



Touch TD1100 Family

General Purpose Corded Handheld Contact Imager Bar Code Reader



Product Reference Guide

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Patents

This product may be covered by one or more of the following patents:

Design Patents: EP2137570.

Utility Patents: EP0789315B1; US5481098; US5992740; US6098883; US6454168; US6561427; US7506816.

Additional patents pending.

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NOTES

Chapter 1

Introduction

About the Touch TD1100

The Touch™ TD1100 series of linear imaging contact readers represent the Datalogic ADC solution for customers who require a cost-effective solution for close contact bar code reading without sacrificing quality and performance.

Designed for low throughput applications within multiple markets, the Touch TD1100 readers provide the guarantee of contact reading with an excellent reading performance on virtually all linear bar codes, including damaged or poorly printed codes.

Small, lightweight and low on energy consumption, the Touch TD1100 readers can still provide robustness and a 1.5 m / 5.0 ft drop resistance, which is typically included in a higher range of products.

The Touch readers are available with the option of two different sizes of reading windows: 6.5 cm / 2.6 in (Touch 65) or 9.0 cm / 3.5 in (Touch 90), which benefits the user when reading either standard or wide bar codes.

The Touch 65/90 Pro readers provide a complete all-in-one multi-interface solution, including RS-232, USB, and Keyboard Wedge Emulation, while the Touch Lite 65/90 readers provide USB-only or RS-232 / Keyboard Wedge interfaces.

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 downloadable 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 reader, and interface configuration bar codes and details.

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

[Chapter 4, References](#) provides details concerning programmable features.

[Appendix A, Technical Specifications](#) lists physical and performance characteristics, as well as environmental and regulatory specifications. It also provides standard cable pin-outs and descriptions of the functions and behaviors of the reader's LED and Beeper indicators.

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

[Appendix C, Sample Bar Codes](#) offers sample bar codes of several common symbologies.

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

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

Conventions

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



NOTE

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



CAUTION

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

Technical Support

Datalogic Website Support

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

Reseller Technical Support

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

Telephone Technical Support

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

Current versions of the Product Reference Guide (PRG), Quick Reference Guide (QRG), the Datalogic Aladdin™ Configuration application, software/firmware and any additional manuals, instruction sheets and utilities for this product can be downloaded from the website listed on the back cover of this manual. Alternatively, printed copies or product support CDs can be purchased through your Datalogic reseller.

NOTES

Chapter 2

Setup

Unpacking

Check carefully to ensure the reader and any accessories ordered are present and undamaged. If any damage occurred during shipment, contact [Technical Support on page 2](#).

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

Setting Up the Reader

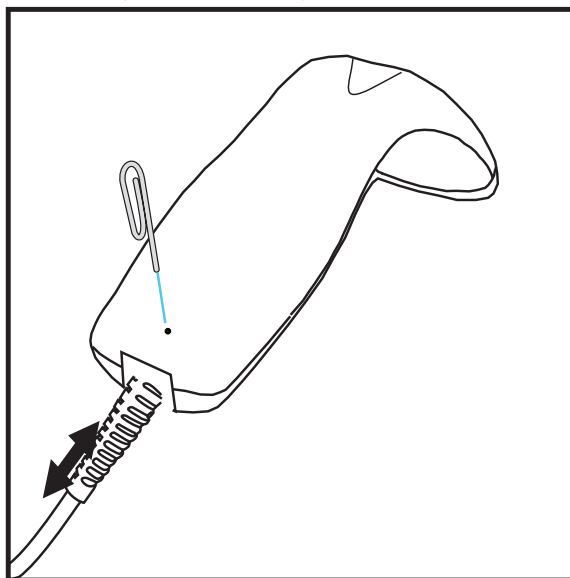
Follow the steps provided in this section to connect and get your reader up and communicating with its host:

1. Install the Interface Cable (see below).
2. ["Connect Host Interface" on page 7](#).
3. Modify ["Customizing Configuration Settings" on page 12](#) (only if modifications are needed from factory settings).

Install the Interface Cable

The reader kit you ordered to match your interface should provide a compatible cable for your installation. If not, contact [Technical Support](#).

Seat the cable assembly into the reader, aligning both the connector and the cable clip with its opening. To disconnect the cable, insert a paper clip or similar object into the opening on the reader, as shown in [Figure 1 on page 6](#).

Figure 1. Connecting/Disconnecting the Interface Cable to the Reader

Depending on the model, the reader can communicate using the following interfaces:

RS-232: The reader can communicate with a standard or Wincor-Nixdorf (W-N) RS-232 host.

RS-232 OPOS: This interface is used for OPOS/UPOS/JavaPOS systems.

Keyboard Wedge (KBW) : When connected using this interface, the host interprets scanned data as keystrokes and supports several international keyboards (for the Windows[®] environment). See ["Country Mode" on page 35](#) for a full listing.

Wand: The Touch 65/90 Pro can be set to use the Wand Emulation interface.

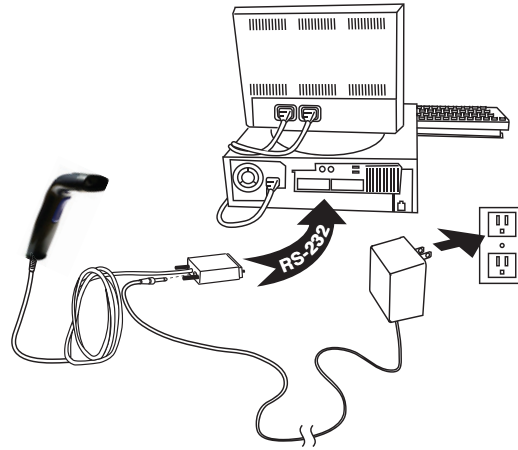
USB: Select to communicate either by USB OEM, USB COM STD, or USB Keyboard interface types by scanning the appropriate interface type bar codes available in this manual. The default interface is USB-KBD (Touch Lite USB and Touch Pro), or RS232-STD (Touch Lite RS232).

Connect Host Interface

RS-232 Serial Connection

Turn off power to the terminal/PC and connect the reader to the terminal/PC serial port via the RS-232 cable as shown. If the terminal will not support POT (Power Off the Terminal) to supply reader power, use the approved power supply (AC Adapter). Plug the AC Adapter barrel connector into the socket on the RS-232 cable connector and the AC Adapter plug into a standard power outlet.

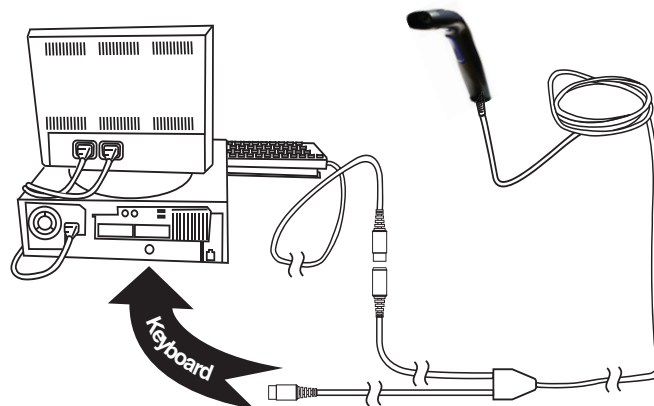
RS-232 Interface



Keyboard Wedge Connection

The Keyboard Wedge cable has a 'Y' connection from the reader. Connect the female to the male end from the keyboard and the remaining end at the keyboard port at the terminal/PC.

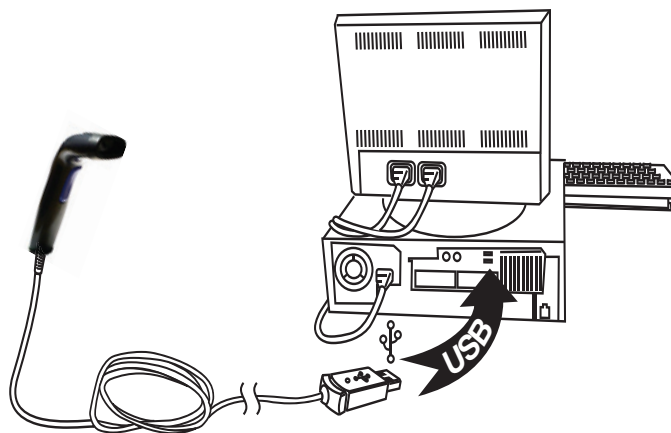
Keyboard Wedge Interface



USB Connection

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

USB Interface



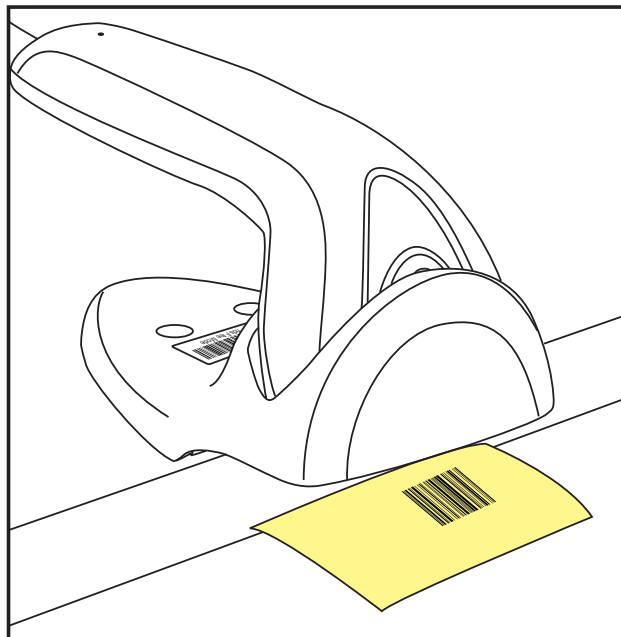
NOTE

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

Holder/Hands-Free Stand

The TD1100 Holder can also be used as a hands-free stand. Insert the reader nose-first into the holder, then pass the bar code beneath the stand. Refer to ["Configuration Using Bar Codes" starting on page 15](#) for information about programming the reader for use with the stand.

Figure 2. Hands-Free Stand



Interface Selection

Upon completing the physical connection between the reader and its host, proceed directly to ["Configuring the Interface" on page 9](#) for information and programming for the interface type the reader is connected to (for example: RS-232, Keyboard Wedge, USB, etc.) and scan the appropriate bar code in the section to select your system's correct interface type.

The reader, depending upon the model, will support one of the following sets of host interfaces:

USB Models (3.0 full speed)

- USB-KBD
- USB-COM STD
- USB-OEM
- USB-KBD-ALT

RS-232 / Keyboard Wedge Models

- RS-232 (Standard, Wincor-Nixdorf, OPOS)
- Keyboard Wedge

Wand Interface (TD1130 Pro only)

Configuring the Interface

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

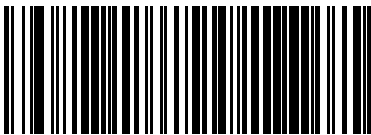
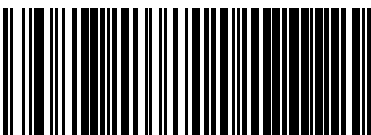
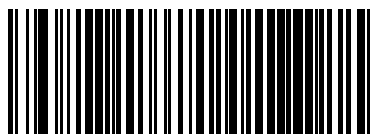
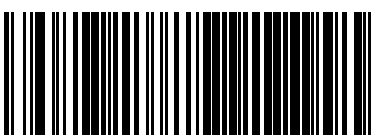


NOTE

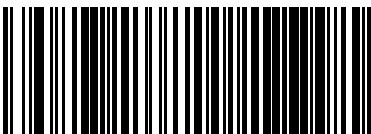
Unlike some other programming features and options, interface selections require that you scan only one programming bar code label. DO NOT scan an ENTER/EXIT bar code prior to scanning an interface selection bar code.

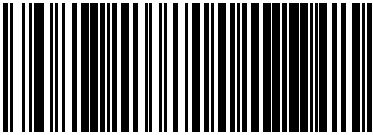
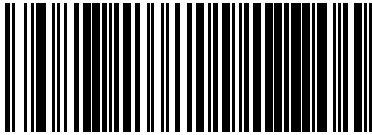
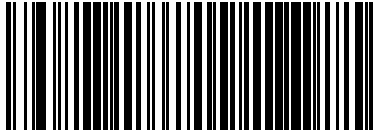
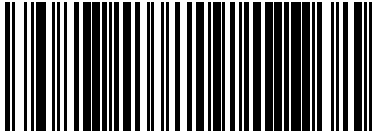
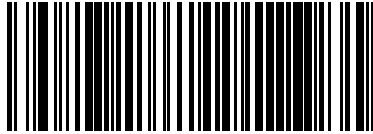
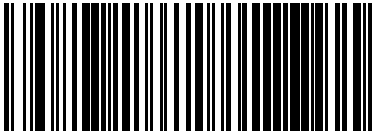
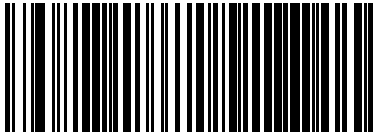
Some interfaces require the reader to start in the disabled state when powered up. If additional reader configuration is desired while in this state, pull the trigger and hold it for five seconds. The reader will change to a state that allows programming with bar codes.

Table 1. Available Interfaces

RS-232		FEATURES
RS-232 standard interface	 Select RS232-STD	Set RS-232 Interface Features starting on page 19
 Select RS232-WN	RS-232 Wincor-Nixdorf	
RS-232 for use with OPOS/UPOS/JavaPOS	 Select RS-232 OPOS	
 Select USB-COM-STD ^a	USB Com to simulate RS-232 standard interface	
USB-OEM		FEATURES
USB-OEM (can be used for OPOS/UPOS/JavaPOS)	 Select USB-OEM	Set USB-OEM Interface Features starting on page 47

a. Download the correct USB Com driver from www.datalogic.com

KEYBOARD		FEATURES
AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/Standard Key Encoding	 Select KBD-AT	Set KEYBOARD WEDGE Interface Features starting on page 35

KEYBOARD (continued)		FEATURES
 Select KBD-AT-NK	Keyboard Wedge for IBM AT PS2 with standard key encoding but without external keyboard	Set KEYBOARD WEDGE Interface Features starting on page 35
AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/Alternate Key  Select KBD-AT-ALT		
 Select KBD-AT-ALT-NK	Keyboard Wedge for IBM AT PS2 with alternate key encoding but without external keyboard	
PC/XT w/Standard Key Encoding  Select KBD-XT		
 Select USB Keyboard	USB Keyboard with standard key encoding	
USB Keyboard with alternate key encoding  Select USB Alternate Keyboard		
WAND EMULATION		FEATURES
 Select WAND	Wand Emulation	Set WAND Interface Features starting on page 49

Customizing Configuration Settings

Using the Programming Bar Codes

This manual contains feature descriptions and bar codes which allow you to reconfigure your reader. Some programming bar code labels, like ["Resetting the Product Configuration to Defaults" on page 14](#), require only the scan of that single label to enact the change. Most of the programming labels in this manual, however, require the reader to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT bar code once to enter Programming Mode. Once the reader is in Programming Mode, you can scan a number of parameter settings before scanning the ENTER/EXIT bar code a second time, which will then accept your changes, exit Programming Mode and return the reader to normal operation.



NOTE

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

Datalogic Aladdin™

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 serial or 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 RS-232/USB-COM interface. Aladdin is available on the CD-ROM provided with your product, and also from the Datalogic website. Aladdin allows you to program the reader by selecting configuration commands through a user-friendly graphical interface running on a PC. These commands are sent to the reader over the selected communication interface, or they can be printed as 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 reader is typically factory-configured with a set of default features standard to the interface type you ordered. See ["Interface Selection" on page 9](#).

[Global Interface Features, starting on page 17](#) provides settings configurable by all interface types. If your installation requires you to further customize your reader, you can select other options through use of the instructions and programming bar codes available in the appropriate section for your interface.

- [RS-232 Only Interface, starting on page 19](#)
- [RS-232/USB-Com Interfaces, starting on page 25](#)
- [Keyboard Interface, starting on page 35](#)
- [USB-OEM Interface, starting on page 47](#)

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:

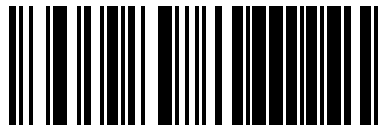
[Configuration Using Bar Codes:](#) General Features includes programming for scanning, beeper and LED indicators and other such universal settings.

[Reading Parameters:](#) Reading Parameters include programming for scanning, beeper and LED indicators and other universal settings.

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

Software Version Transmission

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



Transmit Software Version

Resetting the Product Configuration to Defaults

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



NOTE

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



Restore Custom Default Configuration

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



CAUTION

Scanning either of the “Restore Factory Configuration” commands below will result in the loss of any custom configuration settings for your device.



Restore USA Factory Configuration



Restore EU Factory Configuration

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

Chapter 3

Configuration Using Bar Codes

This and following sections provide programming bar codes to configure your reader by changing the default settings. For details about additional methods of programming, see "Customizing Configuration Settings" on page 12.



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 5 and complete the appropriate procedure.

Configuration Parameters

Once the reader is set up, you can change the default parameters to meet your application needs. Refer to "[Resetting the Product Configuration to Defaults](#)" on page 14 for initial configuration in order to set the default values and select the interface for your application.

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

Interface Configuration:

- "[RS-232 Only Interface](#)" on page 19
- "[RS-232/USB-Com Interfaces](#)" on page 25
- "[Keyboard Interface](#)" on page 35
- "[USB-OEM Interface](#)" on page 47

Parameters common to all interface applications:

- "[Global Prefix/Suffix](#)" on page 54
- "[Data Format](#)" on page 53 offers advanced configuration options for customization of scanned data output.
- "[Reading Parameters](#)" on page 67 control various operating modes and indicators status functioning.

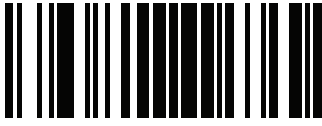
Symbology-specific parameters:

"[Symbologies](#)" on page 87 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 5 and complete the appropriate procedure.



To program features:

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



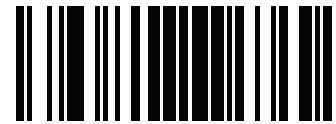
NOTE

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

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

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

For more detailed descriptions, programming information and examples for setting selected configuration items, see [References, starting on page 251](#).



GLOBAL INTERFACE FEATURES

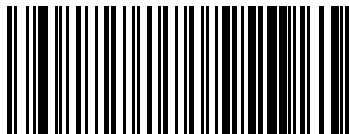
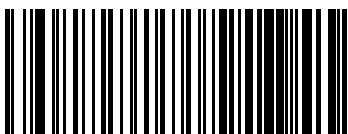
The following interface features are configurable by all interface types. To set features specific to your interface, turn to that section of this manual:

- "RS-232 Only Interface" on page 19
- "RS-232/USB-Com Interfaces" on page 25
- "Keyboard Interface" on page 35
- "USB-OEM Interface" on page 47

Host Commands — Obey/Ignore

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

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

	 Host Commands = Obey
 Host Commands = Ignore	

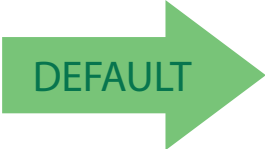
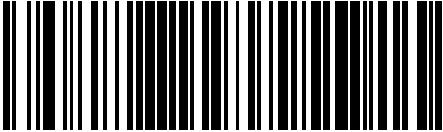
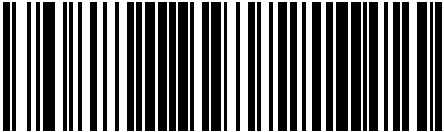


Enter/Exit Programming Mode

USB Suspend Mode

The reader always goes to USB suspend mode (low power consumption) when the connected PC goes to standby mode. This setting enables/disables the ability of USB interfaces to wake up the PC by a trigger pull.

When disabled, a scanner with a USB keyboard interface active will not wake up the PC by trigger pull.

	 USB Suspend Mode = Disable
 USB Suspend Mode = Enable	

RS-232 ONLY INTERFACE

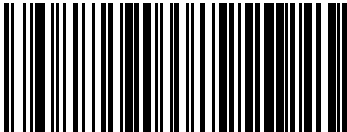
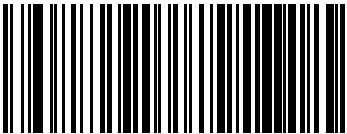
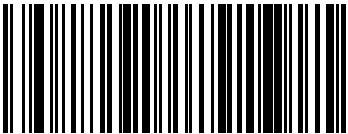
Use the programming bar codes in this chapter if modifications to the standard RS-232 interface settings are necessary to meet your system’s requirements. Additional settings which apply to both the RS-232 and USB interfaces are available in [Chapter 3, RS-232/USB-Com Interfaces](#).

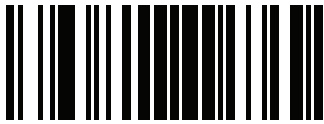
RS-232 Standard Factory Settings

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

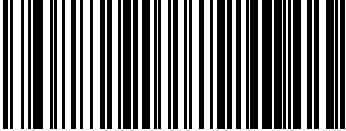
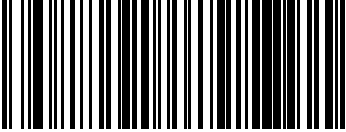
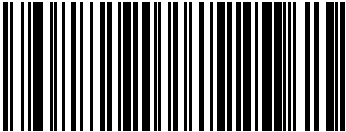
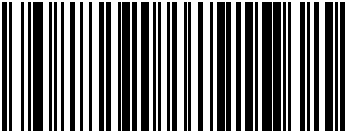
Baud Rate

Baud rate is the number of bits of data transmitted per second. Set the reader's baud rate to match the baud rate setting of the host device. With an improper baud rate setting, data may not reach the host correctly.

	 Baud Rate = 1200
 Baud Rate = 2400	
	 Baud Rate = 4800



Baud Rate — continued

 Baud Rate = 9600	
	 Baud Rate = 19,200
 Baud Rate = 38,400	
	 Baud Rate = 57,600
 Baud Rate = 115,200	

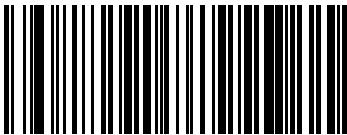
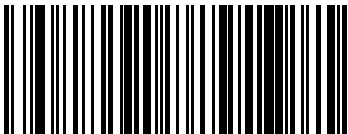
Data Bits

This parameter allows the reader to interface with devices requiring a 7-bit or 8-bit ASCII protocol for sending and receiving data.



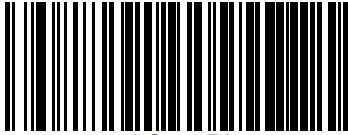
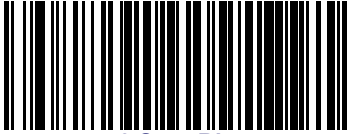
The scanner cannot support 7-bit-data when parity-none is set.

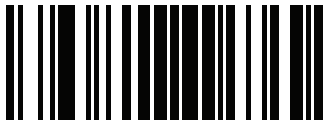
NOTE

	 7 Data Bits
 8 Data Bits	 DEFAULT

Stop Bits

The stop bit(s) at the end of each transmitted character marks the end of transmission of one character and prepares the receiving device for the next character in the serial data stream. The number of stop bits selected (one or two) depends on the number the receiving terminal is programmed to accommodate. Set the number of stop bits to match host device requirements.

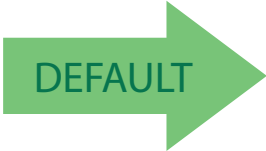
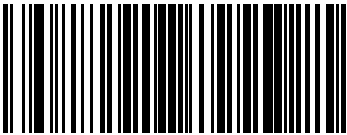
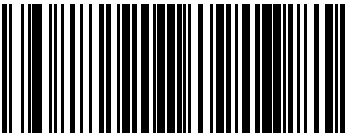
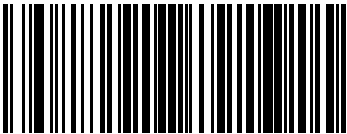
 DEFAULT	 1 Stop Bit
 2 Stop Bits	



Parity

This feature specifies parity required for sending and receiving data. A parity check bit is the most significant bit of each ASCII coded character. Select the parity type according to host device requirements.

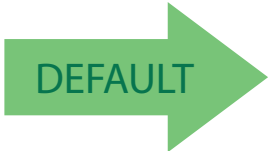
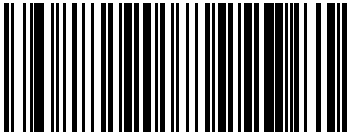
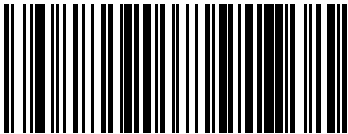
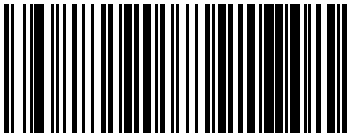
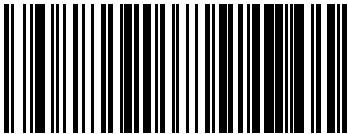
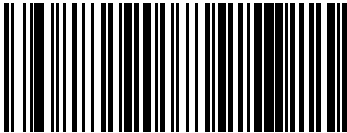
- Select None when no parity bit is required.
- Select Odd parity and the parity bit value is set to 0 or 1, based on data, to ensure that an odd number of 1 bits are contained in the coded character.
- Select Even parity and the parity bit value is set to 0 or 1, based on data, to ensure that an even number of 1 bits are contained in the coded character.

	 Parity = None
 Parity = Even	
	 Parity = Odd

Handshaking Control

The data interface consists of an RS-232 port designed to operate either with or without the hardware handshaking lines, *Request to Send* (RTS), and *Clear to Send* (CTS). Handshaking Control includes the following options:

- RTS — RTS is asserted during transmissions. CTS is ignored.
- RTS/CTS — RTS is asserted during transmissions. CTS gates transmissions.
- RTS/XON/XOFF — RTS is asserted during transmissions. CTS is ignored. XON and XOFF gate transmissions.
- RTS On/CTS — RTS is always asserted. CTS gates transmissions.
- RTS/CTS Scan Control — RTS is asserted during transmissions. CTS gates transmissions and controls enable and disable state of reader.

	 Handshaking Control = RTS
 Handshaking Control = RTS/CTS	
	 Handshaking Control = RTS/XON/XOFF
 Handshaking Control = RTS On/CTS	
	 Handshaking Control = RTS/CTS Scan Control

NOTES

RS-232/USB-COM INTERFACES

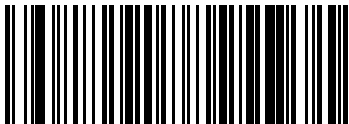
The programming bar codes in this chapter allow modifications to the standard RS-232 and USB-Com interfaces.

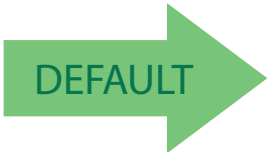
Standard Factory Settings

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

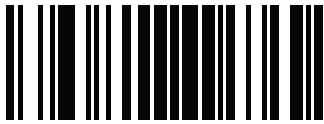
Intercharacter Delay

This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay. See "[Label ID: Pre-loaded Sets](#)" on [page 266](#) 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

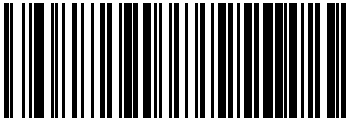
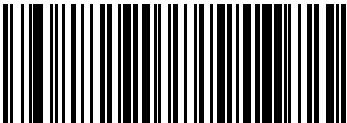


00 = No Intercharacter Delay



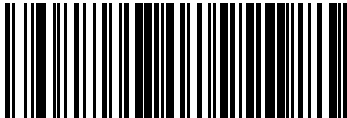
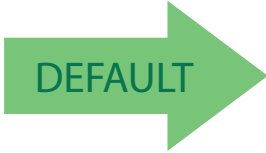
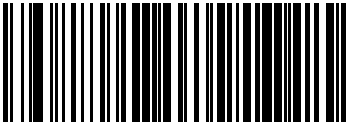
Beep On ASCII BEL

When this parameter is enabled, the reader issues a beep when a <BEL> character is detected on the RS-232 serial line. <BEL> is issued to gain a user's attention to an illegal entry or other important event.

 Beep On ASCII BEL = Disable	
	 Beep On ASCII BEL = Enable

Beep On Not on File

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

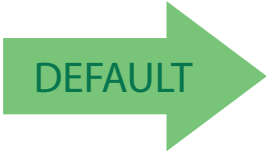
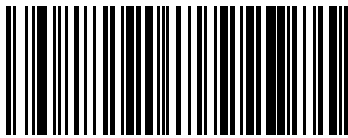
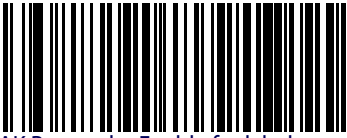
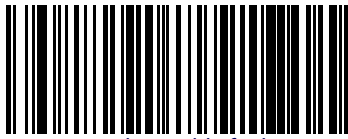
 Beep On Not On File = Disable	
	 Beep On Not On File = Enable

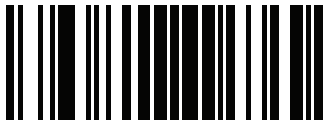
ACK NAK Options

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

Options are:

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

	 ACK/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	



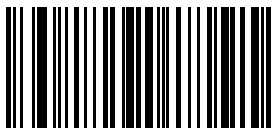
ACK Character

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 254](#) for more detailed programming instructions.

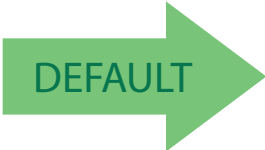


NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option [Data Bits](#) has been set as 7 Data Bits.



Select ACK Character Setting



0x06 'ACK' Character

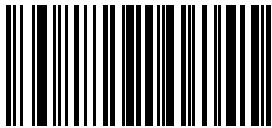
NAK Character

This setting specifies an ASCII character or hex value to be used as the NAK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See ["NAK Character" on page 255](#) for more detailed programming instructions.

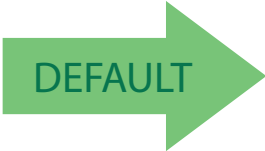


NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option [Data Bits](#) has been set as 7 Data Bits.



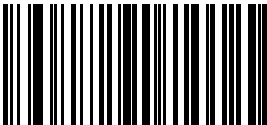
Select NAK Character Setting

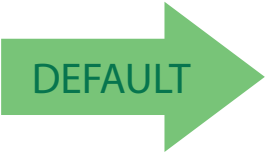


0x15 'NAK' Character

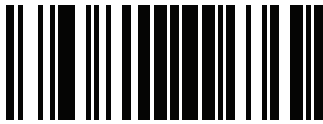
ACK NAK Timeout Value

This option specifies the amount of time the reader waits for an ACK character from the host following label transmission. The selectable timeout range is 200 milliseconds to 15,000ms (15 seconds) in 200ms increments. A selection of 0 disables the timeout. See "ACK NAK Timeout Value" on page 256 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, 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

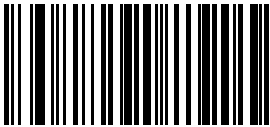
DEFAULT

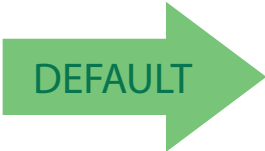
01 ACK NAK Timeout value is 200ms



ACK NAK Retry Count

This feature specifies the number of times the reader retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries. See "ACK NAK Retry Count" on page 257 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, 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



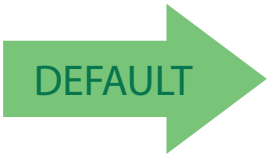
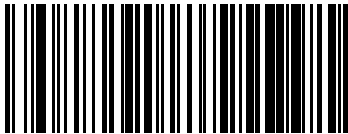
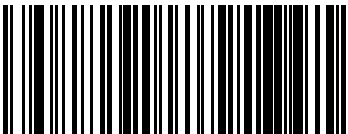
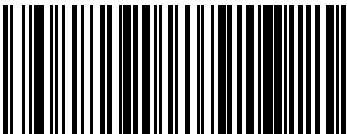
003 = 3 Retries

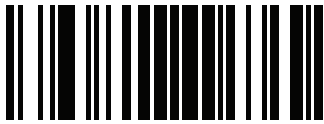
ACK NAK Error Handling

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

Options are:

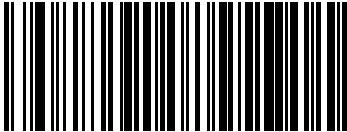
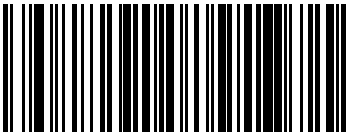
- Ignore errors detected
- Process error as valid ACK character
- Process error as valid NAK character

	 ACK NAK Error Handling = Ignore Errors Detected
 ACK NAK Error Handling = Process Error as Valid ACK Character	
	 ACK NAK Error Handling = Process Error as Valid NAK Character



Indicate Transmission Failure

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

	 Indicate Transmission Failure = Disable Indication
 Indicate Transmission Failure = Enable Indication	

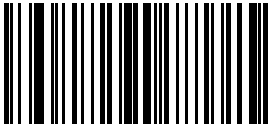
Disable Character

Specifies the value of the RS-232 host command used to disable the reader.
ASCII characters or any hex value from 0 to 0xFF can be selected. See "Disable Character" on page 258 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. 8-bit data is not recognized when the option Data Bits has been set as 7 Data Bits.

 Select Disable Character Setting	
	0x44 = Disable Character is 'D'

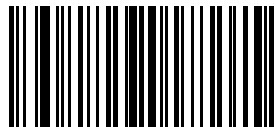
Enable Character

Specifies the value of the RS-232 host command used to enable the reader.
ASCII characters or any hex value from 0 to 0xFF can be selected. See ["Enable Character" on page 259](#) for more detailed programming instructions.

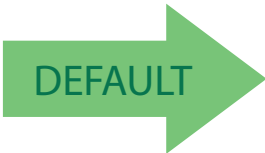


NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option [Data Bits](#) has been set as 7 Data Bits.



Select Enable Character Setting



0x45 = Enable Character is 'E'



NOTES

KEYBOARD INTERFACE

Use the programming bar codes in this chapter to select options for USB Keyboard and Wedge Interfaces. Reference [Appendix B, Standard Defaults](#) for a listing of standard factory settings. Information about control character emulation which applies to keyboard interfaces is listed in [Appendix E, Scancode Tables](#).

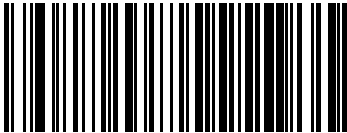
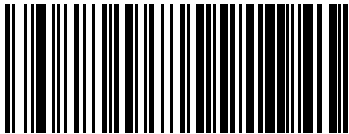
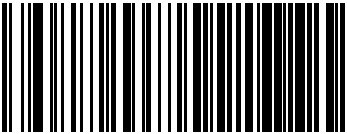
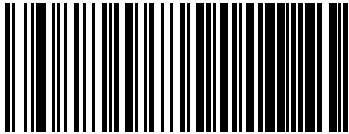
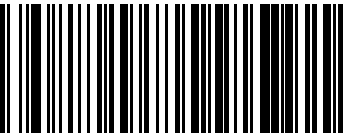
Country Mode

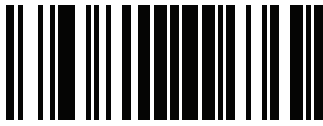
This feature specifies the country/language supported by the keyboard.

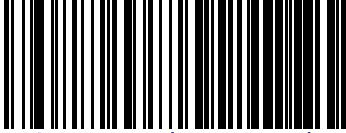
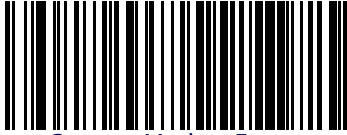
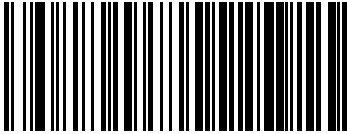
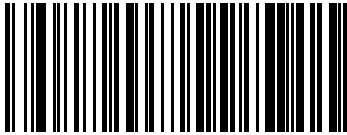
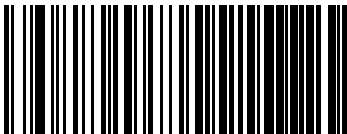
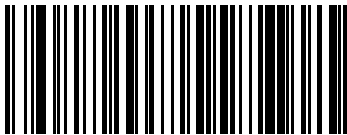
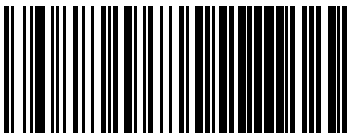
Only the following interfaces support ALL Country Modes.

- USB Keyboard (without alternate key encoding)
- Keyboard Wedge

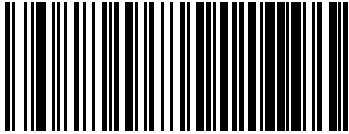
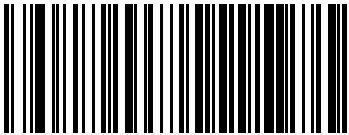
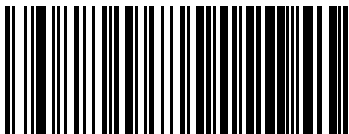
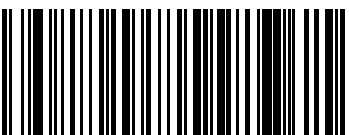
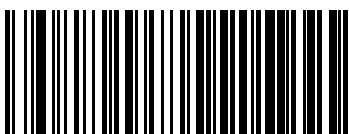
All other interfaces support ONLY the following Country Modes: U.S., Belgium, Britain, France, Germany, Italy, Spain, Sweden.

	 Country Mode = U.S.
 Country Mode = Belgium	
	 Country Mode = Britain
 Country Mode = Croatia	Supports only the interfaces listed in the Country Mode feature description.
Supports only the interfaces listed in the Country Mode feature description.	 Country Mode = Czech Republic

**Country Mode — continued**

 Country Mode = Denmark	Supports only the interfaces listed in the Country Mode feature description.
	 Country Mode = France
 Country Mode = Germany	
Supports only the interfaces listed in the Country Mode feature description.	 Country Mode = Hungary
 Country Mode = Italy	
Supports only the interfaces listed in the Country Mode feature description.	 Country Mode = Japanese 106-key
 Country Mode = Norway	Supports only the interfaces listed in the Country Mode feature description.

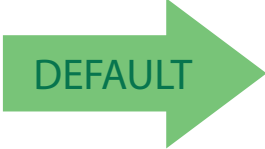
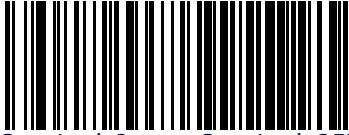
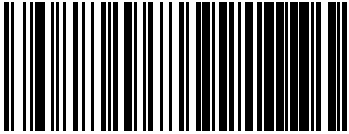
Country Mode — continued

 Country Mode = Poland	Supports only the interfaces listed in the Country Mode feature description.
Supports only the interfaces listed in the Country Mode feature description.	 Country Mode = Portugal
 Country Mode = Romania	Supports only the interfaces listed in the Country Mode feature description.
Supports only the interfaces listed in the Country Mode feature description.	 Country Mode = Slovakia
 Country Mode = Spain	
	 Country Mode = Sweden
 Country Mode = Switzerland	Supports only the interfaces listed in the Country Mode feature description.



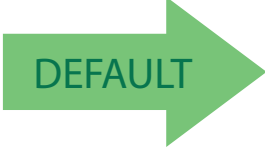
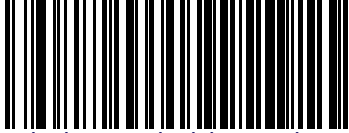
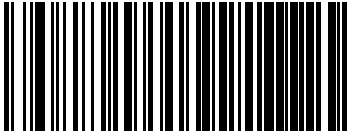
Caps Lock State

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

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

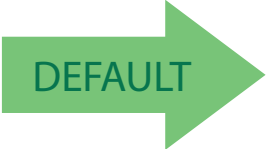
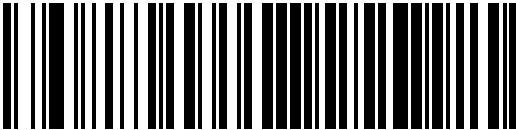
Numlock

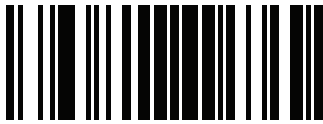
This option specifies the setting of the Numbers Lock (Numlock) key while in Keyboard Wedge interface. This only applies to alternate key encoding interfaces. It does not apply to USB Keyboard.

	 Numlock = Numlock key unchanged
 Numlock = Numlock key toggled	

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

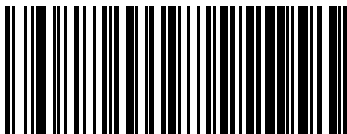
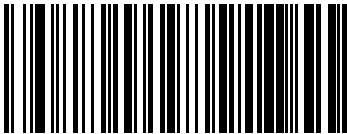
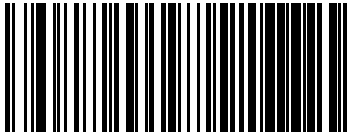
This feature is used by the Keyboard Wedge and USB Keyboard interfaces. It specifies how the reader transmits ASCII control characters to the host. Reference [Appendix E, Scancode Tables](#) for more information about control characters.

Options are as follows:

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

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

Send Special Function Key : Send characters between 00H and 1FH according to the special function key mapping table (see "[Microsoft Windows Codepage 1252](#)" on page 318). 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 = 00
 Keyboard Send Control Characters = 01	
	 Keyboard Send Control Characters = 02

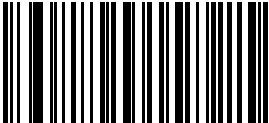
Wedge Quiet Interval

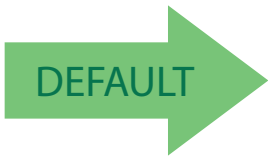
This option specifies the amount of time to look for keyboard activity before the reader breaks the keyboard connection in order to transmit data to host. The selectable range for this feature is from 0 to 990ms in 10ms increments. See "[Wedge Quiet Interval](#)" on page 260 for more detailed programming instructions.



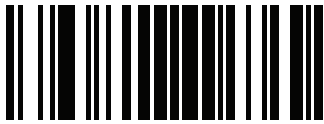
This feature applies ONLY to the Keyboard Wedge interface.

NOTE

 Select Wedge Quiet Interval 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



10 = Quiet Interval of 100 ms



Intercharacter Delay

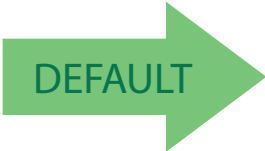
This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay. See "Intercharacter Delay" on page 261 for more detailed programming instructions.



NOTE

This feature applies ONLY to the Keyboard Wedge interface.

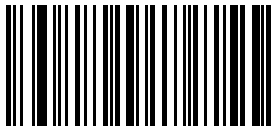
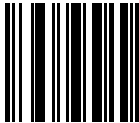
	Intercharacter Delay = No Delay
Select Intercharacter Delay Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT 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

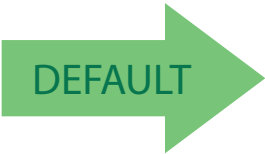


00 = No Intercharacter Delay

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 262](#) for more detailed programming instructions.

 Set Intercode Delay	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

DEFAULT

00 = No Wedge Intercode Delay



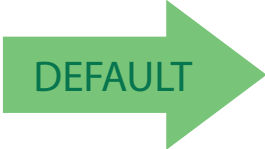
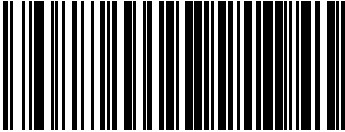
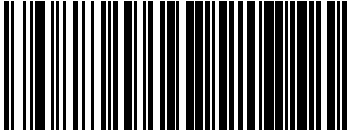
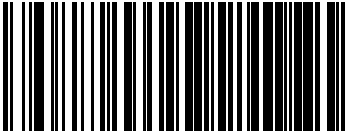
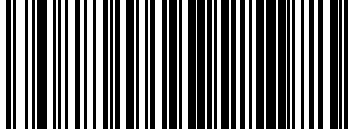
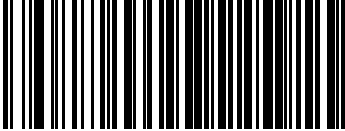
USB Keyboard Speed

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

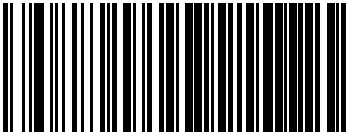
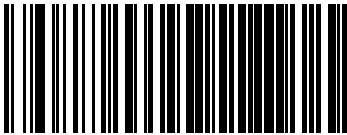
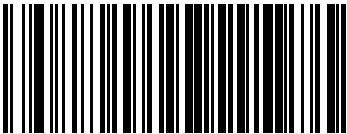
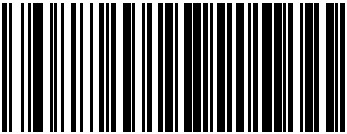
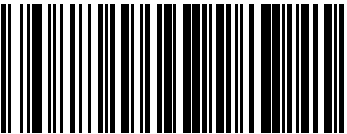


This feature applies **ONLY** to the USB Keyboard interface.

NOTE

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

USB Keyboard Speed — continued

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



NOTES

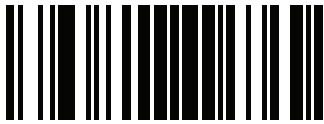
USB-OEM INTERFACE

Introduction

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

Standard Factory Settings

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



USB-OEM Device Usage

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

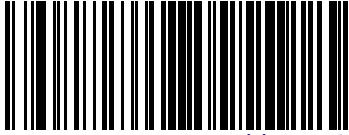
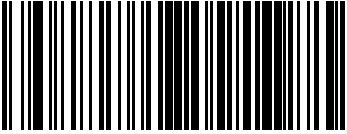
Options are:

- Table Top Scanner
- Handheld Scanner



NOTE

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

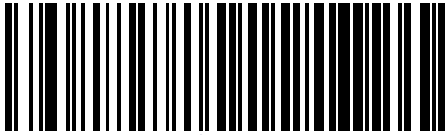
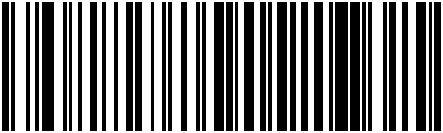
	 USB-OEM Device Usage = Table Top Scanner
 USB-OEM Device Usage = Handheld Scanner	

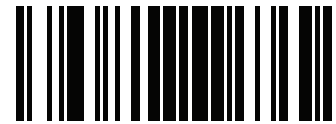
USB-OEM Interface Options

This setting provides for an interface specific control mechanism.

Options are:

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

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



WAND EMULATION INTERFACE

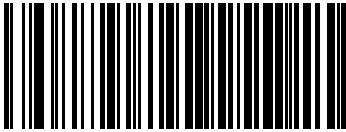
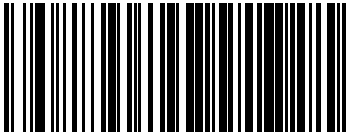
WAND SIGNAL SPEED on page 49
WAND POLARITY on page 50
WAND IDLE STATE on page 50
TRANSMIT NOISE on page 51
LABEL SYBOLOGY CONVERSION on page 52

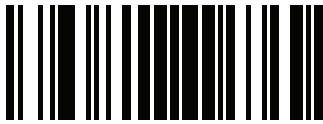
This chapter provides feature/settings configuration for the Wand Emulation interface.
Reference [Appendix B, Standard Defaults](#) for a listing of standard factory settings.

Wand Signal Speed

This feature specifies the speed of the Wand output signal per nominal bar or space. Choices are:

- 330 microseconds
- 660 microseconds

	 Wand Signal Speed = 330ms
 Wand Signal Speed = 660ms	



Wand Polarity

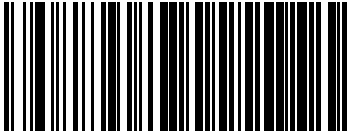
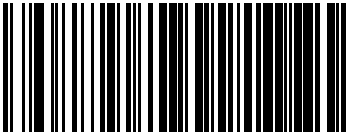
This option specifies the polarity of the Wand output signal. Choices are:

- Quiet zones and spaces are high, bars are low
- Quiet zones and spaces are low, bars are high



NOTE

TTL logic levels:
0V <= Low <= 0.7V
2.4V <= High <= 5.25V

	 Wand Polarity = Quiet Zones & Spaces High, Bars Low
 Wand Polarity = Quiet Zones & Spaces Low, Bars High	

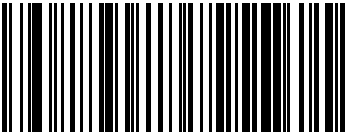
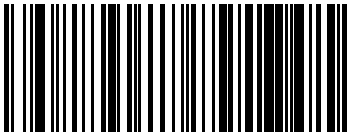
Wand Idle State

This feature specifies the level of the Wand output signal when the reader is idle.



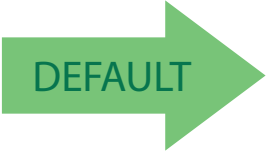
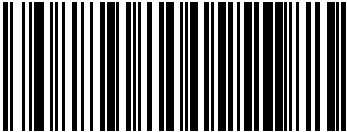
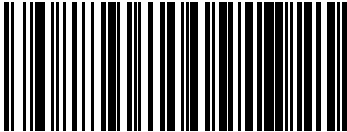
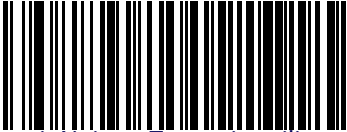
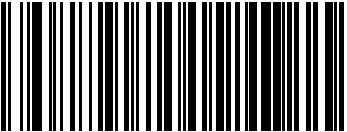
NOTE

TTL logic levels:
0V <= Low <= 0.7V
2.4V <= High <= 5.25V

	 Wand Idle State = Low
 Wand Idle State = High	

Transmit Noise

This option specifies the leading/trailing noise for the Wand interface.

	 Transmit Noise = Disable
 Transmit Noise = Transmit leading noise	
	 Transmit Noise = Transmit trailing noise
 Transmit Noise = Transmit leading and trailing noise	

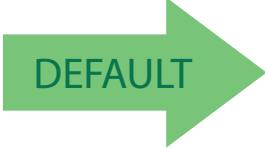
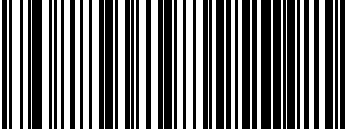
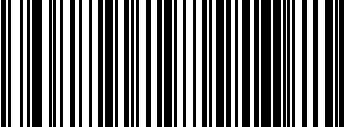
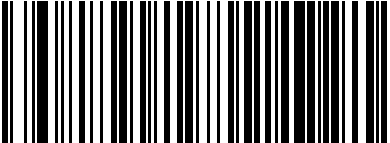
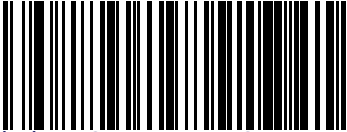


Label Symbology Conversion

When this feature is enabled for the Wand Emulation interface, all barcode labels are converted to a single symbology.

Options are:

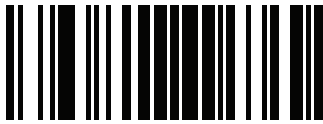
- No conversion
- Convert to Code 39 symbology
- Convert to Code 39 Full ASCII
- Convert to Code 128 symbology

	 Label Symbology Conversion = No conversion
 Label Symbology Conversion = Convert to Code 39	
	 Label Symbology Conversion = Convert to Code 39 Full ASCII
 Label Symbology Conversion = Convert to Code 128	

DATA FORMAT

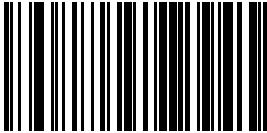
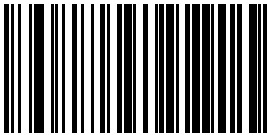
GLOBAL PREFIX/SUFFIX on page 54
GLOBAL AIM ID on page 55
LABEL ID starting on page 56 •Label ID: Pre-loaded Sets •Label ID: Set Individually Per Symbology •Label ID Control •Label ID Symbology Selection
SET GLOBAL MID LABEL ID CHARACTER(S) on page 64
CASE CONVERSION on page 65
CHARACTER CONVERSION on page 66

The features in this chapter can be used to build specific user-defined data into a message string. See "References" starting on page 251 for more detailed instructions on setting these features.



Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the bar code data) and/or as a suffix (in a position following the bar code data). See "Global Prefix/Suffix" on page 264 for more detailed programming instructions.

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.	 Set Global Prefix
 Set Global Suffix	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



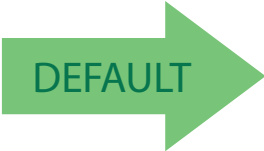
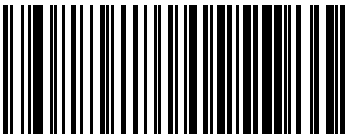
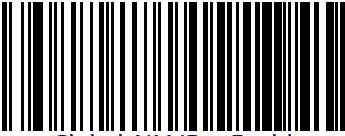
Global AIM ID



NOTE

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

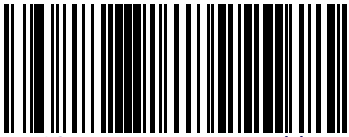
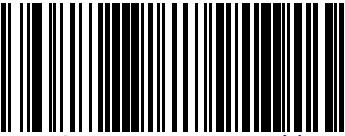
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. See "Global AIM ID" on page 265 for more detailed programming instructions.

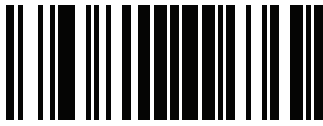
	 Global AIM ID = Disable
 Global AIM ID = Enable	

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 or]C3.

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

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



Label ID

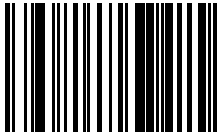
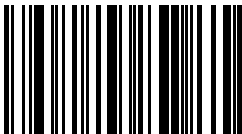
A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01-0xFF), used to identify a bar code (symbology) type. It can be appended previous to or following the transmitted bar code data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" on page 56) or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 57). If you wish to program the reader to always include an industry standard label identifier for ALL symbology types, see the previous feature "Global AIM ID" on page 55.

Label ID: Pre-loaded Sets

The reader supports two pre-loaded sets of Label IDs. shows the USA set and the EU set. See "Label ID: Pre-loaded Sets" on page 266 for more information concerning the pre-loaded sets that are provided.



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

	 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.

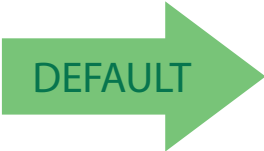
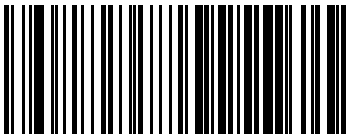
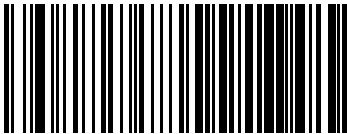
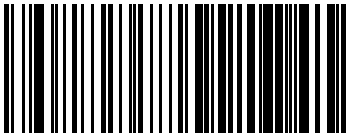


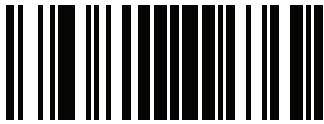
NOTE

This setting requires the scanning of bar codes from multiple sections. See "Label ID: Set Individually Per Symbology" on page 268 for more detailed programming instructions.

Label ID Control

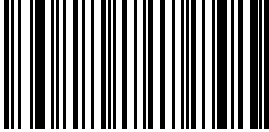
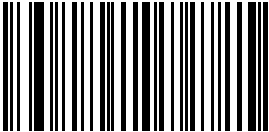
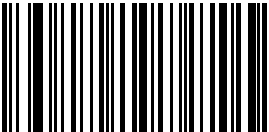
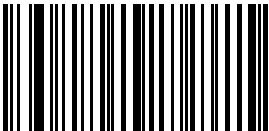
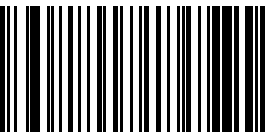
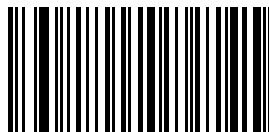
This option controls whether a Label ID is disabled, or sent as a prefix or suffix for a given symbology type.

	 Label ID Transmission = Disable
 Label ID Transmission = Enable as Prefix	
	 Label ID Transmission = Enable as Suffix
 CANCEL	Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.

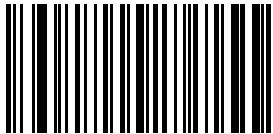
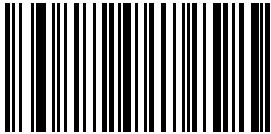
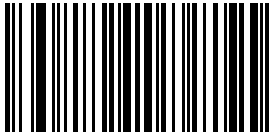
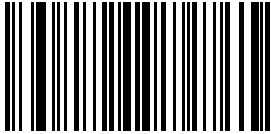
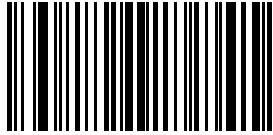
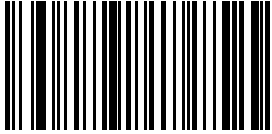
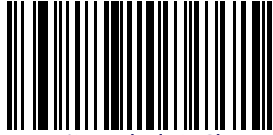
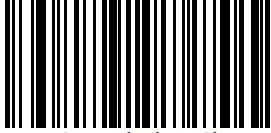


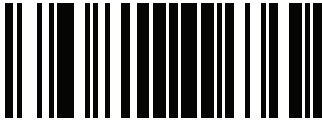
Label ID Symbology Selection

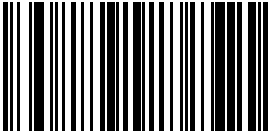
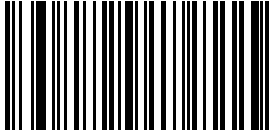
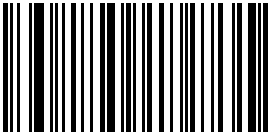
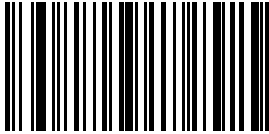
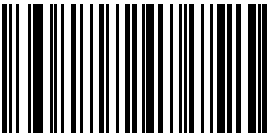
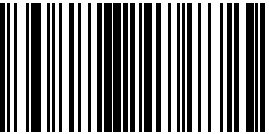
This option selects the symbology for which a Label ID is to be configured. See ["Label ID: Set Individually Per Symbology"](#) on page 268 for full instructions.

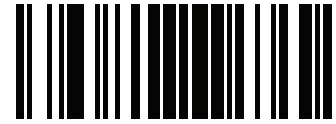
	 Set UPC-A Label ID Character(s)
 Set UPC-A/P2 Label ID Character(s)	
	 Set UPC-A/P5 Label ID Character(s)
 Set UPC-A/GS1-128 Label ID Character(s)	
	 Set UPC-E Label ID Character(s)
 Set UPC-E/P2 Label ID Character(s)	
	 Set UPC-E/P5 Label ID Character(s)

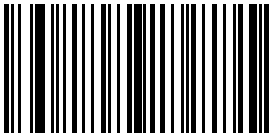
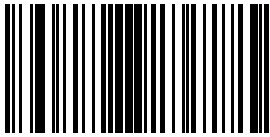
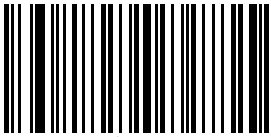
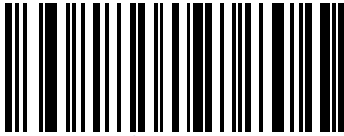
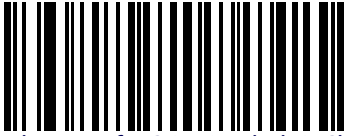
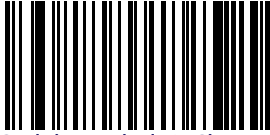
Label ID Symbology Selection — continued

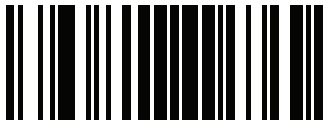
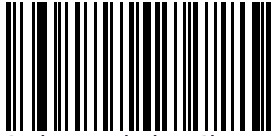
 Set UPC-E/GS1-128 Label ID Character(s)	
	 Set EAN 13 Label ID Character(s)
 Set EAN 13/P2 Label ID Character(s)	
	 Set EAN 13/P5 Label ID Character(s)
 Set EAN 13/GS1-128 Label ID Character(s)	
	 Set EAN 8 Label ID Character(s)
 Set EAN 8/P2 Label ID Character(s)	
	 Set EAN 8/P5 Label ID Character(s)

**Label ID Symbology Selection — continued**

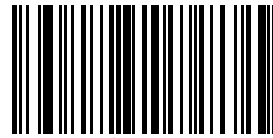
 Set EAN 8/GS1-128 Label ID Character(s)	
	 Set GS1 DataBar Omnidirectional Label ID Character(s)
 Set GS1 DataBar Expanded Label ID Character(s)	
	 Set GS1 DataBar Limited Label ID Character(s)
 Set Code 39 Label ID Character(s)	
	 Set Code 32 Label ID Character(s)
 Set Code 39 CIP Label ID Character(s)	

**Label ID Symbology Selection — continued**

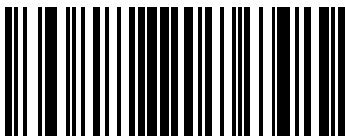
 Set Code 128 Label ID Character(s)	
	 Set GS1-128 Label ID Character(s)
 Set Interleaved 2 of 5 Label ID Character(s)	
	 Set Interleaved 2 of 5 CIP HR Label ID Character(s)
 Set Datalogic 2 of 5 CIP HR Label ID Character(s)	
	 Set Codabar Label ID Character(s)
 Set ABC Codabar Label ID Character(s)	

**Label ID Symbology Selection — continued**

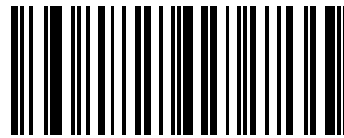
Set Code 11 Label ID Character(s)



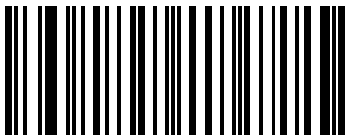
Set Standard 2 of 5 Label ID Character(s)



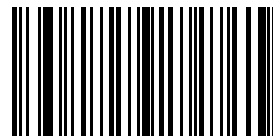
Set Industrial 2 of 5 Label ID Character(s)



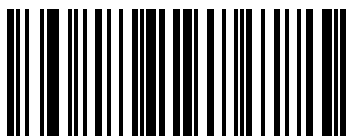
Set ISSN Label ID Character(s)



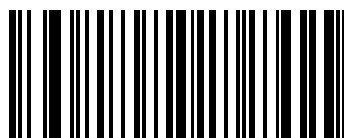
Set IATA Label ID Character(s)



Set Concatenated ISBT 128 Label ID Character(s)

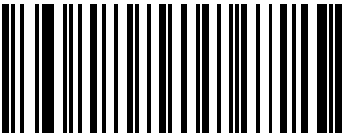
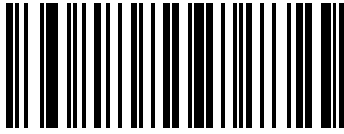
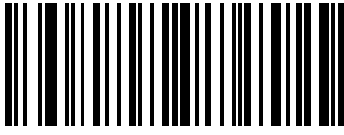
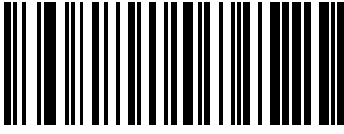
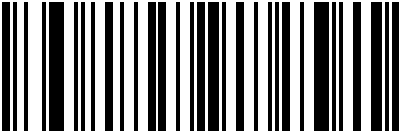
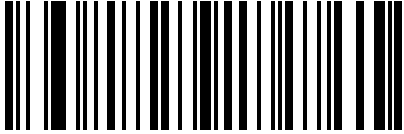


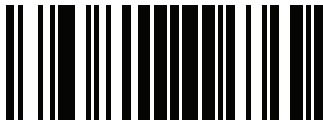
Set MSI Label ID Character(s)



Set Code 93 Label ID Character(s)

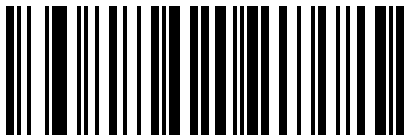
Label ID Symbology Selection — continued

 Set Codablock F Label ID Character(s)	
	 Set Code 4 Label ID Character(s)
 Set Code 5 Label ID Character(s)	
	 Set Follett 2 of 5 Label ID Character(s)
 Set ISBN Label ID Character(s)	
	 Set Concatenated ISBT Label ID Character(s)



Set Global Mid Label ID Character(s)

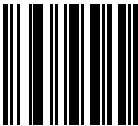
Specifies a mid-label ID that is added for transmission between the labels of a two label pair. The expected string is a maximum of 20 characters. When combining two label pairs into a single label for transmission to the host, this label ID can be added to the data, following the first label and preceding the second label. See "Set Global Mid Label ID Character(s)" on page 270 for more detailed programming instructions.



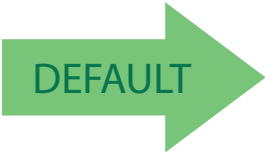
Set Global Mid Label ID Character(s)

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



No Global Mid Label ID
Character(s)
00000000000000000000
00000000000000000000

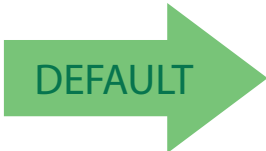
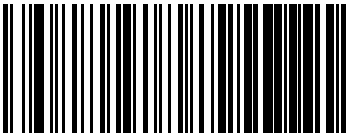
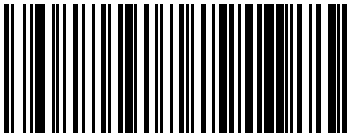
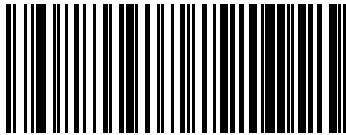
Case Conversion

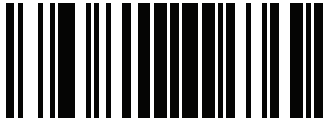
This feature allows conversion of the case of all alphabetic characters to upper or lower case.



NOTE

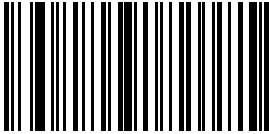
Case conversion affects **ONLY** scanned bar code data, and does not affect Label ID, Prefix, Suffix, or other appended data.

	 Case Conversion = Disable (no case conversion)
 Case Conversion = Convert to upper case	
	 Case Conversion = Convert to lower case



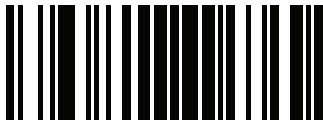
Character Conversion

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 270 for more detailed programming instructions.

	 Configure Character Conversion
➡ DEFAULT	0xFFFFFFFFFFFFFF(N o character conversion)

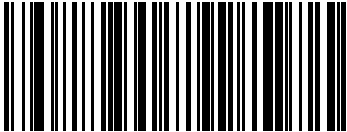
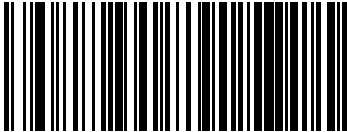
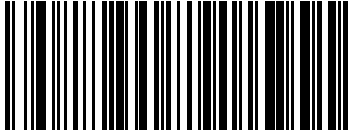
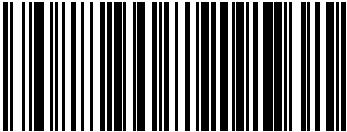
READING PARAMETERS

DOUBLE READ TIMEOUT on page 68	GOOD READ BEEP VOLUME on page 76
LABEL GONE TIMEOUT on page 70	GOOD READ LED DURATION on page 79
POWER SAVE MODE on page 71	SCAN MODE on page 80
LED AND BEEPER INDICATORS on page 73	STAND MODE TRIGGERED TIMEOUT on page 81
POWER ON ALERT on page 73	SCANNING ACTIVE TIME on page 83
GOOD READ: WHEN TO INDICATE on page 74	STAND MODE FLASH on page 83
GOOD READ BEEP TYPE on page 75	FLASH ON TIME on page 84
GOOD READ BEEP FREQUENCY on page 75	FLASH OFF TIME on page 84
GOOD READ BEEP LENGTH on page 77	STAND MODE SENSITIVITY on page 85

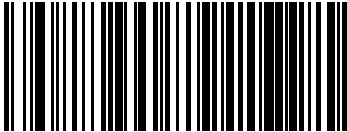
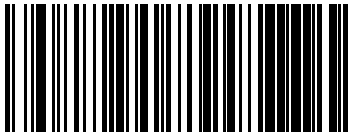
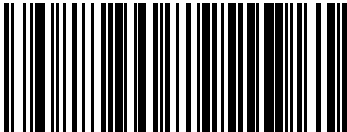
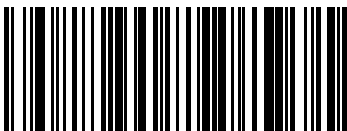


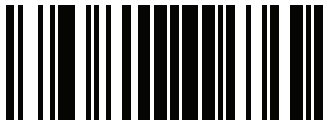
Double Read Timeout

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

	 Double Read Timeout = 0.1 Second
 Double Read Timeout = 0.2 Second	
	 Double Read Timeout = 0.3 Second
 Double Read Timeout = 0.4 Second	

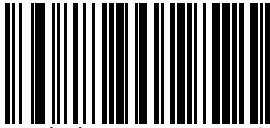
Double Read Timeout — continued

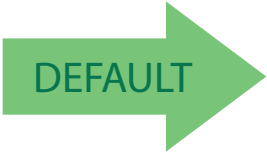
	 Double Read Timeout = 0.5 Second
 Double Read Timeout = 0.6 Second	
	 Double Read Timeout = 0.7 Second
 Double Read Timeout = 0.8 Second	
	 Double Read Timeout = 0.9 Second
 Double Read Timeout = 1 Second	



Label Gone Timeout

This feature sets the time after the last label segment is seen before the reader prepares for a new label. The timeout can be set within a range of 10 milliseconds to 2,550 milliseconds (2.55 seconds) in 10ms increments. Label Gone Timeout does not apply to scan modes that require a trigger pull for each label that is read. See "[Label Gone Timeout](#)" on page 272 for more detailed programming instructions.

 Select Label Gone Timeout 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



016 = Timeout of 160 ms

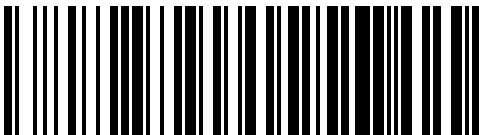
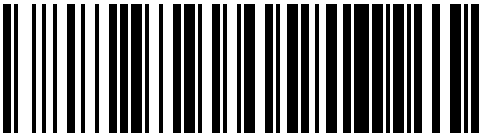
Power Save Mode

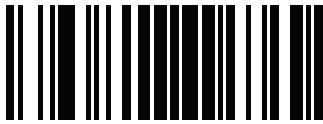
When this feature is enabled, the reader will enter Power Save Mode (a lower power consumption state) after being idle (no scanner activity) for one second.



NOTE

RS-232 and USB interfaces ONLY.
A reader having a Scan Mode setting of Object Sense, Stand Mode, Flashing, or Always On will not enter Power Save Mode. (The reader is always internally active when in these modes.)

	 Power Save Mode = Disabled
 Power Save Mode = Enabled	



Sleep Mode Timeout

Specifies the timeout value for the reader to enter Sleep Mode (a very low power consumption state).



NOTE

RS-232 interface ONLY.

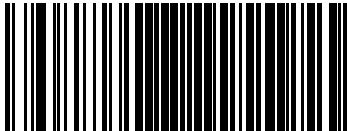
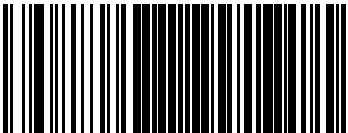
A reader having a Scan Mode setting of Object Sense, Stand Mode, Flashing, or Always On will not enter Sleep Mode. (The reader is always internally active when in these modes.)

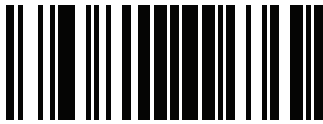
	 Sleep Mode Timeout = Disabled
 Sleep Mode Timeout = 30 Seconds	
	 Sleep Mode Timeout = 1 Minute (60 Seconds)
 Sleep Mode Timeout = 1 Minute 30 Seconds (90 Seconds)	
	 Sleep Mode Timeout = 2 Minutes (120 Seconds)

LED and Beeper Indicators

Power On Alert

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

	 Power On Alert = Disable (No Audible Indication)
 Power On Alert = Power-up Beep	



Good Read: When to Indicate

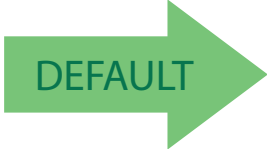
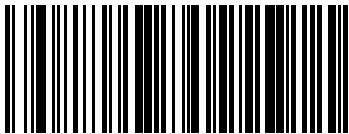
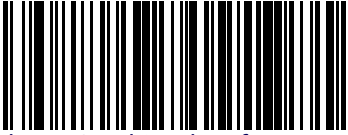
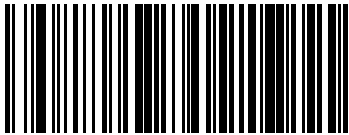
This feature specifies when the reader will provide indication (beep and/or flash its green LED) upon successfully reading a bar code. Choices are:

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



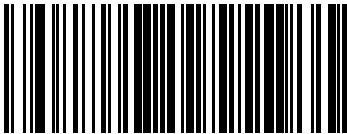
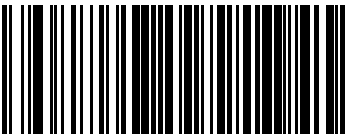
This option, which uses CTS, is only valid for RS-232 interfaces.

NOTE

	 Indicate Good Read = After Decode
 Indicate Good Read = After Transmit	
	 Indicate Good Read = After CTS Goes Inactive, Then Active

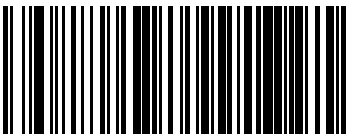
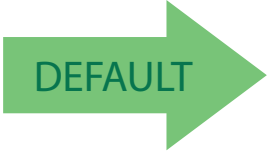
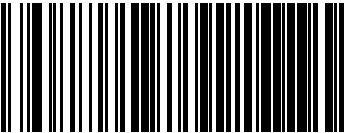
Good Read Beep Type

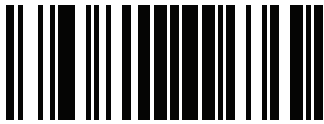
Specifies whether the good read beep has a mono or bitonal beep sound.

	 Good Read Beep Type = Mono
 Good Read Beep Type = Bitonal	

Good Read Beep Frequency

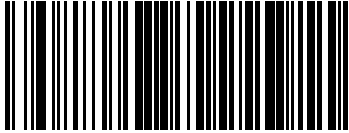
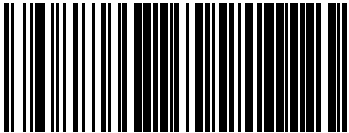
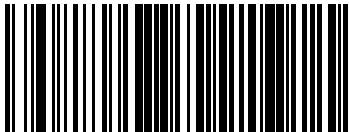
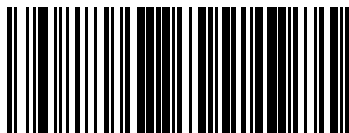
Adjusts the good read beep to sound at a selectable low, medium or high frequency, selectable from the list below. (Controls the beeper’s pitch/tone.)

	 Good Read Beep Frequency = Low
 Good Read Beep Frequency = Medium	
	 Good Read Beep Frequency = High



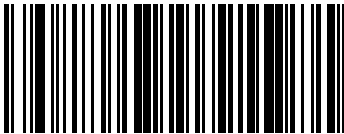
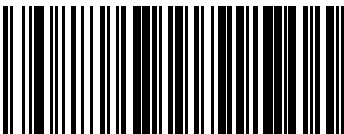
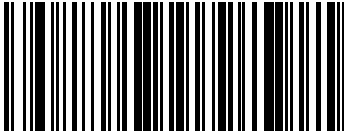
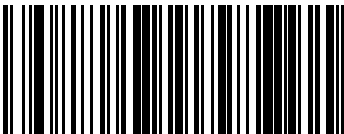
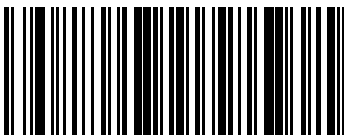
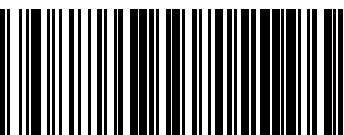
Good Read Beep Volume

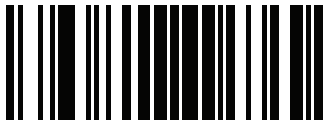
Selects the beeper volume (loudness) upon a good read beep. There are three selectable volume levels.

	 Good Read Beep Volume = Beeper Off
 Good Read Beep Volume = Low	
	 Good Read Beep Volume = Medium
 Good Read Beep Volume = High	

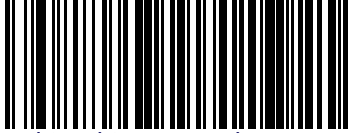
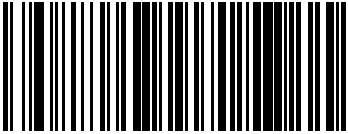
Good Read Beep Length

Specifies the duration of a good read beep.

	 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 — continued

	 Good Read Beep Length = 180 msec
 Good Read Beep Length = 200 msec	

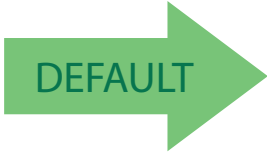
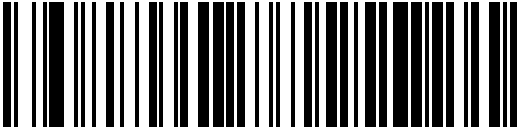
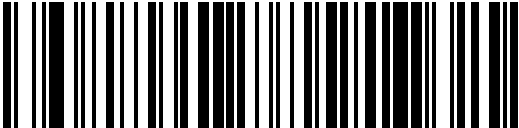
Illumination Control

Controls illumination during a good read beep.



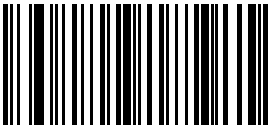
Setting this configuration item to turn off illumination during the beep reduces the peak current drawn by the reader in some scanning modes.

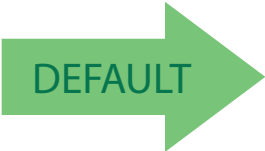
NOTE

	 Illumination Control = Illumination off during beep
 Illumination Control = Illumination and beep are independently controlled	

Good Read LED Duration

This feature specifies the amount of time that the Good Read LED remains on following a good read. The good read LED on time can be set within a range of 0.1 to 25.5 seconds in 100ms increments. See "Good Read LED Duration" on page 273 for more detailed programming instructions.

 Select Good Read LED Duration 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

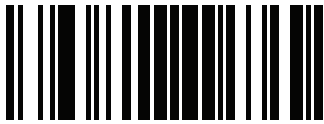
 **DEFAULT**

020 = Good Read LED stays on for 2 seconds.



NOTE

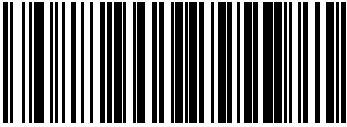
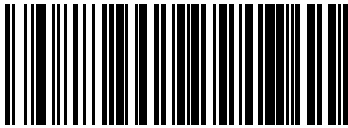
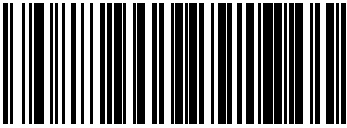
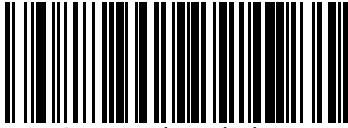
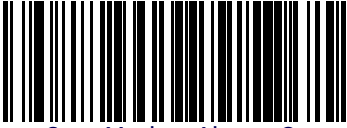
Indicators are dimmed during sleep.



Scanning Features

Scan Mode

See "Scan Mode" on page 274 for more detailed programming instructions.

 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

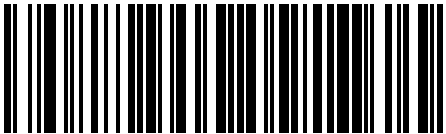
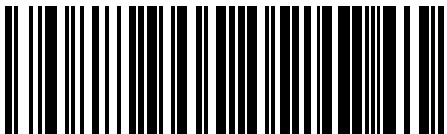
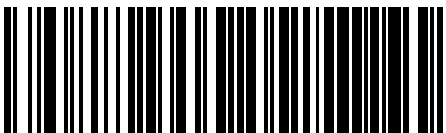
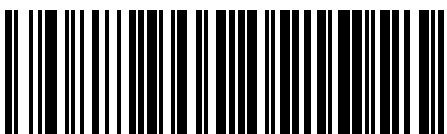
Stand Mode Triggered Timeout

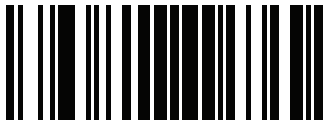
This feature specifies the time to remain in [Trigger Single](#) mode after the trigger is pulled while in [Stand Mode](#).



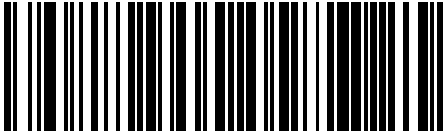
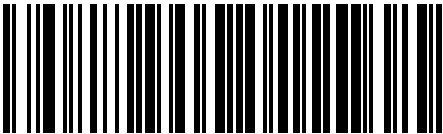
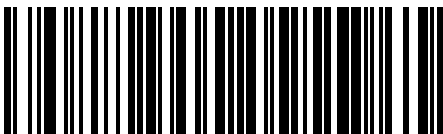
NOTE

This timeout is only used when the Scan Mode is configured as [Stand Mode](#).

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



Stand Mode Triggered Timeout — continued

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

Scanning Active Time

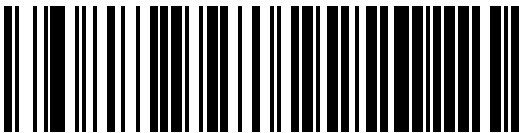
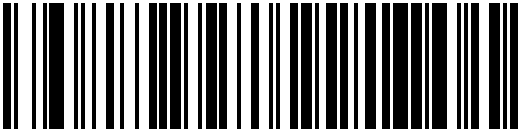
This setting specifies the amount of time that the reader stays in scan ON state once the state is entered. The range for this setting is from 1 to 255 seconds in 1-second increments. See "Scanning Active Time" on page 275 for more detailed programming instructions.

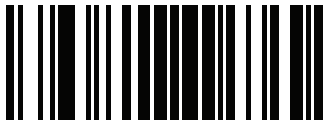
 Select Scanning Active Time Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake?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



Stand Mode Flash

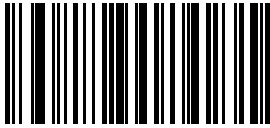
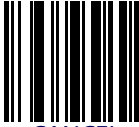
Enables/disables the LED flash when the reader is in Stand Mode.

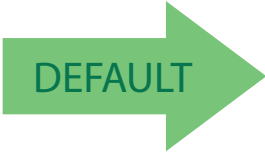
 DEFAULT	 Stand Mode Flash = Disable
 Stand Mode Flash = Enable	



Flash On Time

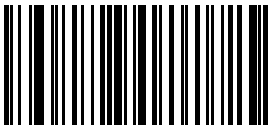
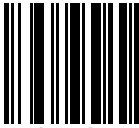
This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See "Flash On Time" on page 276 for more detailed programming instructions.

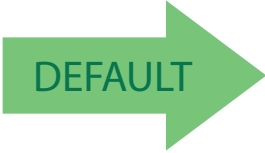
 Select Flash ON Time Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the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

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

Flash Off Time

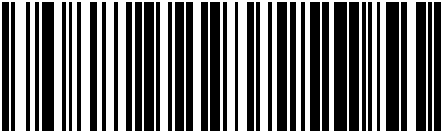
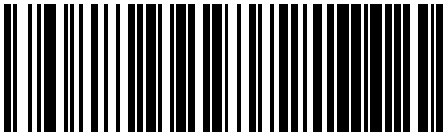
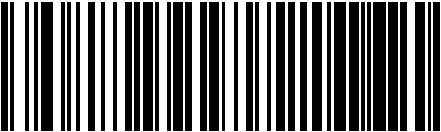
This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See "Flash Off Time" on page 277 for more detailed programming instructions.

 Select Flash OFF Time 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

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

Stand Mode Sensitivity

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

	 Stand Mode Sensitivity = Low
 Stand Mode Sensitivity = Medium	
	 Stand Mode Sensitivity = High



NOTES

SYMBOLOGIES

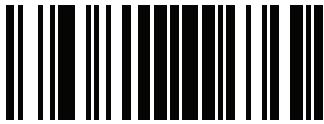
Introduction

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

- UPC-A
- UPC-E
- EAN 13
- EAN 13 (JAN 13)
- EAN 8 (JAN 8)
- Add-Ons
- GS1 DataBar™ Omnidirectional
- GS1 DataBar™ Expanded
- GS1 DataBar™ Limited
- Code 39
- Code 32 (Italian Pharmaceutical)
- Code 39 CIP (French Pharmaceutical)
- Code 128
- GS1-128
- Interleaved 2 of 5 (I 2 of 5)
- Interleaved 2 of 5 CIP HR
- Datalogic 2 of 5
- Codabar
- ABC Codabar
- Code 11
- Standard 2 of 5
- Industrial 2 of 5
- IATA
- ISBT 128
- MSI
- Code 93
- Codablock F
- Code 4
- Code 5
- Follett 2 of 5
- BC412
- Plessey

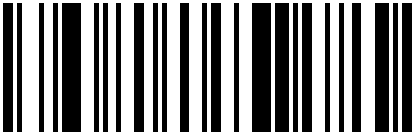
Standard Factory Settings for Symbologies

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



Disable All Symbolologies

Scan this label to disable all symbolologies.

	 Disable all symbolologies
--	---

Coupon Control

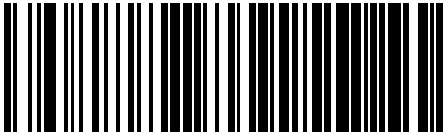
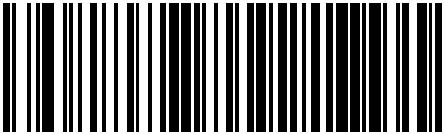
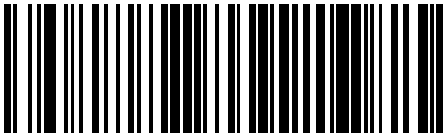
This feature is used to control the method of processing coupon labels.

Options are:

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

To set this feature:

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

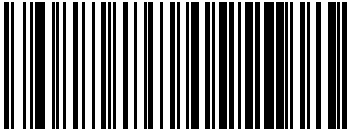
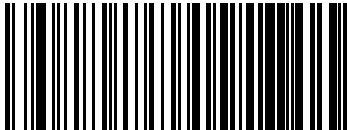
	 Coupon Control = Allow all
 Coupon Control = Enable only UPC/EAN	
	 Coupon Control = Enable only GS1 DataBar

UPC-A

The following options apply to the UPC-A symbology.

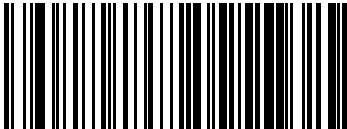
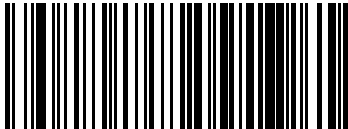
UPC-A Enable/Disable

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

	 UPC-A = Disable
 UPC-A = Enable	

UPC-A Check Character Transmission

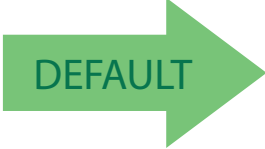
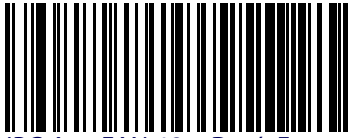
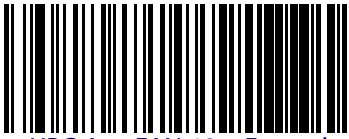
Enable this option to transmit the check character along with UPC-A bar code data.

	 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

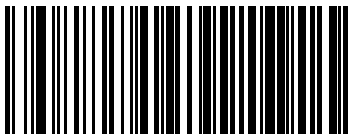
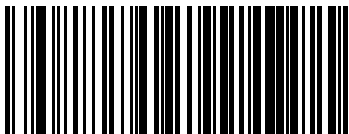
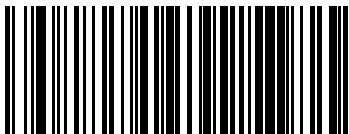
This feature enables/disables transmission of the UPC-A number system character.

	 UPC-A Number System Character = Do not transmit
 UPC-A Number System Character = Transmit	

In-Store Minimum Reads

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

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

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

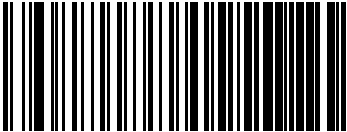
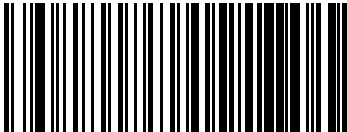


UPC-E

The following options apply to the UPC-E symbology.

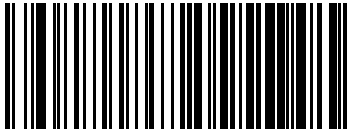
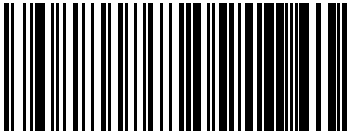
UPC-E Enable/Disable

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

	 UPC-E = Disable
 UPC-E = Enable	

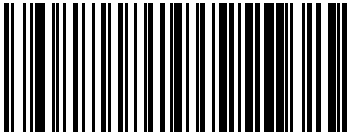
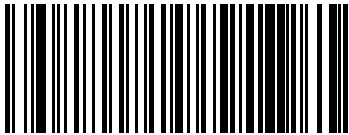
UPC-E Check Character Transmission

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	

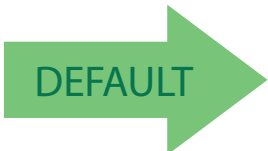
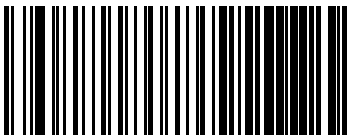
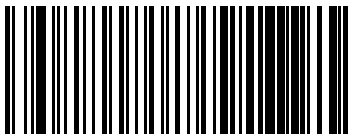
Expand UPC-E to EAN-13

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

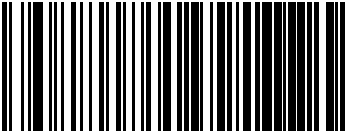
Expands UPC-E data to the UPC-A data format.

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



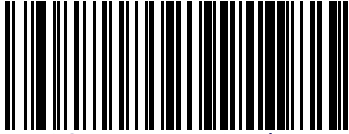
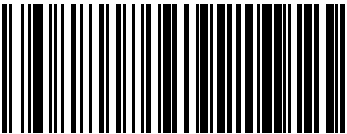
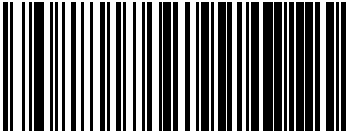
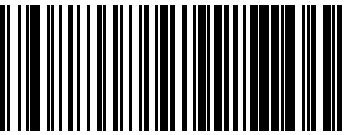
UPC-E Number System Character Transmission

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

	 UPC-E Number System Character = Do not transmit
 UPC-E Number System Character = Transmit	

UPC-E Minimum Read

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

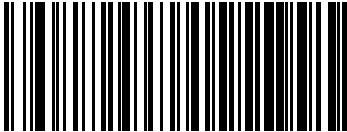
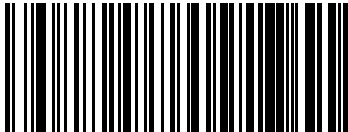
	 UPC-E Minimum Reads = 1
 UPC-E Minimum Reads = 2	
	 UPC-E Minimum Reads = 3
 UPC-E Minimum Reads = 4	

EAN 13

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

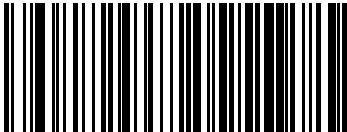
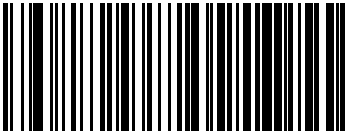
EAN 13 Enable/Disable

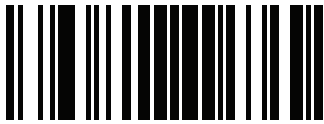
When disabled, the reader will not read EAN 13/JAN 13 bar codes.

	 EAN 13 = Disable
 EAN 13 = Enable	

EAN 13 Check Character Transmission

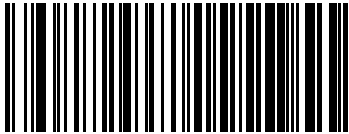
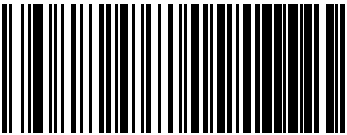
Enable this option to transmit the check character along with EAN 13 bar code data.

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



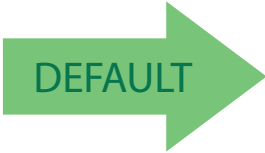
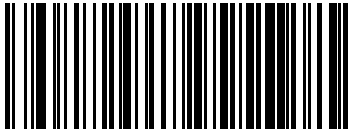
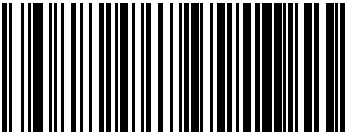
EAN-13 Flag 1 Character

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

	 EAN-13 Flag 1 Char= Don't transmit
 EAN-13 Flag 1 Char= Transmit	

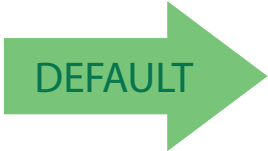
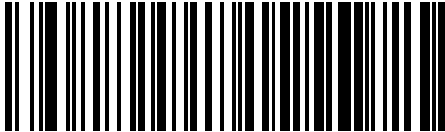
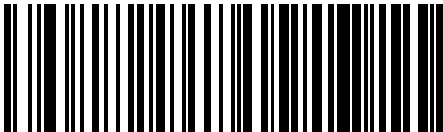
EAN-13 ISBN Conversion

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

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

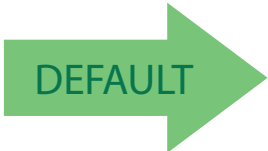
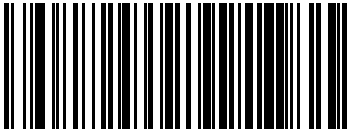
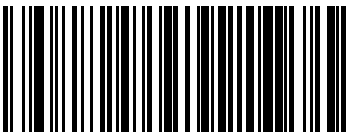
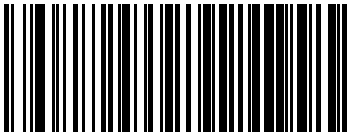
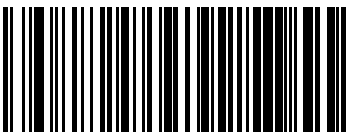
ISSN Enable/Disable

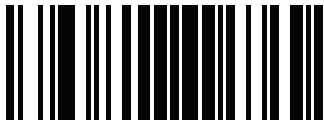
Enables/disables conversion of EAN/JAN13 Bookland labels starting with 977 to ISSN labels.

	 ISSN = Disable
 ISSN = Enable	

EAN 13 Minimum Reads

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

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

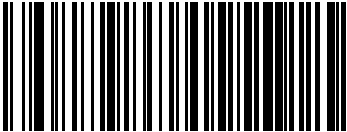
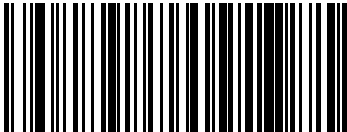


EAN 8

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

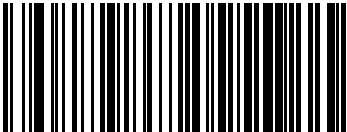
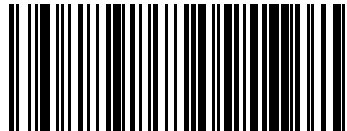
EAN 8 Enable/Disable

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

	 EAN 8 = Disable
 EAN 8 = Enable	

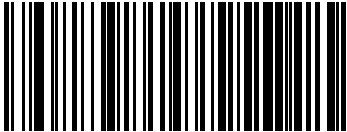
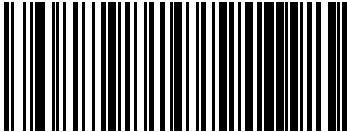
EAN 8 Check Character Transmission

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

	 EAN 8 Check Character Transmission = Don't Send
 EAN 8 Check Character Transmission = Send	

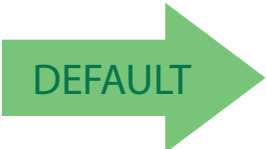
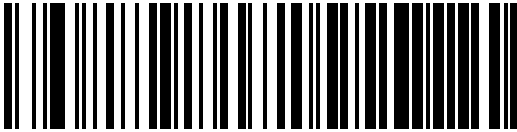
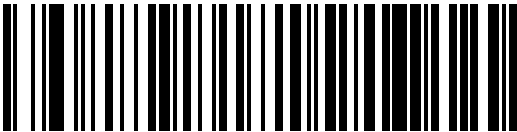
Expand EAN 8 to EAN 13

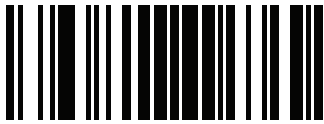
Enable this option to expand EAN 8/JAN 8 labels to EAN 13/JAN 13.

	 Expand EAN 8 to EAN 13 = Disable
 Expand EAN 8 to EAN 13 = Enable	

EAN 8 Both Guards Substitution

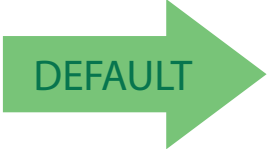
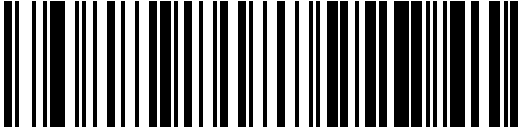
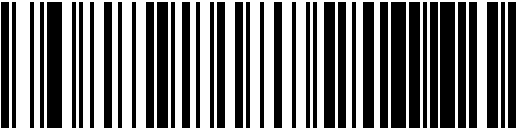
Enables/disables the ability of the reader to find an EAN/JAN8 guard pattern in cases where the EAN/JAN8 margin makes the guard look like a character.

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



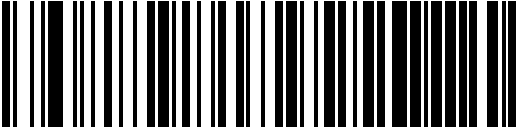
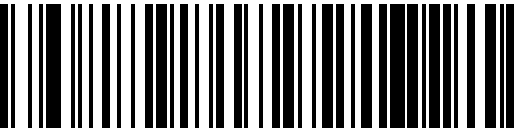
EAN 8 Guard Insertion

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

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

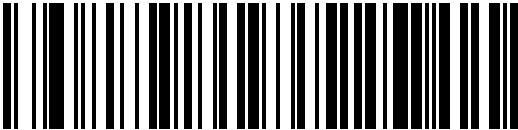
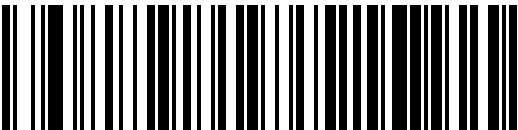
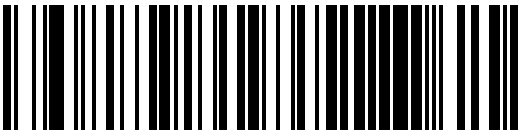
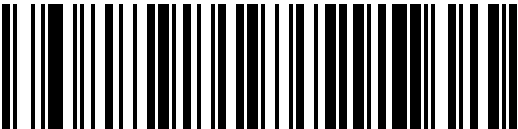
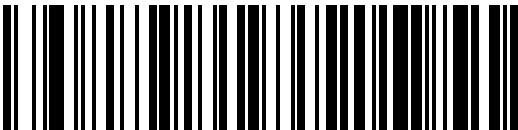
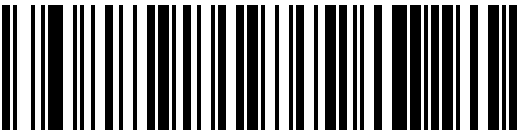
EAN 8 Guard Substitution

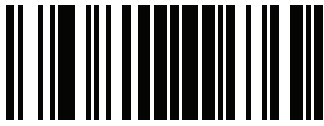
Enables/disables the ability of the reader to substitute guard pattern for even parity 6 when an EAN/JAN8 label is presented.

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

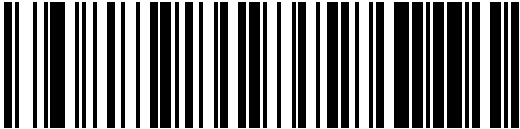
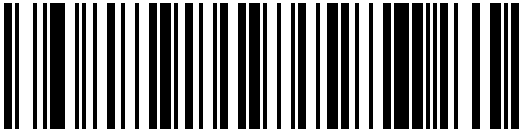
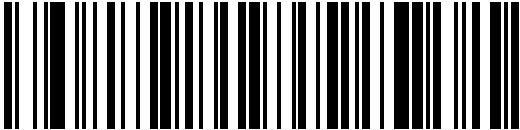
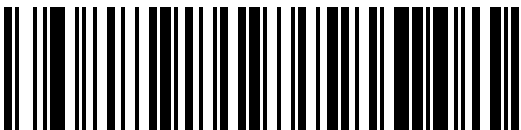
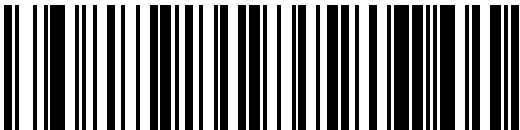
EAN 8 Minimum Segment Length Block

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

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

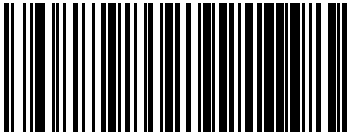
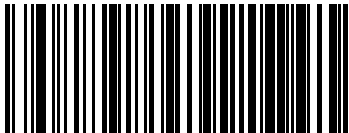
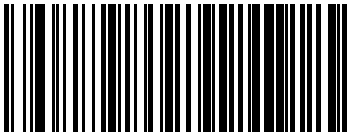
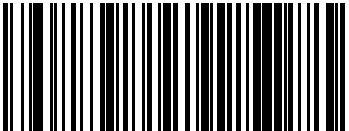


EAN 8 Minimum Segment Length Block — cont.

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

EAN 8 Minimum Reads

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

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



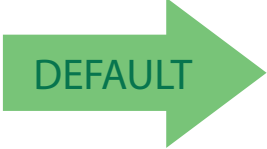
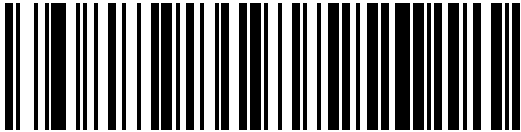
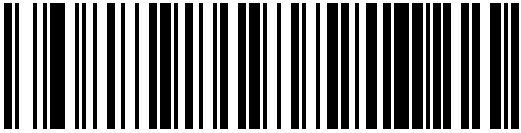
EAN 8 Stitch Exact Label Halves

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



NOTE

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

	 EAN 8 Stitch Exact Label Halves = Disable
 EAN 8 Stitch Exact Label Halves = Enable	

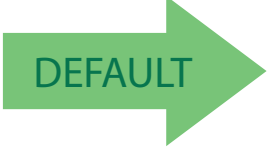
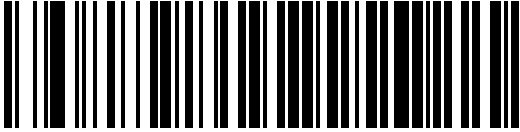
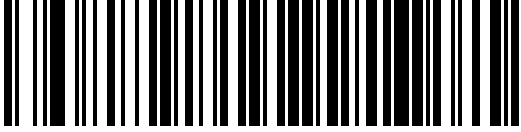
EAN 8 Stitch Unlike Label Halves

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



NOTE

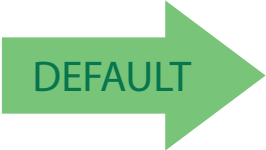
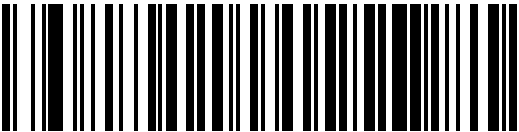
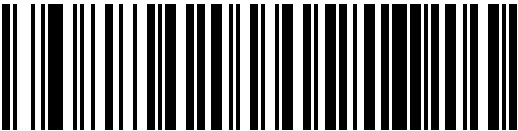
The label structure must be GddddCd... and ..dCddddG. The characters dCd must match between the two segments.

	 EAN 8 Stitch Unlike Label Halves = Disable
 EAN 8 Stitch Unlike Label Halves = Enable	

EAN Two Label

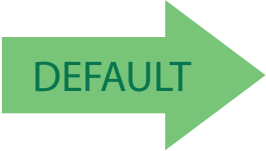
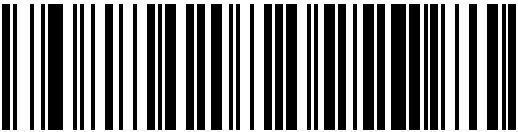
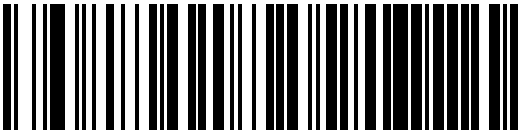
EAN Two Label Enable/Disable

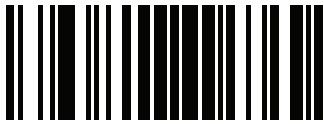
When disabled, the reader will not read EAN two label bar codes.

	 EAN Two Label = Disable
 EAN Two Label = Enable	

EAN Two Label Combined Transmission

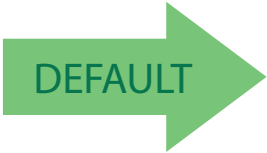
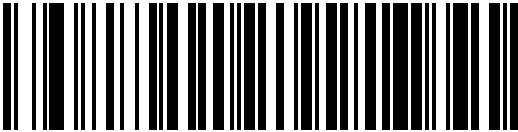
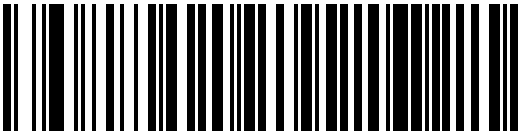
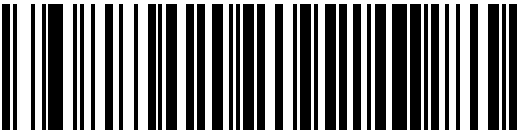
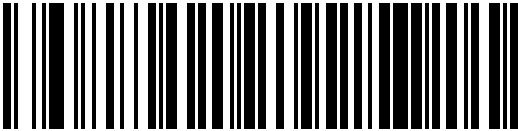
This feature enables/disables transmission of an EAN two label pair as one label. The label type for EAN two label pairs is EAN 13.

	 EAN Two Label = Disable
 EAN Two Label = Enable	



EAN Two Label Minimum Reads

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

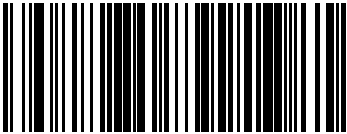
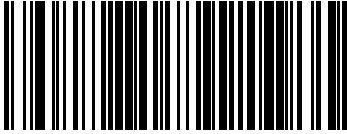
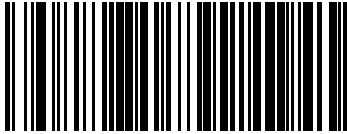
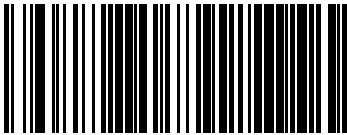
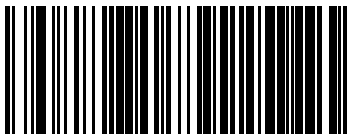
	 EAN 8 Minimum Reads = 1
 EAN 8 Minimum Reads = 2	
	 EAN 8 Minimum Reads = 3
 EAN 8 Minimum Reads = 4	

UPC/EAN Global Settings

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

UPC/EAN Decoding Level

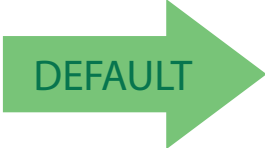
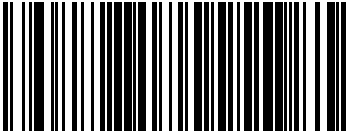
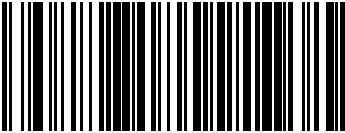
Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See ["Decoding Levels"](#) on page 278 for more detailed programming instructions.

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



UPC/EAN Correlation

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

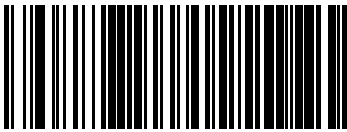
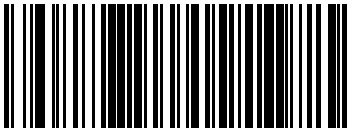
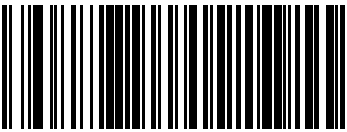
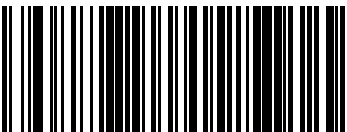
	 UPC/EAN Correlation = Disable
 UPC/EAN Correlation = Enable	

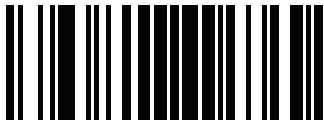
UPC/EAN Price Weight Check

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

Options are

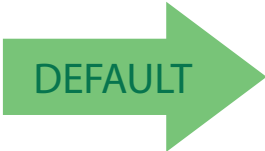
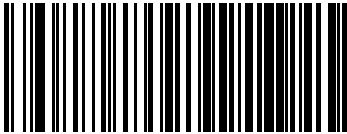
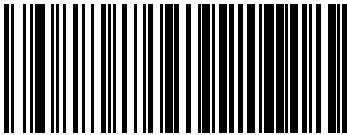
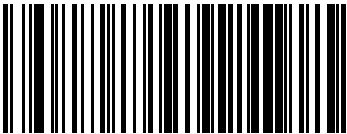
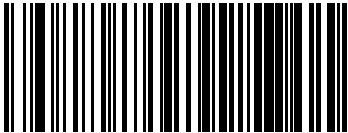
- Disabled
- Enable 4-digit price-weight check-digit calculation
- Enable 5-digit price-weight check-digit calculation
- Enable European 4-digit price-weight check-digit calculation
- Enable European 5-digit price-weight check-digit calculation

	 Price Weight Check = Disabled
 Price Weight Check = 4-digit price-weight check	
	 Price Weight Check = 5-digit price-weight check
 Price Weight Check = European 4-digit price-weight check	
	 Price Weight Check = European 5-digit price-weight check



UPC-A Minimum Reads

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

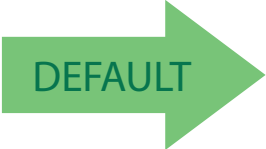
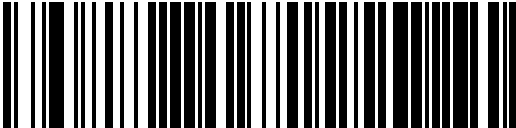
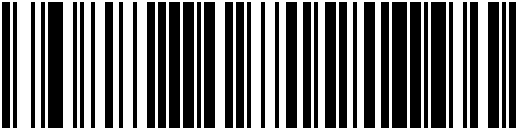
	 UPC-A Minimum Reads = 1
 UPC-A Minimum Reads = 2	
	 UPC-A Minimum Reads = 3
 UPC-A Minimum Reads = 4	

UPC/EAN Guard Insertion

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



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

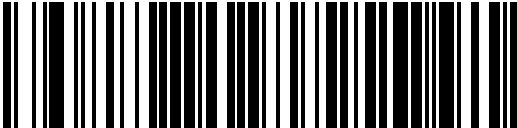
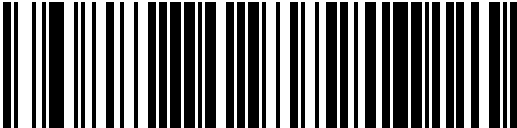
	 UPC/EAN Guard Insertion = Disable
 UPC/EAN Guard Insertion = Enable	

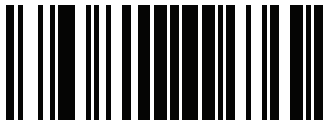
UPC/EAN Stitch Exact Label Halves

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



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

	 UPC/EAN Stitch Exact Label Halves = Disable
 UPC/EAN Stitch Exact Label Halves = Enable	



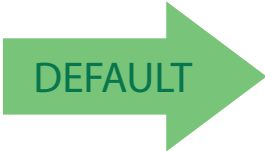
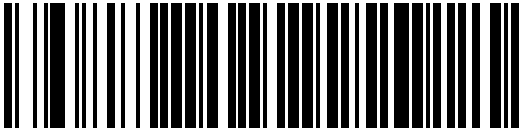
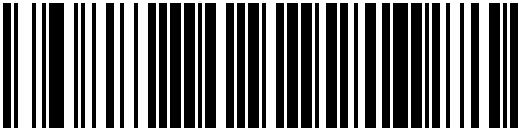
UPC/EAN Stitch Unlike Label Halves

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



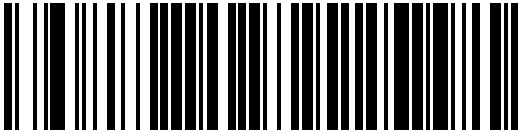
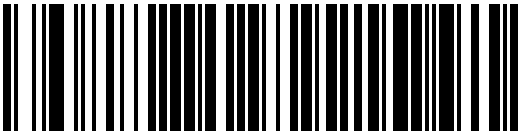
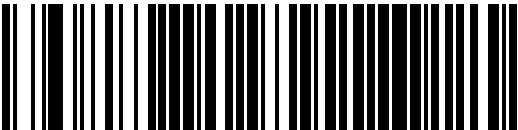
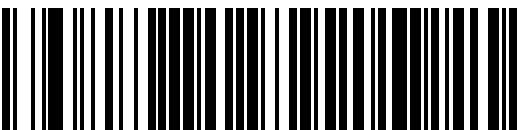
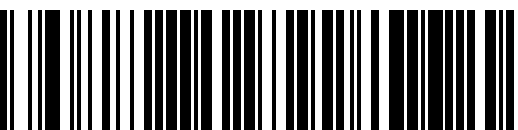
NOTE

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

	 UPC/EAN Stitch Unlike Label Halves = Disable
 UPC/EAN Stitch Unlike Label Halves = Enable	

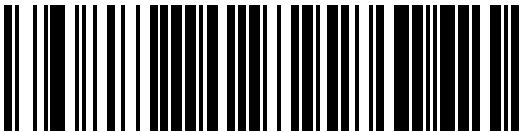
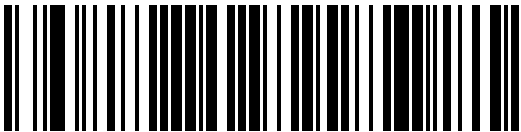
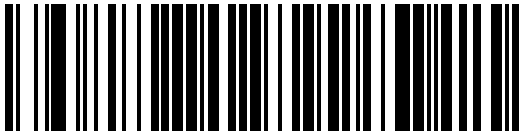
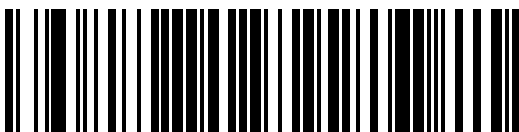
UPC/EAN Minimum Segment Length

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

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



UPC/EAN Minimum Segment Length — cont.

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

Add-Ons

The following features apply to optional add-ons.



NOTE

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

Optional Add-ons

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

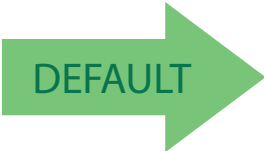
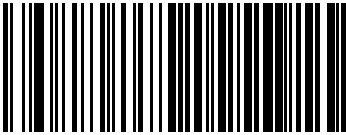
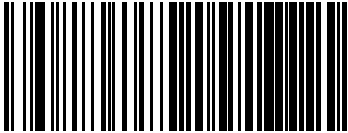
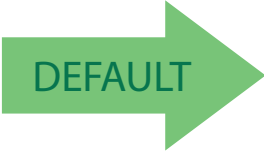
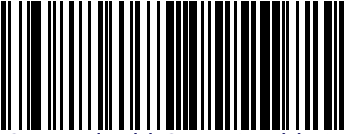
- P2
- P5
- GS1-128

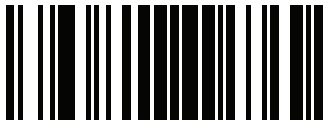


NOTE

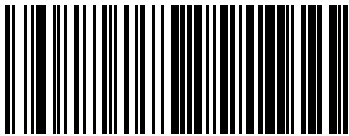
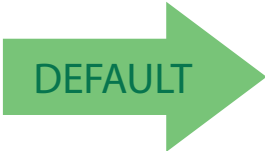
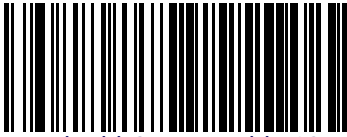
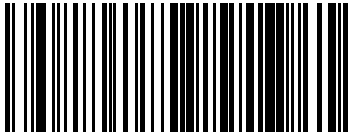
If a UPC/EAN base label and a an add-on are both decoded, the reader will transmit the base label and add-on. If a UPC/EAN base label is decoded without an add-on, the base label will be transmitted without an add-on.

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

	 Optional Add-Ons = Disable P2
 Optional Add-Ons = Enable P2	
	 Optional Add-Ons = Disable P5

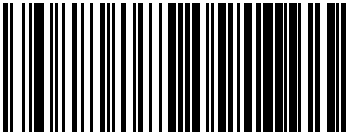
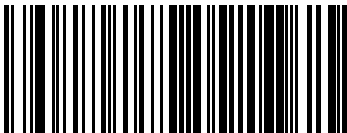
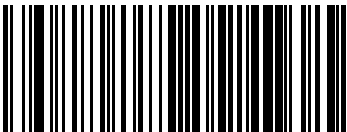
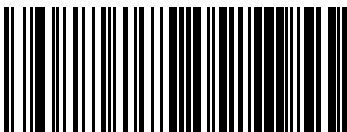
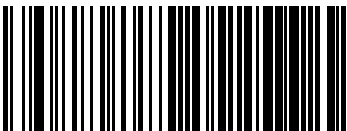


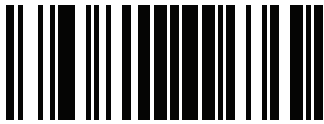
Optional Add-ons — cont.

 Optional Add-Ons = Enable P5	
	 Optional Add-Ons = Disable GS1-128
 Optional Add-Ons = Enable GS1-128	

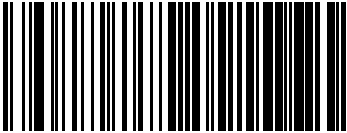
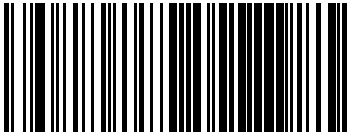
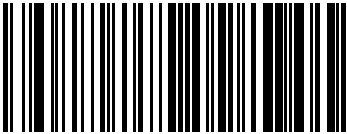
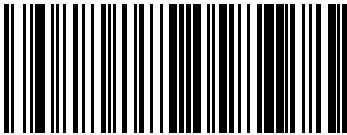
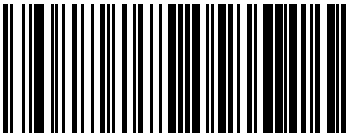
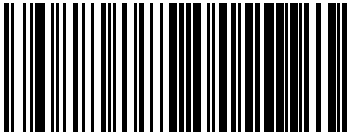
Optional Add-On Timer

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

 Optional Add-on Timer = 10ms	
	 Optional Add-on Timer = 20ms
 Optional Add-on Timer = 30ms	
	 Optional Add-on Timer = 40ms
 Optional Add-on Timer = 50ms	

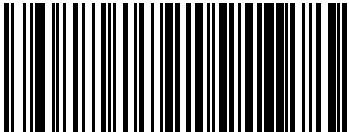
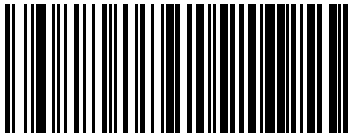
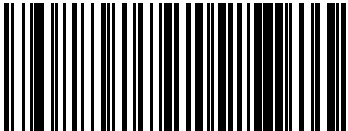


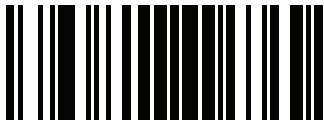
Optional Add-On Timer — cont.

	 Optional Add-on Timer = 60ms
 Optional Add-on Timer = 70ms	
	 Optional Add-on Timer = 100ms
 Optional Add-on Timer = 120ms	
	 Optional Add-on Timer = 140ms
 Optional Add-on Timer = 160ms	

P2 Add-Ons Minimum Reads

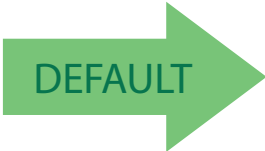
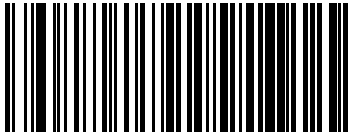
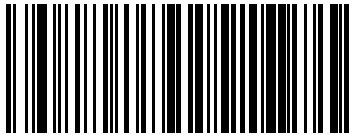
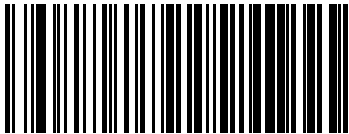
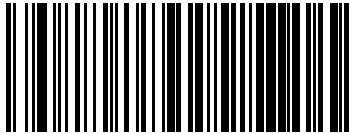
This feature specifies the minimum number of times a P2 add-on must be read before it is marked as valid and then combined with a base label.

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



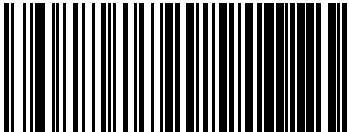
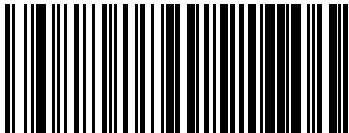
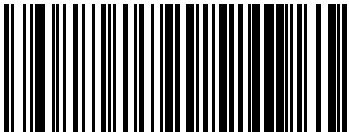
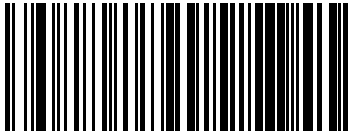
P5 Add-Ons Minimum Reads

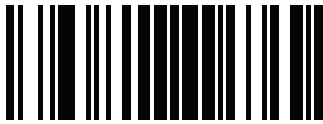
This feature specifies the minimum number of times a P5 add-on must be read before it is marked as valid and then combined with a base label.

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

GS1-128 Add-Ons Minimum Reads

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

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

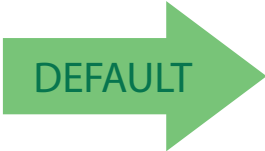
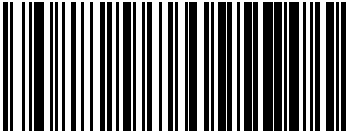
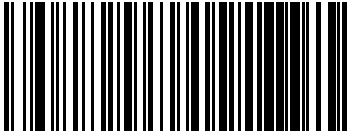


GS1 DataBar™ Omnidirectional

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

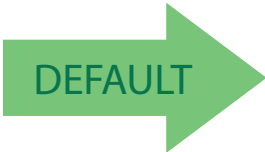
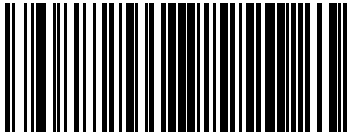
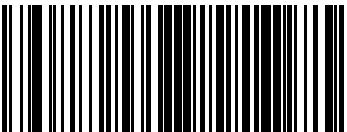
GS1 DataBar Omnidirectional Enable/Disable

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

	 GS1 DataBar Omnidirectional = Disable
 GS1 DataBar Omnidirectional = Enable	

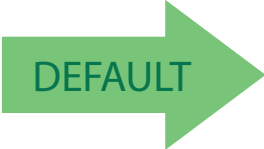
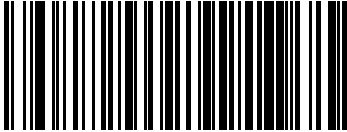
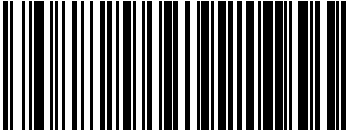
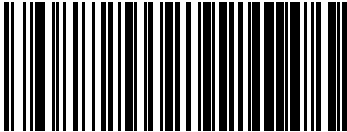
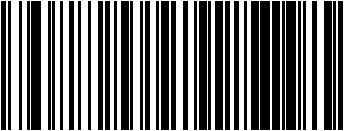
GS1 DataBar Omnidirectional GS1-128 Emulation

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

	 GS1 DataBar Omnidirectional GS1-128 Emulation = Disable
 GS1 DataBar Omnidirectional GS1-128 Emulation = Enable	

GS1 DataBar Omnidirectional Minimum Reads

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

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

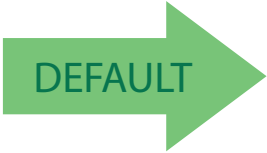
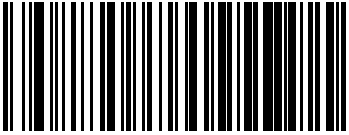
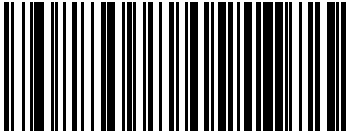


GS1 DataBar™ Expanded

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

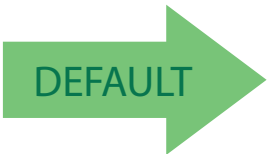
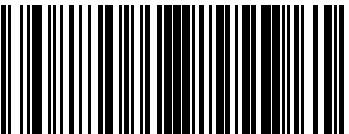
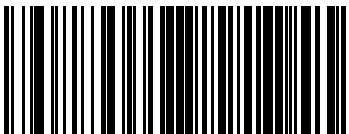
GS1 DataBar Expanded Enable/Disable

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

	 GS1 DataBar Expanded = Disable
 GS1 DataBar Expanded = Enable	

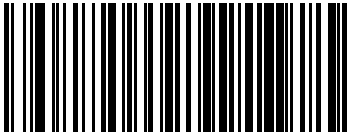
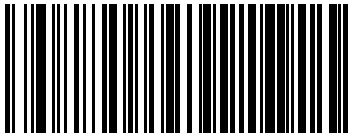
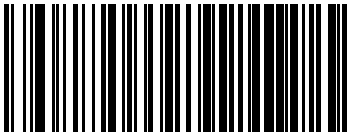
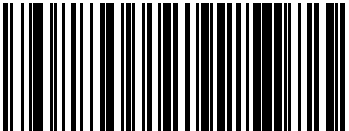
GS1 DataBar Expanded GS1-128 Emulation

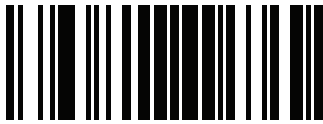
When enabled, GS1 DataBar Expanded bar codes will be translated to the GS1-128 label data format.

	 GS1 DataBar Expanded GS1-128 Emulation = Disable
 GS1 DataBar Expanded GS1-128 Emulation = Enable	

GS1 DataBar Expanded Minimum Reads

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

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

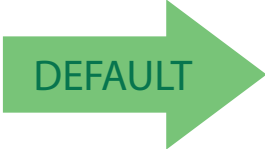
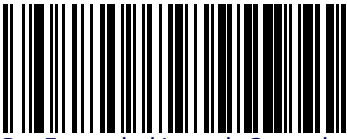
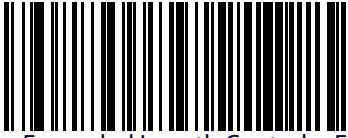


GS1 DataBar Expanded Length Control

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

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

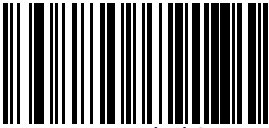
Fixed Length: For fixed-length decoding, two different lengths may be set.

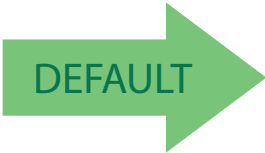
	 GS1 DataBar Expanded Length Control = Variable Length
 GS1 DataBar Expanded Length Control = Fixed Length	

GS1 DataBar Expanded Set Length 1

This feature specifies one of the bar code lengths for [GS1 DataBar Expanded Length Control](#). 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 278 for more detailed programming instructions.

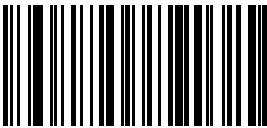
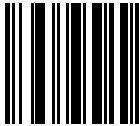
 Select GS1 DataBar Expanded Set Length 1 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

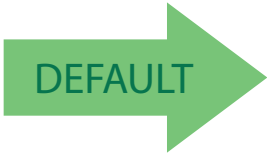
 **01 = Length 1 is 1 Character**

GS1 DataBar Expanded Set Length 2

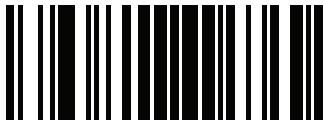
This feature specifies one of the bar code lengths for [GS1 DataBar Expanded Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the bar code's data characters only.

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 280 for more detailed programming instructions.

 Select GS1 DataBar Expanded Set Length 2 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

 **DEFAULT**

74 = Length 2 is 74 Characters

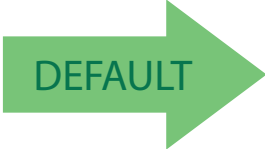
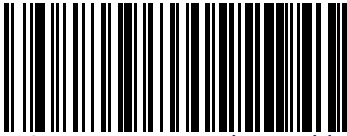


GS1 DataBar™ Limited

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

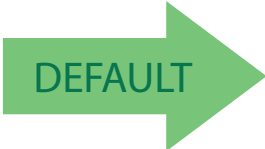
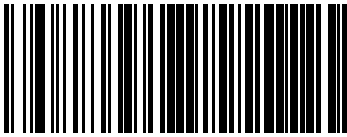
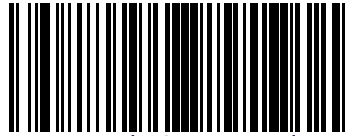
GS1 DataBar Limited Enable/Disable

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

	 GS1 DataBar Limited = Disable
 GS1 DataBar Limited = Enable	

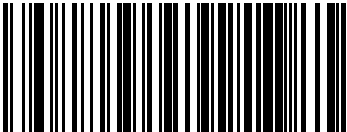
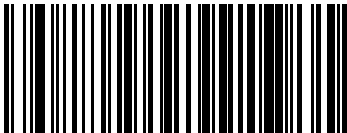
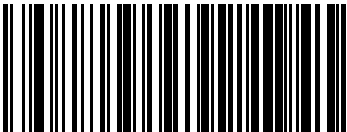
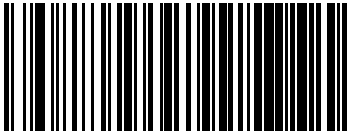
GS1 DataBar Limited GS1-128 Emulation

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

	 GS1 DataBar Limited GS1-128 Emulation = Disable
 GS1 DataBar Limited GS1-128 Emulation = Enable	

GS1 DataBar Limited Minimum Reads

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

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

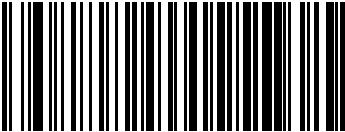
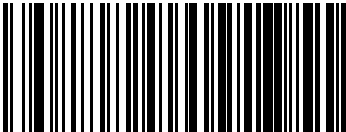


Code 39

The following options apply to the Code 39 symbology.

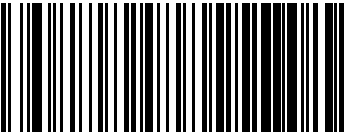
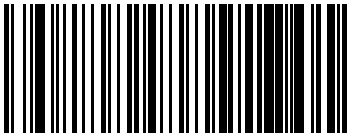
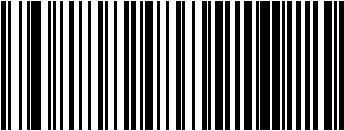
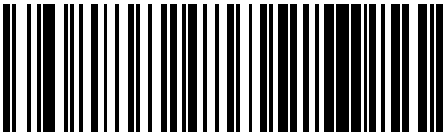
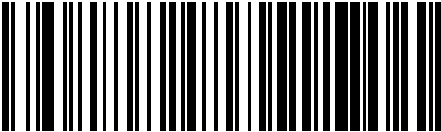
Code 39 Enable/Disable

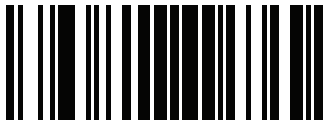
When disabled, the reader will not read Code 39 bar codes.

	 Code 39 = Disable
 Code 39 = Enable	

Code 39 Check Character Calculation

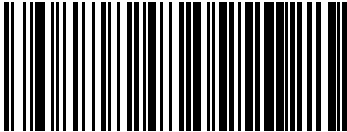
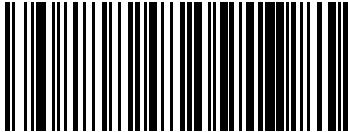
Enable this option to enable/disable calculation and verification of an optional Code 39 check character. When disabled, any check character in the label is treated as a data character.

	 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



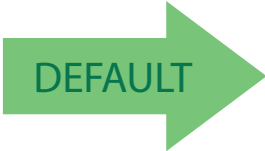
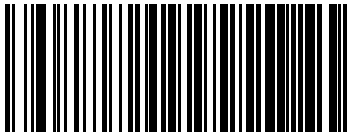
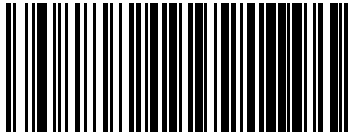
Code 39 Check Character Transmission

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	

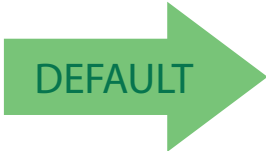
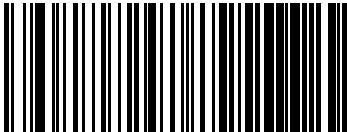
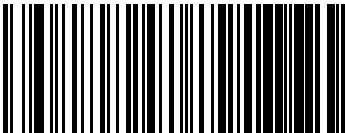
Code 39 Start/Stop Character Transmission

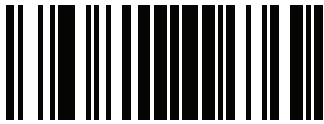
Enable this option to enable/disable transmission of Code 39 start and stop characters.

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

Code 39 Full ASCII

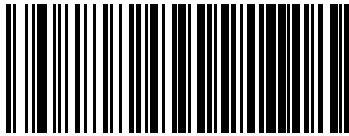
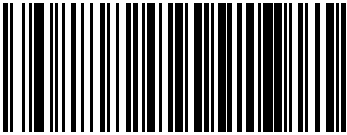
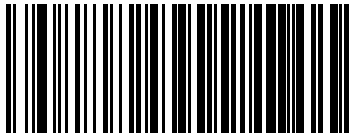
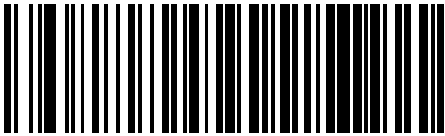
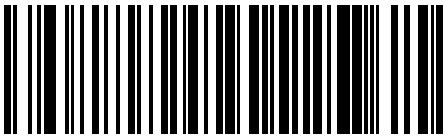
In Code 39 decoding, this enables/disables the translation of Code 39 characters to Code 39 full-ASCII characters.

	 Code 39 Full ASCII = Disable
 Code 39 Full ASCII = Enable	



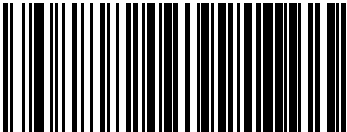
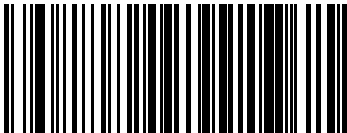
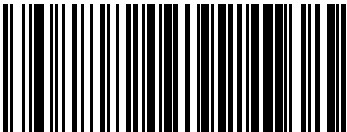
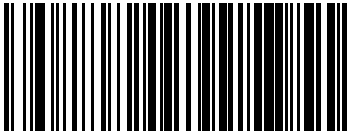
Code 39 Quiet Zones

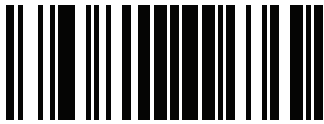
This feature specifies the number of quiet zones for Code 39 labels. Quiet zones are blank areas at the ends of a bar code and are typically 10 times the width of the narrowest bar or space in the label.

 Code 39 Quiet Zones = 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 Minimum Reads

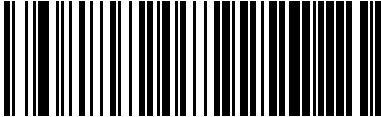
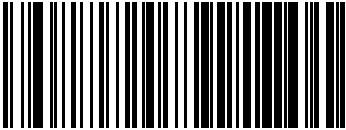
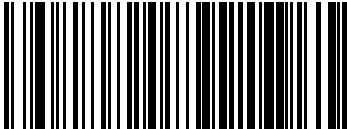
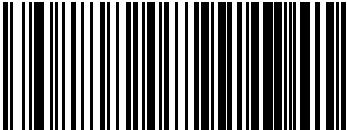
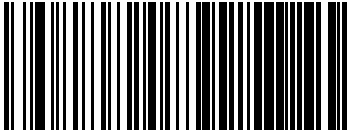
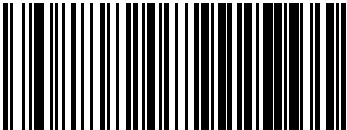
This feature specifies the minimum number of consecutive times a Code 39 label must be decoded before it is accepted as good read.

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



Code 39 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See "Decoding Levels" on page 278 for more detailed programming instructions.

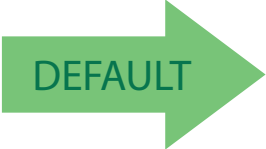
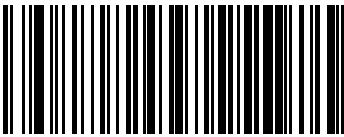
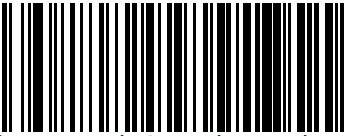
	 Code 39 Decoding Level = Disabled
 Code 39 Decoding Level = 1	
	 Code 39 Decoding Level = 2
 Code 39 Decoding Level = 3	
	 Code 39 Decoding Level = 4
 Code 39 Decoding Level = 5	

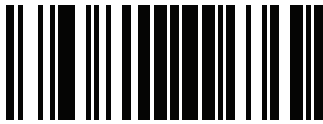
Code 39 Length Control

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

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

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

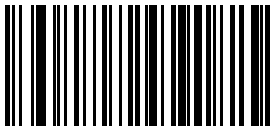
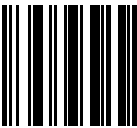
	 Code 39 Length Control = Variable Length
 Code 39 Length Control = Fixed Length	

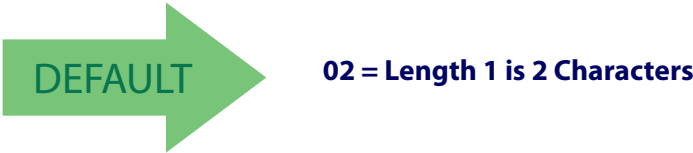


Code 39 Set Length 1

This feature specifies one of the bar code lengths for [Code 39 Length Control](#). 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 278 for more detailed programming instructions.

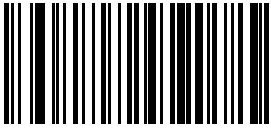
 Select Code 39 Set Length 1 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

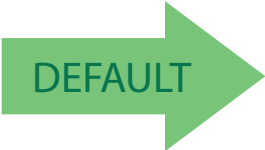


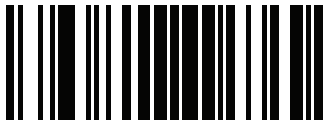
Code 39 Set Length 2

This feature specifies one of the bar code lengths for [Code 39 Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the 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 280 for more detailed programming instructions.

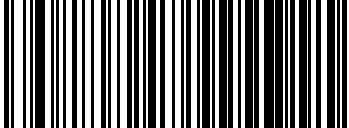
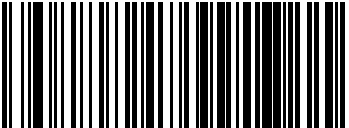
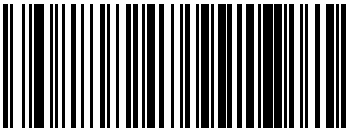
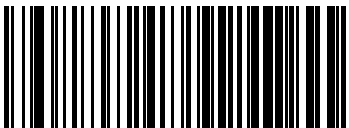
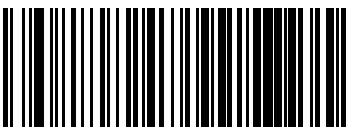
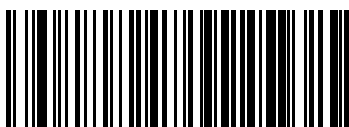
 Select Code 39 Length 2 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

 **50 = Length 2 is 50 Characters**

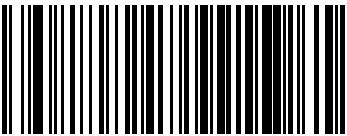
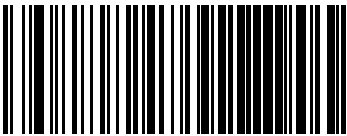
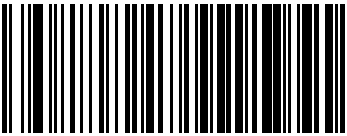
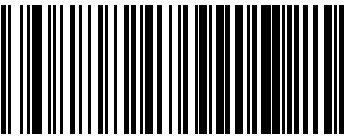
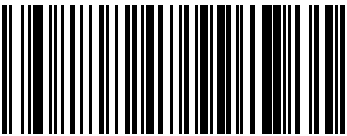


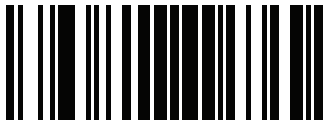
Code 39 Interdigit Ratio

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

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

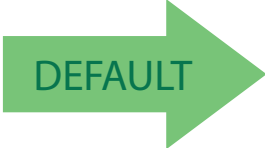
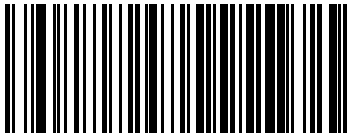
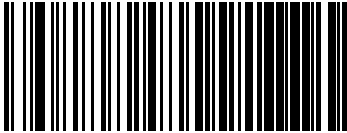
Code 39 Interdigit Ratio — cont.

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



Code 39 Character Correlation

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

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

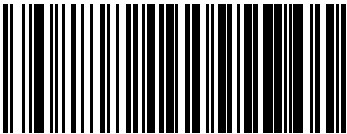
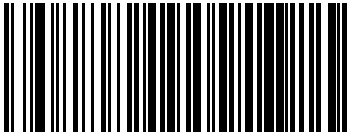
Code 39 Stitching

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



This feature is available only on the TD1130 model.

NOTE

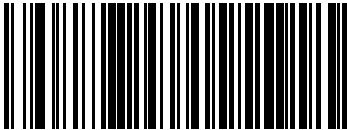
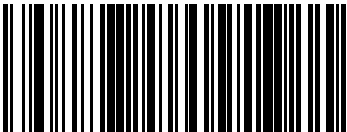
	 Code 39 Stitching = Disable
 Code 39 Stitching = Enable	

Code 32 (Italian Pharmaceutical)

The following options apply to the Code 32 symbology.

Code 32 Enable/Disable

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

	 Code 32 = Disable
 Code 32 = Enable	

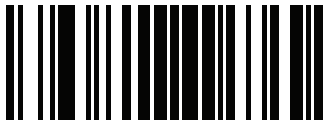
Code 32 Feature Setting Exceptions



NOTE

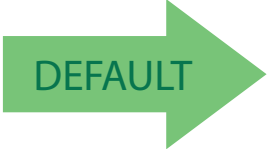
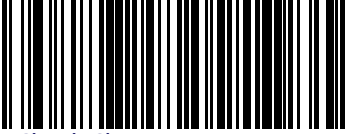
The following features are set for Code 32 by using these Code 39 settings:

- "Code 39 Quiet Zones" on page 134
- "Code 39 Minimum Reads" on page 135
- "Code 39 Decoding Level" on page 136
- "Code 39 Interdigit Ratio" on page 140
- "Code 39 Character Correlation" on page 142
- "Code 39 Stitching" on page 142



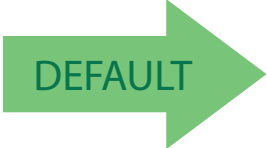
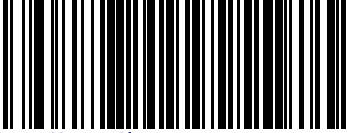
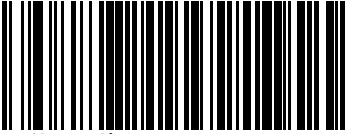
Code 32 Check Character Transmission

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

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

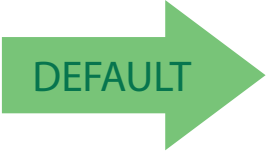
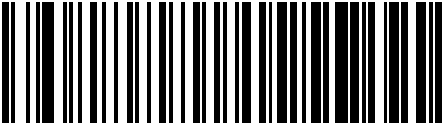
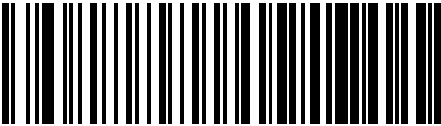
	 Code 32 Start/Stop Character Transmission = Don't Transmit
 Code 32 Start/Stop Character Transmission = Transmit	

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 reader to decode Code 39 CIP labels.

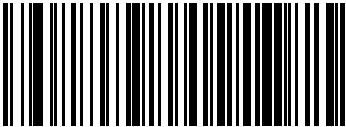
	 Code 39 CIP = Disable
 Code 39 CIP = Enable	

Code 128

The following options apply to the Code 128 symbology.

Code 128 Enable/Disable

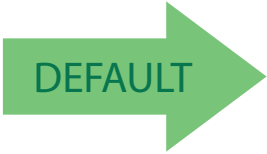
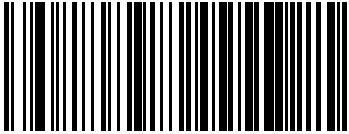
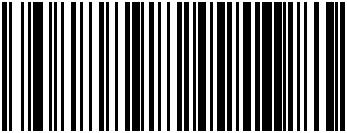
When disabled, the reader will not read Code 128 bar codes.

	 Code 128 = Disable
 Code 128 = Enable	



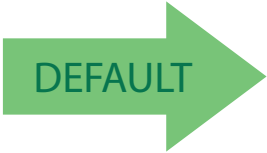
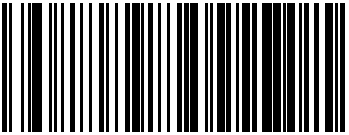
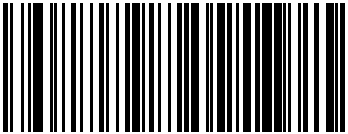
Expand Code 128 to Code 39

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	

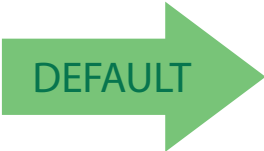
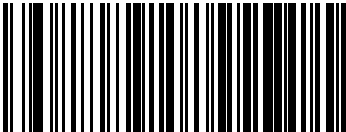
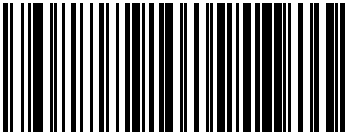
Code 128 Function Character Transmission

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



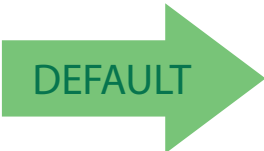
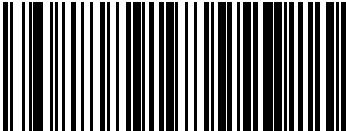
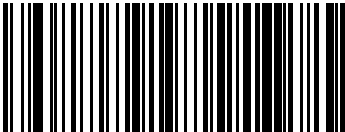
It is recommended that this setting be disabled for all interfaces except Wand Emulation.

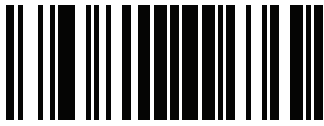
NOTE

	 Code 128 Function Character Transmission = Don't Send
 Code 128 Function Character Transmission = Send	

Code 128 Sub-Code Change Transmission

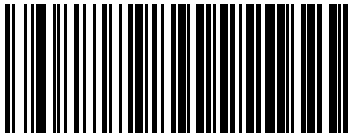
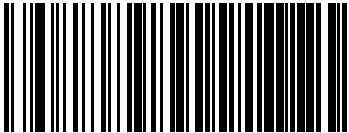
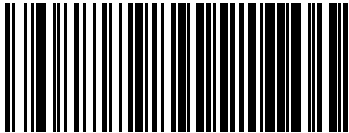
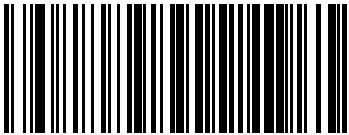
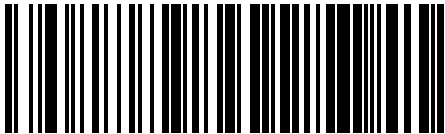
Enables/disables the transmission of “Sub-Code exchange” characters (NOT transmitted by standard decoding).

	 Code 128 Sub-Code Change Transmission = Disable
 Code 128 Sub-Code Change Transmission = Enable	



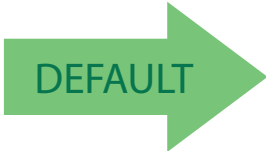
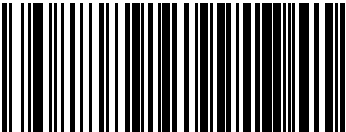
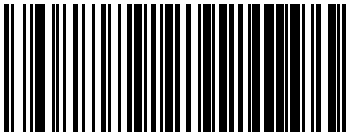
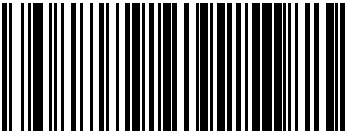
Code 128 Quiet Zones

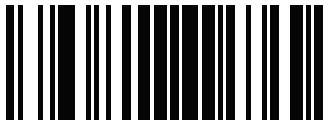
This feature specifies the number of quiet zones for Code 128 labels. Quiet zones are blank areas at the ends of a bar code and are typically 10 times the width of the narrowest bar or space in the label.

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

Code 128 Minimum Reads

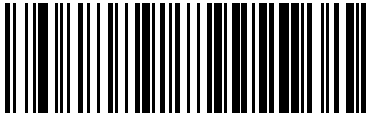
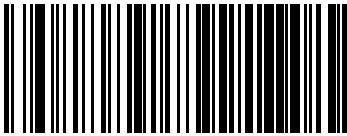
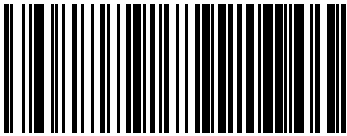
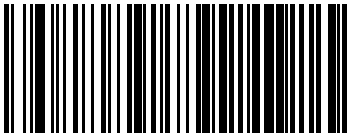
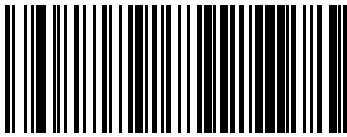
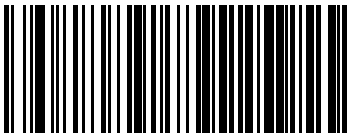
This feature specifies the minimum number of consecutive times a Code 128 label must be decoded before it is accepted as good read.

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



Code 128 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See "Decoding Levels" on page 278 for more detailed programming instructions.

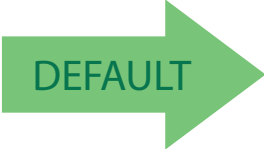
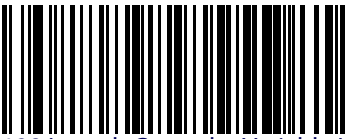
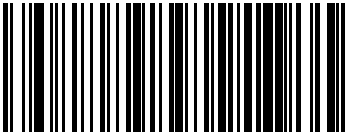
	 Code 128 Decoding Level = Disabled
 Code 128 Decoding Level = 1	
	 Code 128 Decoding Level = 2
 Code 128 Decoding Level = 3	
	 Code 128 Decoding Level = 4
 Code 128 Decoding Level = 5	

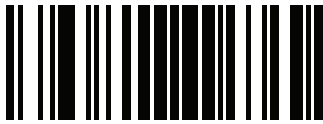
Code 128 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 128 symbology.

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

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

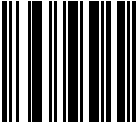
	 Code 128 Length Control = Variable Length
 Code 128 Length Control = Fixed Length	

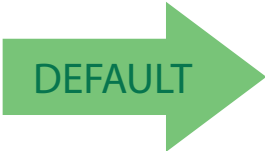


Code 128 Set Length 1

This feature specifies one of the bar code lengths for [Code 128 Length Control](#). 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 278 for more detailed programming instructions.

 Select Code 128 Set Length 1 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

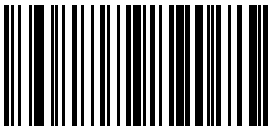


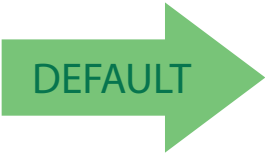
01 = Length 1 is 1 Character

Code 128 Set Length 2

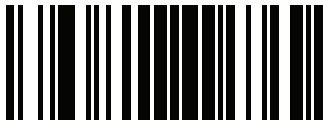
This feature specifies one of the bar code lengths for [Code 128 Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the bar code's data characters only.

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 280 for more detailed programming instructions.

 Select Code 128 Length 2 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

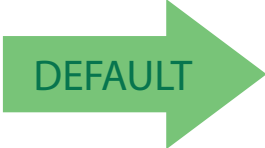
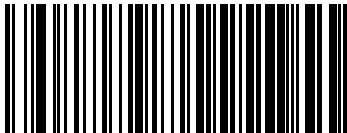
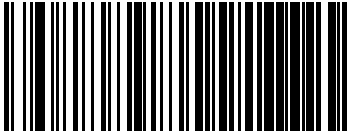
 **DEFAULT**

80 = Length 2 is 80 Characters



Code 128 Character Correlation

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

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

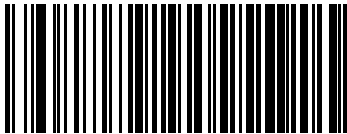
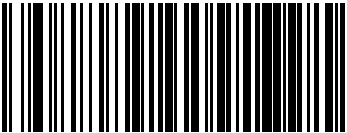
Code 128 Stitching

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



This feature is available only on the TD1130 model.

NOTE

	 Code 128 Stitching = Disable
 Code 128 Stitching = Enable	

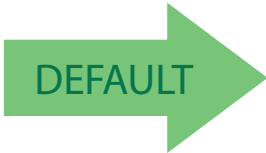
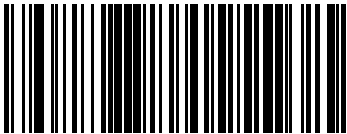
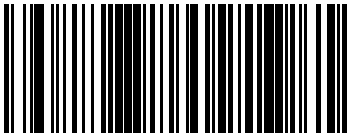
GS1-128

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

GS1-128 Enable

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

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

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

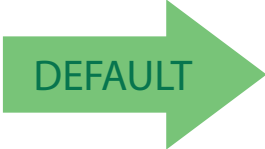
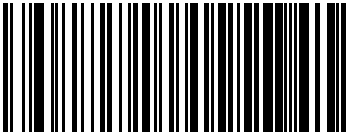
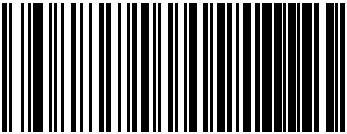


Interleaved 2 of 5 (I 2 of 5)

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

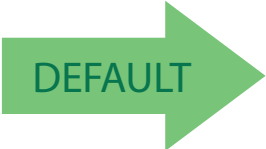
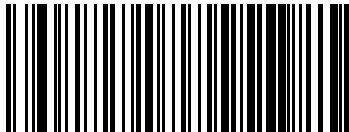
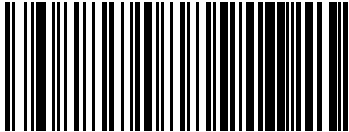
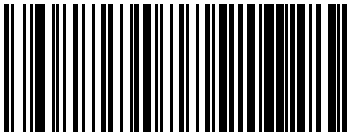
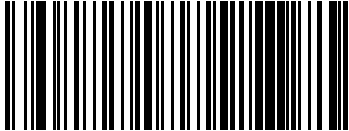
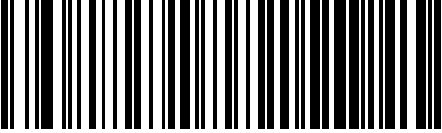
I 2 of 5 Enable/Disable

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

	 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 Char Calc = Disable
 I 2 of 5 Check Char Calc = Check Standard (Modulo 10)	
	 I 2 of 5 Check Char Calc = Check German Parcel
 I 2 of 5 Check Char Calc = Check DHL	
	 I 2 of 5 Check Char Calc = Check Daimler Chrysler
 I 2 of 5 Check Char Calc = Check Bosch	
	 I 2 of 5 Check Character Calculation = Check Italian Post

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



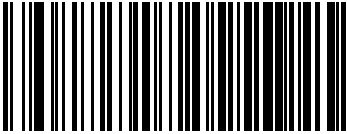
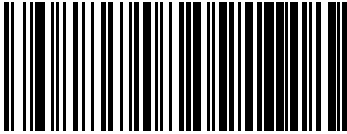
I 2 of 5 Check Character Transmission

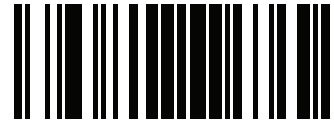
Enable this option to transmit the check character along with I 2 of 5 bar code data.



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

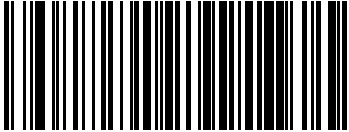
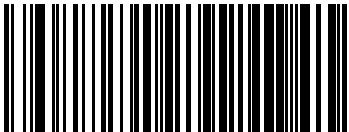
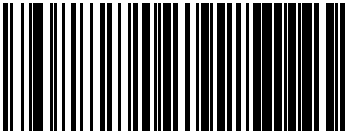
NOTE

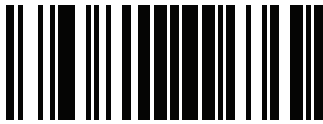
	 I 2 of 5 Check Character Transmission = Don't Send
 I 2 of 5 Check Character Transmission = Send	



I 2 of 5 Minimum Reads

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

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



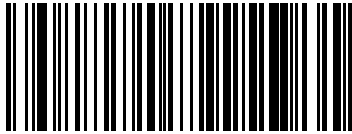
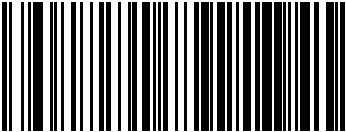
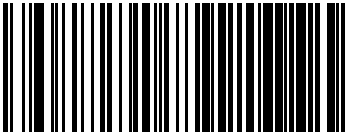
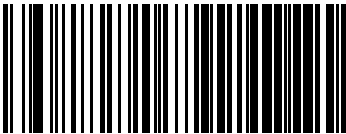
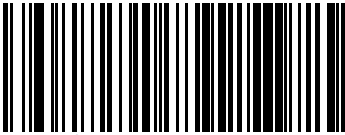
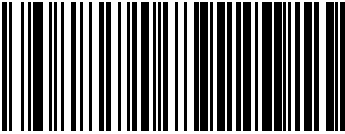
I 2 of 5 Decoding Level

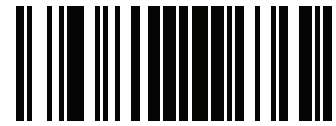


This configuration item applies to Interleaved 2 of 5, Datalogic 2 of 5 and Standard 2 of 5.

NOTE

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "[Decoding Levels](#)" on page 278 for more detailed programming instructions.

	 2 of 5 Decoding Level = Disabled
 2 of 5 Decoding Level = 1	
	 2 of 5 Decoding Level = 2
 2 of 5 Decoding Level = 3	
	 2 of 5 Decoding Level = 4
 2 of 5 Decoding Level = 5	

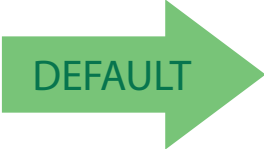
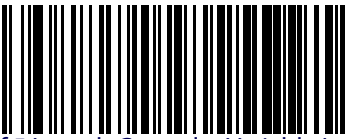
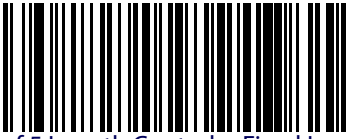


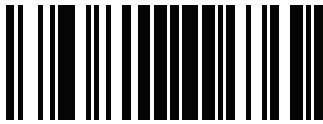
I 2 of 5 Length Control

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

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

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

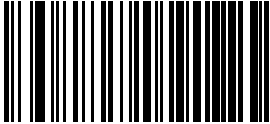
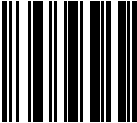
	 I 2 of 5 Length Control = Variable Length
 I 2 of 5 Length Control = Fixed Length	

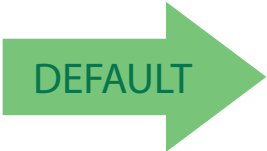


I 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for [I 2 of 5 Length Control](#). 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 278 for more detailed programming instructions.

 Select I 2 of 5 Length 1 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

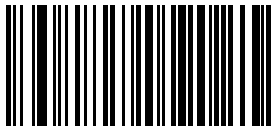
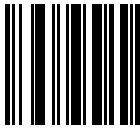


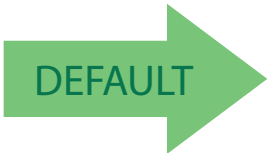
06 = Length 1 is 6 Characters

I 2 of 5 Set Length 2

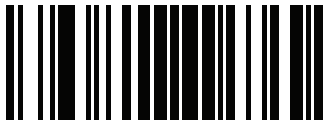
This feature specifies one of the bar code lengths for [I 2 of 5 Length Control](#). Length 2 is the maximum label length if in [Variable Length Mode](#), or the second fixed length if in [Fixed Length Mode](#). The length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length). See ["Set Length 2"](#) on page 280 for more detailed programming instructions.

 Select I 2 of 5 Length 2 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

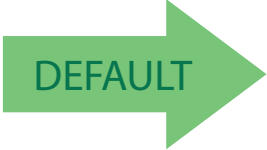
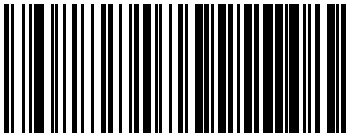
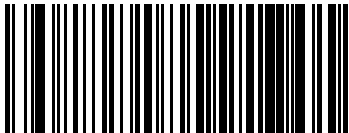
DEFAULT

50 = Length 2 is 50 Characters



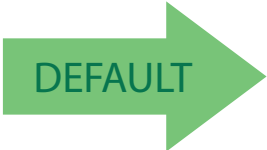
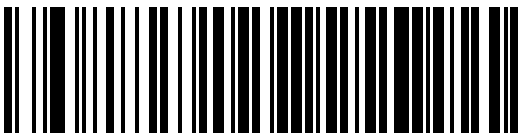
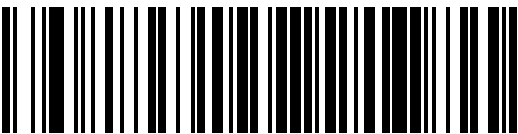
I 2 of 5 Character Correlation

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

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

I 2 of 5 Zero Pattern

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

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

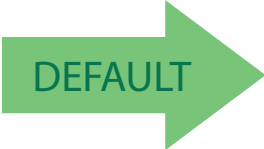
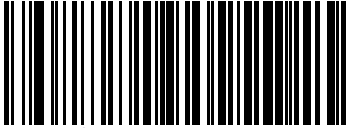
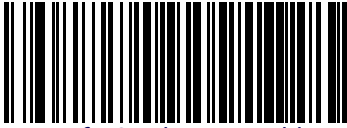
I 2 of 5 Stitching

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



This feature is available only on the TD1130 model.

NOTE

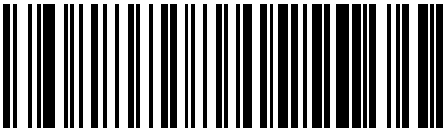
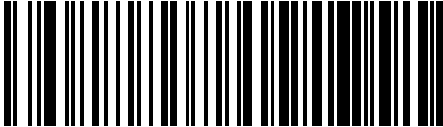
	 I 2 of 5 Stitching = Disable
 I 2 of 5 Stitching = Enable	

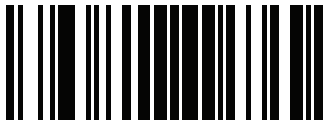
Interleaved 2 of 5 CIP HR

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

Interleaved 2 of 5 CIP HR Enable/Disable

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

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

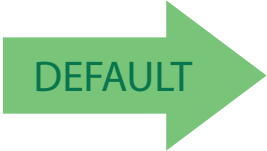
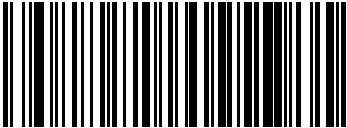
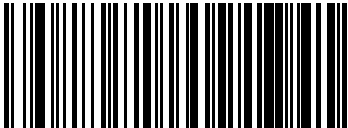


Datalogic 2 of 5

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

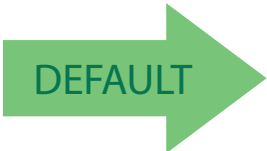
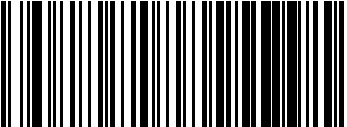
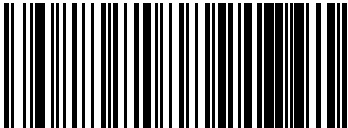
Datalogic 2 of 5 Enable/Disable

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

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

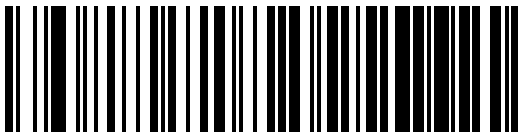
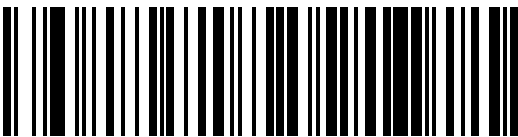
Datalogic 2 of 5 Check Character Calculation

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	

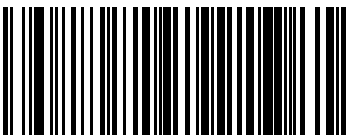
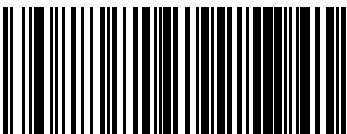
Datalogic 2 of 5 Check Character Transmission

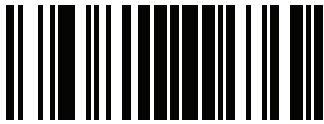
This option enables/disables transmission of an optional Datalogic 2 of 5 character.

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

Datalogic 2 of 5 Minimum Reads

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

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



Datalogic 2 of 5 Decoding Level



NOTE

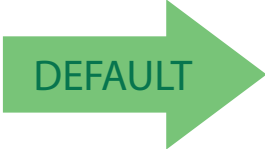
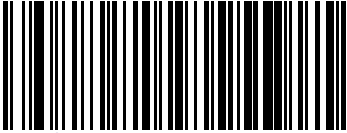
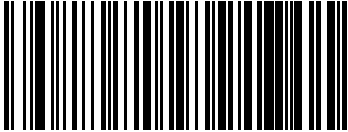
The Datalogic 2 of 5 Decoding Level feature is set using "I 2 of 5 Decoding Level" on page 160.

Datalogic 2 of 5 Length Control

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

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

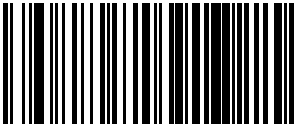
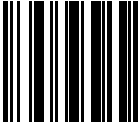
Fixed Length: For fixed length decoding, two different lengths may be set.

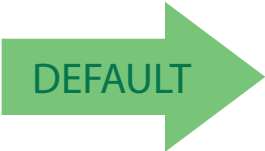
	 Datalogic 2 of 5 Length Control = Variable Length
 Datalogic 2 of 5 Length Control = Fixed Length	

Datalogic 2 of 5 Set Length 1

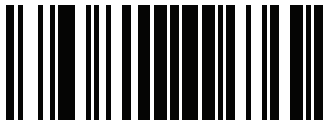
This feature specifies one of the bar code lengths for [Datalogic 2 of 5 Length Control](#). Length 1 is the minimum label length if in [Variable Length Mode](#), or the first fixed length if in [Fixed Length Mode](#). The length includes the bar code's data characters only.

The length can be set from 2 to 50 characters in increments of two. See "[Set Length 1](#)" on page 278 for more detailed programming instructions.

 Select Datalogic 2 of 5 Length 1 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

 **DEFAULT**

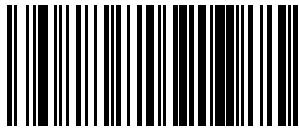
06 = Length 1 is 6 Characters



Datalogic 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for [Datalogic 2 of 5 Length Control](#). 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.

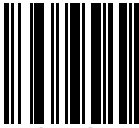
The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "[Set Length 2](#)" on page 280 for more detailed programming instructions.



Select Datalogic 2 of 5 Length 2 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.



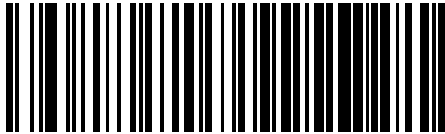
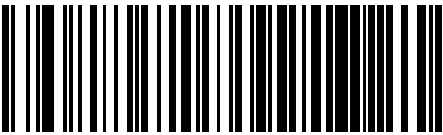
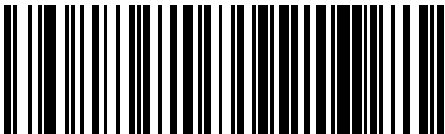
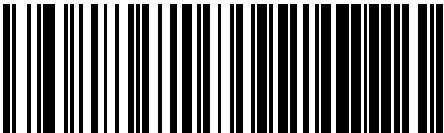
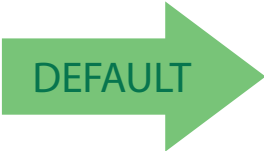
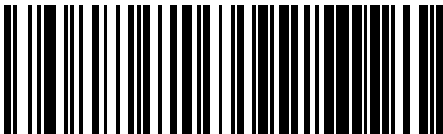
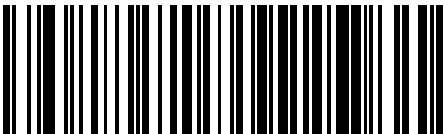
CANCEL

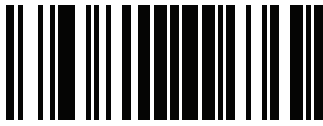


50 = Length 2 is 50 Characters

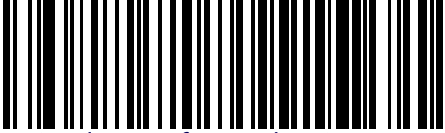
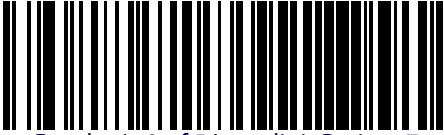
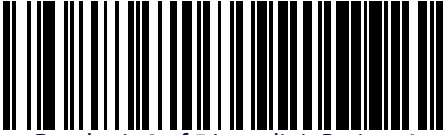
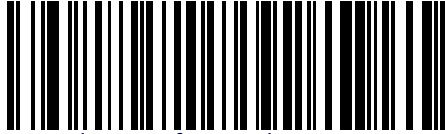
Datalogic 2 of 5 Interdigit Ratio

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

	 Datalogic 2 of 5 Interdigit Ratio = Disable
 Datalogic 2 of 5 Interdigit Ratio = 1	
	 Datalogic 2 of 5 Interdigit Ratio = 2
 Datalogic 2 of 5 Interdigit Ratio = 3	
	 Datalogic 2 of 5 Interdigit Ratio = 4
 Datalogic 2 of 5 Interdigit Ratio = 5	

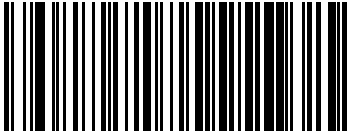
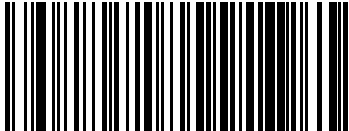


Datalogic 2 of 5 Interdigit Maximum Ratio — cont.

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

Datalogic 2 of 5 Character Correlation

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

	 1 2 of 5 Character Correlation = Disable
 1 2 of 5 Character Correlation = Enable	

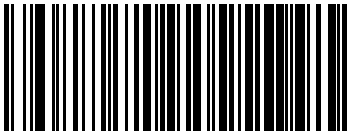
Datalogic 2 of 5 Stitching

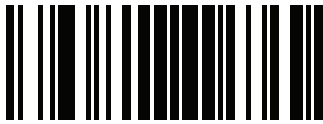
This option enables/disables stitching for Datalogic 2 of 5 labels. When parts of a Datalogic 2 of 5 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader’s software, and the data will be decoded if all bar code proofing requirements are met.



This feature is available only on the TD1130 model.

NOTE

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

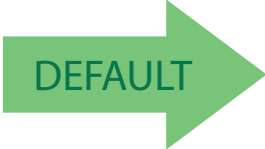
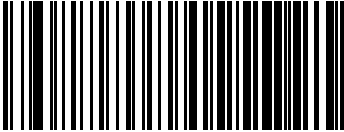
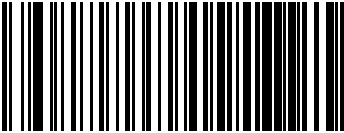


Codabar

The following options apply to the Codabar symbology.

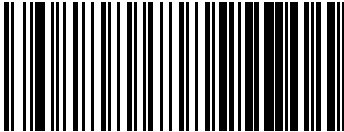
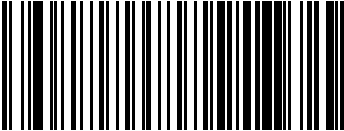
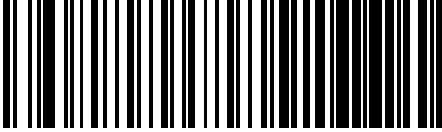
Codabar Enable/Disable

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

	 Codabar = Disable
 Codabar = Enable	

Codabar Check Character Calculation

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

	 Codabar Check Character Calculation = Don't Calculate
 Codabar Check Character Calculation = Enable AIM standard check char.	
	 Codabar Check Character Calculation = Enable Modulo 10 check char.

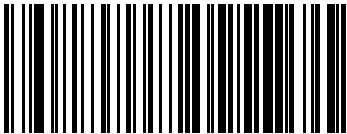
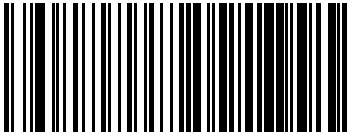
Codabar Check Character Transmission

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



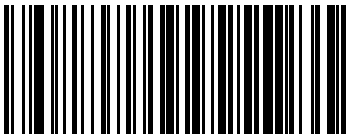
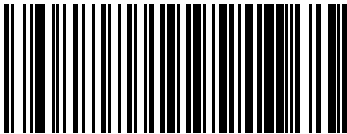
This feature is valid only when Codabar Check Character Calculation is enabled.

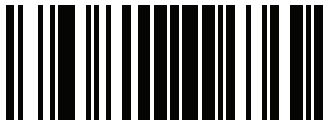
NOTE

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

Codabar Start/Stop Character Transmission

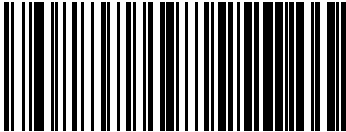
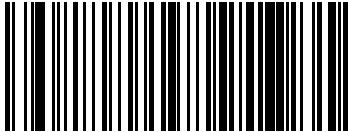
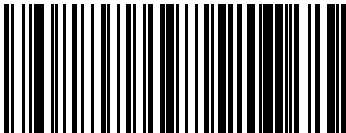
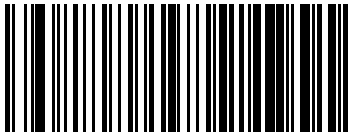
Enable this option to enable/disable transmission of Codabar start and stop characters.

	 Codabar Start/Stop Character Transmission = Don't Transmit
 Codabar Start/Stop Character Transmission = Transmit	



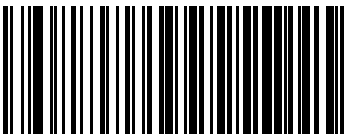
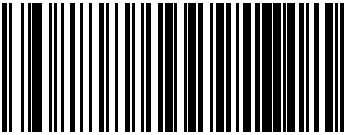
Codabar Start/Stop Character Set

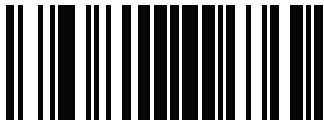
This option specifies the format of transmitted Codabar start/stop characters.

	 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

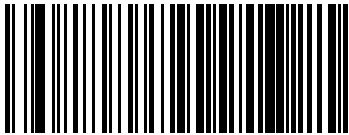
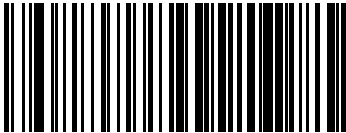
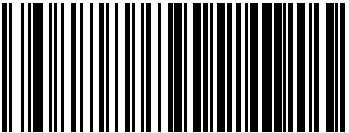
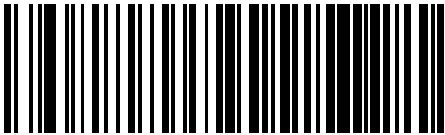
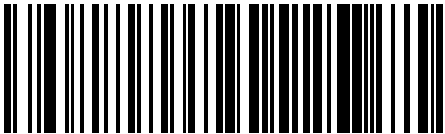
When enabled, this option requires that start and stop characters match.

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



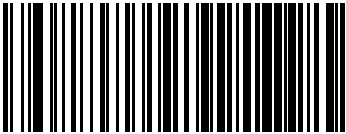
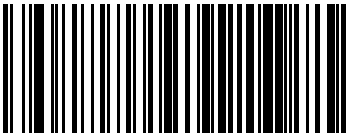
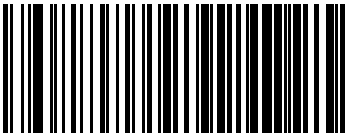
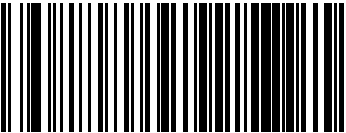
Codabar Quiet Zones

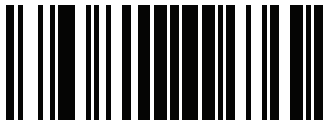
This feature specifies the number of quiet zones for Codabar labels. Quiet zones are blank areas at the ends of a bar code and are typically 10 times the width of the narrowest bar or space in the label.

 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 Minimum Reads

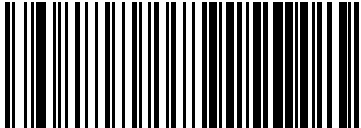
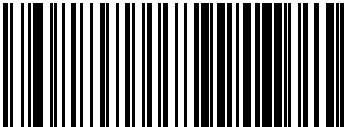
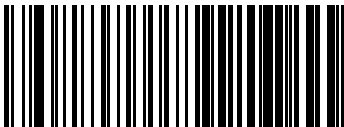
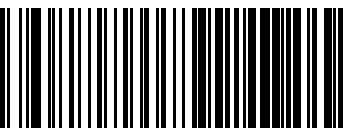
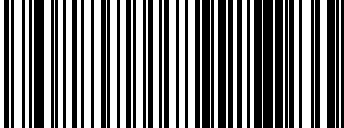
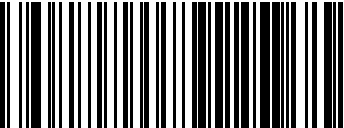
This feature specifies the minimum number of consecutive times a Codabar label must be decoded before it is accepted as good read.

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



Codabar Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See "[Decoding Levels](#)" on page 278 for more detailed programming instructions.

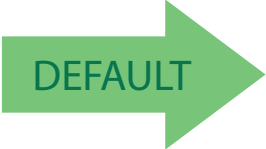
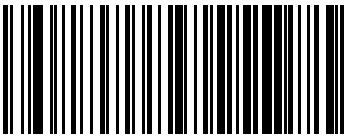
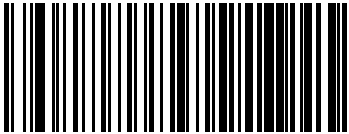
	 Codabar Decoding Level = Disabled
 Codabar Decoding Level = 1	
	 Codabar Decoding Level = 2
 Codabar Decoding Level = 3	
	 Codabar Decoding Level = 4
 Codabar Decoding Level = 5	

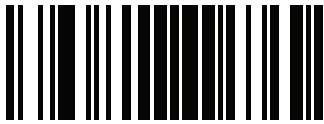
Codabar Length Control

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

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

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

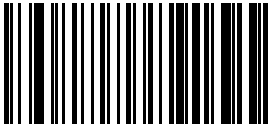
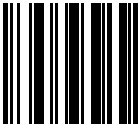
	 Codabar Length Control = Variable Length
 Codabar Length Control = Fixed Length	

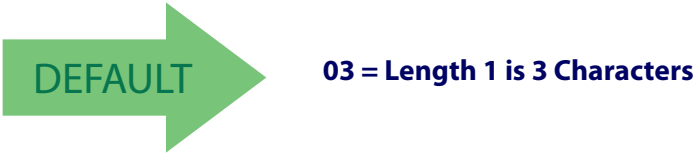


Codabar Set Length 1

This feature specifies one of the bar code lengths for [Codabar Length Control](#). 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 278 for more detailed programming instructions.

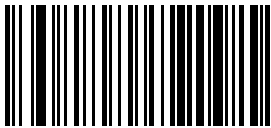
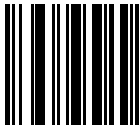
 Select Codabar Length 1 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

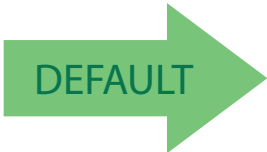


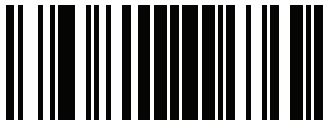
Codabar Set Length 2

This feature specifies one of the bar code lengths for [Codabar Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. The length includes the 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 280 for more detailed programming instructions.

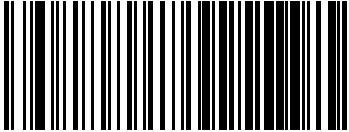
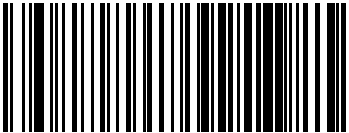
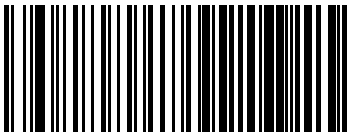
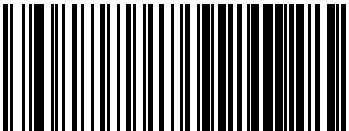
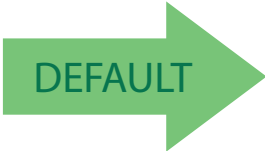
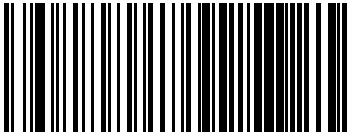
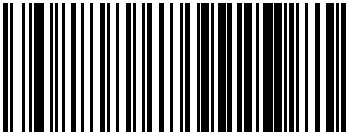
 Select Codabar Length 2 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

 **50 = Length 2 is 50 Characters**

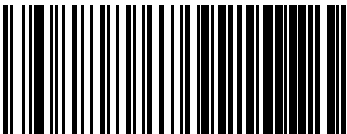
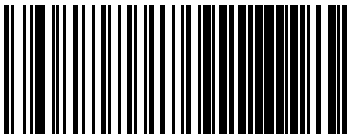
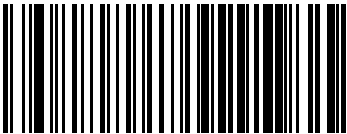
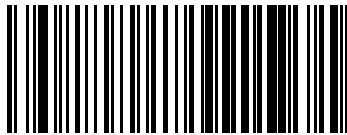
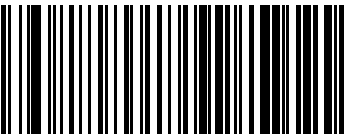


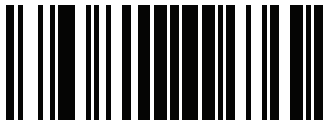
Codabar Interdigit Ratio

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

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

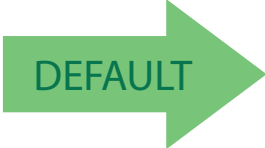
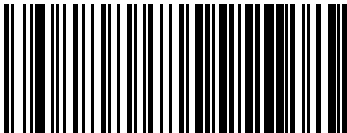
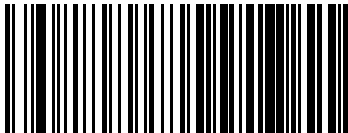
Codabar Interdigit Ratio — cont.

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



Codabar Character Correlation

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

	 Codabar Character Correlation = Disable
 Codabar Character Correlation = Enable	

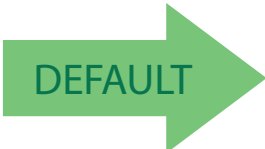
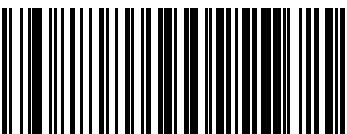
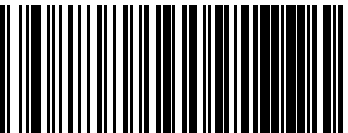
Codabar Stitching

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



This feature is available only on the TD1130 model.

NOTE

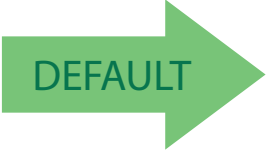
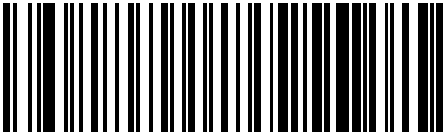
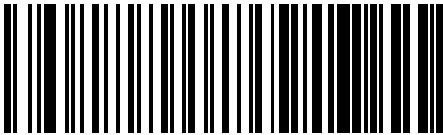
	 Codabar Stitching = Disable
 Codabar Stitching = Enable	

ABC Codabar

The following options apply to the ABC Codabar symbology.

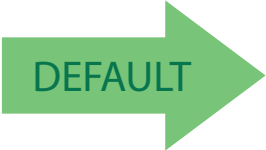
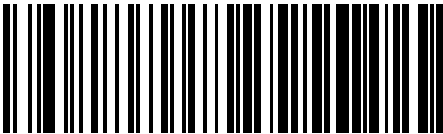
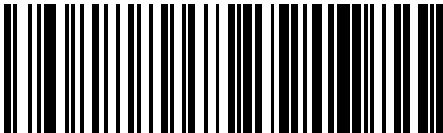
ABC Codabar Enable/Disable

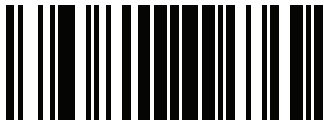
Enables/Disables ability of reader to decode ABC Codabar labels.

	 ABC Codabar = Disable
 ABC Codabar = Enable	

ABC Codabar Concatenation Mode

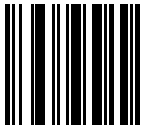
Specifies the concatenation mode between Static and Dynamic.

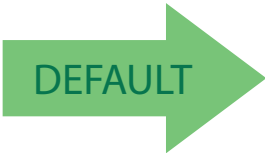
	 ABC Codabar Concatenation Mode = Static
 ABC Codabar Concatenation Mode = Dynamic	



ABC Codabar Dynamic Concatenation Timeout

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.

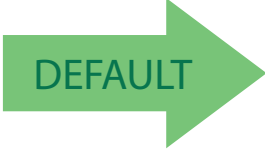
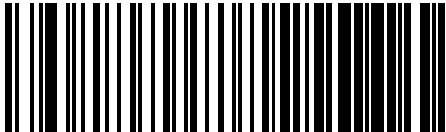
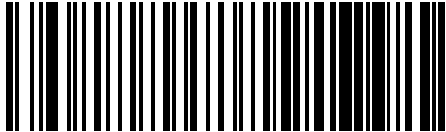
 Select ABC Codabar Dynamic Concatenation Timeout Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.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



10 = Quiet Interval of 200 ms

ABC Codabar Force Concatenation

Forces labels starting or ending with D to be concatenated.

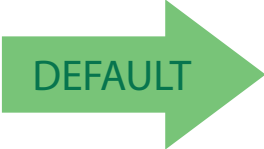
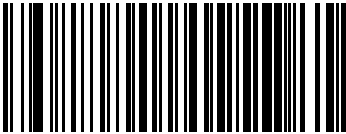
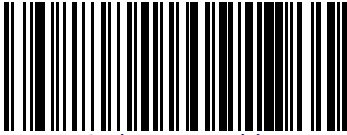
	 ABC Codabar Force Concatenation = Disable
 ABC Codabar Force Concatenation = Enable	

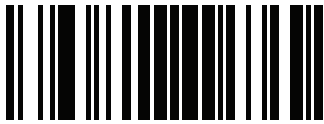
Code 11

The following options apply to the Code 11 symbology.

Code 11 Enable/Disable

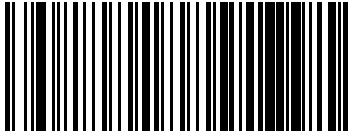
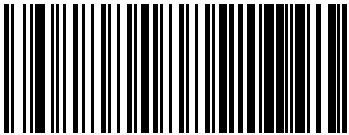
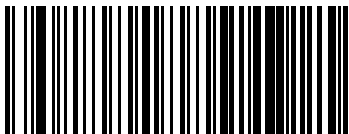
When disabled, the reader will not read Code 11 bar codes.

	 Code 11 = Disable
 Code 11 = Enable	



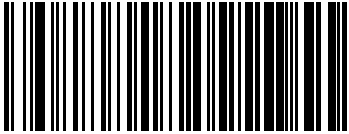
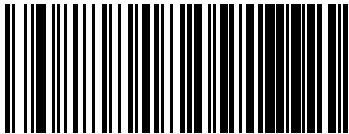
Code 11 Check Character Calculation

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

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

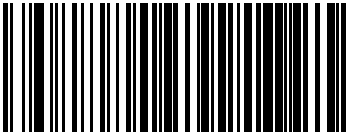
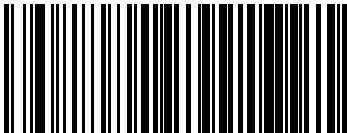
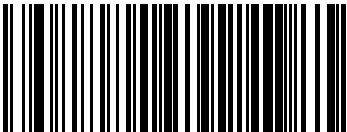
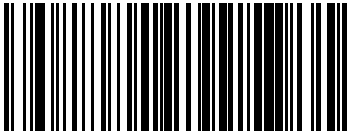
Code 11 Check Character Transmission

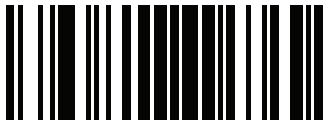
This feature enables/disables transmission of an optional Code 11 check character.

	 Code 11 Check Character Transmission = Don't Send
 Code 11 Check Character Transmission = Send	

Code 11 Minimum Reads

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

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

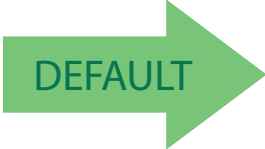
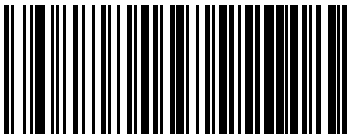
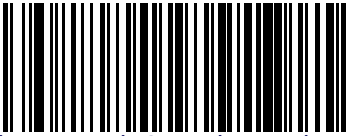


Code 11 Length Control

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

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

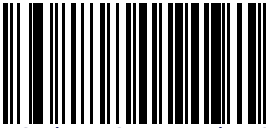
Fixed Length: For fixed length decoding, two different lengths may be set.

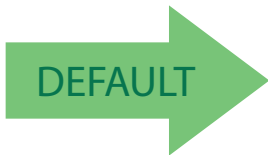
	 Code 11 Length Control = Variable Length
 Code 11 Length Control = Fixed Length	

Code 11 Set Length 1

This feature specifies one of the bar code lengths for [Code 11 Length Control](#). 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 278 for more detailed programming instructions.

 Select Code 11 Set Length 1 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

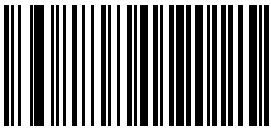


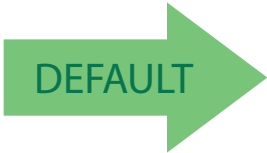
04 = Length 1 is 4 Characters

Code 11 Set Length 2

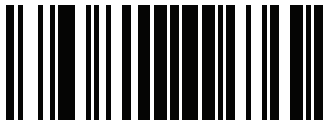
This feature specifies one of the bar code lengths for [Code 11 Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the bar code's check and data characters.

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 280 for more detailed programming instructions.

 Select Code 11 Length 2 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

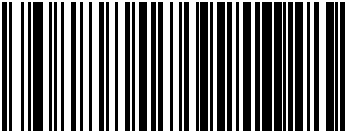
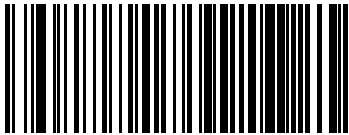
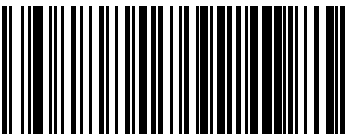
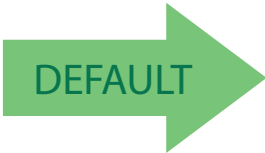
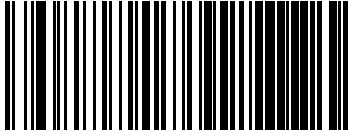
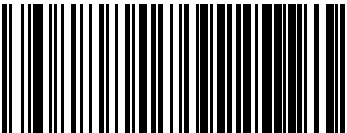
 **DEFAULT**

50 = Length 2 is 50 Characters

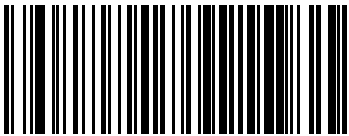
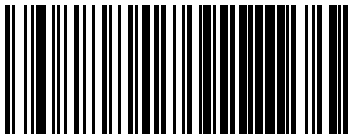
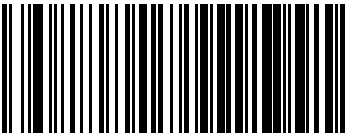
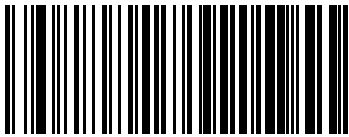
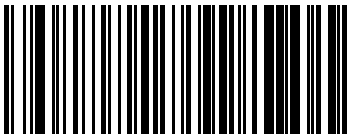


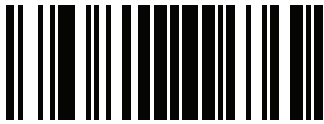
Code 11 Interdigit Ratio

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

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

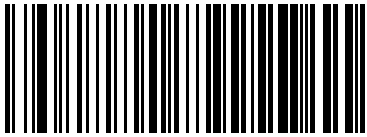
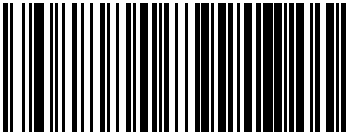
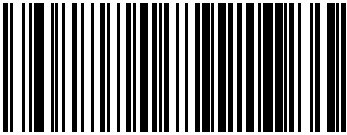
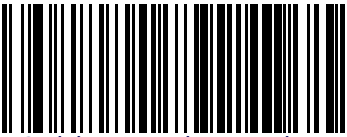
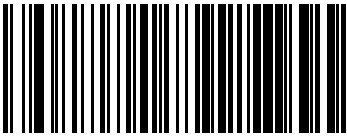
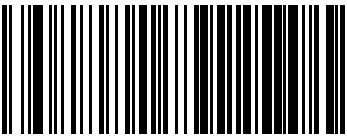
Code 11 Interdigit Ratio — cont.

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



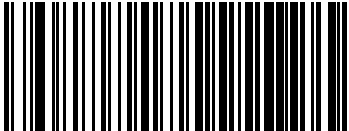
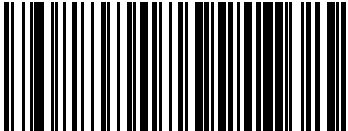
Code 11 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See "Decoding Levels" on page 278 for more detailed programming instructions.

	 Codabar Decoding Level = Disabled
 Codabar Decoding Level = 1	
	 Codabar Decoding Level = 2
 Codabar Decoding Level = 3	
	 Codabar Decoding Level = 4
 Codabar Decoding Level = 5	

Code 11 Character Correlation

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

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

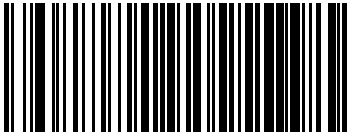
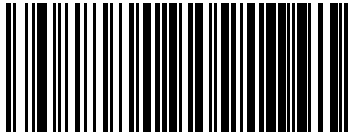
Code 11 Stitching

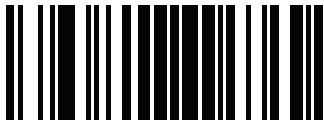
This option enables/disables stitching for Code 11 labels. When parts of a Code 11 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader’s software, and the data will be decoded if all bar code proofing requirements are met.



This feature is available only on the TD1130 model.

NOTE

	 Code 11 Stitching = Disable
 Code 11 Stitching = Enable	

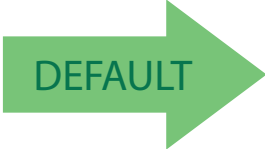
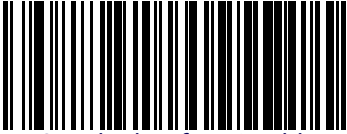
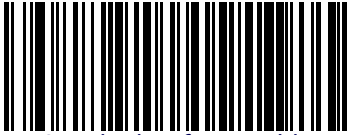


Standard 2 of 5

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

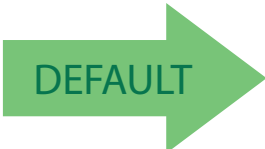
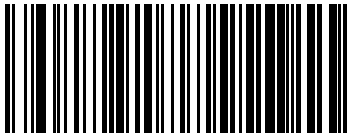
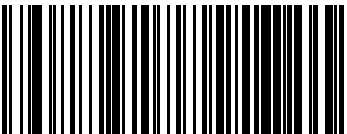
Standard 2 of 5 Enable/Disable

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

	 Standard 2 of 5 = Disable
 Standard 2 of 5 = Enable	

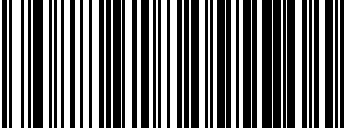
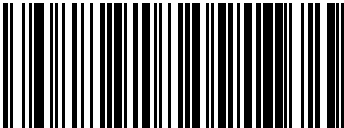
Standard 2 of 5 Check Character Calculation

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	

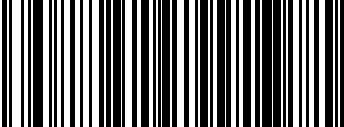
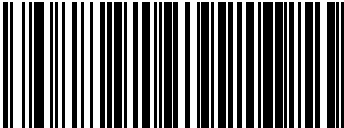
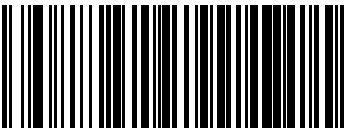
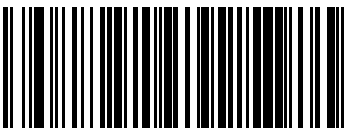
Standard 2 of 5 Check Character Transmission

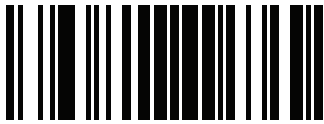
This feature enables/disables transmission of an optional Standard 2 of 5 check character.

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

Standard 2 of 5 Minimum Reads

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

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



Standard 2 of 5 Decoding Level



NOTE

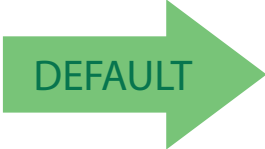
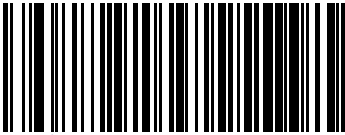
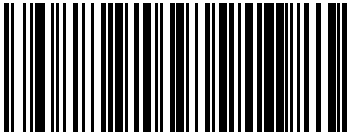
The Standard 2 of 5 Decoding Level feature is set using "I 2 of 5 Decoding Level" on page 160.

Standard 2 of 5 Length Control

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

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

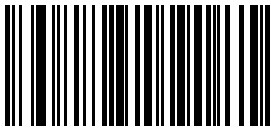
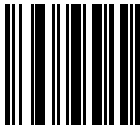
Fixed Length: For fixed length decoding, two different lengths may be set.

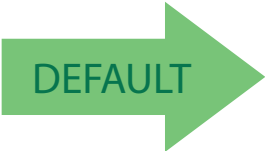
	 Standard 2 of 5 Length Control = Variable Length
 Standard 2 of 5 Length Control = Fixed Length	

Standard 2 of 5 Set Length 1

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

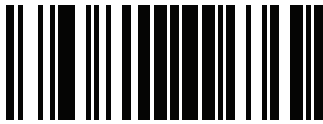
The length can be set from 1 to 50 characters. See "[Set Length 1](#)" on page 278 for more detailed programming instructions.

 Select Standard 2 of 5 Length 1 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



DEFAULT

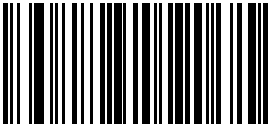
08 = Length 1 is 8 Characters

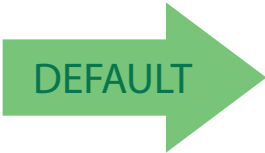


Standard 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for [Standard 2 of 5 Length Control](#). 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 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "[Set Length 2](#)" on page 280 for more detailed programming instructions.

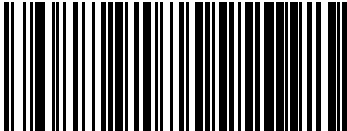
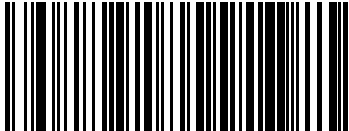
 Select Standard 2 of 5 Length 2 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL



50 = Length 2 is 50 Characters

Standard 2 of 5 Character Correlation

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

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

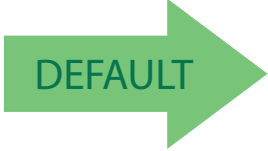
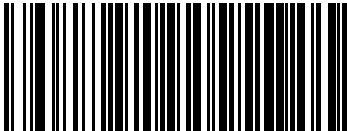
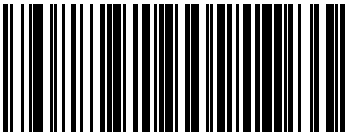
Standard 2 of 5 Stitching

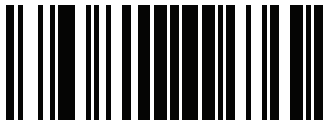
This option enables/disables stitching for Standard 2 of 5 labels. When parts of a Standard 2 of 5 bar code are presented to the reader with this feature enabled, the bar code parts will be assembled by the reader’s software, and the data will be decoded if all bar code proofing requirements are met.



This feature is available only on the TD1130 model.

NOTE

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

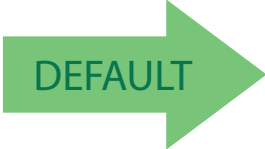
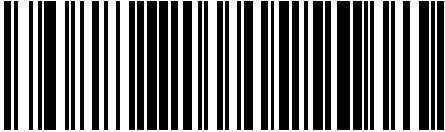
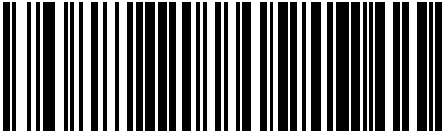


Industrial 2 of 5

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

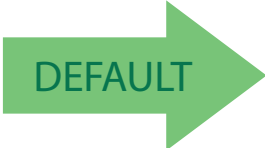
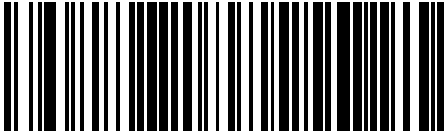
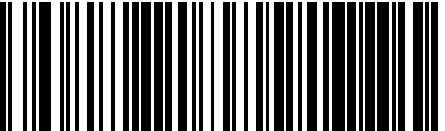
Industrial 2 of 5 Enable/Disable

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

	 Industrial 2 of 5 = Disable
 Industrial 2 of 5 = Enable	

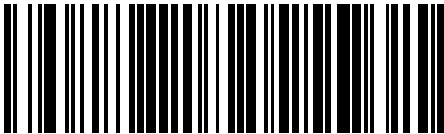
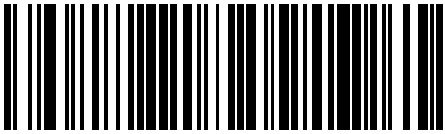
Industrial 2 of 5 Check Character Calculation

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

	 Industrial 2 of 5 Check Character Calculation = Disable
 Industrial 2 of 5 Check Character Calculation = Enable	

Industrial 2 of 5 Check Character Transmission

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

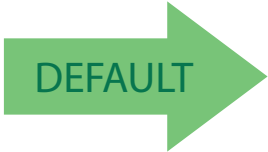
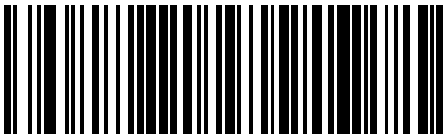
	 Industrial 2 of 5 Check Character Transmission = Disable
 Industrial 2 of 5 Check Character Transmission = Enable	

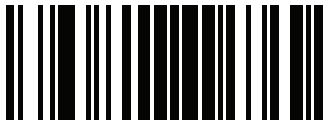
Industrial 2 of 5 Length Control

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

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

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

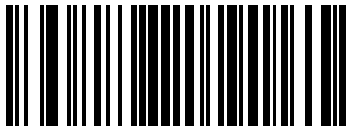
	 Industrial 2 of 5 Length Control = Variable Length
 Industrial 2 of 5 = Fixed Length	



Industrial 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for [Industrial 2 of 5 Length Control](#). Length 1 is the minimum label length if in [Variable Length](#) Mode, or the first fixed length if in [Fixed Length](#) Mode. Length includes the bar code's data characters only.

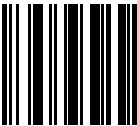
The length can be set from 1 to 50 characters. See "[Set Length 1](#)" on page 278 for more detailed programming instructions.



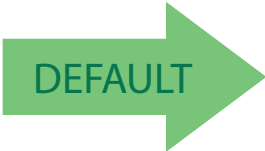
Select Industrial 2 of 5 Set Length 1 Setting

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

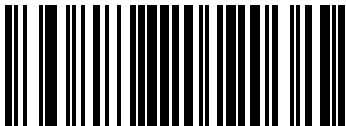
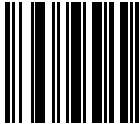


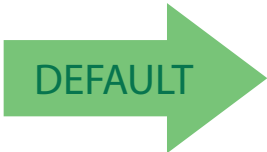
01 = Length 1 is 1 Character

Industrial 2 of 5 Set Length 2

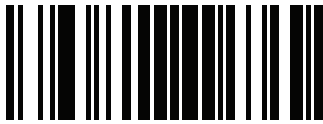
This feature specifies one of the bar code lengths for [Industrial 2 of 5 Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the bar code’s check, data, and full-ASCII shift characters. The 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 280 for more detailed programming instructions.

 Select Industrial 2 of 5 Length 2 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

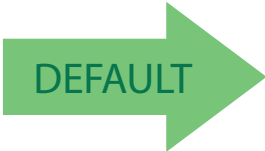
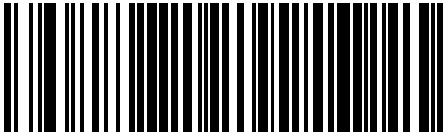
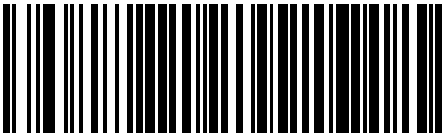
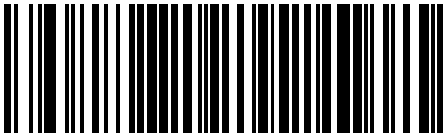
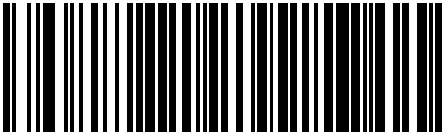


50 = Length 2 is 50 Characters



Industrial 2 of 5 Minimum Reads

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

	 Industrial 2 of 5 Minimum Reads = 1
 Industrial 2 of 5 Minimum Reads = 2	
	 Industrial 2 of 5 Minimum Reads = 3
 Industrial 2 of 5 Minimum Reads = 4	

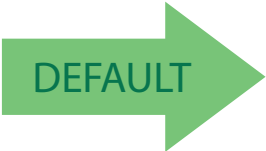
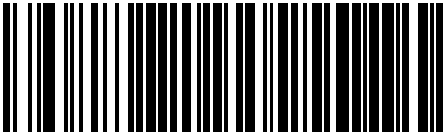
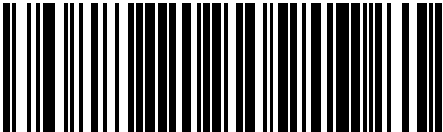
Industrial 2 of 5 Stitching

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



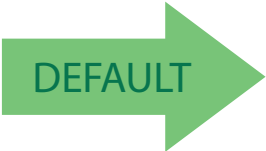
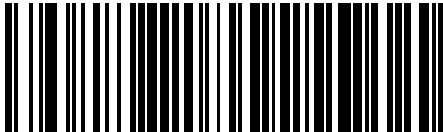
This feature is available only on the TD1130 model.

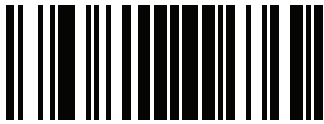
NOTE

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

Industrial 2 of 5 Character Correlation

Enable/disables character correlation for Industrial 2 of 5.

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

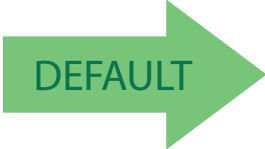
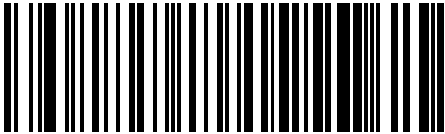
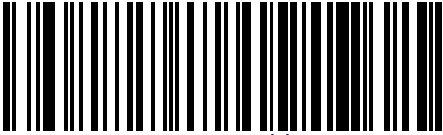


IATA

The following options apply to the IATA symbology.

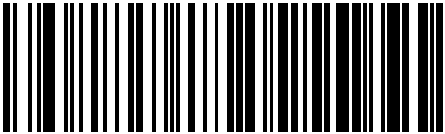
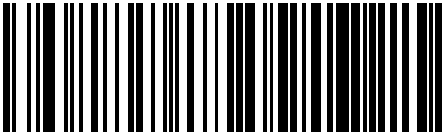
IATA Enable/Disable

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

	 IATA = Disable
 IATA = Enable	

IATA Check Character Transmission

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

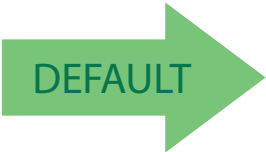
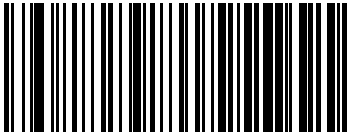
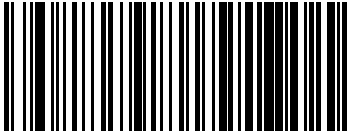
	 IATA Check Character Transmission = Disable
 IATA Check Character Transmission = Enable	

ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

Enables/disables ISBT128 concatenation of 2 labels.

	 ISBN 128 Concatenation = Disable
 ISBN 128 Concatenation = Enable	

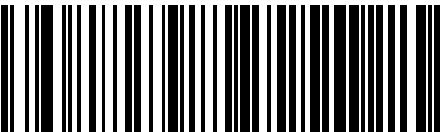
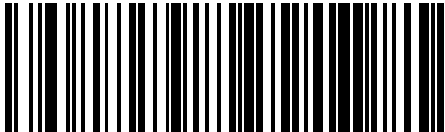
ISBT 128 Concatenation Mode

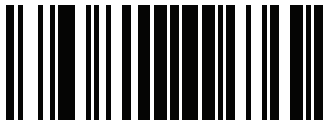
Specifies the concatenation mode between Static and Dynamic.



NOTE

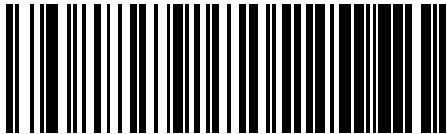
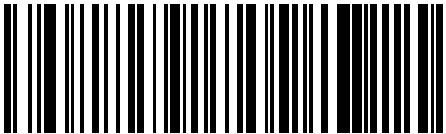
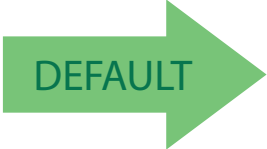
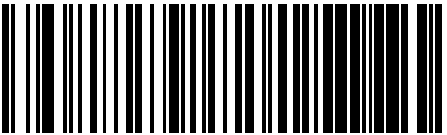
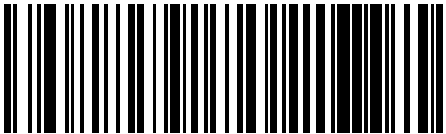
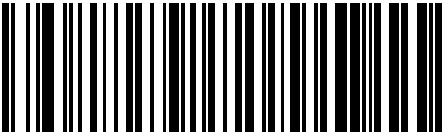
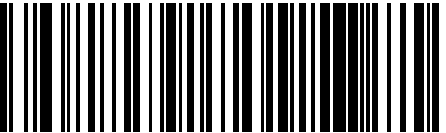
This option is only valid when [ISBT 128 Concatenation](#) is enabled (see page 211).

	 ISBT 128 Concatenation Mode = Static
 ISBT 128 Concatenation Mode = Dynamic	



ISBT 128 Dynamic Concatenation Timeout

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

	 ISBT 128 Dynamic Concatenation Timeout = 50 msec
 ISBT 128 Dynamic Concatenation Timeout = 100 msec	
	 ISBT 128 Dynamic Concatenation Timeout = 200 msec
 ISBT 128 Dynamic Concatenation Timeout = 500 msec	
	 ISBT 128 Dynamic Concatenation Timeout = 750 msec
 ISBT 128 Dynamic Concatenation Timeout = 1 second	

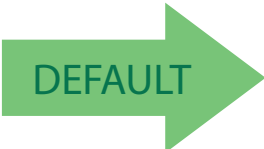
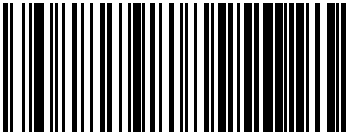
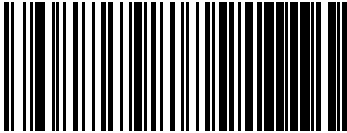
ISBT 128 Force Concatenation

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



NOTE

This option is only valid when [ISBT 128 Concatenation](#) is enabled. (see page 211).

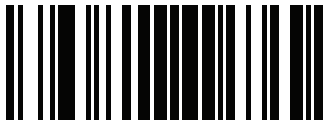
	 ISBT 128 Force Concatenation = Disable
 ISBT 128 Force Concatenation = Enable	

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.

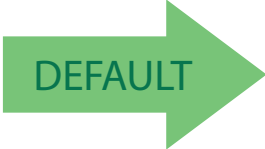
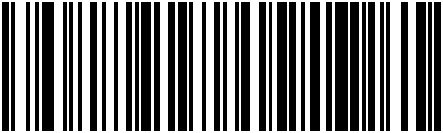


MSI

The following options apply to the MSI symbology.

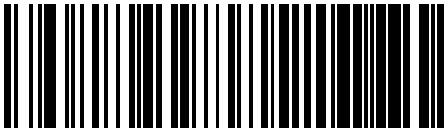
MSI Enable/Disable

Enables/Disables ability of reader to decode MSI labels.

	 MSI = Disable
 MSI = Enable	

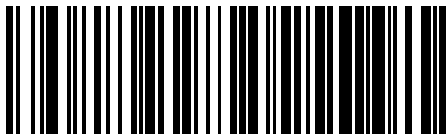
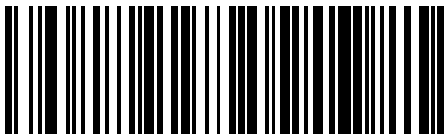
MSI Check Character Calculation

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

	 MSI Check Character Calculation = Disable
 MSI Check Character Calculation = Enable Mod10	
	 MSI Check Character Calculation = Enable Mod11/10
 MSI Check Character Calculation = Enable Mod10/10	

MSI Check Character Transmission

Enables/disables transmission of an MSI check character.

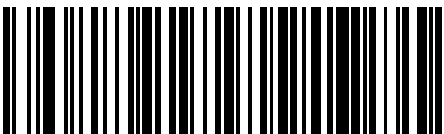
	 MSI Check Character Transmission = Disable
 MSI Check Character Transmission = Enable	

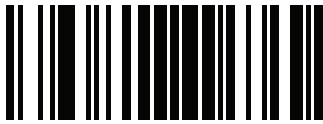
MSI Length Control

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

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

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

	 MSI Length Control = Variable Length
 MSI = Fixed Length	



MSI Set Length 1

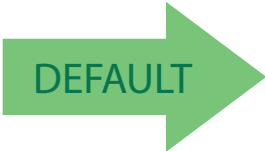
This feature specifies one of the bar code lengths for [MSI Length Control](#). Length 1 is the minimum label length if in [Variable Length Mode](#), or the first fixed length if in [Fixed Length Mode](#). Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "[Set Length 1](#)" on page 278 for more detailed programming instructions.



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.

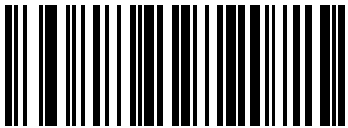
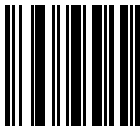


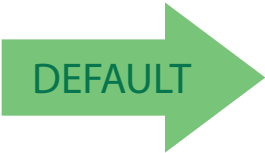
01 = Length 1 is 1 Character

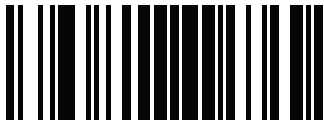
MSI Set Length 2

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

The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length). See "[Set Length 2](#)" on page 280 for more detailed programming instructions.

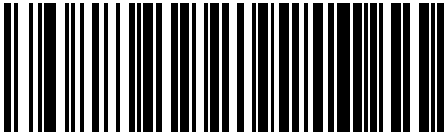
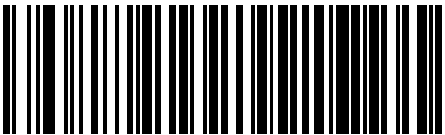
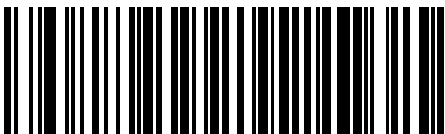
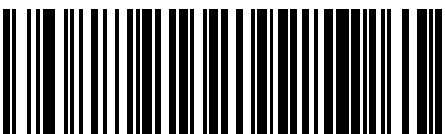
 Select MSI Length 2 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

 **50 = Length 2 is 50 Characters**



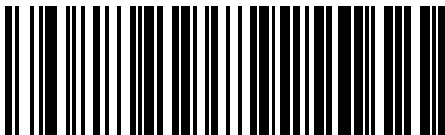
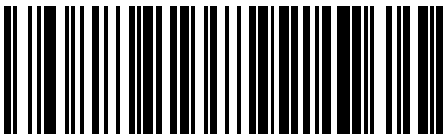
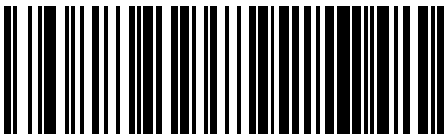
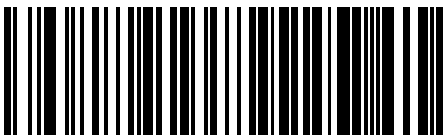
MSI Minimum Reads

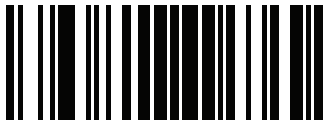
This feature specifies the minimum number of consecutive times an MSI label must be decoded before it is accepted as good read.

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

MSI Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See "Decoding Levels" on page 278 for more detailed programming instructions.

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

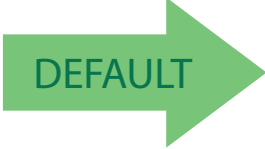
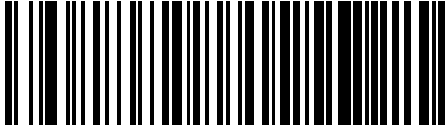
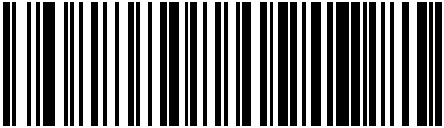


Code 93

The following options apply to the Code 93 symbology.

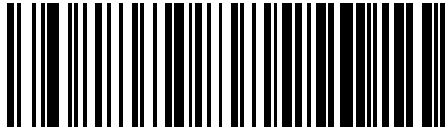
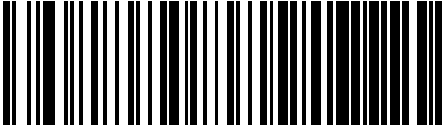
Code 93 Enable/Disable

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

	 Code 93 = Disable
 Code 93 = Enable	

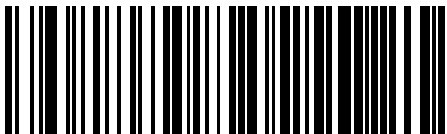
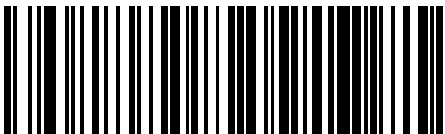
Code 93 Check Character Calculation

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

	 Code 93 Check Character Calculation = Disable
 Code 93 Check Character Calculation = Enable Check C	
	 Code 93 Check Character Calculation = Enable Check K
 Code 93 Check Character Calculation = Enable Check C and K	

Code 93 Check Character Transmission

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

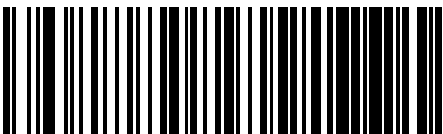
	 Code 93 Check Character Transmission = Disable
 Code 93 Check Character Transmission = Enable	

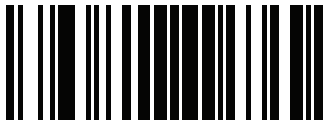
Code 93 Length Control

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

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

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

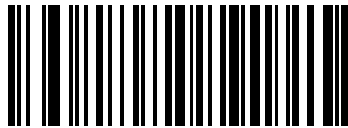
	 Code 93 Length Control = Variable Length
 Code 93 = Fixed Length	



Code 93 Set Length 1

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

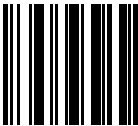
The length can be set from 01 to 50 characters. See ["Set Length 1"](#) on page 278 for more detailed programming instructions.



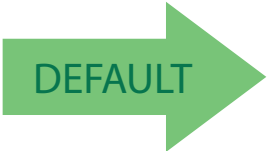
Select Code 93 Set Length 1 Setting

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

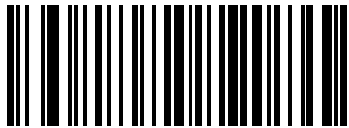
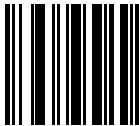


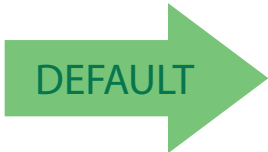
01 = Length 1 is 1 Character

Code 93 Set Length 2

This feature specifies one of the bar code lengths for [Code 93 Length Control](#). 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 280 for more detailed programming instructions.

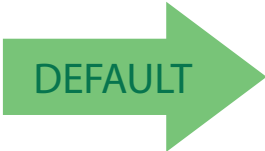
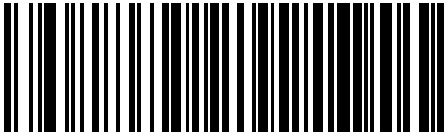
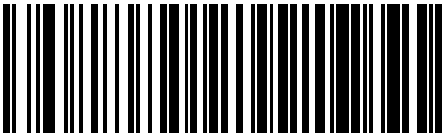
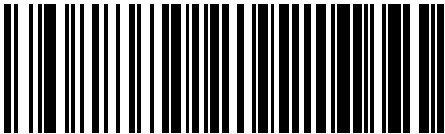
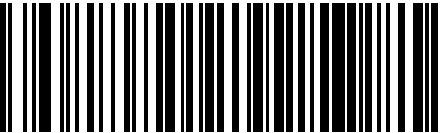
 Select Code 93 Length 2 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

 **50 = Length 2 is 50 Characters**



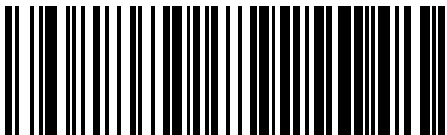
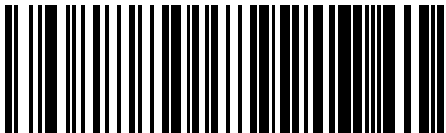
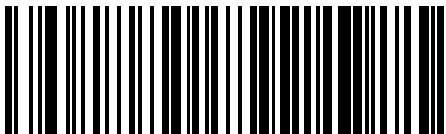
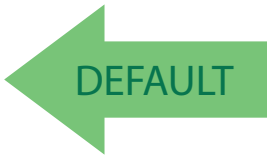
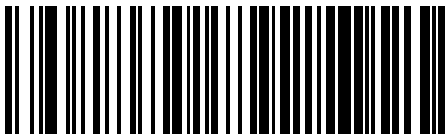
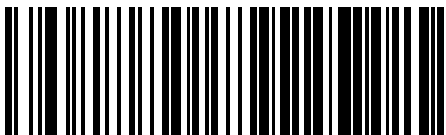
Code 93 Minimum Reads

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

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

Code 93 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See ["Decoding Levels"](#) on page 278 for more detailed programming instructions.

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



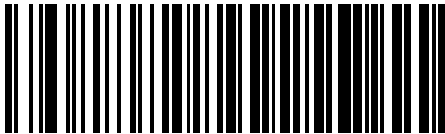
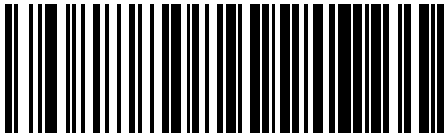
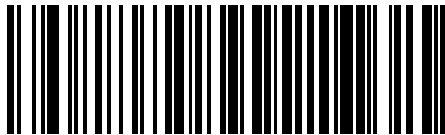
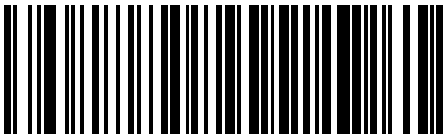
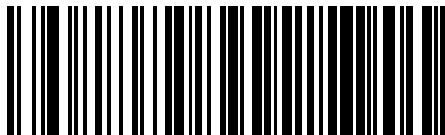
Code 93 Quiet Zones

Enables/disables fixed length stitching for Code 93.



This feature is available only on the TD1130 model.

NOTE

	 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

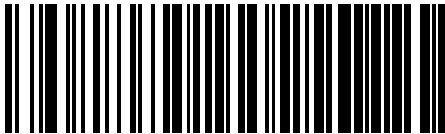
Code 93 Stitching

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



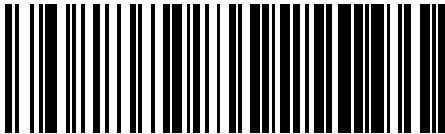
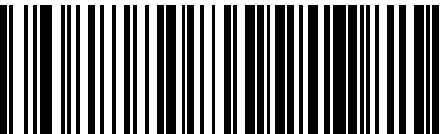
This feature is available only on the TD1130 model.

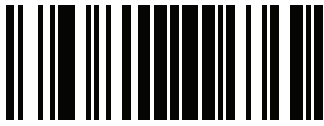
NOTE

	 Code 93 Stitching = Disable
 Code 93 Stitching = Enable	

Code 93 Character Correlation

Enables/disables Character Correlation for Code 93.

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

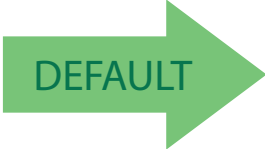
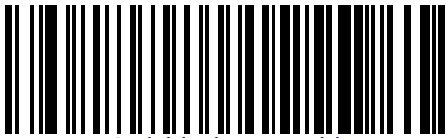
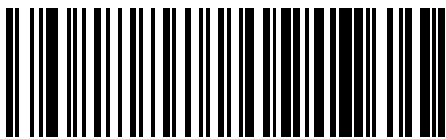


Codablock F

The following options apply to the Codablock F symbology.

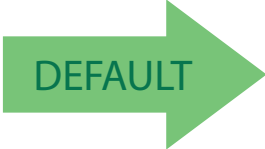
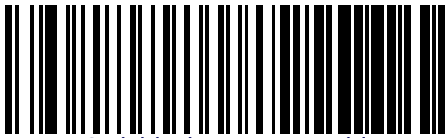
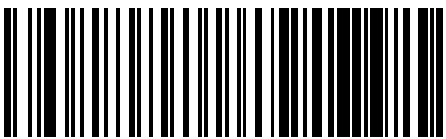
Codablock F Enable/Disable

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

	 Codablock F = Disable
 Codablock F = Enable	

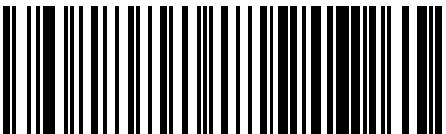
Codablock F EAN Enable/Disable

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

	 Codablock F EAN = Disable
 Codablock F EAN = Enable	

Codablock F AIM Check

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

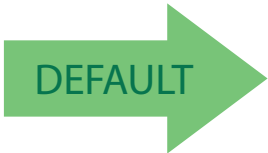
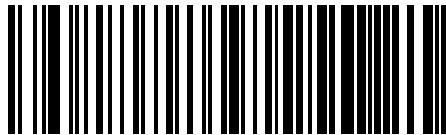
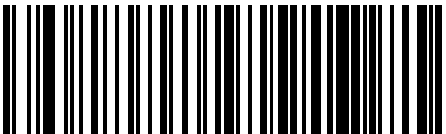
	 Codablock F AIM Check = Not AIM compliant
 Codablock F AIM Check = AIM compliant	

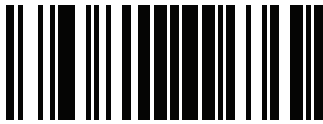
Codablock F Length Control

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

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

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

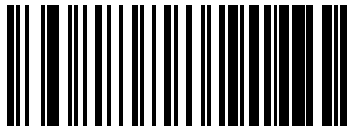
	 Codablock F Length Control = Variable Length
 Codablock F = Fixed Length	



Codablock F Set Length 1

This feature specifies one of the bar code lengths for [Codablock F Length Control](#). 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.

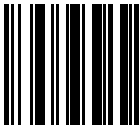
The length can be set from 003 to 255 characters. See "[Set Length 1](#)" on page 278 for more detailed programming instructions.



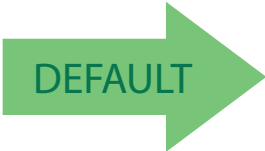
Select Codablock F Length 1 Setting

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

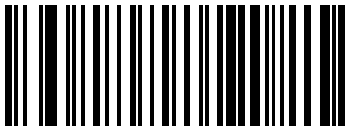
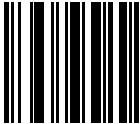


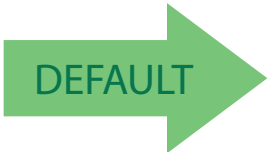
003 = Length 1 is 3 Characters

Codablock F Set Length 2

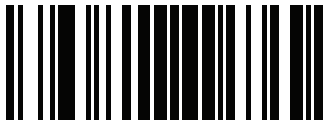
This feature specifies one of the bar code lengths for [Codablock F Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the bar code’s check, data, and full-ASCII shift characters. The length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

The length can be set from 3 to 255 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "[Set Length 2](#)" on page 280 for more detailed programming instructions.

 Select Codablock F Length 2 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

 **DEFAULT**

100 = Length 2 is 100 Characters

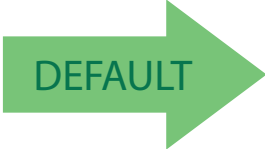
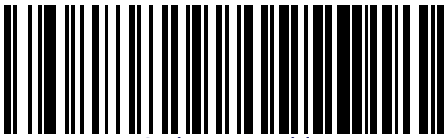
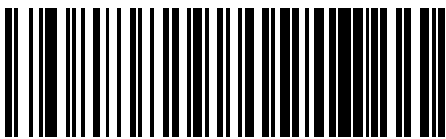


Code 4

The following options apply to the Code 4 symbology.

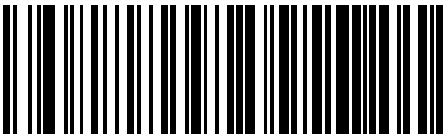
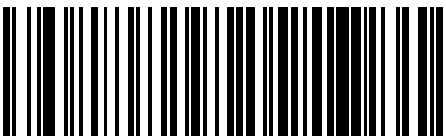
Code 4 Enable/Disable

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

	 Code 4 = Disable
 Code 4 = Enable	

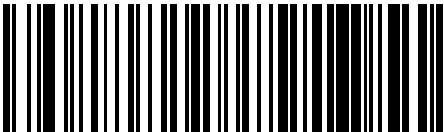
Code 4 Check Character Transmission

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

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

Code 4 Hex to Decimal Conversion

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

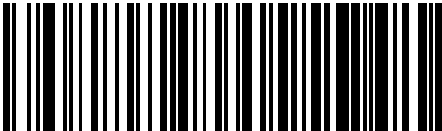
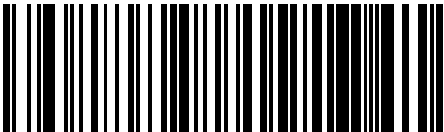
	 Code 4 Hex to Decimal Conversion = Disable
 Code 4 Hex to Decimal Conversion = Enable	

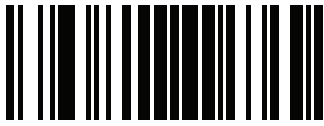
Code 5

The following options apply to the Code 5 symbology.

Code 5 Enable/Disable

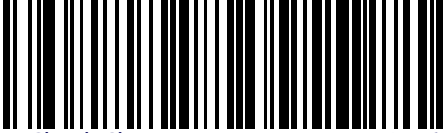
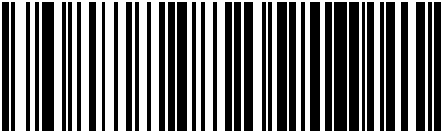
Enables/Disables ability of reader to decode Code 5 labels.

	 Code 5 = Disable
 Code 5 = Enable	



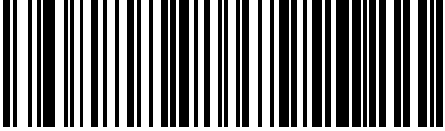
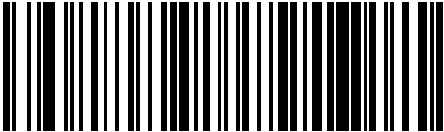
Code 5 Check Character Transmission

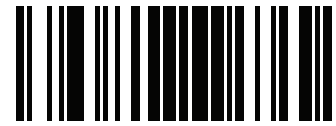
This feature enables/disables transmission of an optional Code 5 check character.

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

Code 5 Hex to Decimal Conversion

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

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



Code 4 and Code 5 Common Configuration Items

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

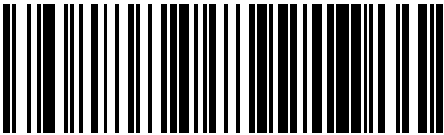
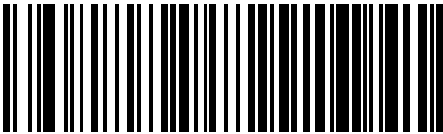
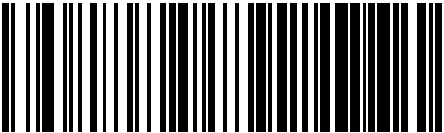
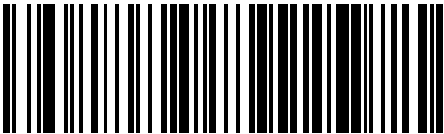
Code 4 and 5 Decoding Level

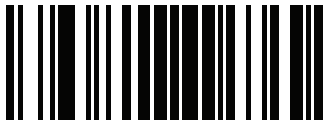
Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See "[Decoding Levels](#)" on page 278 for more detailed programming instructions.



This configuration item applies to Code 4 and Code 5.

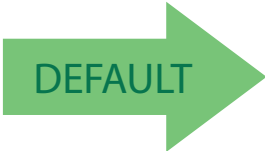
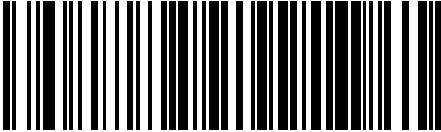
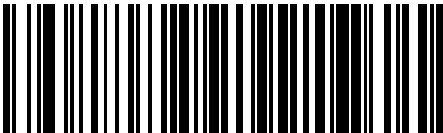
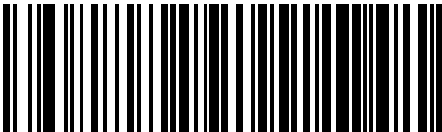
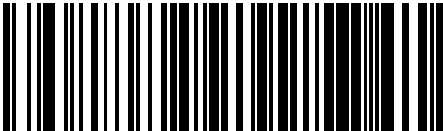
NOTE

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



Code 4 and Code 5 Minimum Reads

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

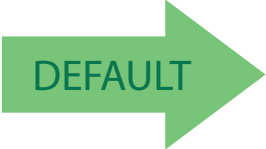
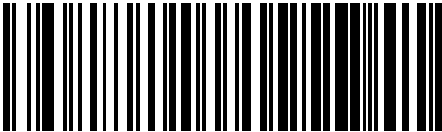
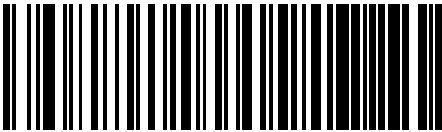
	 Code 4 or Code 5 Minimum Reads = 1
 Code 4 or Code 5 Minimum Reads = 2	
	 Code 4 or Code 5 Minimum Reads = 3
 Code 4 or Code 5 Minimum Reads = 4	

Follett 2 of 5

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

Follett 2 of 5 Enable/Disable

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

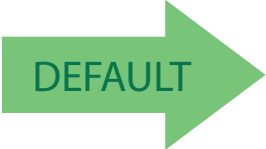
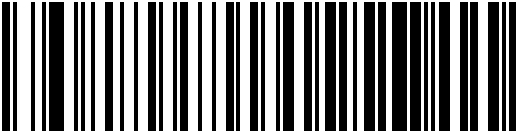
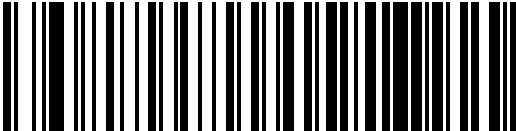
	 Follett 2 of 5 = Disable
 Follett 2 of 5 = Enable	

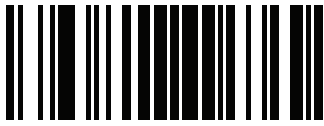
BC412

The following options apply to the BC412 symbology.

BC412 Enable/Disable

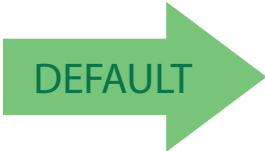
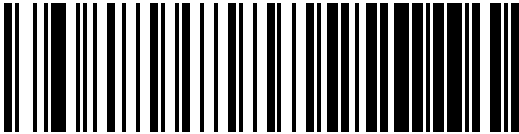
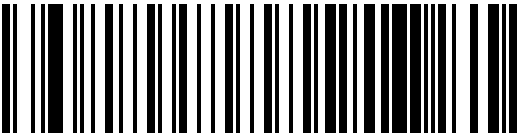
Enables/Disables ability of reader to decode BC412 labels.

	 BC412 = Disable
 BC412 = Enable	



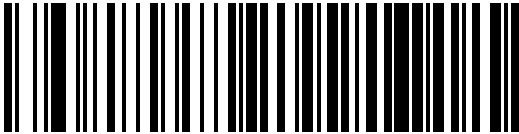
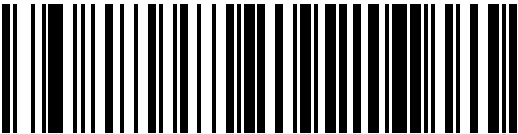
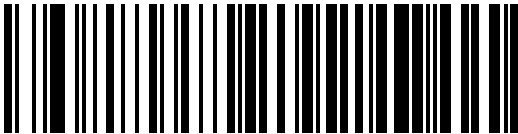
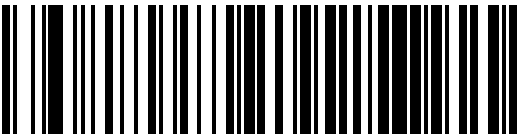
BC412 Check Character Calculation

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

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

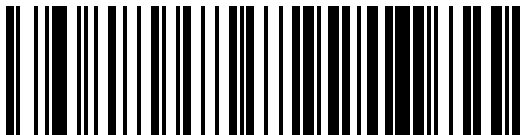
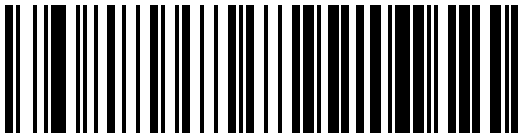
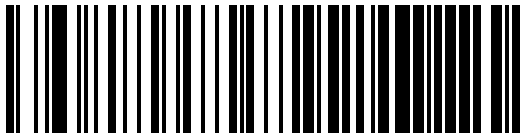
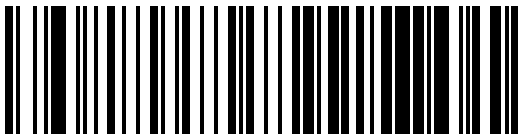
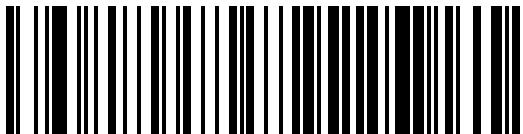
BC412 Minimum Reads

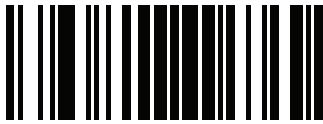
This feature specifies the minimum number of consecutive times a BC412 label must be decoded before it is accepted as good read.

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

BC412 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See ["Decoding Levels"](#) on page 278 for more detailed programming instructions.

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

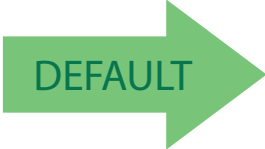
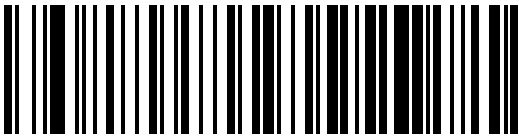
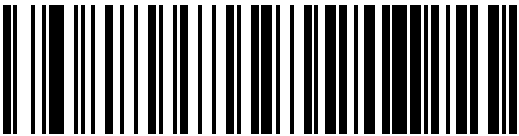


BC412 Length Control

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

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

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

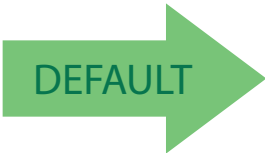
	 BC412 Length Control = Variable Length
 BC412 Length Control = Fixed Length	

BC412 Set Length 1

This feature specifies one of the bar code lengths for [BC412 Length Control](#). 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 0 to 50 characters. See ["Set Length 1"](#) on page 278 for more detailed programming instructions.

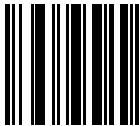
 Select BC412 Set Length 1 Setting	To configure this feature, scan the ENTER/EXIT bar code above, then the bar code at left followed by digits from the Alphanumeric characters in Appendix D, Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

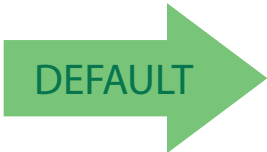
 **01 = Length 1 is 1 Character**

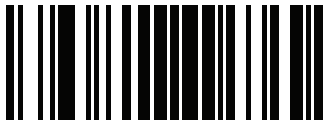
BC412 Set Length 2

This feature specifies one of the bar code lengths for [BC412 Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the 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 280 for more detailed programming instructions.

 Select BC412 Length 2 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

50 = Length 2 is 50 Characters

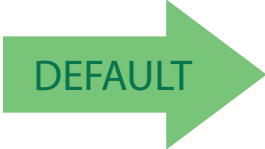
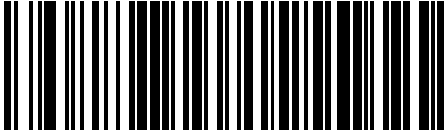
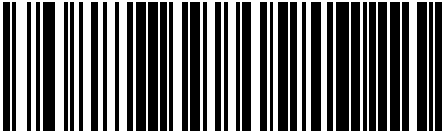


Plessey

The following options apply to the Plessey symbology.

Plessey Enable/Disable

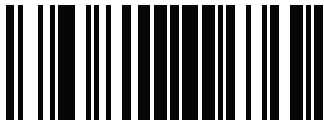
Enables/Disables ability of reader to decode Plessey labels.

	 Plessey = Disable
 Plessey = Enable	

Plessey Check Character Calculation

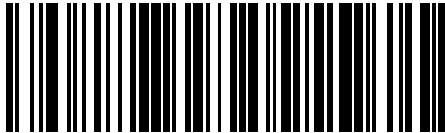
Enables/Disables calculation and verification of an optional Plessey check character.

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



Plessey Check Character Transmission

Enables/disables transmission of an MSI check character.

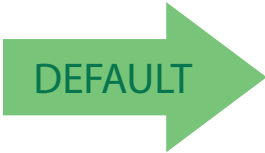
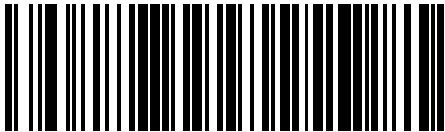
	 Plessey Check Character Transmission = Disable
 Plessey Check Character Transmission = Enable	

Plessey Length Control

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

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

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

	 Plessey Length Control = Variable Length
 Plessey = Fixed Length	

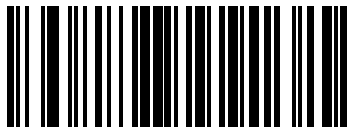
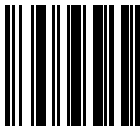
Plessey Set Length 1

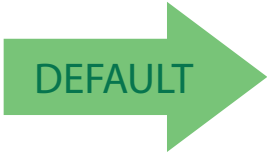
This feature specifies one of the barcode lengths for [Plessey Length Control](#). Length 1 is the minimum label length if in [Variable Length Mode](#), or the first fixed length if in [Fixed Length Mode](#). Length includes the barcode’s data characters only. The length can be set from 01 to 50 characters.

[Table 2](#) provides some examples for setting Length 1. See "[Set Length 1](#)" on page 278 for detailed instructions on setting this feature.

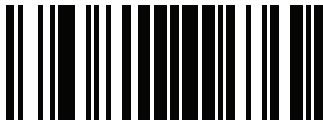
Table 2. Plessey Length 1 Setting Examples

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

 Select Plessey Set Length 1 Setting	
Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.	 CANCEL



01 = Length 1 is 1 Character



Plessey Set Length 2

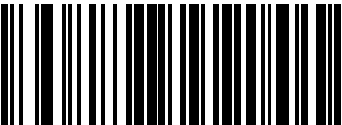
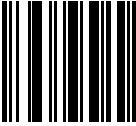
This feature specifies one of the barcode lengths for [Plessey Length Control](#). Length 2 is the maximum label length if in [Variable Length](#) Mode, or the second fixed length if in [Fixed Length](#) Mode. Length includes the barcode’s check, data, and full-ASCII shift characters. The length does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

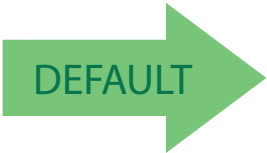
The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

[Table 3](#) provides examples for setting Length 2. See "[Set Length 2](#)" on page 280 for detailed instructions on setting this feature.

Table 3. Plessey Length 2 Setting Examples

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

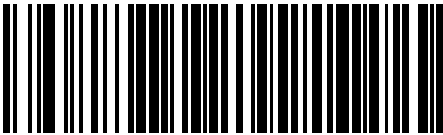
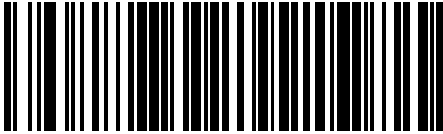
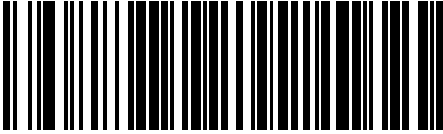
 Select Plessey Length 2 Setting	
Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.	 CANCEL

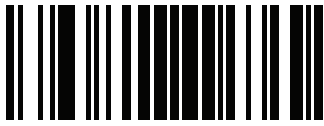


50 = Length 2 is 50 Characters

Plessey Minimum Reads

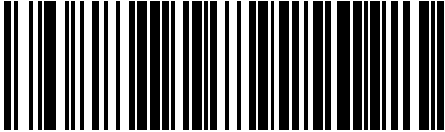
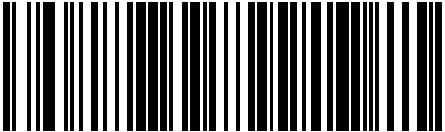
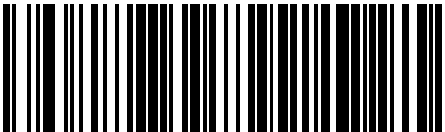
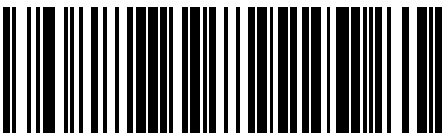
This feature specifies the minimum number of consecutive times a Plessey label must be decoded before it is accepted as good read.

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



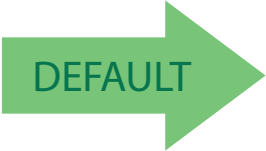
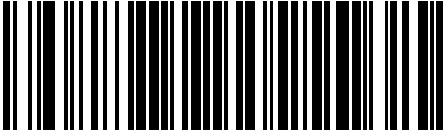
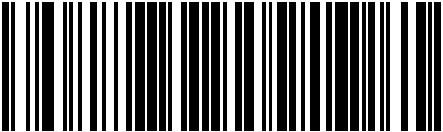
Plessey Decoding Level

Specifies the decoding level for Plessey. Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer’s needs. See "Decoding Levels" on page 278 for more information on this feature.

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

Plessey Stitching

Enables/disables fixed length stitching for Plessey.

	 Plessey Stitching = Disable
 Plessey Stitching = Enable	

Plessey Character Correlation

Enables/disables Character Correlation for Plessey.

	 Plessey Character Correlation = Disable
 Plessey Character Correlation = Enable	

NOTES

Chapter 4

References

This section contains explanations and examples of selected bar code features. See ["Configuration Using Bar Codes"](#) starting on page 15 for the actual bar code labels used to configure the reader.

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RS-232 Parameters

RS-232 Only

Baud Rate

Baud rate is the number of bits of data transmitted per second. Set the reader's baud rate to match the baud rate setting of the host device. With an improper baud rate setting, data may not reach the host correctly.

Stop Bits

The stop bit(s) at the end of each transmitted character marks the end of transmission of one character and prepares the receiving device for the next character in the serial data stream. The number of stop bits selected (one or two) depends on the number the receiving terminal is programmed to accommodate. Set the number of stop bits to match host device requirements.

Parity

This feature specifies parity required for sending and receiving data. A parity check bit is the most significant bit of each ASCII coded character. Select the parity type according to host device requirements.

- Select None when no parity bit is required.
- Select Odd parity and the parity bit value is set to 0 or 1, based on data, to ensure that an odd number of 1 bits are contained in the coded character.
- Select Even parity and the parity bit value is set to 0 or 1, based on data, to ensure that an even number of 1 bits are contained in the coded character.

Handshaking Control

The data interface consists of an RS-232 port designed to operate either with or without the hardware handshaking lines, *Request to Send* (RTS), and *Clear to Send* (CTS). Handshaking Control includes the following options:

- RTS — RTS is asserted during transmissions. CTS is ignored.
- RTS/CTS — RTS is asserted during transmissions. CTS gates transmissions.
- RTS/XON/XOFF — RTS is asserted during transmissions. CTS is ignored. XON and XOFF gate transmissions.
- RTS On/CTS — RTS is always asserted. CTS gates transmissions.
- RTS/CTS Scan Control — RTS is asserted during transmissions. CTS gates transmissions and controls enable and disable state of scanner.

RS-232/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 25](#) and scan the bar code: SELECT INTERCHARACTER DELAY SETTING.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

NOTE

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 4. Intercharacter Delay Setting Examples

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

ACK NAK Options

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

Options are:

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

ACK Character

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



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](#) has been set as 7 Data Bits.

NOTE

1. Determine the desired character or value.
2. Use the [ASCII Chart](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to [page 28](#) and 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, Keypad](#), 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 5. ACK Character Setting Examples

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

NAK Character

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



NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option [Data Bits](#) has been set as 7 Data Bits.

To set this feature:

1. Determine the desired character or value.
2. Use the [ASCII Chart](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT NAK CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value 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. NAK Character Setting Examples

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

ACK NAK Timeout Value

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

To set this value:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 200 (setting is in 200ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to [page 29](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ACK NAK TIMEOUT VALUE SETTING.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



NOTE

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

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

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

Table 7. ACK NAK Timeout Value Setting Examples

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

ACK NAK Retry Count

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

To set this feature:

1. Determine the desired setting.
2. Pad the number with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Go to [page 30](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ACK NAK RETRY COUNT SETTING.
5. Scan the appropriate three digits from the keypad in [Appendix D, Keypad](#), that represent the number which was determined in the steps above. You will hear a two-beep indication after the last character.



NOTE

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

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

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

Table 8. ACK NAK Retry Count Setting Examples

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

Disable Character

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

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



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 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 the inside back cover of this manual to find the hex equivalent for the desired character/value.
- 3. Go to [page 32](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
- 4. Scan the bar code: SELECT DISABLE CHARACTER SETTING.
- 5. Scan the appropriate two alphanumeric characters from the keypad in [Appendix D, Keypad](#), 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 9. Disable Character Setting Examples

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

Enable Character

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

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](#) has been set as 7 Data Bits.

To set this feature:

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

1. Determine the desired character or value.
2. Use the [ASCII Chart](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to [page 33](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ENABLE CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in [Appendix D, Keypad](#), 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 10. Enable Character Setting Examples

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

Keyboard Interface

Wedge Quiet Interval

Specifies the amount of time the reader looks for keyboard activity before it breaks the keyboard connection in order to transmit data to host. The range is from 0 to 990ms in 10ms increments.



This feature applies **ONLY** to the Keyboard Wedge interface.

NOTE

- 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 41](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Prog. Mode.
- 4. Scan the bar code: SELECT WEDGE QUIET INTERVAL SETTING.
- 5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

NOTE

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

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

Table 11. Wedge Quiet Interval Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Setting	10ms	150ms	600ms	850ms
2	Divide by 10 (and pad with leading zeroes)	01	15	60	85
3	Scan ENTER/EXIT PROGRAMMING MODE				
4	Scan SELECT WEDGE QUIET INTERVAL SETTING				
5	Scan Two Characters From Appendix D, Keypad	'0' and '1'	'1' and '5'	'6' and '0'	'8' and '5'
6	Scan ENTER/EXIT PROGRAMMING MODE				

Intercharacter Delay

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



This feature applies ONLY to the Keyboard Wedge interface.

NOTE

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 42](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCHARACTER DELAY SETTING.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

NOTE

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. Intercharacter Delay Setting Examples

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

Intercode Delay

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

Follow these instructions to set this feature:

- 1. Determine the desired setting.
- 2. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc
- 3. Go to [page 43](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
- 4. Scan the bar code: SELECT INTERCODE DELAY SETTING.
- 5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



NOTE

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

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

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

Table 13. Wedge Intercode Delay Examples

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

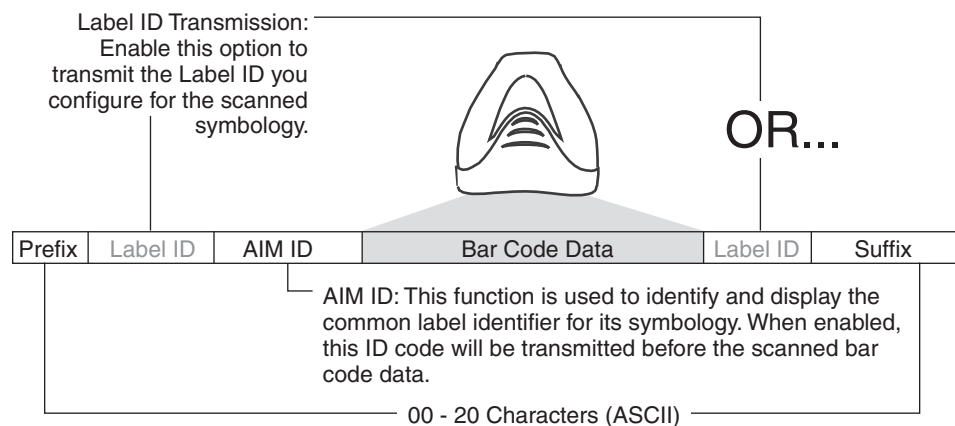
Data Format

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 3. 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 (as described on [page 2](#)) for more information.

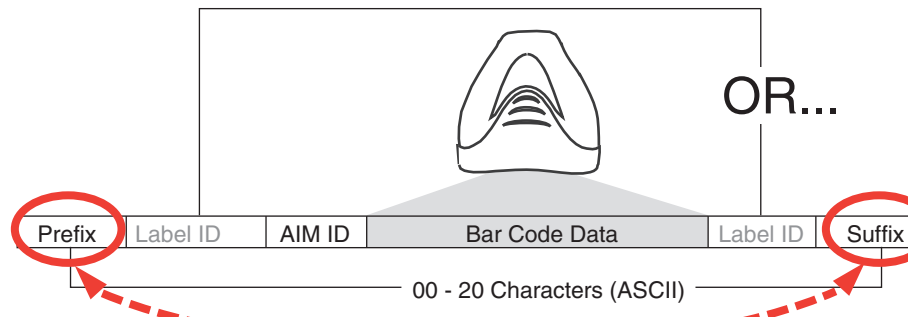
Please Keep In Mind...

- Modifying a message string is not a mandatory requirement. Data editing is a sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.
- A prefix or suffix may be applied only to a specified symbology (reference [Symbologies, starting on page 87](#)) or across all symbologies (set via the Global features in [Configuration Using Bar Codes, starting on page 15](#)).
- You can add any character from the [ASCII Chart](#) (from 00-FF) on the inside back cover of this manual as a prefix, suffix or Label ID.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

Global Prefix/Suffix

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

Figure 4. Prefix and Suffix Positions



Example: Setting a Prefix

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

1. Determine which ASCII character(s) are to be added to scanned bar code data. In this example, we'll add a dollar sign ('\$') as a prefix.
2. Go to [page 54](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code, then scan the SET GLOBAL PREFIX bar code.
3. Reference the [ASCII Chart](#) on the inside back cover of this manual to find the hex value assigned to the desired character. The corresponding hex number for the '\$' character is 24. To enter this selection code, scan the '2' and '4' bar codes from [Appendix D, Keypad](#).



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.
6. The resulting message string would appear as follows:
Scanned bar code data: **12345**
Resulting message string output: **\$12345**

Global AIM ID



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

NOTE

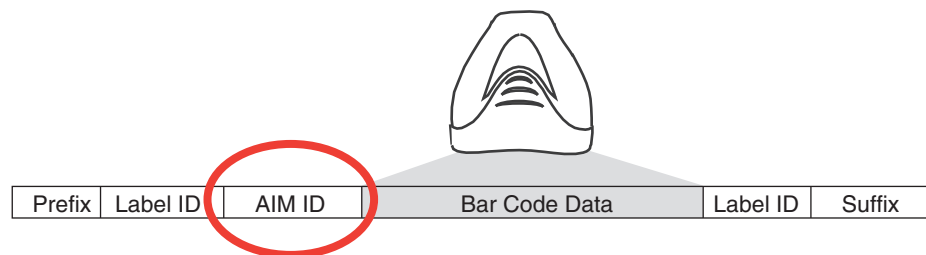
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. AIM label identifiers consist of three characters as follows:

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

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

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

Figure 5. AIM ID



Label ID

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 57](#)). If you wish to program the reader to always include an industry standard label identifier for ALL symbology types, see ["Global AIM ID" on page 55](#).

Label ID: Pre-loaded Sets

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

Table 14. Label ID Pre-loaded Sets

Symbology	USA Label ID set		EU Label ID set	
	ASCII character	Hex value	ASCII character	Hexadecimal value
ABC Codabar	S	530000	S	530000
CODABAR	%	250000	R	520000
Codablock F	I	6C0000	m	6D0000
Code 39 CIP	Y	590000	Y	590000
Code 93	&	260000	U	550000
CODE11	CE	434500	b	620000
CODE128	#	230000	T	540000
CODE32	A	410000	X	580000
CODE39	*	2A0000	V	560000
CODE4	4	340000	4	340000
CODE5	j	6A0000	j	6A0000
CODE93	&	260000	U	550000
DATALOGIC 20F5	s	730000	s	730000
EAN13	F	460000	B	420000
EAN13 P2	F	460000	L	4C0000
EAN13 P5	F	460000	M	4D0000
EAN13 P8	F	460000	#	230000
EAN8	FF	464600	A	410000
EAN8 P2	FF	464600	J	4A0000
EAN8 P5	FF	464600	K	4B0000

Symbology	USA Label ID set		EU Label ID set	
EAN8 P8	FF	464600	*	2A0000
FOLLETT 2OF5	O	4F0000	O	4F0000
GS1 DATABAR EXPANDED	RX	525800	t	740000
GS1 DATABAR LIMITED	RL	524C00	v	760000
GS1 DATABAR 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	l	490000	@	400000
ISBT128	f	660000	f	660000
ISSN	n	6E0000	n	6E0000
MSI	@	400000	Z	5A0000
S25	s	730000	P	500000
UPCA	A	410000	C	430000
UPCA P2	A	410000	F	460000
UPCA P5	A	410000	G	470000
UPCA P8	A	410000	Q	510000
UPCE	E	450000	D	440000
UPCE P2	E	450000	H	480000
UPCE P5	E	450000	I	490000
UPCE P8	E	450000	E	450000

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

1. Scan the ENTER/EXIT bar code.
2. Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by scanning the appropriate bar code in the section "Label ID Control" on page 57. Reference [Figure 6](#) for Label ID positioning options if multiple identification features are enabled.
3. Scan a bar code to select the symbology for which you wish to configure a custom Label ID from the section [Label ID Symbology Selection, starting on page 58](#).
4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.
5. Turn to the [ASCII Chart](#) on the inside back cover of this manual and find the equivalent hex digits associated with your choice of Label ID. For example, if you wish to select an equal sign (=) as a Label ID, the chart indicates its associated hex characters as 3D. Turn to [Keypad, starting on page 305](#) 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 15](#).



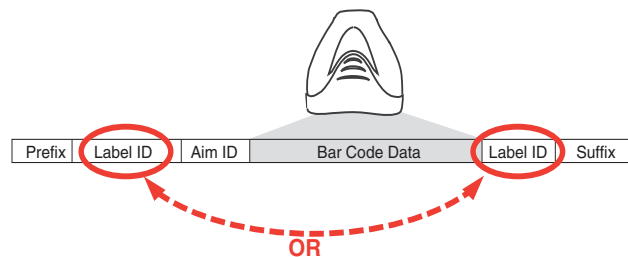
NOTE

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

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

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

Figure 6. Label ID Position Options



Label ID: Set Individually Per Symbology — continued

Table 15. Label ID Examples

STEP	ACTION	EXAMPLES			
1.	Scan the ENTER/EXIT bar code	(Reader enters Programming Mode)			
2.	Determine placement of the Label ID characters BEFORE or AFTER with regard to scanned data using "Label ID Control" on page 57	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 58.	GS1 DataBar Omnidirectional	Code 39	Interleaved 2 of 5	Code 32
4.	Custom Label ID example (desired characters):	D B *	= C 3	+	P H
5.	Find hex equivalents from the ASCII table (inside back cover), then scan in these digits/characters using the bar codes in the section: Keypad, starting on page 305. 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	(Reader exits Label ID entry)			
7.	Scan the ENTER/EXIT bar code once again	(Reader exits Programming Mode)			
Result:		DB*[bar code data]	[bar code data]=C3	+ [bar code data]	[bar code data]PH

Set Global Mid Label ID Character(s)

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

1. Scan the ENTER/EXIT bar code.
2. Scan the bar code in ["Set Global Mid Label ID Character\(s\)" on page 64](#)
3. Determine the desired character(s) (you may choose up to twenty) which will represent the Mid Label ID for two label pairs. If the first character is 00, then nothing is added between the two labels.
4. Turn to the [ASCII Chart](#) on the inside back cover of this manual and find the equivalent hex digits associated with your choice of Label ID. For example, if you wish to select the characters 'M', 'I' and 'D' as a Label ID, the chart indicates its associated hex characters as 4D4944. Turn to [Keypad, starting on page 305](#) and scan the bar codes representing the hex characters determined. For the example given, the characters '4', 'D', '4', '9', '4' and '4' would be scanned. More examples of Label ID settings are provided in [Table 15](#).



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. The reader will save the string and exit Programming Mode when:
 - the ENTER/EXIT bar code is scanned a second time, or
 - the hex values for all twenty available characters have been entered, or
 - the first 00 hex value entered terminates the string.

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

Character Conversion

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

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

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

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

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

To set Character Conversion:

1. Scan the ENTER/EXIT bar code.
2. Scan the bar code for ["Character Conversion" on page 66](#)
3. Determine the desired string. Sixteen positions must be determined as in the above example. Next, turn to the [ASCII Chart](#) on the inside back cover of this manual and find the equivalent hex digits needed to fulfill the string.
4. Turn to [Appendix D, Keypad](#) and scan the bar codes representing the hex characters determined in the previous step.
5. Scan the ENTER/EXIT bar code to exit Programming Mode.



NOTE

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

Reading Parameters

Label Gone Timeout

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

Follow these instructions to set this feature:

- 1. Determine the desired setting in milliseconds.
- 2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
- 3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
- 4. Scan the bar code: SELECT LABEL GONE TIMEOUT SETTING.
- 5. Scan the appropriate three alpha-numeric characters from the keypad in [Appendix D, Keypad](#) representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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 16. Timeout Setting Examples

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

Good Read LED Duration

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

Follow these instructions to set this feature:

1. Determine the desired setting in milliseconds. A setting of 0 means that the good read LED stays on until the next time the trigger is pulled.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 000, 20 = 020, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT GOOD READ LED DURATION SETTING.
5. Scan the appropriate three digits from the keypad in [Appendix D, Keypad](#) representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



NOTE

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

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

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

Table 17. Good Read LED Duration Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Setting	Good Read LED stays on until next trigger pull (00)	200ms	1500ms (1.5 sec.)	2500ms (2.5 sec.)
2	Divide by 100 (and pad with leading zeroes)	000	002	015	025
3	Scan ENTER/EXIT PROGRAMMING MODE				
4	Scan SELECT GOOD READ LED DURATION SETTING				
5	Scan Three Characters From Appendix D, Keypad	'0', '0' and '0'	'0', '0' and '2'	'0', '1' and '5'	'0', '2' and '5'
6	Scan ENTER/EXIT PROGRAMMING MODE				

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:

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

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

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

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

Flashing: The reader flashes¹ 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. While in a stand watch state, the reader illumination LED goes from dim to maximum bright.

¹Controlled 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.
5. Scan the appropriate three digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



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

NOTE

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 18. Scanning Active Time Setting Examples

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

Flash On Time

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

Follow these instructions to set this feature.

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



NOTE

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

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

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

Table 19. Flash On Time Setting Examples

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

Flash Off Time

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

Follow these instructions to set this feature.

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



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.

NOTE

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 20. Flash Off Time Setting Examples

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

Symbologies

Decoding Levels

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

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

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

Set Length

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 to view the selectable range (number of characters) for the symbology being set.

Follow these instructions to set this feature:

1. Determine the desired character length. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
3. Scan the "Select Length 1 Setting" for the symbology being set.

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

**NOTE**

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

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

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

Table 21. Length 1 Setting Examples

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

Set Length 2

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

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

Follow these instructions to set this feature:

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



NOTE

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

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

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

Table 22. Length 2 Setting Examples

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

Appendix A

Technical Specifications

The table below contains Physical and Performance Characteristics, User Environment and Regulatory information. [Table 25](#) provides Standard Cable Pinouts.

Table 23. Technical Specifications

Item	Description
Physical Characteristics	
Dimensions	Touch 65: 16.0 x 8.4 x 5.8 cm / 6.3 x 3.3 x 2.3 in Touch 90: 17.0 x 10.4 x 6.7 cm / 6.7 x 4.1 x 2.7 in
Weight (without cable)	Touch 65: 130.0 g / 4.6 oz Touch 90: 153.0 g / 5.4 oz
Color	Black; TD1130 (Pro) available in White ; Other colors and custom logo options are available for minimum quantity purchase.
Electrical Characteristics	
Voltage & Current	Operating (Typical): < 100 mA @ 5 VDC Standby/Idle (Typical): 20 mA @ 5 VDC Max 180mA @ 5VDC
Input Voltage	5 VDC +/- 0.5 V
Reading Performance	
Imager Sensor	Linear Imaging Sensor: Illumination: Red LED 640 nm wavelength
Print Contrast Ratio (Minimum)	25%
Roll (Tilt) Tolerance	± 45° from normal
Pitch Tolerance	± 65°
Skew (Yaw) Tolerance	± 70°
Reading Indicators	Beeper (Adjustable Tone); Good Read LED
Resolution (1D Codes, Maximum)	Touch 65 Minimum Resolution = 4 mil (0.102 mm) Touch 90 Min Resolution = 5 mil (0.127 mm)

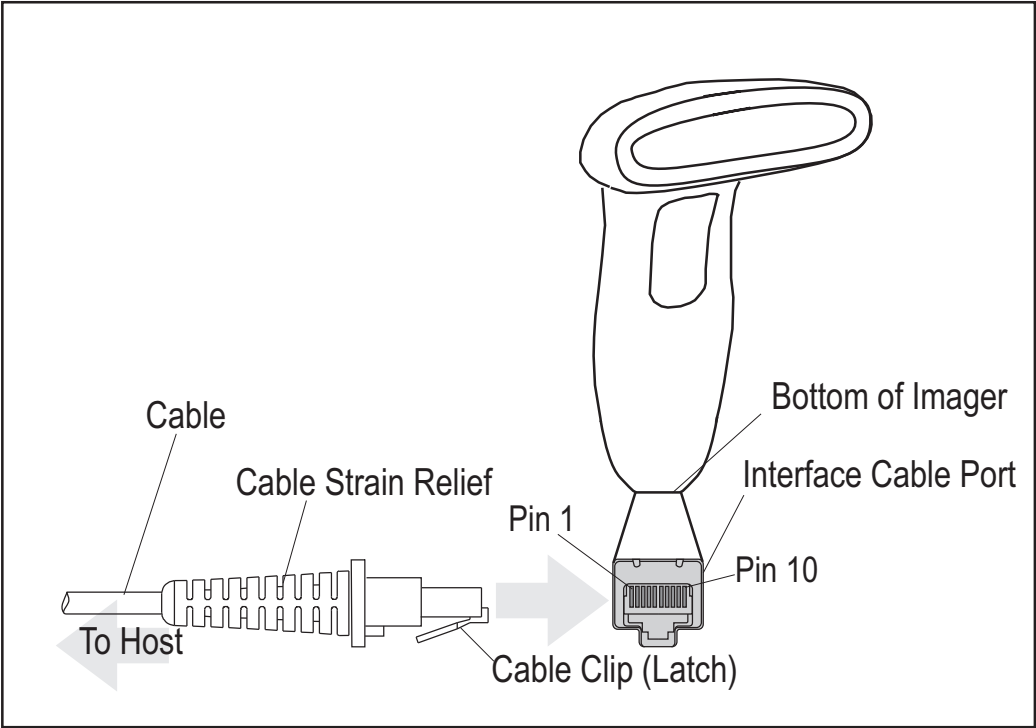
Reading Ranges		
Typical Depth Of Field	Minimum distance determined by symbol length and scan angle.	
	Printing resolution, contrast, and ambient light dependent.	
	Touch 65	Touch 90
Code 39 5 mils:	0 to 5.0 cm (1.97 inches)	0-2.5 cm (0.98 inches)
Code 39 7.5 mils:	0 to 10.0 cm (3.94 inches)	0-8.5 cm (3.35 inches)
Code 39 10 mils:	0 to 15.0 cm (5.91 inches)	0-13.5 cm (5.31 inches)
EAN-13 13 mils:	0 to 20.0 cm (7.87 inches)	0-18.5 cm (7.28 inches)

Item	Description
Decoding Capability	
1D / Linear Codes	Autodiscriminates all standard 1D codes including GS1 DataBar™ linear codes.
Stacked Codes	GS1 DataBar Expanded Stacked; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional
Humidity	5 - 95%
Drop specifications	Withstands repeated drops from 1.5 m / 5.0 ft onto a concrete surface
Ambient Light immunity	0 - 20,000 lux
Particulate and Water Sealing	IP30
ESD Level	16 kV
Regulatory	
LED Emission Class	(IEC-62471:2006-07) Exempt Risk Group (RG 0)
Electrical Safety	IEC 60950-1 , CAN/CSA C22.2 No. 60950-1-07; UL 60950-1
EMI/RFI	North America (FCC) : Part 15 Class B, Canada (IC) : ICES-003 Class B, European Union EMC Directive, Australian (C-tick), Russia (Gost); Korean KCC ; Japan (VCCI)

Standard Cable Pinouts

Figure 24 and Table 25 provide standard pinout information for the reader’s cable.

Figure 24. Standard Cable Pinouts



The signal descriptions in Table 25 apply to the connector on the reader and are for reference only.

Table 25. Standard Cable Pinouts — Reader Side

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

LED and Beeper Indications

The reader's beeper sounds and its LED illuminates to indicate various functions or errors on the reader. The tables below list these indications. One exception to the behaviors listed in the tables is that the reader's functions are programmable, and may or may not be turned on. For example, certain indications such as the power-up beep can be disabled using programming bar code labels.

Table 26. LED and Beeper Indications

INDICATION	DESCRIPTION	LED	BEEPER
Power-up Beep	The reader is in the process of powering-up.	LED flashes/blinks on power-up but 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 Beep	A label has been successfully scanned by the reader.	LED behavior for this indication is configurable via the feature “Good Read: When to Indicate”	The reader will beep once at current frequency, volume, mono/bi-tonal setting and duration upon a successful label scan.
ROM Failure	There is an error in the reader's software/programming	Flashes 200mS on / 200mS off	Reader sounds one error beep at highest volume for 200 mS.
Limited Scanning Label Read	Indicates that a host connection is not established when the USB interface is enabled.	N/A	Reader 'chirps' six times at the highest frequency and current volume.
Reader Disabled	The reader has been disabled by the host.	The LED blinks continuously 100mS on / 900 mS off	N/A

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

INDICATION	DESCRIPTION	LED	BEEPER
Label Programming Mode Entry	A valid programming label has been scanned.	LED blinks continuously	Reader sounds four low frequency beeps.
Label Programming Mode Rejection of Label	A label has been rejected.	N/A	Reader sounds three times at lowest frequency & current volume.
Label Programming Mode Acceptance of Partial Label	In cases where multiple labels must be scanned to program one feature, this indication acknowledges each portion as it is successfully scanned.	N/A	Reader sounds one short beep at highest frequency & current volume.

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

INDICATION	DESCRIPTION	LED	BEEPER
Label Programming Mode Acceptance of Programming	Configuration option(s) have been successfully programmed via labels and the reader has exited Programming Mode.	N/A	Reader sounds one high frequency beep and 4 low frequency beeps followed by reset beeps.
Label Programming Mode Cancel Item Entry	Cancel label has been scanned.	N/A	Reader sounds two times at low frequency and current volume.

Error Codes

Upon startup, if the reader sounds a long tone, this means the reader has not passed its automatic Selftest and has entered FRU (Field Replaceable Unit) isolation mode. If the reader is reset, the sequence will be repeated. The following table describes the LED flashes/beep codes associated with an error found.

NUMBER OF LED FLASHES/ BEEPS	ERROR	CORRECTIVE ACTION
1	Configuration	Contact Helpdesk for assistance
2	Interface PCB	
5	[Reserved]	
6	Digital PCB	

NOTES

Appendix B

Standard Defaults

The most common configuration settings are listed in the “Default” column of [Table 27](#). The settings in this table are as applied to a standard RS-232 interface. See [Table 1](#) for a listing of default exceptions to this list as applied to other interface types. Page references are also provided for feature descriptions and programming bar codes for each parameter. A column has also been provided for recording of your preferred default settings for these same configurable features.

Table 27. Standard Defaults

Parameter	Default	Your Setting	Page Number
GLOBAL INTERFACE FEATURES			
Host Commands — Obey/Ignore	Obey		21
USB Suspend Mode	Disable		22
RS-232			
Baud Rate	9600		19
Data Bits	8 Data Bits		21
Stop Bits	1 Stop Bit		21
Parity	None		22
Handshaking Control	Disable		23
RS-232/USB-COM			
Intercharacter Delay	No Delay		25
Beep On ASCII BEL	Disable		26
Beep On Not on File	Enable		26
ACK Character	‘ACK’		28
NAK Character	‘NAK’		28
ACK NAK Timeout Value	600 ms		29
ACK NAK Retry Count	3 Retries		30
ACK NAK Error Handling	Ignore Errors Detected		31
Indicate Transmission Failure	Enable		32

Parameter	Default	Your Setting	Page Number
Disable Character	'D'		32
Enable Character	'E'		33
KEYBOARD WEDGE			
Country Mode	U.S. Keyboard		35
Caps Lock State	Caps Lock OFF		38
Numlock	Numlock Key Unchanged		38
Keyboard Numeric Keypad	Standard Keys		39
Keyboard Send Control Characters	Disable		40
Wedge Quiet Interval	100ms		41
Intercharacter Delay	No Delay		42
Intercode Delay	100 ms		43
USB Keyboard Speed	1 ms		44
USB-OEM			
USB-OEM Device Usage	Handheld Scanner		48
USB-OEM Interface Options	Ignore		48
WAND EMULATION			
Wand Signal Speed	660ms		49
Wand Polarity	Quiet Zones & Spaces Low, Bars High		50
Wand Idle State	High		50
Transmit Noise	Disable		51
Label Symbology Conversion	No conversion		52
DATA FORMAT			
Global Prefix/Suffix	No Global Prefix Global Suffix = 0x0D (CR)		54
Global AIM ID	Disable		55
GS1-128 AIM ID	Enable		55
Label ID Control	Disable		57
Set Global Mid Label ID Character(s)	No Characters		64

Parameter	Default	Your Setting	Page Number
Case Conversion	Disable		65
Character Conversion	No Char Conversion		66
READING PARAMETERS			
Double Read Timeout	0.6 Second		68
Label Gone Timeout	160 ms		70
Power Save Mode	Enabled		71
Sleep Mode Timeout	Disabled		72
LED AND BEEPER INDICATIONS			
Power On Alert	4 Beeps		73
Good Read: When to Indicate	After Decode		74
Good Read Beep Type	Mono		75
Good Read Beep Frequency	Medium		75
Good Read Beep Length	80 ms		77
Illumination Control	Illumination Off during beep		78
Good Read Beep Volume	High		76
Good Read LED Duration	LED on until next trigger pull		79
SCANNING FEATURES			
Scan Mode	Trigger Single		80
Stand Mode Triggered Timeout	0.5 Seconds		81
Scanning Active Time	5 Seconds		83
Stand Mode Flash	Disable		83
Flash On Time	1 Second		84
Flash Off Time	600 ms		84
Stand Mode Sensitivity	Medium		85
SYMBOLOGIES			
Coupon Control	Enable only UPC/ EAN		88
UPC-A			
UPC-A Enable/Disable	Enable		89

Parameter	Default	Your Setting	Page Number
UPC-A Check Character Transmission	Enable		89
Expand UPC-A to EAN-13	Don't Expand		90
UPC-A Number System Character Transmission	Transmit		90
In-Store Minimum Reads	2		91
UPC-E			
UPC-E Enable/Disable	Enable		92
UPC-E Check Character Transmission	Send		92
Expand UPC-E to EAN-13	Don't Expand		93
Expand UPC-E to UPC-A	Don't Expand		93
UPC-E Number System Character Transmission	Transmit		94
UPC-E Minimum Read	2		94
EAN 13			
EAN 13 Enable/Disable	Enable		95
EAN 13 Check Character Transmission	Send		95
EAN-13 Flag 1 Character	Transmit		96
EAN-13 ISBN Conversion	Disable		96
ISSN Enable/Disable	Disable		97
EAN 13 Minimum Reads	1		97
EAN 8			
EAN 8 Enable/Disable	Enable		98
EAN 8 Check Character Transmission	Send		98
Expand EAN 8 to EAN 13	Disable		99
EAN 8 Both Guards Substitution	Disable		99
EAN 8 Guard Insertion	Disable		100
EAN 8 Guard Substitution	Disable		100
EAN 8 Minimum Segment Length Block	8		101
EAN 8 Minimum Reads	1		103
EAN 8 Stitch Exact Label Halves	Disable		104
EAN 8 Stitch Unlike Label Halves	Disable		104

Parameter	Default	Your Setting	Page Number
EAN Two LABEL			
EAN Two Label Enable/Disable	Disable		105
EAN Two Label Combined Transmission	Disable		105
EAN Two Label Minimum Reads	1 Read		106
UPC/EAN GLOBAL SETTINGS			
UPC/EAN Decoding Level	2		107
UPC/EAN Correlation	Disable		108
UPC/EAN Price Weight Check	Disable		109
UPC-A Minimum Reads	1 Read		110
UPC/EAN Guard Insertion	Disable		111
UPC/EAN Stitch Exact Label Halves	Disable		111
UPC/EAN Stitch Unlike Label Halves	Disable		112
UPC/EAN Minimum Segment Length	5		113
ADD-ONS			
Optional Add-ons	Disable P2, P5 and P8		115
Optional Add-On Timer	70 ms		117
P2 Add-Ons Minimum Reads	2		119
P5 Add-Ons Minimum Reads	1		120
GS1-128 Add-Ons Minimum Reads	1		121
GS1 DATABAR OMNIDIRECTIONAL			
GS1 DataBar Omnidirectional Enable/Disable	Disable		122
GS1 DataBar Omnidirectional GS1-128 Emulation	Disable		122
GS1 DataBar Omnidirectional Minimum Reads	1		123
GS1 DATABAR EXPANDED			
GS1 DataBar Expanded Enable/Disable	Disable		124
GS1 DataBar Expanded GS1-128 Emulation	Disable		124
GS1 DataBar Expanded Minimum Reads	1		125

Parameter	Default	Your Setting	Page Number
GS1 DataBar Expanded Length Control	Variable		126
GS1 DataBar Expanded Set Length 1	1		126
GS1 DataBar Expanded Set Length 2	74		127
GS1 DATABAR LIMITED			
GS1 DataBar Limited Enable/Disable	Disable		128
GS1 DataBar Limited GS1-128 Emulation	Disable		128
GS1 DataBar Limited Minimum Reads	1		129
CODE 39			
Code 39 Enable/Disable	Enable		130
Code 39 Check Character Calculation	Don't Calculate		131
Code 39 Check Character Transmission	Send		132
Code 39 Start/Stop Character Transmission	Don't Transmit		132
Code 39 Full ASCII	Disable		133
Code 39 Quiet Zones	Auto		134
Code 39 Minimum Reads	2		135
Code 39 Decoding Level	3		136
Code 39 Length Control	Variable		137
Code 39 Set Length 1	2		138
Code 39 Set Length 2	50		139
Code 39 Interdigit Ratio	4		140
Code 39 Character Correlation	Disable		142
Code 39 Stitching	Enable		142
CODE 32			
Code 32 Enable/Disable	Disable		143
Code 32 Check Character Transmission	Don't Send		144
Code 32 Start/Stop Character Transmission	Don't Transmit		144
CODE 39 CIP			
Code 39 CIP Enable/Disable	Disable		145

Parameter	Default	Your Setting	Page Number
CODE 128			
Code 128 Enable/Disable	Enable		145
Expand Code 128 to Code 39	Don't Expand		146
Code 128 Check Character Transmission	Don't Send		146
Code 128 Quiet Zones	Auto		148
Code 128 Minimum Reads	1		149
Code 128 Decoding Level	3		150
Code 128 Length Control	Variable		151
Code 128 Set Length 1	1		152
Code 128 Set Length 2	80		153
Code 128 Character Correlation	Disable		154
Code 128 Stitching	Enable		154
GS1-128			
GS1-128 Enable	Transmit in Code 128 Data Format		155
INTERLEAVED 2 OF 5			
I 2 of 5 Enable/Disable	Disable		156
I 2 of 5 Check Character Calculation	Disable		157
I 2 of 5 Check Character Transmission	Send		158
I 2 of 5 Minimum Reads	2		167
I 2 of 5 Decoding Level	3		160
I 2 of 5 Length Control	Variable		161
I 2 of 5 Set Length 1	6		162
I 2 of 5 Set Length 2	50		163
I 2 of 5 Character Correlation	Disable		164
I 2 of 5 Stitching	Disable		165
INTERLEAVED 2 OF 5 CIP			
Interleaved 2 of 5 CIP HR Enable/Disable	Disable		165
DATALOGIC 2 OF 5			
Datalogic 2 of 5 Enable/Disable	Enable		166

Parameter	Default	Your Setting	Page Number
Datalogic 2 of 5 Check Character Calculation	Disable		166
Datalogic 2 of 5 Check Character Transmission	Don't Send		167
Datalogic 2 of 5 Minimum Reads	2		167
Datalogic 2 of 5 Length Control	Variable		168
Datalogic 2 of 5 Set Length 1	12		169
Datalogic 2 of 5 Set Length 2	100		170
Datalogic 2 of 5 Interdigit Ratio	4		171
Datalogic 2 of 5 Character Correlation	Disable		173
Datalogic 2 of 5 Stitching	Disable		173
CODABAR			
Codabar Enable/Disable	Disable		174
Codabar Check Character Calculation	Don't Calculate		174
Codabar Check Character Transmission	Send		175
Codabar Start/Stop Character Transmission	Transmit		175
Codabar Start/Stop Character Set	abcd/abcd		176
Codabar Start/Stop Character Match	Don't Require Match		177
Codabar Quiet Zones	Auto		178
Codabar Minimum Reads	2		179
Codabar Decoding Level	3		180
Codabar Length Control	Variable		181
Codabar Set Length 1	3		182
Codabar Set Length 2	50		183
Codabar Interdigit Ratio	4		184
Codabar Character Correlation	Disable		186
Codabar Stitching	Disable		186
ABC CODABAR			
ABC Codabar Enable/Disable	Disable		187
ABC Codabar Concatenation Mode	Static		187

Parameter	Default	Your Setting	Page Number
ABC Codabar Dynamic Concatenation Timeout	200mS		188
ABC Codabar Force Concatenation	Disable		188
CODE 11			
Code 11 Enable/Disable	Disable		189
Code 11 Check Character Calculation	Check C and K		190
Code 11 Check Character Transmission	Send		190
Code 11 Minimum Reads	2		191
Code 11 Length Control	Variable		192
Code 11 Set Length 1	4		192
Code 11 Set Length 2	50		193
Code 11 Interdigit Ratio	4		194
Code 11 Decoding Level	3		196
Code 11 Character Correlation	Disable		197
Code 11 Stitching	Disable		197
STANDARD 2 OF 5			
Standard 2 of 5 Enable/Disable	Disable		198
Standard 2 of 5 Check Character Calculation	Disable		198
Standard 2 of 5 Check Character Transmission	Send		199
Standard 2 of 5 Minimum Reads	2		199
Standard 2 of 5 Decoding Level	3		200
Standard 2 of 5 Length Control	Variable		200
Standard 2 of 5 Set Length 1	8		201
Standard 2 of 5 Set Length 2	50		202
Standard 2 of 5 Character Correlation	Disable		203
Standard 2 of 5 Stitching	Disable		203
INDUSTRIAL 2 OF 5			
Industrial 2 of 5 Enable/Disable	Disable		204
Industrial 2 of 5 Check Character Calculation	Disable		204

Parameter	Default	Your Setting	Page Number
Industrial 2 of 5 Check Character Transmission	Enable		205
Industrial 2 of 5 Length Control	Variable		205
Industrial 2 of 5 Set Length 1	1 Character		206
Industrial 2 of 5 Set Length 2	50 Characters		207
Industrial 2 of 5 Minimum Reads	1 Read		208
Industrial 2 of 5 Stitching	Disable		209
Industrial 2 of 5 Character Correlation	Disable		209
IATA			
IATA Enable/Disable	Disable		210
IATA Check Character Transmission	Enable		210
ISBT 128			
ISBT 128 Concatenation	Disable		211
ISBT 128 Concatenation Mode	Static		211
ISBT 128 Dynamic Concatenation Time-out	200ms		212
ISBT 128 Force Concatenation	Disable		213
ISBT 128 Advanced Concatenation Options	Disable		213
MSI			
MSI Enable/Disable	Disable		214
MSI Check Character Calculation	Enable Mod10		214
MSI Check Character Transmission	Enable		215
MSI Length Control	Variable		215
MSI Set Length 1	1 Character		216
MSI Set Length 2	50 Characters		217
MSI Minimum Reads	4 Reads		218
MSI Decoding Level	Level 3		219
CODE 93			
Code 93 Enable/Disable	Disable		220
Code 93 Check Character Calculation	Disable		220

Parameter	Default	Your Setting	Page Number
Code 93 Check Character Transmission	Enable		221
Code 93 Length Control	Variable		221
Code 93 Set Length 1	1 Character		222
Code 93 Set Length 2	50 Characters		223
Code 93 Minimum Reads	1 Read		224
Code 93 Decoding Level	Level 3		225
Code 93 Quiet Zones	Auto		226
Code 93 Stitching	Enable		227
Code 93 Character Correlation	Enable		227
CODABLOCK F			
Codablock F Enable/Disable	Disable		228
Codablock F EAN Enable/Disable	Disable		228
Codablock F AIM Check	Enable Check C		229
Codablock F Length Control	Variable		229
Codablock F Set Length 1	3 Characters		230
Codablock F Set Length 2	100 Characters		231
CODE 4			
Code 4 Enable/Disable	Disable		232
Code 4 Check Character Transmission	Enable		232
Code 4 Hex to Decimal Conversion	Enable		233
CODE 5			
Code 5 Enable/Disable	Disable		233
Code 5 Check Character Transmission	Enable		234
Code 5 Hex to Decimal Conversion	Enable		234
CODE 4 AND CODE 5 COMMON CONFIGURATION ITEMS			
Code 4 and 5 Decoding Level	3		235
Code 4 and Code 5 Minimum Reads	1		236
FOLLETT 2 OF 5			
Follett 2 of 5 Enable/Disable	Disable		237

Parameter	Default	Your Setting	Page Number
BC412			
BC412 Enable/Disable	Disable		237
BC412 Check Character Calculation	Don't Calculate		238
BC412 Minimum Reads	2 Reads		238
BC412 Decoding Level	3		239
BC412 Length Control	Variable Length		240
BC412 Set Length 1	1 Character		240
BC412 Set Length 2	50 Characters		241
PLESSEY			
Plessey Enable/Disable	Disable		242
Plessey Check Character Calculation	Enable Plessey std. check char. verification		243
Plessey Check Character Transmission	Enable		244
Plessey Length Control	Variable Length		244
Plessey Set Length 1	1 Character		245
Plessey Set Length 2	50 Characters		246
Plessey Minimum Reads	4		247
Plessey Decoding Level	3		248
Plessey Stitching	Disable		249
Plessey Character Correlation	Disable		249

Default Exceptions

Table 1. Default Exceptions by Interface Type

Parameter	Default Exception
Interfaces: USB-OEM	
Global Suffix	No Global Suffix
Double Read Timeout	500 msec
Interfaces: All Keyboard Wedge, USB Keyboard	
No unique settings	
Interface: RS232-WN	

Parameter	Default Exception
Expand UPC-A to EAN-13	Enable
UPC-E Check Character Transmission	Disable
Parity	Odd Parity
Handshaking Control	RTS/CTS
Transmission Label ID Code	Prefix
GS1-128 AIM ID	Disable
UPCE Label ID Character(s)	C
EAN 8 Label ID Character(s)	B
EAN 13 Label ID Character(s)	A
Code ISBN Label ID Character(s)	A
Code 39 Label ID Character(s)	M
Interleaved 2of5 Label ID Character(s)	I
Code Standard 2/5 Label ID Character(s)	H
Codabar Label ID Character(s)	N
Code 128 Label ID Character(s)	K
GS1-128 Label ID Character(s)	P
Datalogic 2 of 5 Label ID Character(s)	H
ISBT 128 Label ID Character(s)	K
UPCE P2 Label ID Character(s)	C
UPCE/P5 Label ID Character(s)	C
UPCE/GS1-128 Label ID Character(s)	C
EAN8/P2 Label ID Character(s)	B
EAN8/P5 Label ID Character(s)	B
EAN8/GS1-128 Label ID Character(s)	B
EAN13/P2 Label ID Character(s)	A
EAN13/P5 Label ID Character(s)	A
EAN13/GS1-128 Label ID Character(s)	A
GS1 DataBar 14 (Omnidirectional) Label ID Character(s)	E
GS1 DataBar Expanded Label ID Character(s)	E
GS1 DataBar Limited Label ID Character(s)	E
Character Conversion	CR to `

Parameter	Default Exception
Interface: RS232-OPOS	
Baud Rate	115200 Baud
Transmission Label ID Code	Prefix
GS1-128 AIM ID	Disable
UPCA Label ID Character(s)	C
UPCE Label ID Character(s)	D
EAN 8 Label ID Character(s)	A
EAN 13 Label ID Character(s)	B
Code ISBN Label ID Character(s)	@
Code 39 Label ID Character(s)	V
Code 32 Label ID Character(s)	X
Interleaved 2of5 Label ID Character(s)	N
Code Standard 2/5 Label ID Character(s)	P
Codabar Label ID Character(s)	R
Code 11 Label ID Character(s)	b
Code 128 Label ID Character(s)	T
GS1-128 Label ID Character(s)	k
UPCA/P2 Label ID Character(s)	F
UPCA/P5 Label ID Character(s)	G
UPCA/GS1-128 Label ID Character(s)	Q
UPCE P2 Label ID Character(s)	H
UPCE/P5 Label ID Character(s)	I
EAN8/P2 Label ID Character(s)	J
EAN8/P5 Label ID Character(s)	K
EAN8/GS1-128 Label ID Character(s)	*
EAN13/P2 Label ID Character(s)	L
EAN13/P5 Label ID Character(s)	M
EAN13/GS1-128 Label ID Character(s)	#
GS1 DataBar 14 (Omnidirectional) Label ID Character(s)	u
GS1 DataBar Expanded Label ID Character(s)	t
GS1 DataBar Limited Label ID Character(s)	v

Appendix C

Sample Bar Codes

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

1D Bar Codes

UPC-A



EAN-13



Code 39



Code 128



Interleaved 2 of 5



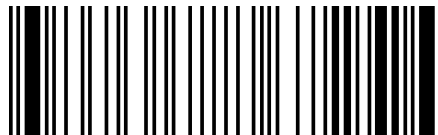
Code 32



Codabar



Code 93



Code 11



GS1 DataBar (RSS)



GS1 DataBar variants must be enabled to read the bar codes below (see [GS1 DataBar \(RSS\)](#) on page 303).

NOTE



10293847560192837465019283746029478450366523
(GS1 DataBar Expanded Stacked)



1234890hjio9900mnb
(GS1 DataBar Expanded)



08672345650916
(GS1 DataBar Limited)

GS1 DataBar-14



55432198673467
(GS1 DataBar Omnidirectional Truncated)



90876523412674
(GS1 DataBar Omnidirectional Stacked)



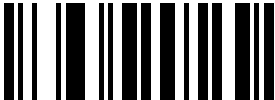
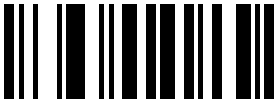
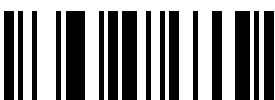
78123465709811
(GS1 DataBar Omnidirectional Stacked)

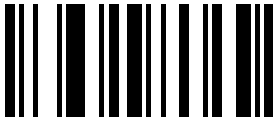
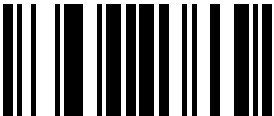
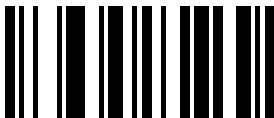
NOTES

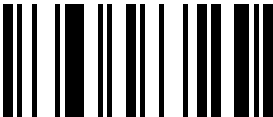
Appendix D

Keypad

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

 0	
	 1
 2	
	 3
 4	
	 5

 6	
	 7
 8	
	 9
 A	
	 B
 C	

	 D
 E	
	 F

NOTES

Appendix E

Scancode Tables

Control Character Emulation

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

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

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

Control Character 02 — Special keys are located from 00 to 0x1F and characters from 0x80 to 0xFE are intended as an extended ASCII table (Microsoft Windows Codepage 1252 — [see page 316](#)).

Interface Type PC AT PS/2 or USB-Keybaord

Table 28. 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	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
	C(S)+@	C(S)+A	C(S)+B	C(S)+C	C+D	C(S)+E	C(S)+F	C(S)+G	C(S)+H	TAB	C(S)+J	C(S)+K	C(S)+L	Enter	C(S)+N	C(S)+O
1x	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
	C(S)+P	C(S)+Q	C(S)+R	C(S)+S	C(S)+T	C(S)+U	C(S)+V	C(S)+W	C(S)+X	C(S)+Y	C(S)+Z	Esc	C(S)+\	C+]	C(S)+^	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	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
					(keyp)											
9x	F12	Home	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al ↑	Cl↓	Cl ↑	Cr↓
Ax	Cr↑	—	‘	f	„	...	†	‡	^	%o	Š	◀	Š	◀	Œ	—
Bx	°	±	²	³	´	µ	¶	·	,	¹	º	»	¼	½	¾	¿
Cx	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
Dx	Ð	—	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
Ex	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
Fx	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

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

Interface Type PC AT PS/2 or USB-Keybaord — cont.

Table 29. 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	„	...	†	‡	^	%o	Š	◀	Š	◀	Œ	—
9x	—	‘	’	“	”	•	—	—	~	™	š	›	œ	—	—	ÿ
Ax	NBSP	ı	ø	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	—
Bx	°	±	²	³	´	µ	¶	·	,	ı	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 30. Scancode Set When Control Character is 00 or 01

	x0	x1	x2	x3	x4	x5	X6	x7	x8	x9	xA	xB	xC	xD	xE	Xf
0x	Alt+000	Alt+001	Alt+002	Alt+003	Alt+004	Alt+005	Alt+006	Alt+007	Alt+008	HT TAB	Alt+010	Alt+011	Alt+012	CR Enter	Alt+014	Alt+015
1x	Alt+016	Alt+017	Alt+018	Alt+019	Alt+020	Alt+021	Alt+022	Alt+023	Alt+024	Alt+025	Alt+026	ESC Esc	Alt+028	Alt+029	Alt+030	Alt+031
2x	A+032	A+033	A+034	A+035	A+036	A+037	A+038	A+039	A+040	A+041	A+042	A+043	A+044	A+045	A+046	A+047
3x	A+048	A+049	A+050	A+051	A+052	A+053	A+054	A+055	A+056	A+057	A+058	A+059	A+060	A+061	A+062	A+063
4x	A+064	A+065	A+066	A+067	A+068	A+069	A+070	A+071	A+072	A+073	A+074	A+075	A+076	A+077	A+078	A+079
5x	A+080	A+081	A+082	A+083	A+084	A+085	A+086	A+087	A+088	A+089	A+090	A+091	A+092	A+093	A+094	A+095
6x	A+096	A+097	A+098	A+099	A+100	A+101	A+102	A+103	A+104	A+105	A+106	A+107	A+108	A+109	A+110	A+111
7x	A+112	A+113	A+114	A+115	A+116	A+117	A+118	A+119	A+120	A+121	A+122	A+123	A+124	A+125	A+126	A+127
8x	_	Sh↓	Sh?	Ins	Ent	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 — cont.

Table 31. 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+0252	A+0253	A+0254	A+0255

Digital Interface

Table 32. 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	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
	C(S)+@	C(S)+A	C(S)+B	C(S)+C	C+D	C(S)+E	C(S)+F	C(S)+G	C(S)+H	TAB	C(S)+J	C(S)+K	C(S)+L	Enter	C(S)+N	C(S)+O
1x	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
	C(S)+P	C(S)+Q	C(S)+R	C(S)+S	C(S)+T	C(S)+U	C(S)+V	C(S)+W	C(S)+X	C(S)+Y	C(S)+Z	Esc	C(S)+\	C+]	C(S)+^	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	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
				(keyp)												
9x	F12	F13	F14	F15	F16	↑	↓	←	→					Cl↓	Cl↑	

Digital Interface — cont.

Table 33. 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	→	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

Table 34. 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	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
	C(S)+@	C(S)+A	C(S)+B	C(S)+C	C+D	C(S)+E	C(S)+F	C(S)+G	C(S)+H	TAB	C(S)+J	C(S)+K	C(S)+L	Enter	C(S)+N	C(S)+O
1x	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
	C(S)+P	C(S)+Q	C(S)+R	C(S)+S	C(S)+T	C(S)+U	C(S)+V	C(S)+W	C(S)+X	C(S)+Y	C(S)+Z	Esc	C(S)+\	C+]	C(S)+^	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	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
					(keyp)											
9x	F12	Home	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al↑	Cl↓	Cl↑	Cr↓
Ax	Cr↑															

IBM XT — cont.

Table 35. 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

Microsoft Windows Codepage 1252

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

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	<u>NUL</u> 0000	<u>STX</u> 0001	<u>SOT</u> 0002	<u>ETX</u> 0003	<u>EOT</u> 0004	<u>ENQ</u> 0005	<u>ACK</u> 0006	<u>BEL</u> 0007	<u>BS</u> 0008	<u>HT</u> 0009	<u>LF</u> 000A	<u>VT</u> 000B	<u>FF</u> 000C	<u>CR</u> 000D	<u>SO</u> 000E	<u>SI</u> 000F
10	<u>DLE</u> 0010	<u>DC1</u> 0011	<u>DC2</u> 0012	<u>DC3</u> 0013	<u>DC4</u> 0014	<u>NAK</u> 0015	<u>SYN</u> 0016	<u>ETB</u> 0017	<u>CAN</u> 0018	<u>EM</u> 0019	<u>SUB</u> 001A	<u>ESC</u> 001B	<u>FS</u> 001C	<u>GS</u> 001D	<u>RS</u> 001E	<u>US</u> 001F
20	<u>SP</u> 0020	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	<u>DEL</u> 007F
80	€ 20AC		ƒ 201A	„ 0192	“ 201E	… 2026	† 2020	‡ 2021	ˆ 02C6	% 2030	Š 0160	< 2039	Œ 0152		Ž 017D	
90		\ 2018	/ 2019	“ 201C	” 201D	• 2022	— 2013	— 2014	˜ 02DC	™ 2122	Š 0161	> 203A	œ 0153		Ž 017E	Ÿ 0178
A0	<u>NSP</u> 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

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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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