

 **DATALOGIC**

# QuickScan™ I

## QD21X1/QM21X1/QBT21X1

General Purpose Handheld  
Linear Imager Barcode Reader



**Product Reference Guide**

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# Chapter 1

## Introduction

With rich feature sets and extensive options, the QuickScan™ product series from Datalogic represents the premium level of data collection equipment for general purpose applications. The QuickScan 21X1 readers have enhanced optics with improved motion tolerance, allowing codes placed on fast moving objects to be easily and quickly captured. These features help to create the ideal reader for tasks requiring high throughput like those found in retail and light industrial environments.

### About this Guide

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.

### Manual Overview

[Chapter 1, Introduction](#) provides a product overview, unpacking instructions, and cable connection information.

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

[Chapter 3, Interfaces](#) consists of interface configuration bar codes and details.

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

[Chapter 5, Message Formatting](#) offers detailed instructions for more complex programming options.

[Chapter 6, References](#) provides additional details concerning programmable features.

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

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

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

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

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

## Manual Conventions

The following conventions are used in this document:

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



**NOTE**

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



**CAUTION**

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


## Other Resources

Current versions of 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.

## Technical Support

### Support Through the Website

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

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

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

### Reseller Technical Support

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

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## 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.





## Chapter 2 Setup

### About the Reader

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

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 48 for a full listing.

**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 for Wedge models (7230) and USB-OEM for IBM models (7210).

### 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 in this section to connect and get your reader up and communicating with its host.

**Corded Model:**

1. Install the Interface Cable.
2. Select the Interface Type (see page 15).
3. Configure the Reader starting on page 15 (optional, depends on settings needed).

**Cordless Models:**

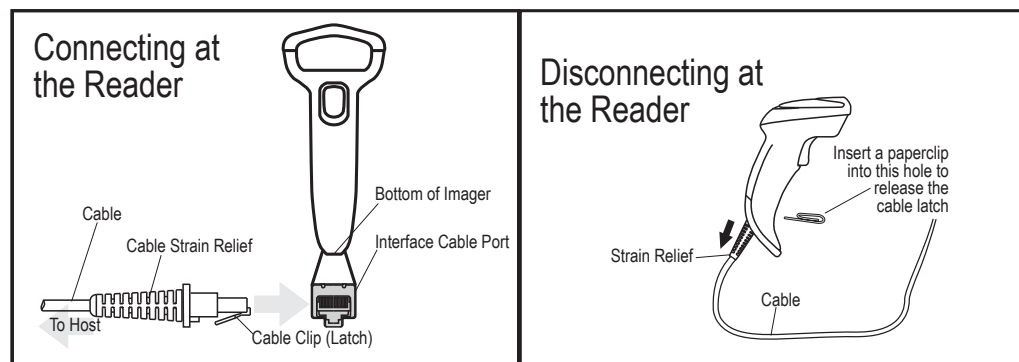
1. Configure the Base Station starting on page 8.
2. Charge the Batteries (see page 16).
3. Link to the Base Station (see page 8).
4. Select the Interface Type (see page 20).
5. Configure the Reader starting on page 20 (optional, depends on settings needed).

### Install the Interface Cable (corded models)

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

Seat the cable assembly into the reader, aligning both the connector, aligning the cable clip with its opening as shown in the insert portion of Figure 1.

**Figure 1. Connecting/Disconnecting the Interface Cable**



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

**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 in Figure 1. 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



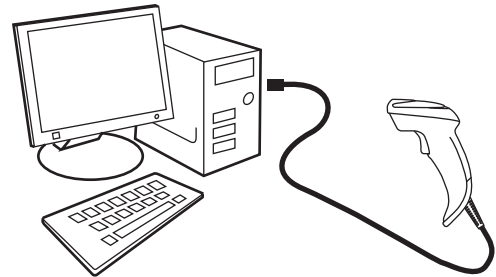
connector into the socket on the RS-232 cable connector and the AC Adapter plug into a standard power outlet.

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

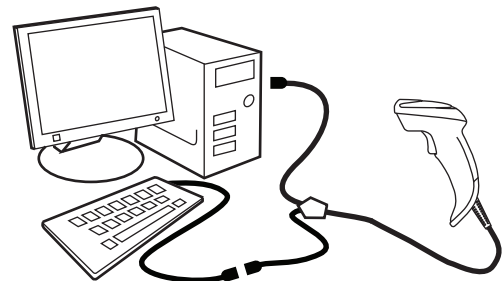
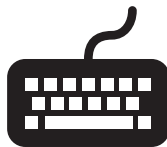
**Keyboard Wedge Connection :** The Keyboard Wedge cable has a ‘Y’ connection from the reader. Connect the female to the male end from the keyboard and the remaining end at the keyboard port at the terminal/PC.

**Figure 2. Connection Types**

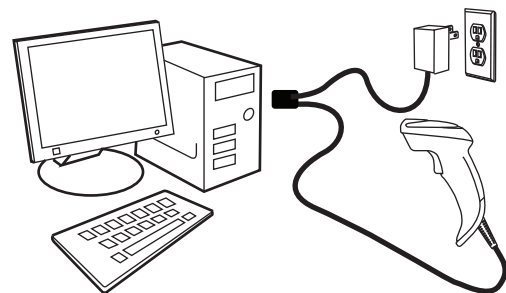
USB



Keyboard Wedge



RS-232



**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.

## Connecting the Base Station

Figure 3 on page 9 shows how to connect the Base Station to a terminal, PC or other host device. Turn off the host before connection and consult the manual for that equipment (if necessary) before proceeding. Connect the interface cable before applying power to the Base Station.



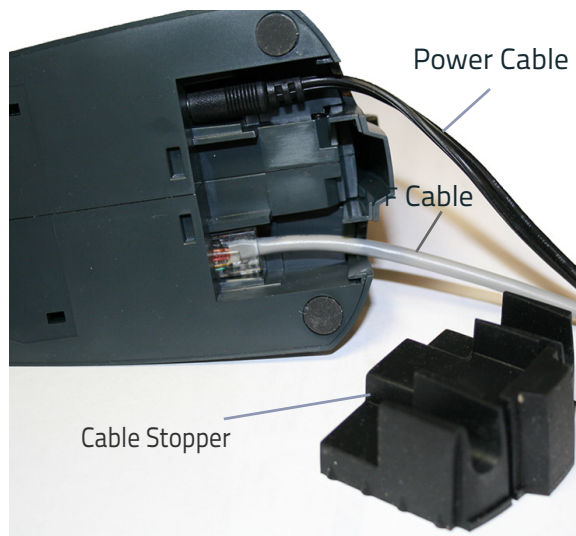
### NOTE

The Q21X1 can also be Powered by the Terminal. When powered by the Terminal, the battery charger is automatically set as Slow charge.

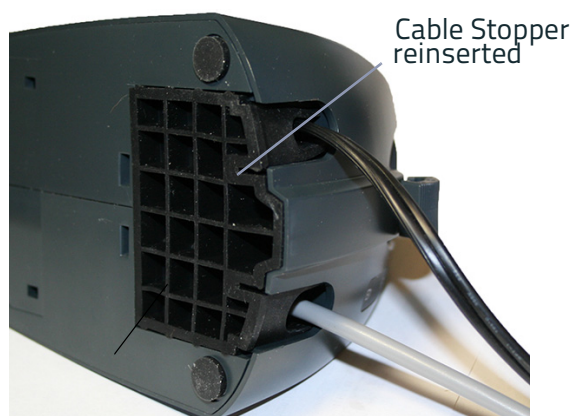
For some specific interfaces, hosts, or lengths of cable, the use of an external power supply may be recommended for full recharging capability (see "Technical Specifications," starting on page 313 for more details).

## Base Station Connection and Routing

1. Remove the rubber Cable Stopper from the bottom of the Base Station.
2. Securely plug the Power Cable (if used) and Interface (I/F) Cable connectors into their respective ports in the underside of the Base Station.

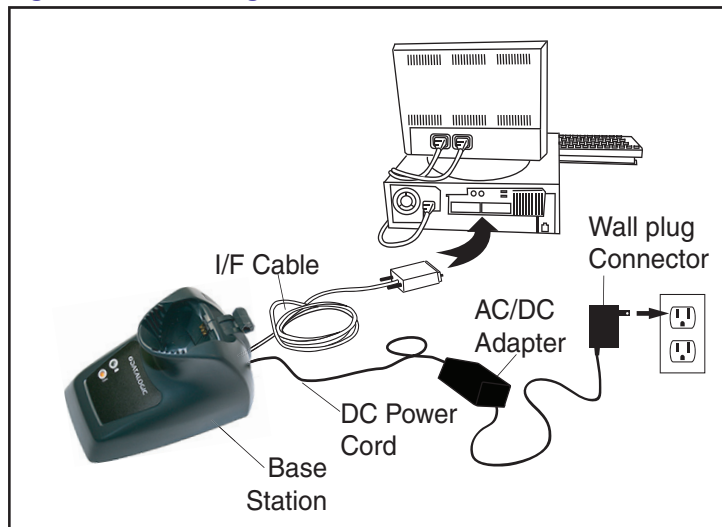


3. After the cables are plugged in, reinsert the Cable Stopper.



4. Connect the Base Station power adapter to an AC wall outlet.

**Figure 3. Connecting the Base Station**



**Host Connection:** Verify before connection that the reader's cable type is compatible with your host equipment.

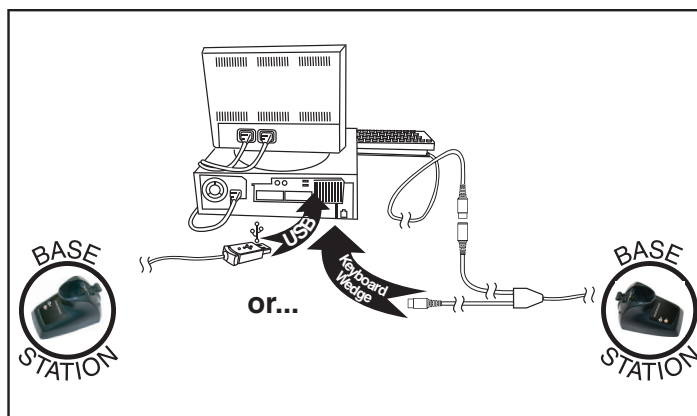


**NOTE**

The QuickScan QBT21X1 can be set up to require a PIN code when connecting to the host. If you are adding new equipment to a system that uses a custom security PIN. See "Connecting the Base when Security Pin is Enabled," starting on page 12 for more information.

Most connections plug directly into the host device as shown in Figure 4. Keyboard Wedge interface cables have a 'Y' connection where its female end mates with the male end of the cable from the keyboard and the remaining end at the keyboard port on the terminal/PC.

**Figure 4. Connecting to the Host**



**Power Connection:** Plug the AC Adapter into an approved AC socket. If plugged into the wall, ensure cable is facing downwards (as shown in Figure 3) to prevent undue strain on the socket.

## Locking the Reader to the Base

The Base Station provides a locking mechanism to ensure electrical contact between Reader and Base, in case of inadvertent movements.



### To Lock the Reader in the Base

1. Insert the Reader into the Base. The lock lever rests in its natural disengaged position toward the bottom of the Base.

**Figure 5. Lock lever disengaged**



- Engage the locking mechanism by pushing up the lever as far as it will go.

**Figure 6. Lever in locked position**



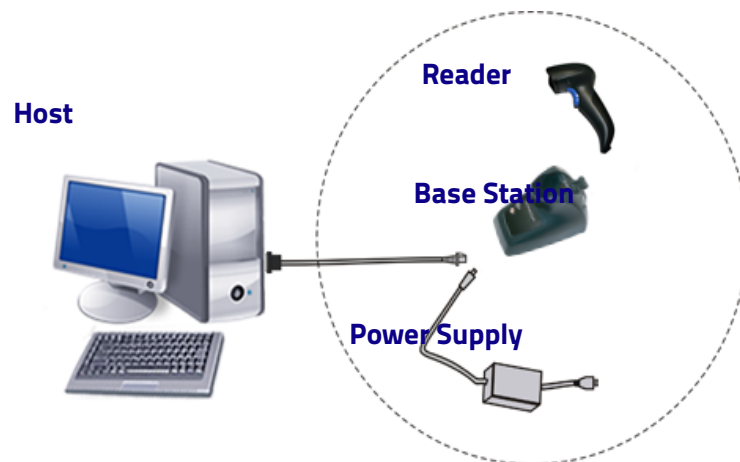
**NOTE**

It is good practice to put the reader in the locked condition at the end of the working shift, or when not in use for an extended period of time. This will ensure that the scanner is fully seated for complete battery recharge.

## System and Network Layout

### Typical Setup with Cradle and Host

**Figure 7. Reader Layout**



---

## Connecting the Base when Security Pin is Enabled

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

1. Power down the host system.
2. Connect the appropriate interface cable into the Base as shown.
3. Place the reader in the Base.
4. Power up the host. The reader will link to the Base
5. When the host completely powers up, a new custom Security Pin Code may be sent to the reader and Base, depending on host configuration. Contact Datalogic Technical Support for more information.



If you want to change security settings or set up a PIN, see "[BT Security Mode](#)" on page 271.

NOTE

## Linking the Reader to a Base Station

### RF Devices

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



### BT Models only

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

## Linking a BT Reader to a PC

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

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

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

1. Install any drivers provided with the Bluetooth adapter.
2. Scan the bar code below to make the scanner visible to the host computer.



Link to a PC in Server Mode

3. Use the host computer's Bluetooth manager to "Discover new devices" and select "Datalogic Scanner." If you receive an error message, it may be necessary to disable security on the device.
4. Select "connect" on the PC to link the reader to the PC. Use an RS-232 terminal program to see incoming data on the port designated by the computer's Bluetooth manager.

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

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

1. Ensure the PC or terminal can network with Bluetooth devices and that it is powered on.
2. Ensure that a COM port is assigned under Services within the Bluetooth setup menu.
3. Create a Link label that contains the address of the PC Bluetooth adapter.



#### NOTE

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

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

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

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

## Linking to a PC in HID mode

1. Install any drivers provided with the Bluetooth adapter.
2. Scan the **Link to PC in HID** label below.
3. Use the host computer's Bluetooth manager to "Discover new devices" and select "Datalogic Scanner." If you receive an error message, it may be necessary to disable security on the device.
4. Use a text editor to see incoming data on the port designated by the computer's Bluetooth manager.



Once the reader has been connected using HID mode directly to an Apple® iPad, smart phone, or laptop, you can toggle the **virtual keyboard** on the host with double press trigger within 0,5 second. This feature is only supported with Apple devices.

## Power Off

Shuts off power to the BT handheld until the next trigger pull. This function only applies to the BT model.





## Using the BC20xx™ Radio Base





### Radio Base LEDs

LEDs on the QuickScan Base provide information about the Base as well as battery charging status, as shown in Figure 8.

Figure 8. QuickScan Base LEDs



Table 1. Radio Base LEDs

	LED	STATUS
	Power on / Data	Yellow On = Base is powered Yellow Blinking = Base receives data and commands from the Host or the Reader.
	Charging	Red On = the Battery is charging.
	Charge completed	Green On = the Battery is completely charged.
	Charging + Charge completed	Red and Green Blinking together = the Reader is not correctly placed onto the Base.

## Charging the Battery Pack

To charge the battery, simply insert the QuickScan reader into the base. When the scanner is fully seated in the cradle, it will sound a “chirp” to indicate that the cradle has detected the scanner connection.

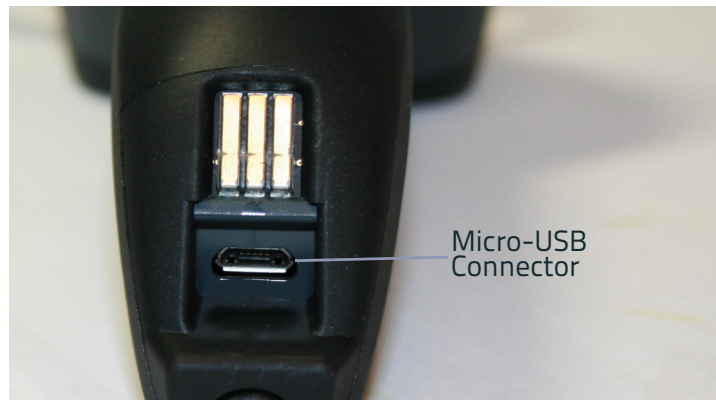
The LEDs on the base (shown in Table 1 on page 15) will indicate the status of the battery.



### NOTE

Before using the battery, read “Battery Safety” in the following section. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

Alternatively, the battery can be charged by connecting the reader directly to a host or a wall adapter through the micro-USB connector in the bottom of the handle, as shown.



## Battery Safety

To install, charge and/or perform any other action on the battery, follow the instructions in this manual.



Do not discharge the battery using any device except for the scanner. When the battery is used in devices other than the designated product, it may damage the battery or reduce its life expectancy. If the device causes an abnormal current to flow, it may cause the battery to become hot, explode or ignite and cause serious injury.

Lithium-ion battery packs may get hot, explode or ignite and cause serious injury if exposed to abusive conditions. Be sure to follow the safety warnings listed on the following page.



- Do not place the battery pack in fire or heat.
- Do not connect the positive terminal and negative terminal of the battery pack to each other with any metal object (such as wire).
- Do not carry or store the battery pack together with metal objects.
- Do not pierce the battery pack with nails, strike it with a hammer, step on it or otherwise subject it to strong impacts or shocks.
- Do not solder directly onto the battery pack.
- Do not expose the battery pack to liquids, or allow the battery to get wet.
- Do not apply voltages to the battery pack contacts.



In the event the battery pack leaks and the fluid gets into your eye, do not rub the eye. Rinse well with water and immediately seek medical care. If left untreated, the battery fluid could cause damage to the eye.



Always charge the battery at 32° – 104° F (0° - 40° C) temperature range.



Use only the authorized power supplies, battery pack, chargers, and docks supplied by your Datalogic reseller. The use of any other power supplies can damage the device and void your warranty.

Do not disassemble or modify the battery. The battery contains safety and protection devices, which, if damaged, may cause the battery to generate heat, explode or ignite.



Do not place the battery in or near fire, on stoves or other high temperature locations. Do not place the battery in direct sunlight, or use or store the battery inside cars in hot weather. Doing so may cause the battery to generate heat, explode or ignite. Using the battery in this manner may also result in a loss of performance and a shortened life expectancy.



**CAUTION**

**Do not place the battery in microwave ovens, high-pressure containers or on induction cookware.**

**Immediately discontinue use of the battery if, while using, charging or storing the battery, the battery emits an unusual smell, feels hot, changes color or shape, or appears abnormal in any other way.**

**Do not replace the battery pack when the device is turned on.**

**Do not remove or damage the battery pack's label.**

**Do not use the battery pack if it is damaged in any part.**

**Battery pack usage by children should be supervised.**

As with other battery types, Lithium-Ion (LI) batteries will lose capacity over time. Capacity deterioration is noticeable after one year of service whether the battery is in use or not. It is difficult to precisely predict the finite life of a LI battery, but cell manufacturers rate them at 500 charge cycles. In other words, the batteries should be expected to take 500 full discharge/charge cycles before needing replacement. This number is higher if partial discharging/recharging is adhered to rather than full/deep discharging.



**CAUTION**

**Storage of batteries for a long time at fully charged status or at fully discharged status should be avoided.**



**CAUTION**

**Only in case of long storage, to avoid deep discharge of the battery it is recommended to partially recharge the battery every three months to keep the charge status at a medium level.**

**As a reference, run a fast recharge for 20 minutes every three months on unused products to avoid any performance deterioration of the cell.**

The useful life of LI batteries depends on usage and number of charges, etc., after which they should be removed from service, especially in mission critical applications. Do not continue to use a battery showing excessive loss of capacity, it should be properly recycled / disposed of and replaced.

Collect and recycle waste batteries separately from the device to comply with European Directive 2006/66/EC, 2011/65/EU, 2002/96/EC, 2012/19/EU and subsequent modifications, US and China regulatory and other laws and regulations about the environment.

## Replacing the Battery Pack



### NOTE

Before proceeding, read "Battery Safety" on the preceding pages. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

1. Using a coin or screwdriver, unscrew the captive screw located on the bottom of the scanner handle until the battery pack is disengaged.



The battery pack will rise slightly in the rear, pushed by the contact springs.

2. Extract the battery pack by slightly rotating the pack and pulling away from the reader.



To mount the new battery pack reverse the process:

1. Insert the top of the new pack inside the reader's handle.
2. Rotate the battery pack downward while pressing the bottom side of the battery pack (to seat securely into the contact springs) so that the edges of the pack and the handle board are aligned, while securing the captive screw in the bottom of the handle.

---

## Programming

The reader is typically factory-configured with a set of default features standard to the interface type you ordered. After scanning the interface bar code from the [Interfaces on page 23](#) section, you can select other options and customize your reader through use of the instructions and programming bar codes available in the corresponding features section for your interface and also the [Data Format on page 61](#) and [Symbologies on page 91](#) chapters of this manual.

### Select the Interface Type

Upon completing the physical connection between the reader and its host, proceed directly to "Interfaces" on page 23 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 that section to select your system's correct interface type.

### Configure Interface Settings

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

- "RS-232 ONLY Interface," starting on page 31
- "RS-232, USB-COM and Keyboard, BT HID Interfaces" on page 34
- "Keyboard Interface," starting on page 47
- "USB-OEM Interface," starting on page 59

### Configure 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:

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

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

### Software Version Transmission

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



Transmit Software Version

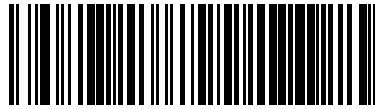
## Resetting the Product Configuration to Defaults

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



### NOTE

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



Restore Custom Default Configuration

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



Restore USA Factory Configuration



Restore EU Factory Configuration

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







# Chapter 3 Interfaces

## Interface Selection

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

### USB Models (all are 2.0 full speed)

- USB KBD
- USB COM STD
- USB OEM
- USB Composite

### RS-232 / Keyboard Wedge Models

- RS-232 (Standard)
- Keyboard Wedge

## Configuring the Interface

Scan the programming bar code from this section which selects the appropriate interface type matching the system the reader will be connected to. Next, proceed to the corresponding chapter in this manual (also listed in [Table 2](#)) to configure any desired settings and features associated with that interface.

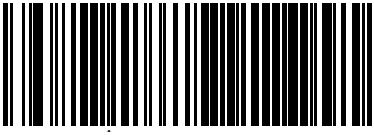
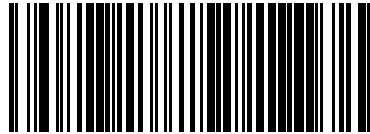


### NOTE

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 2. Available Interfaces**

RS-232		FEATURES
RS-232 standard interface	 Select RS-232 STD	Set RS-232 Interface Features starting on page 31
 Select RS-232 WN	RS-232 Wincor-Nixdorf	
RS-232 for use with OPOS/UPOS/JavaPOS	 Select RS-232 OPOS	
 Select USB-COM-STD <sup>a</sup>	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 59

a. Download the correct USB Com driver from [www.datalogic.com](http://www.datalogic.com)

KEYBOARD	FEATURES
<p>AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 &amp; 95 w/Standard Key Encoding</p>  <p>Select KBD-AT</p>	<p>Set KEYBOARD WEDGE Interface Features starting on page 47</p>
 <p>Select KBD-AT-NK</p> <p>Keyboard Wedge for IBM AT PS2 with standard key encoding but without external keyboard</p>	
<p>AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 &amp; 95 w/Alternate Key</p>  <p>Select KBD-AT-ALT</p>	
 <p>Select KBD-AT-ALT-NK</p> <p>Keyboard Wedge for IBM AT PS2 with alternate key encoding but without external keyboard</p>	
<p>PC/XT w/Standard Key Encoding</p>  <p>Select KBD-XT</p>	
 <p>Select KBD-IBM-3153</p> <p>Keyboard Wedge for IBM Terminal 3153</p>	

KEYBOARD (continued)	FEATURES
<p>USB Keyboard with standard key encoding</p>  <p>Select USB Keyboard</p>	<p>Set KEYBOARD WEDGE Interface Features starting on page 47</p>
 <p>Select USB Alternate Keyboard</p> <p>USB Keyboard with alternate key encoding</p>	
<p>Nh erdugz hgjhriufEP Dhp hdy64{{}65{{}p 67{{}6:{{}p dhp qd ph erdg</p>  <p>Select KBD-IBM-M</p>	
 <p>Select KBD-IBM-MB</p> <p>Nh erdugz hgjhriufEP Dhp hdy64{{}65{{}p 67{{}6:{{}p dhp qd ph erdg</p>	
<p>Nh erdugz hgjhriufSLTWDQDhp hdyYW5{{}p YW6{{}YW7{{}</p>  <p>Select KBD-DIG-VT</p>	
 <p>Select USB-KBD-APPLE</p> <p>USB Keyboard for Apple computers</p>	
<p>Select USB Composite (KEYBOARD + COM)</p> 	



## Chapter 4

# Configuration Using Bar Codes

This and following sections provide programming bar codes to configure your reader by changing the default settings. For details about additional methods of programming, see "Programming" on page 20.



**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.

### 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 21, 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™ Utility

Programming can alternatively be performed using the Datalogic Aladdin™ Configuration application which is available for free download from the Datalogic website listed on the back cover of this manual. This multi-platform utility program allows device configuration using a PC. It communicates to the device using a 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. The Aladdin utility is available on the Datalogic website. Aladdin allows you to program the scanner by selecting configuration commands through a user-friendly graphical interface running on a PC. These commands are sent to the scanner over the selected communication interface, or they can be printed as bar codes to be scanned.

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

---

## Configuration Parameters

Once the reader is set up, you can change the default parameters to meet your application needs. Refer to "Standard Defaults" starting on page 319 for initial configuration in order to set the default values and select the interface for your application.

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

### Interface-Specific Parameters:

- "RS-232 ONLY Interface" on page 31
- "RS-232, USB-COM and Keyboard, BT HID Interfaces" on page 34
- "Keyboard Interface" on page 47
- "USB-OEM Interface" on page 59

### Parameters common to all interface applications:

- "Data Format" on page 61 control various operating modes and indicators status functioning.
- "Reading Parameters" on page 75 gives options to control the messages sent to the Host system.

### Symbology-specific parameters:

- "Symbologies" on page 91 provides configuration of a personalized mix of 1D codes, code families and their options.



#### NOTE

You must first enable your reader to read bar codes in order to use this section. If you have not done this, go to [Setup, starting on page 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 281](#).

## GLOBAL INTERFACE FEATURES

The following interface features are configurable by all interface types.

### Global Interface Features

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

- "RS-232 ONLY Interface" on page 31
- "RS-232, USB-COM and Keyboard, BT HID Interfaces" on page 34
- "Keyboard Interface" on page 47
- "USB-OEM Interface" on page 59

### 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.

	 <p>Host Commands = Obey</p>
 <p>Host Commands = Ignore</p>	



## USB Suspend Mode

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

	 USB Suspend Mode = Disable
 USB Suspend Mode = Enable	



## RS-232 ONLY Interface

Use the programming bar codes in this section 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 6, RS-232 and USB-COM Interfaces](#).

<b>BAUD RATE</b> on page 32	<b>PARITY</b> on page 35
<b>DATA BITS</b> on page 33	<b>HANDSHAKING CONTROL</b> on page 36
<b>STOP BITS</b> on page 34	

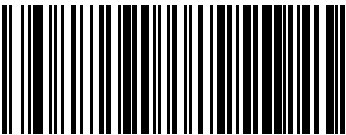

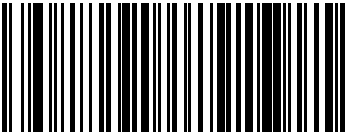
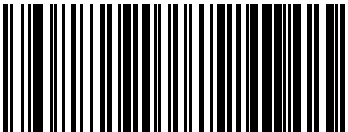


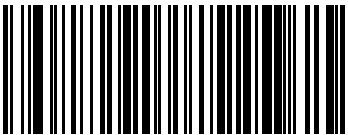
### RS-232 Standard Factory Settings

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

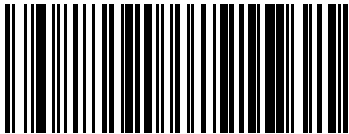
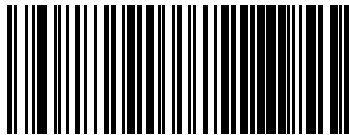


## Baud Rate

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 = 9600	
	 Baud Rate = 19,200
 Baud Rate = 38,400	

## Baud Rate (continued)

	 <p>Baud Rate = 57,600</p>
 <p>Baud Rate = 115,200</p>	

## Data Bits

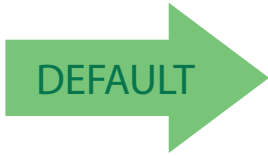
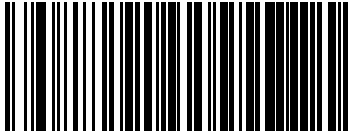
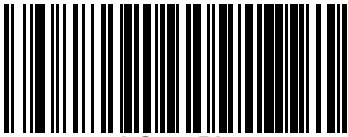
This parameter allows the reader to interface with devices requiring a 7-bit or 8-bit ASCII protocol for sending and receiving data.

	 <p>7 Data Bits</p>
 <p>8 Data Bits</p>	



## 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.

	 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.

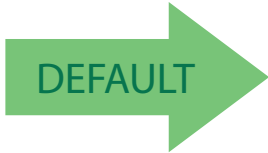
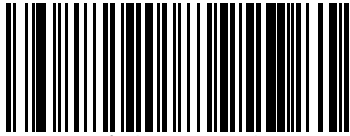
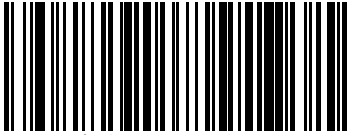
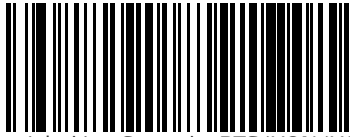


- Select None when no parity bit is required.
- Select Odd parity and the parity bit value is set to 0 or 1, based on data, to ensure that an odd number of 1 bits are contained in the coded character.
- Select Even parity and the parity bit value is set to 0 or 1, based on data, to ensure that an even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

	 <p>Handshaking Control = RTS</p>
 <p>Handshaking Control = RTS/CTS</p>	
	 <p>Handshaking Control = RTS/XON/XOFF</p>
 <p>Handshaking Control = RTS On/CTS</p>	
	 <p>Handshaking Control = RTS/CTS Scan Control</p>

# RS-232 and USB-COM Interfaces

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

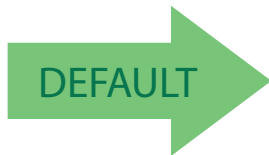
<b>INTERCHARACTER DELAY</b> on page 38
<b>BEEP ON ASCII BEL</b> on page 39
<b>BEEP ON NOT ON FILE</b> on page 39
<b>ACK CHARACTER</b> on page 41
<b>NAK CHARACTER</b> on page 41
<b>ACK NAK TIMEOUT VALUE</b> on page 42
<b>ACK NAK RETRY COUNT</b> on page 43
<b>ACK NAK ERROR HANDLING</b> on page 44
<b>INDICATE TRANSMISSION FAILURE</b> on page 45
<b>DISABLE CHARACTER</b> on page 45
<b>ENABLE CHARACTER</b> on page 46



## 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 282 or "Intercharacter Delay" on page 290 for more detailed programming instructions.

	 Intercharacter Delay = No Delay
 Select Intercharacter Delay Setting	
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.	 CANCEL



**00 = No Intercharacter Delay**



## Beep On ASCII BEL

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

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

## Beep On Not on File

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

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



## ACK NAK Options

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

Options are:

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

	 <p>ACK/NAK Protocol = Disable ACK/NAK</p>
 <p>ACK/NAK Protocol = Enable for label transmission</p>	
	 <p>ACK/NAK Protocol = Enable for host-command acknowledge</p>
 <p>ACK/NAK Protocol = Enable for label transmission and host-command acknowledge</p>	

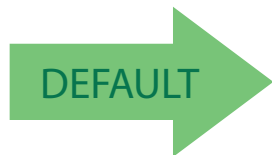
## ACK Character

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 283 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 on page 33 has been set as 7 Data Bits.



**0x06 'ACK' Character**

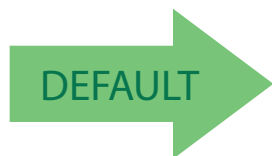
## NAK Character

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 284 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 on page 33 has been set as 7 Data Bits.

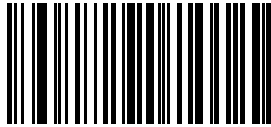


**0x15 'NAK' Character**



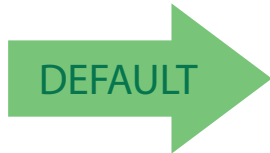
### ACK NAK Timeout Value

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 285 for more detailed programming instructions.



Select ACK NAK Timeout Value Setting



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



**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 286 for more detailed programming instructions.

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


**003 = 3 Retries**

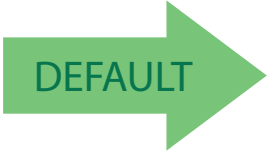

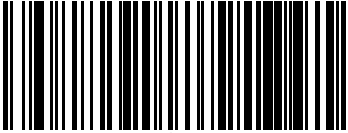
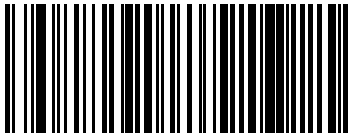


## ACK NAK Error Handling

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

	 <p>ACK NAK Error Handling = Ignore Errors Detected</p>
 <p>ACK NAK Error Handling = Process Error as Valid ACK Character</p>	
	 <p>ACK NAK Error Handling = Process Error as Valid NAK Character</p>

## 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	

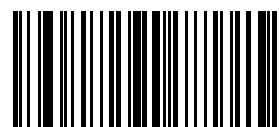
## Disable Character

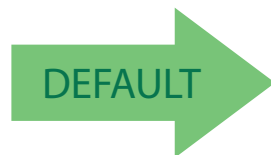
Specifies the value of the RS-232 host command used to disable the reader. ASCII characters or any hex value from 0 to 0xFF can be selected. See "Disable Character" on page 287 for more detailed programming instructions.



**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 on page 33 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 288 for more detailed programming instructions.

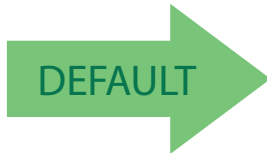


**NOTE**

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 on page 33 has been set as 7 Data Bits.



Select Enable Character Setting



0x45 = Enable Character is 'E'



# Keyboard Interface

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

<b>COUNTRY MODE</b> on page 48
<b>CAPS LOCK STATE</b> on page 51
<b>NUMLOCK</b> on page 52
<b>KEYBOARD NUMERIC KEYPAD</b> on page 52
<b>KEYBOARD SEND CONTROL CHARACTERS</b> on page 53
<b>WEDGE QUIET INTERVAL</b> on page 54
<b>INTERCODE DELAY</b> on page 55
<b>USB KEYBOARD SPEED</b> on page 56

## Standard Factory Settings

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

## Scancode Tables

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



# Country Mode

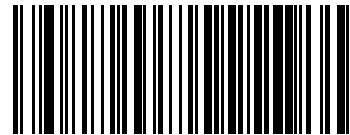
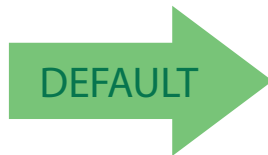
This feature specifies the country/language supported by the keyboard.

Country Modes are only valid for the following interfaces:

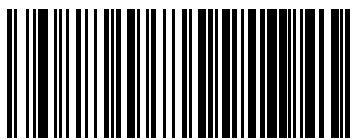
- USB Keyboard (without alternate key encoding)
- Keyboard Wedge
- BT HID

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

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

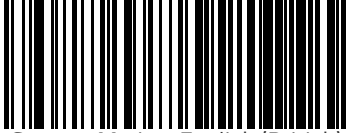
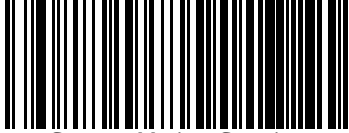
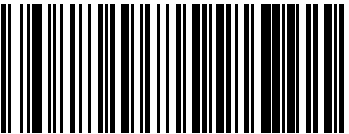
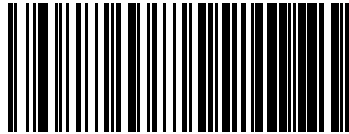
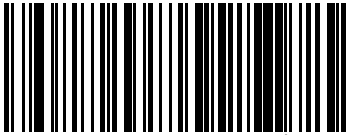
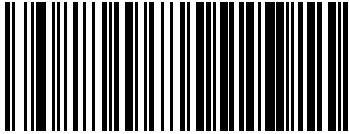
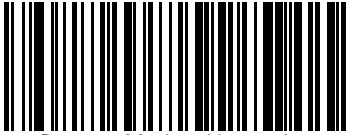



Country Mode = English (USA)



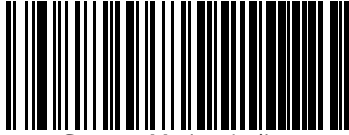
Country Mode = Belgian

## Country Mode (continued)

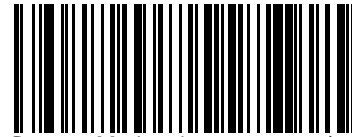
	 <p>Country Mode = English (British)</p>
 <p>Country Mode = Croatian</p>	
	 <p>Country Mode = Czech</p>
 <p>Country Mode = Danish</p>	
	 <p>Country Mode = French</p>
 <p>Country Mode = German</p>	
	 <p>Country Mode = Hungarian</p>
 <p>Country Mode = Lithuanian</p>	



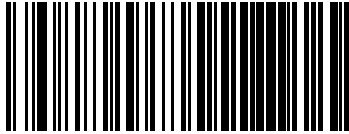
## Country Mode (continued)



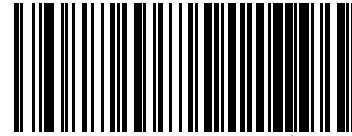
Country Mode = Italian



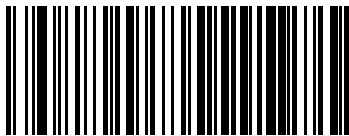
Country Mode = Japanese 106-key



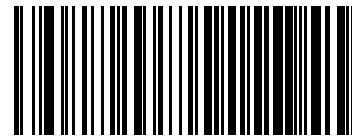
Country Mode = Norwegian



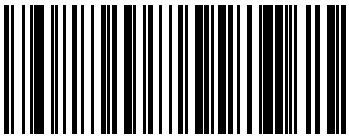
Country Mode = Polish



Country Mode = Portuguese (Brazilian)



Country Mode = Romanian



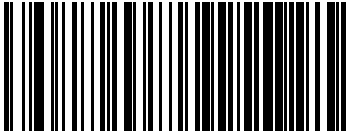

Country Mode = Slovakian

## Country Mode (continued)

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

## Caps Lock State

This option specifies the format in which the reader sends character data. This 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



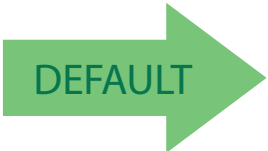

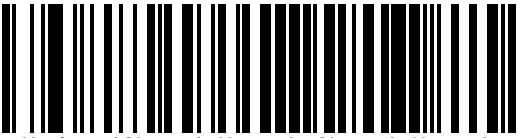
## Numlock

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

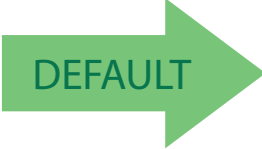
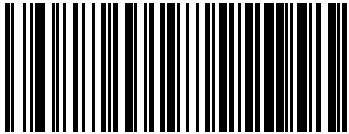
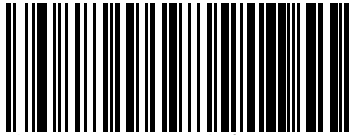
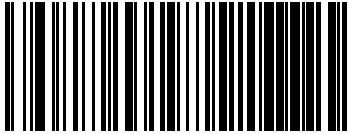
This feature is used by the Keyboard Wedge and USB Keyboard interfaces. It specifies how the reader transmits ASCII control characters to the host. Reference [Appendix E](#), for more information about control characters.

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 350). This is used to send keys that are not in the normal ASCII set. A unique set is provided for each available scancode set.

	 <p>Keyboard Send Control Characters = 00</p>
 <p>Keyboard Send Control Characters = 01</p>	
	 <p>Keyboard Send Control Characters = 02</p>



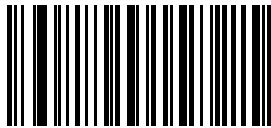
## Wedge Quiet Interval

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 289 for more detailed programming instructions.



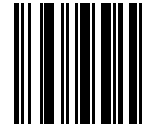
**NOTE**

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

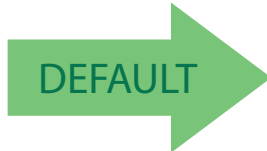


Select Wedge Quiet Interval Setting

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



CANCEL





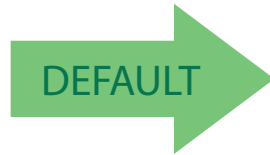
**OA = Quiet Interval of 100 ms**



## 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 291 for more detailed programming instructions.

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



**00 = No Wedge Intercode Delay**



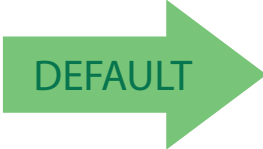
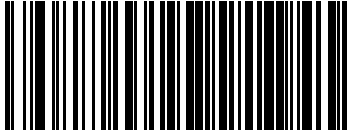
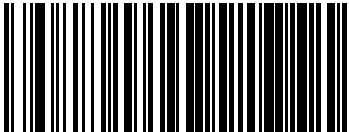
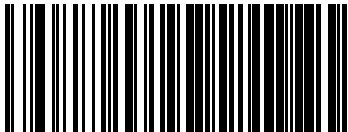
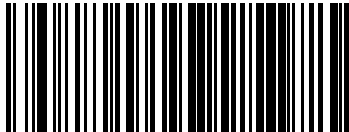
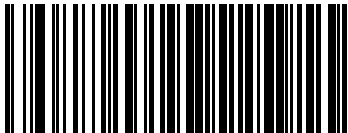
## USB Keyboard Speed

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

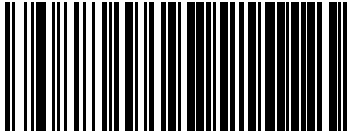
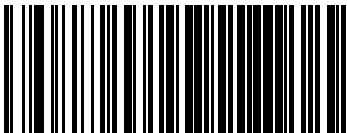
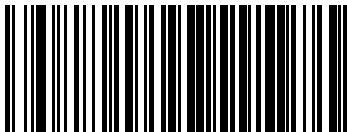
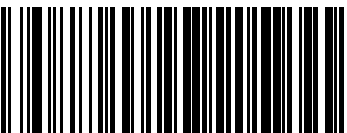
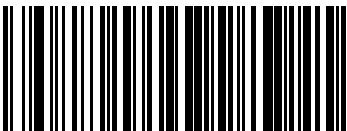


**NOTE**

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

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

## USB Keyboard Speed (continued)

 <p>USB Keyboard Speed = 6ms</p>	
	 <p>USB Keyboard Speed = 7ms</p>
 <p>USB Keyboard Speed = 8ms</p>	
	 <p>USB Keyboard Speed = 9ms</p>
 <p>USB Keyboard Speed = 10ms</p>	



# NOTES

# USB-OEM Interface

<b>USB-OEM DEVICE USAGE</b> on page 60
<b>USB-OEM INTERFACE OPTIONS</b> on page 60

## 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



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

### NOTE

	 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	

# Data Format

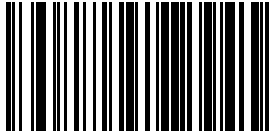
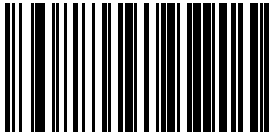
<b>GLOBAL PREFIX/SUFFIX</b> on page 62
<b>GLOBAL AIM ID</b> on page 63
<b>LABEL ID</b> starting on page 64 <ul style="list-style-type: none"><li>•Label ID: Pre-loaded Sets on page 64</li><li>•Label ID: Set Individually Per Symbology on page 65</li><li>•Label ID Control on page 65</li><li>•Label ID Symbology Selection on page 66</li></ul>
<b>SET GLOBAL MID LABEL ID CHARACTER(S)</b> on page 72
<b>CASE CONVERSION</b> on page 73
<b>CHARACTER CONVERSION</b> on page 74

The features in this chapter can be used to build specific user-defined data into a message string. See "References" starting on page 281 for more detailed instructions on setting these features.

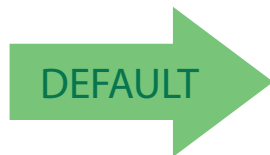


## Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the bar code data) and/or as a suffix (in a position following the bar code data) as indicated in "Global Prefix/Suffix" on page 293.

	 Set Global Prefix
 Set Global Suffix	

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



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




## Global AIM ID



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

### NOTE

AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. See "Global AIM ID" on page 294 for more detailed programming instructions.

## 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.



## Label ID

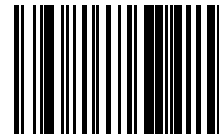
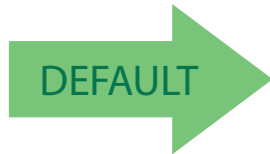
A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01–0xFF), used to identify a bar code (symbology) type. It can be appended previous to or following the transmitted bar code data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" on page 64) or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 65). 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 63.

### Label ID: Pre-loaded Sets

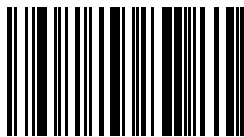
The reader supports two pre-loaded sets of Label IDs. Shown is the USA set and the EU set. See "Label ID: Pre-loaded Sets" on page 295 for more information concerning the pre-loaded sets that are provided.



**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 297 for more detailed programming instructions.

## Label ID Control

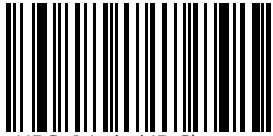
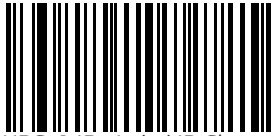
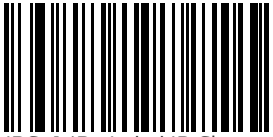
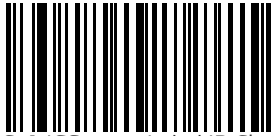
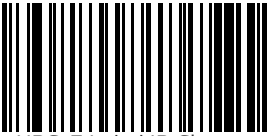
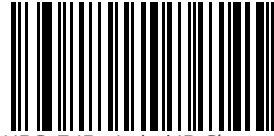
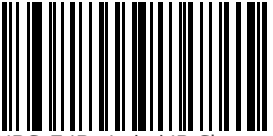
This option controls whether a Label ID is disabled, or sent as a prefix or suffix for a given symbology type.

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

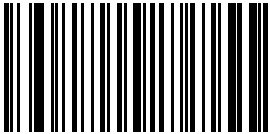
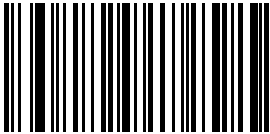
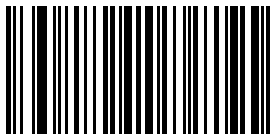
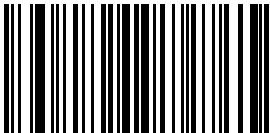
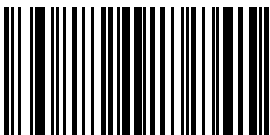
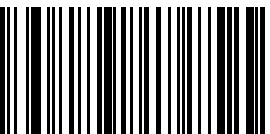
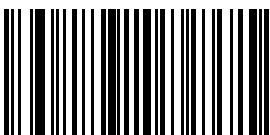
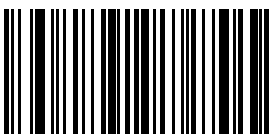


### Label ID Symbology Selection

This option selects the symbology for which a Label ID is to be configured. See "Label ID: Set Individually Per Symbology" on page 297 for full instructions.

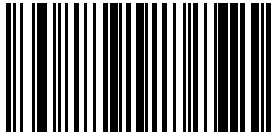
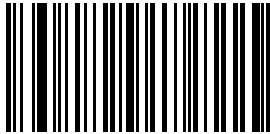
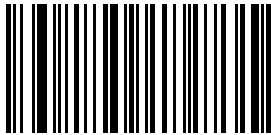
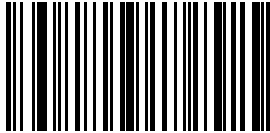
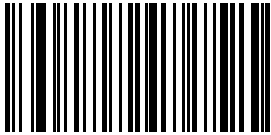
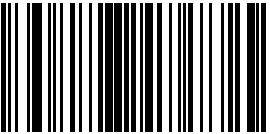
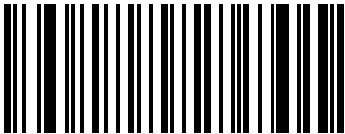
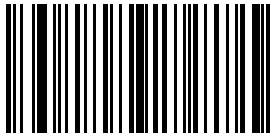
	 <p>Set UPC-A Label ID Character(s)</p>
 <p>Set UPC-A/P2 Label ID Character(s)</p>	
	 <p>Set UPC-A/P5 Label ID Character(s)</p>
 <p>Set UPC-A/GS1-128 Label ID Character(s)</p>	
	 <p>Set UPC-E Label ID Character(s)</p>
 <p>Set UPC-E/P2 Label ID Character(s)</p>	
	 <p>Set UPC-E/P5 Label ID Character(s)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

### Label ID Symbology Selection (continued)

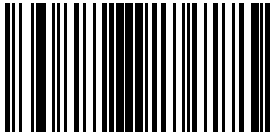
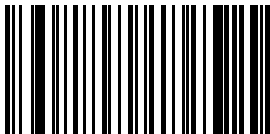

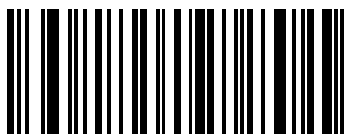
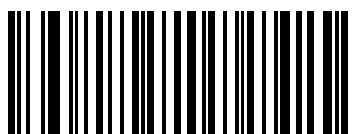
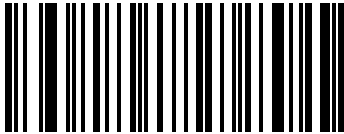
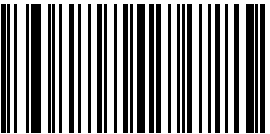
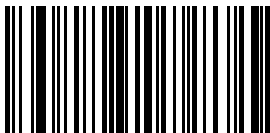
 <p>Set UPC-E/GS1-128 Label ID Character(s)</p>	
	 <p>Set EAN 13 Label ID Character(s)</p>
 <p>Set EAN 13/P2 Label ID Character(s)</p>	
	 <p>Set EAN 13/P5 Label ID Character(s)</p>
 <p>Set EAN 13/GS1-128 Label ID Character(s)</p>	
	 <p>Set EAN 8 Label ID Character(s)</p>
 <p>Set EAN 8/P2 Label ID Character(s)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



### Label ID Symbology Selection (continued)

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

### Label ID Symbology Selection (continued)

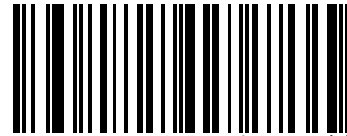
 <p>Set GS1-128 Label ID Character(s)</p>	
	 <p>Set Codabar Label ID Character(s)</p>
 <p>Set Interleaved 2 of 5 Label ID Character(s)</p>	
	 <p>Set Interleaved 2 of 5 CIP HR Label ID Character(s)</p>
 <p>Set Datalogic 2 of 5 CIP HR Label ID Character(s)</p>	
	 <p>Set ABC Codabar Label ID Character(s)</p>
 <p>Set Code 11 Label ID Character(s)</p>	
	 <p>Set Standard 2 of 5 Label ID Character(s)</p>



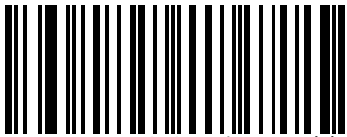
### Label ID Symbology Selection (continued)



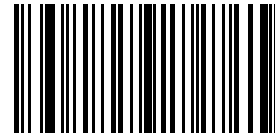
Set Industrial 2 of 5 Label ID Character(s)



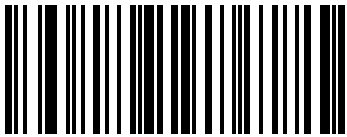
Set ISSN Label ID Character(s)



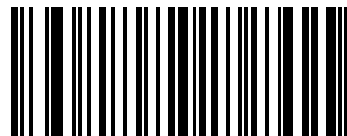
Set IATA Label ID Character(s)



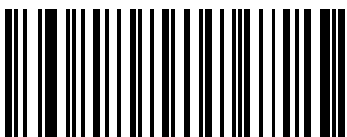
Set Concatenated ISBT 128 Label ID Character(s)



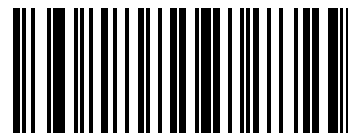
Set MSI Label ID Character(s)



Set Code 93 Label ID Character(s)



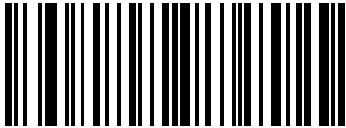
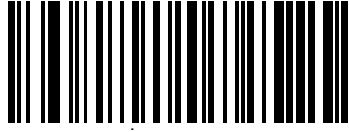
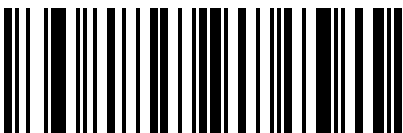
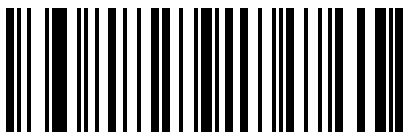
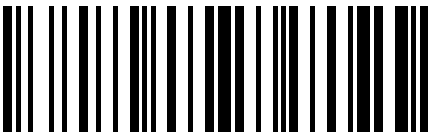

Set Codablock F Label ID Character(s)



Set Code 4 Label ID Character(s)



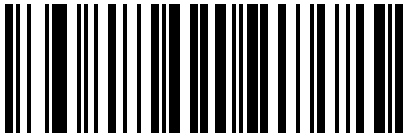
**Label ID Symbology Selection (continued)**

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



## 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 299 for more information.

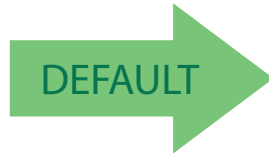


Set Global Mid Label ID Character(s)

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



CANCEL



No Global Mid Label ID  
Character(s)  
00000000000000000000

## Case Conversion

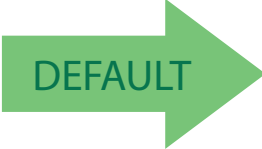
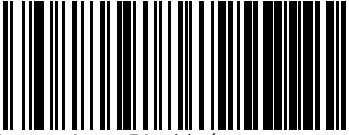
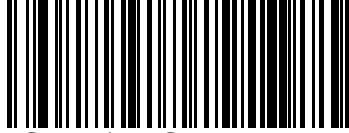

This feature allows conversion of the case of all alphabetic characters to upper or lower case

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



**NOTE**

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

	 <p>Case Conversion = Disable (no case conversion)</p>
 <p>Case Conversion = Convert to upper case</p>	
	 <p>Case Conversion = Convert to lower case</p>

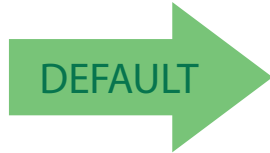


## Character Conversion

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 299 for more detailed programming instructions.



Configure Character Conversion



**0xFFFFFFFFFFFFFFF**  
**(No character conversion)**

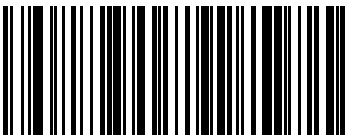
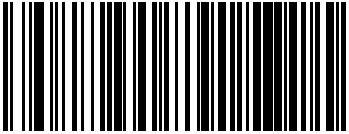
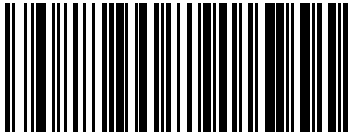
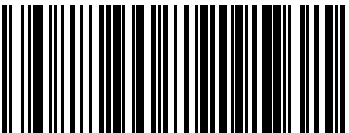

# Reading Parameters

<b>DOUBLE READ TIMEOUT</b> on page 76	<b>GOOD READ LED DURATION</b> on page 84
<b>LABEL GONE TIMEOUT</b> on page 78	<b>SCAN MODE</b> on page 85
<b>LED AND BEEPER INDICATORS</b> on page 79	<b>STAND MODE TRIGGERED TIMEOUT</b> on page 86
<b>POWER ON ALERT</b> on page 79	<b>STAND DETECTION</b> on page 87
<b>GOOD READ: WHEN TO INDICATE</b> on page 80	<b>STAND MODE SENSITIVITY</b> on page 88
<b>GOOD READ BEEP TYPE</b> on page 81	<b>SCANNING ACTIVE TIME</b> on page 88
<b>GOOD READ BEEP FREQUENCY</b> on page 81	<b>STAND MODE FLASH</b> on page 89
<b>GOOD READ BEEP LENGTH</b> on page 82	<b>FLASH ON TIME</b> on page 89
<b>GOOD READ BEEP VOLUME</b> on page 83	<b>FLASH OFF TIME</b> on page 90

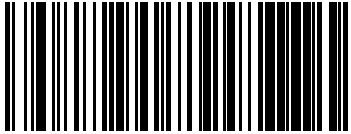

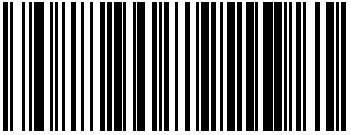
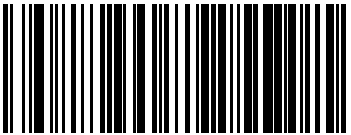
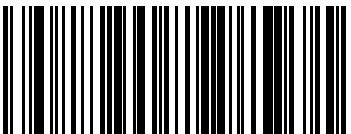
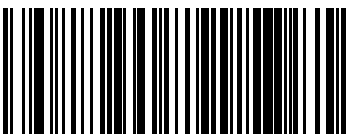


## Double Read Timeout

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

	 Double Read Timeout = 0.1 Second
 Double Read Timeout = 0.2 Second	
	 Double Read Timeout = 0.3 Second
 Double Read Timeout = 0.4 Second	
	 Double Read Timeout = 0.5 Second

## Double Read Timeout (continued)

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



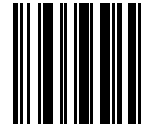
## Label Gone Timeout

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 301 for more detailed programming instructions.

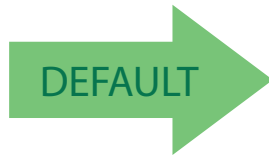


Select Label Gone Timeout Setting

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



CANCEL



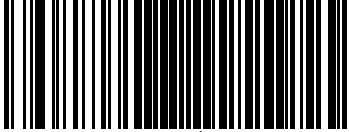
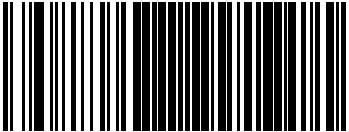
**10 = Timeout of 160 ms**



## LED and Beeper Indicators

### Power On Alert

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

	 <p>Power On Alert = Disable (No Audible Indication)</p>
 <p>Power On Alert = Power-up Beep</p>	



## 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 Q21XX models with RS-232 interfaces.

### NOTE

	 <p>Indicate Good Read = After Decode</p>
 <p>Indicate Good Read = After Transmit</p>	
	 <p>Indicate Good Read = After CTS Goes Inactive, Then Active</p>

## Good Read Beep Type

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

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

## Good Read Beep Frequency

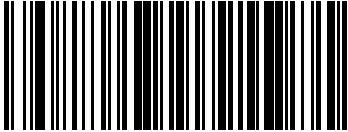
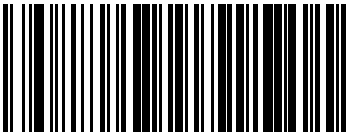

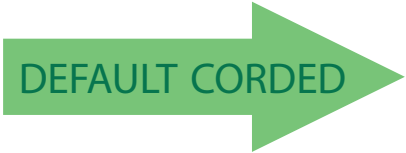
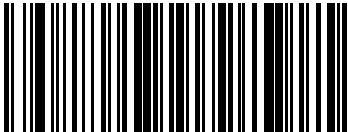
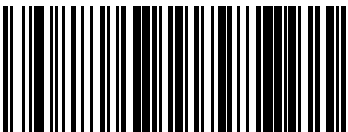
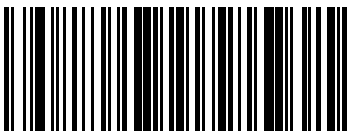
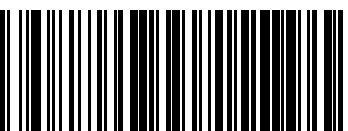
Adjusts the good read beep to sound at a selectable low, medium or high frequency, selectable from the list below. (Controls the beeper's pitch/tone.)

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



## Good Read Beep Length

Specifies the duration of a good read beep.

	 <p>Good Read Beep Length = 60 msec</p>
 <p>Good Read Beep Length = 80 msec</p>	
	 <p>Good Read Beep Length = 100 msec</p>
 <p>Good Read Beep Length = 120 msec</p>	
	 <p>Good Read Beep Length = 140 msec</p>
 <p>Good Read Beep Length = 160 msec</p>	

### Good Read Beep Length (continued)

	 <p>Good Read Beep Length = 180 msec</p>
 <p>Good Read Beep Length = 200 msec</p>	

### Good Read Beep Volume

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

	 <p>Good Read Beep Volume = Beeper Off</p>
 <p>Good Read Beep Volume = Low</p>	
	 <p>Good Read Beep Volume = Medium</p>
 <p>Good Read Beep Volume = High</p>	



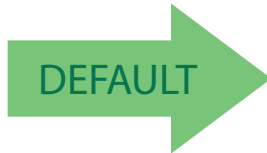
### Good Read LED Duration

This feature specifies the amount of time that the Good Read LED remains on following a good read. The good read LED on time can be set within a range of 0.1 to 25.5 seconds in 100ms increments. A setting of 00 keeps the LED on until the next trigger pull. See "Good Read LED Duration" on page 302 for more detailed programming instructions.



Select Good Read LED Duration Setting

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



**003 = Good Read LED stays on for 0.3 seconds.**



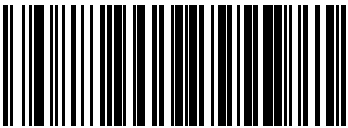


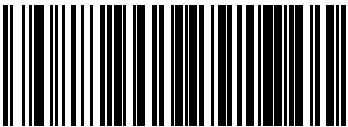
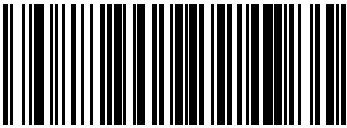
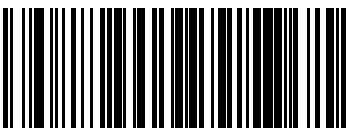



**NOTE**

**Indicators are dimmed during sleep.**

## Scanning Features

### Scan Mode

See "Scan Mode" on page 303 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 = Autosense <sup>®</sup> Stand Mode
 Scan Mode = Trigger Object Sense	



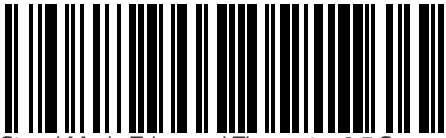
## Stand Mode Triggered Timeout

This feature specifies the time to remain in Trigger Single on page 303 mode after the trigger is pulled while in Autosense® Stand Mode on page 303.

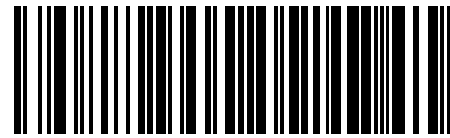


**NOTE**

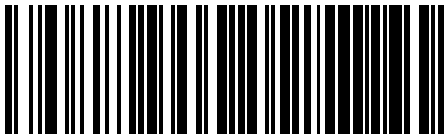
This timeout is only used when the Scan Mode is configured as Autosense® Stand Mode on page 303.



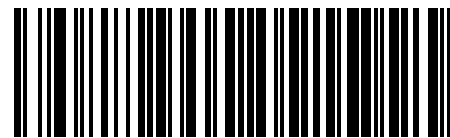
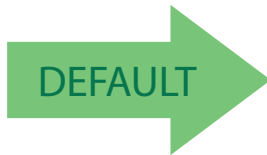
Stand Mode Triggered Timeout = 0.5 Seconds



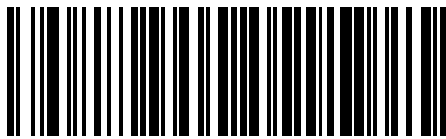
Stand Mode Triggered Timeout = 1.5 Seconds



Stand Mode Triggered Timeout = 2 Seconds



Stand Mode Triggered Timeout = 3 Seconds



Stand Mode Triggered Timeout = 4 Seconds

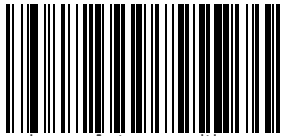

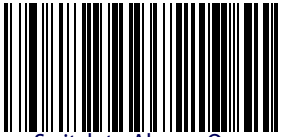
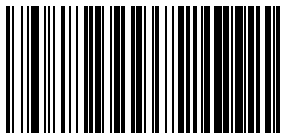


## Stand Mode Triggered Timeout (continued)

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

## Stand Detection

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

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



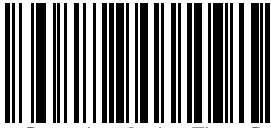
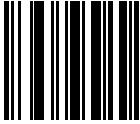
### Stand Mode Sensitivity

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

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

### Scanning Active Time

This setting specifies the amount of time that the reader stays in scan ON state once the state is entered. The range for this setting is from 1 to 255 seconds in 1-second increments. See "Scanning Active Time" on page 304 for more detailed programming instructions.

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


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



## Stand Mode Flash


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

	 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 305 for more detailed programming instructions.

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


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



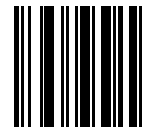
### Flash Off Time

This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See "Flash Off Time" on page 306 for more detailed programming instructions.

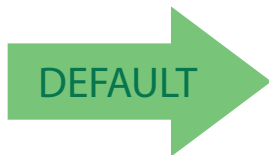


Select Flash OFF Time Setting

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



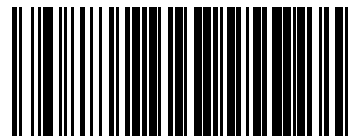
CANCEL



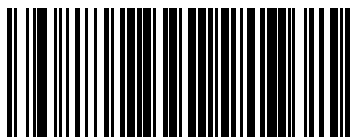
06 = Flash is OFF for 600ms

### Green Spot Duration

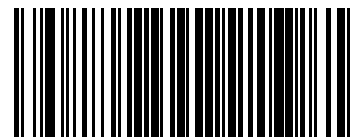
Specifies the duration of the good read pointer beam after a good read.



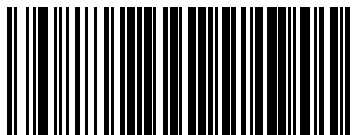
Green Spot Duration = Disable (Green Spot is Off)



Green Spot Duration = Short (300 msec)



Green Spot Duration = Medium (500 msec)



Green Spot Duration = Long (800 msec)

# Symbologies

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

• UPC-A on page 93	• Datalogic 2 of 5 on page 170
• UPC-E on page 96	• Codabar on page 178
• EAN 13 on page 99	• ABC Codabar on page 191
• EAN 13 on page 99 (JAN 13)	• Code 11 on page 193
• EAN 8 on page 102 (JAN 8)	• Standard 2 of 5 on page 203
• Add-Ons on page 119	• Industrial 2 of 5 on page 209
• GS1 DataBar™ Omnidirectional on page 126	• IATA on page 215
• GS1 DataBar™ Expanded on page 128	• ISBT 128 on page 216
• GS1 DataBar™ Limited on page 133	• MSI on page 219
• Code 39 on page 135	• Code 93 on page 225
• Code 32 (Italian Pharmaceutical) on page 148	• Codablock F on page 233
• Code 39 CIP (French Pharmaceutical) on page 150	• Code 4 on page 237
• Code 128 on page 150	• Code 5 on page 238
• GS1-128 on page 160	• Follett 2 of 5 on page 242
• Interleaved 2 of 5 (I 2 of 5) on page 161	• BC412 on page 242
• Interleaved 2 of 5 CIP HR on page 169	• Plessey on page 248

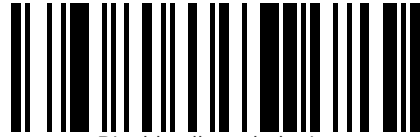
## Standard Factory Settings for Symbologies

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



## Disable All Symbologies

Scan this label to disable all symbologies.



Disable all symbologies

## Coupon Control

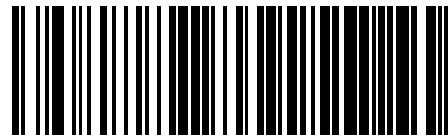
This feature is used to control the method of processing coupon labels.

Options are:

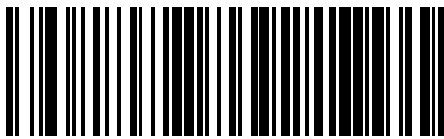
- Allow all — allow all coupon bar codes to be decoded
- Enable only UPC/EAN — enables only UPC/EAN coupon decoding
- Enable only GS1 DataBar — enables only GS1 DataBar coupon decoding

To set this feature:

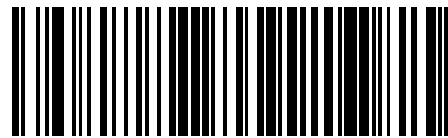
1. Scan the Enter/Exit bar code.
2. Scan either the enable or disable bar code below. You'll need to cover any unused bar codes on this and the facing page to ensure that the reader sees only the bar code you intend to scan.
3. Complete the programming sequence by scanning the Enter/Exit bar code.



Coupon Control = Allow all



Coupon Control = Enable only UPC/EAN



Coupon Control = Enable only GS1 DataBar

## UPC-A

The following options apply to the UPC-A symbology.

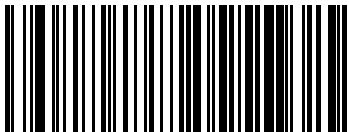
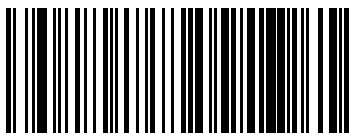

### UPC-A Enable/Disable

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.


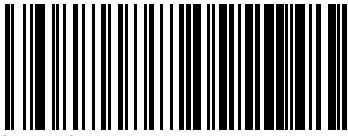
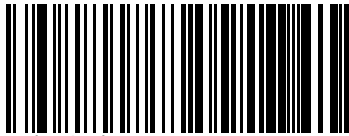
### UPC-E Enable/Disable

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

	 <p>UPC-E = Disable</p>
 <p>UPC-E = Enable</p>	


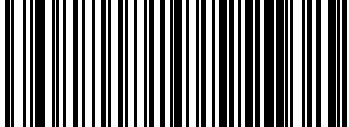
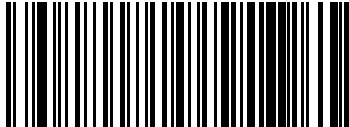
### UPC-E Check Character Transmission

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

	 <p>UPC-E Check Character Transmission = Don't Send</p>
 <p>UPC-E Check Character Transmission = Send</p>	

### 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.

	 <p>UPC-E to EAN-13 = Don't Expand</p>
 <p>UPC-E to EAN-13 = Expand</p>	

### Expand UPC-E to UPC-A

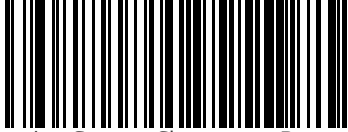
Expands UPC-E data to the UPC-A data format.

	 <p>UPC-E to UPC-A = Don't Expand</p>
 <p>UPC-E to UPC-A = Expand</p>	



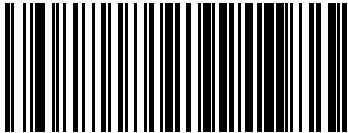

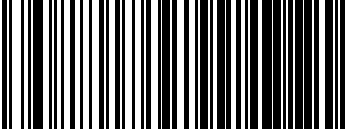
### UPC-E Number System Character Transmission

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 Reads

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

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

## EAN 13

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

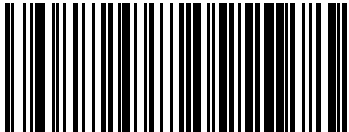
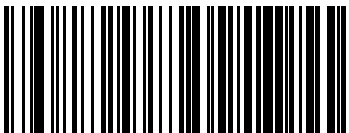

### EAN 13 Enable/Disable

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.

	 <p>EAN-13 Flag 1 Char= Don't transmit</p>
 <p>EAN-13 Flag 1 Char= Transmit</p>	




### EAN-13 ISBN Conversion

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

	 <p>EAN-13 ISBN Conversion = Disable</p>
 <p>EAN-13 ISBN Conversion = Convert to ISBN</p>	

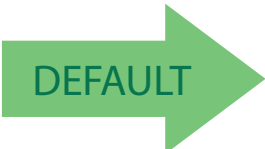




## ISSN Enable/Disable

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

## 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 8

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

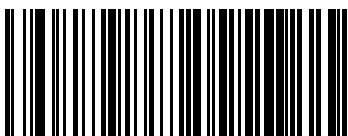
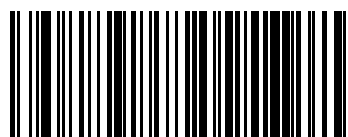

### EAN 8 Enable/Disable

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

	 <p>EAN 8 = Disable</p>
 <p>EAN 8 = Enable</p>	

### EAN 8 Check Character Transmission

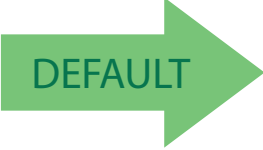

Enable this option to transmit the check character along with EAN 8 bar code data.

	 <p>EAN 8 Check Character Transmission = Don't Send</p>
 <p>EAN 8 Check Character Transmission = Send</p>	



## 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

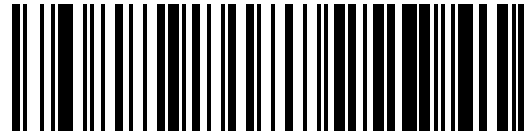
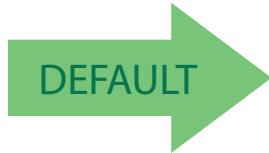
Enables/disables the ability of the reader to find an EAN/JAN8 guard pattern in cases where the EAN/JAN8 margin makes the guard look like a character.

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

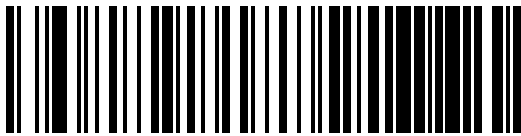


### EAN 8 Guard Insertion

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



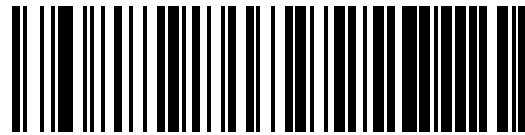
EAN 8 Guard Insertion = Disable



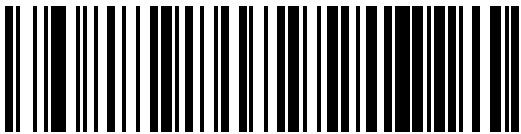
EAN 8 Guard Insertion = Enable

### 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

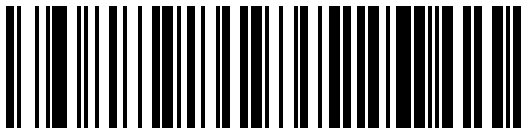
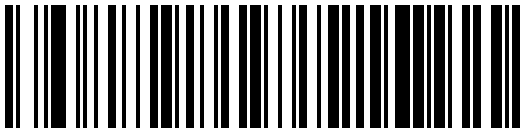
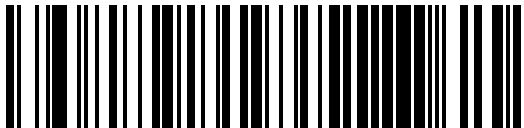






EAN 8 Guard Substitution = Enable



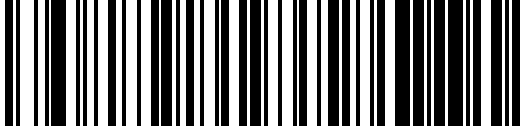
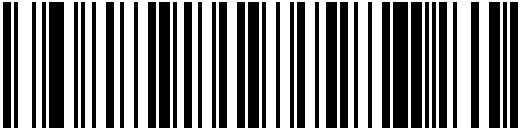
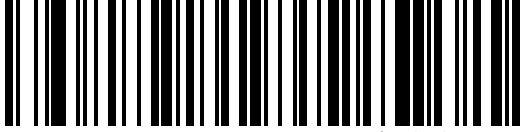
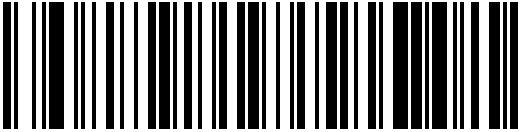
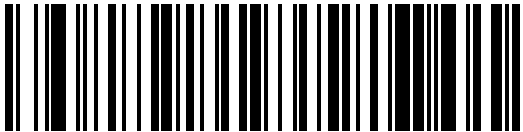
## EAN 8 Minimum Segment Length Block

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 (continued)

	 <p>EAN 8 Minimum Segment Length Block = 11</p>
 <p>EAN 8 Minimum Segment Length Block = 12</p>	
	 <p>EAN 8 Minimum Segment Length Block = 13</p>
 <p>EAN 8 Minimum Segment Length Block = 14</p>	
	 <p>EAN 8 Minimum Segment Length Block = 15</p>

## 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 GdddC and CdddG.

	EAN 8 Stitch Exact Label Halves = Disable

### 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 GdddCd... and ..dCdddG. The characters dCd must match between the two segments.

	EAN 8 Stitch Unlike Label Halves = Disable

## EAN Two Label

### EAN Two Label Enable/Disable

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

	 <p>EAN Two Label = Disable</p>
 <p>EAN Two Label = Enable</p>	

### 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.

	 <p>EAN Two Label = Disable</p>
 <p>EAN Two Label = Enable</p>	



### 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	

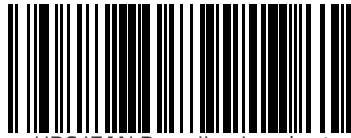
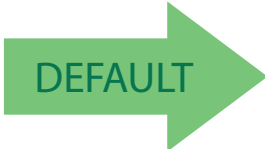

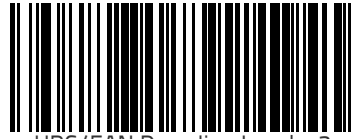

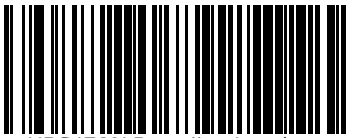
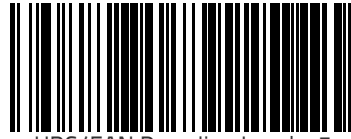


## UPC/EAN Global Settings

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 307 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 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 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 = 5-digit price-weight check
 Price Weight Check = European 4-digit price-weight check	
 Price Weight Check = European 5-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.

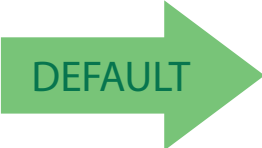
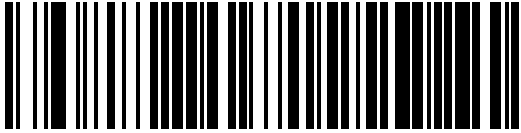
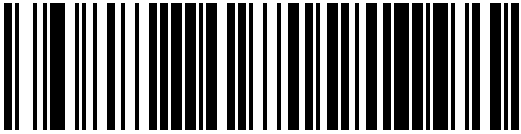
## UPC/EAN Guard Insertion

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



NOTE

The segment must have the structure GddddddCdddddd or dddddddCddddddG.

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

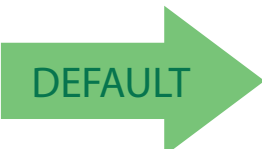
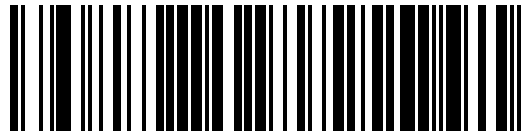
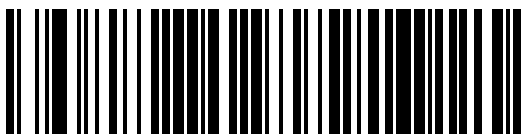
## UPC/EAN Stitch Exact Label Halves

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



NOTE

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

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



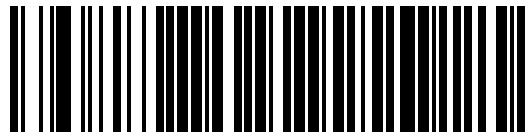
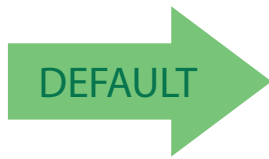
## UPC/EAN Stitch Unlike Label Halves

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

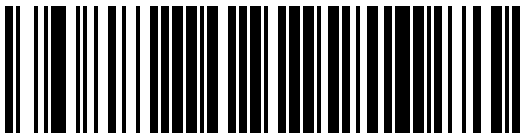


The label half structures must have the structure GdddddC and CdddddG. The characters dCd must match between the two segments.

### NOTE



UPC/EAN Stitch Unlike Label Halves = Disable



UPC/EAN Stitch Unlike Label Halves = Enable

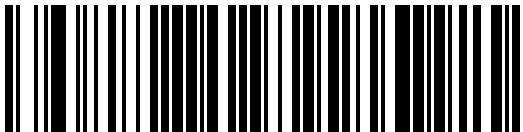
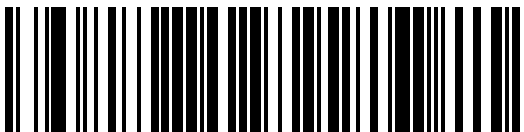
## UPC/EAN Minimum Segment Length

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.

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



## UPC/EAN Global Settings (continued)

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



## Add-Ons

The following features apply to optional add-ons.



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

**NOTE**

## Optional Add-ons

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

- P2
- P5
- GS1-128



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.

**NOTE**

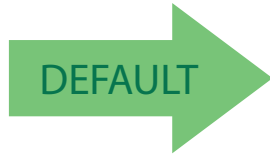
	 Optional Add-Ons = Disable P2
 Optional Add-Ons = Enable P2	
	 Optional Add-Ons = Disable P5



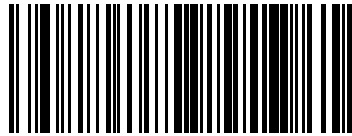
### Optional Add-ons (continued)



Optional Add-Ons = Enable P5




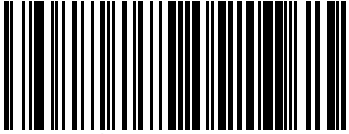
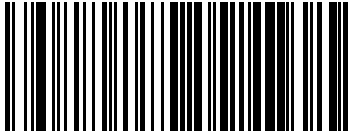

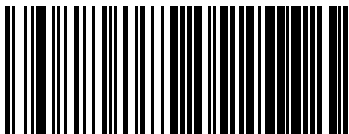
Optional Add-Ons = Disable GS1-128



Optional Add-Ons = Enable GS1-128


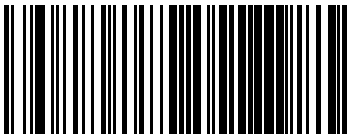



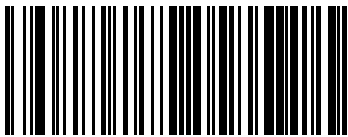
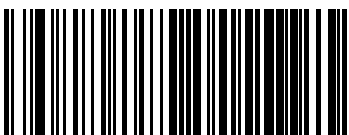
## Optional Add-On Timer

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 (continued)

	 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.


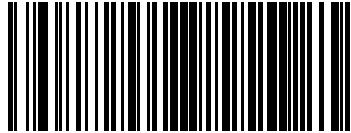
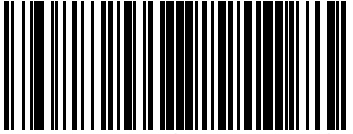
### GS1 DataBar Omnidirectional Enable/Disable

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.

	 <p>GS1 DataBar Omnidirectional Minimum Reads = 1</p>
 <p>GS1 DataBar Omnidirectional Minimum Reads = 2</p>	
	 <p>GS1 DataBar Omnidirectional Minimum Reads = 3</p>
 <p>GS1 DataBar Omnidirectional Minimum Reads = 4</p>	



## GS1 DataBar™ Expanded

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

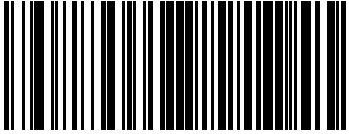
### GS1 DataBar Expanded Enable/Disable

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.

	 <p>GS1 DataBar Expanded Length Control = Variable Length</p>
 <p>GS1 DataBar Expanded Length Control = Fixed Length</p>	

## GS1 DataBar Expanded Set Length 1

This feature specifies one of the bar code lengths for [GS1 DataBar Expanded Length Control on page 130](#). Length 1 is the minimum label length if in [Variable Length on page 130 Mode](#), or the first fixed length if in [Fixed Length on page 130 Mode](#). Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. See ["Set Length 1" on page 308](#) for more detailed programming instructions.



Select GS1 DataBar Expanded Set Length 1 Setting

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




DEFAULT

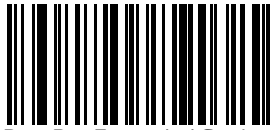
01 = Length 1 is 1 Character



## GS1 DataBar Expanded Set Length 2

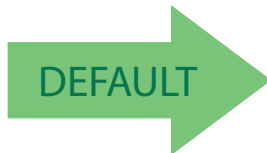
This feature specifies one of the bar code lengths for GS1 DataBar Expanded Length Control on page 130. Length 2 is the maximum label length if in Variable Length on page 130 Mode, or the second fixed length if in Fixed Length on page 130 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 309 for more detailed programming instructions.



Select GS1 DataBar Expanded Set Length 2 Setting

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



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.

	 <p>GS1 DataBar Limited Minimum Reads = 1</p>
 <p>GS1 DataBar Limited Minimum Reads = 2</p>	
	 <p>GS1 DataBar Limited Minimum Reads = 3</p>
 <p>GS1 DataBar Limited Minimum Reads = 4</p>	



## Code 39

The following options apply to the Code 39 symbology.

### Code 39 Enable/Disable

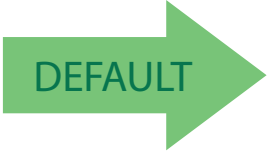

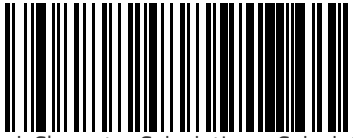

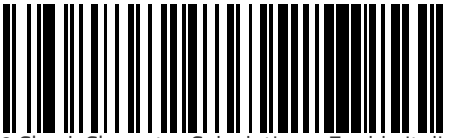
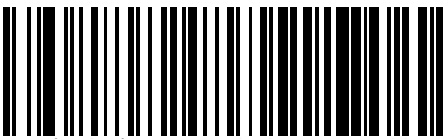
When disabled, the reader will not read Code 39 bar codes.

	 <p>Code 39 = Disable</p>
 <p>Code 39 = Enable</p>	



### 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.

	 <p>Code 39 Check Character Calculation = Don't Calculate</p>
 <p>Code 39 Check Character Calculation = Calculate Std Check</p>	
	 <p>Code 39 Check Character Calculation = Calculate Mod 7 Check</p>
 <p>Code 39 Check Character Calculation = Enable Italian Post Check</p>	
	 <p>Code 39 Check Character Calculation = Enable Daimler Chrysler Check</p>

## 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

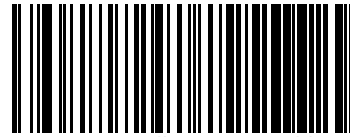
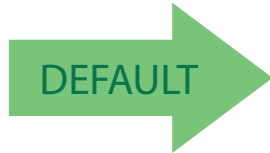
Enable this option to enable/disable transmission of Code 39 start and stop characters.

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

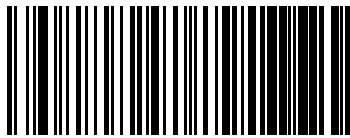


## Code 39 Full ASCII

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.

 <p>Code 39 Quiet Zones = Quiet Zone on one side</p>	
	 <p>Code 39 Quiet Zones = Quiet Zones on two sides</p>
 <p>Code 39 Quiet Zones = Auto</p>	
	 <p>Code 39 Quiet Zones = Virtual Quiet Zones on two sides</p>
 <p>Code 39 Quiet Zones = Small Quiet Zones on two sides</p>	



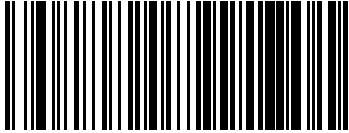

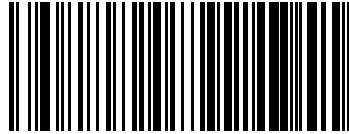

## Code 39 Minimum Reads

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 307 for more detailed programming instructions.

 <p>Code 39 Decoding Level = 1</p>	
	 <p>Code 39 Decoding Level = 2</p>
 <p>Code 39 Decoding Level = 3</p>	
	 <p>Code 39 Decoding Level = 4</p>
 <p>Code 39 Decoding Level = 5</p>	

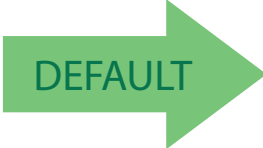


### Code 39 Length Control

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.

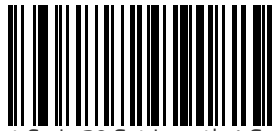
	 <p>Code 39 Length Control = Variable Length</p>
 <p>Code 39 Length Control = Fixed Length</p>	



## Code 39 Set Length 1

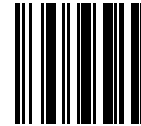
This feature specifies one of the bar code lengths for **Code 39 Length Control** on page 142. Length 1 is the minimum label length if in **Variable Length** on page 142 Mode, or the first fixed length if in **Fixed Length** on page 142 Mode. Length includes the bar code's data characters only.

The length can be set from 0 to 50 characters. See "**Set Length 1**" on page 308 for more detailed programming instructions.



Select Code 39 Set Length 1 Setting

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



CANCEL

DEFAULT

02 = Length 1 is 2 Characters



## Code 39 Set Length 2

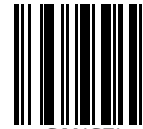
This feature specifies one of the bar code lengths for **Code 39 Length Control** on page 142. Length 2 is the maximum label length if in **Variable Length** on page 142 Mode, or the second fixed length if in **Fixed Length** on page 142 Mode. Length includes the bar code's check, data, and full-ASCII 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 309 for more detailed programming instructions.

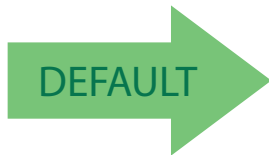


Select Code 39 Length 2 Setting

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



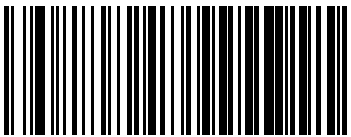
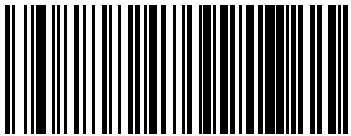
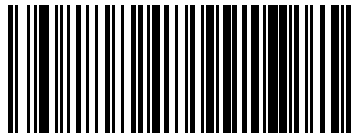
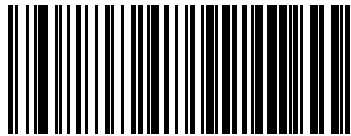
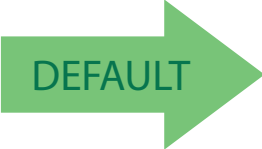
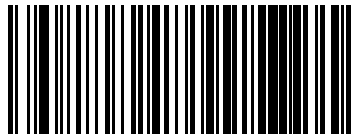
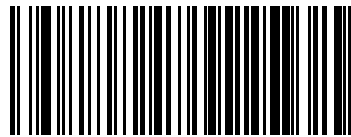
CANCEL



**50 = Length 2 is 50 Characters**

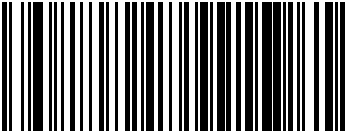
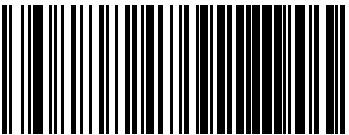
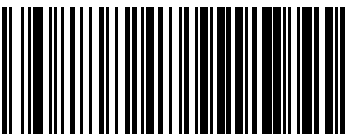
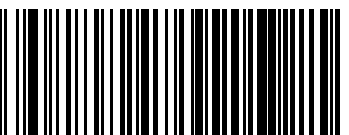
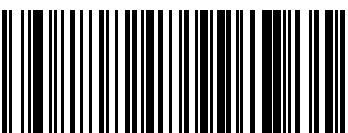
## Code 39 Interdigit Ratio

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	

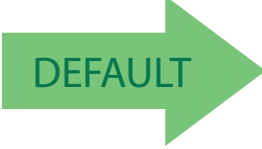
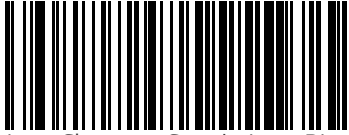
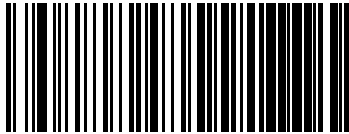


## Code 39 Interdigit Ratio (continued)

	 <p>Code 39 Interdigit Ratio = 6</p>
 <p>Code 39 Interdigit Ratio = 7</p>	
	 <p>Code 39 Interdigit Ratio = 8</p>
 <p>Code 39 Interdigit Ratio = 9</p>	
	 <p>Code 39 Interdigit Ratio = 10</p>

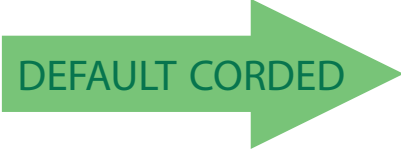
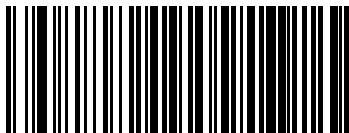
## Code 39 Character Correlation

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.

	 Code 39 Stitching = Disable
 Code 39 Stitching = Enable	

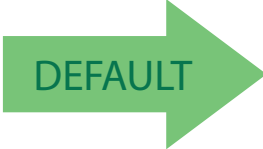
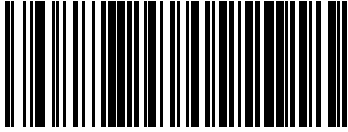
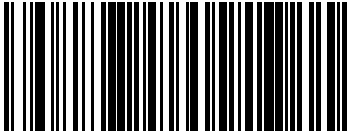


## Code 32 (Italian Pharmaceutical)

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



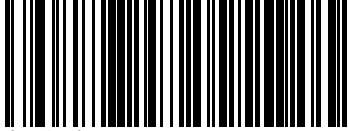
**NOTE**

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

- "Code 39 Quiet Zones" on page 139
- "Code 39 Minimum Reads" on page 140
- "Code 39 Decoding Level" on page 141
- "Code 39 Interdigit Ratio" on page 145
- "Code 39 Character Correlation" on page 147
- "Code 39 Stitching" on page 147

## Code 32 Check Character Transmission

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

	 <p>Code 32 Check Character Transmission = Don't Send</p>
 <p>Code 32 Check Character Transmission = Send</p>	

## Code 32 Start/Stop Character Transmission

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

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



## 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.

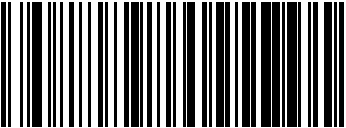


	 Code 39 CIP = Disable
 Code 39 CIP = Enable	

## Code 128

The following options apply to the Code 128 symbology.

### Code 128 Enable/Disable

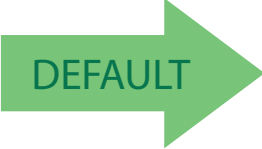

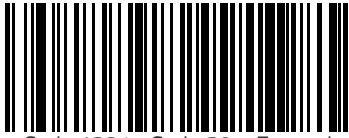
When disabled, the reader will not read Code 128 bar codes.

	 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	



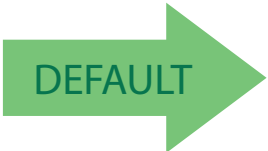
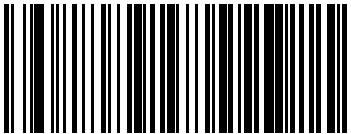
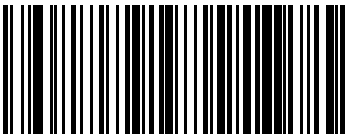
### Code 128 Function Character Transmission

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

	 <p>Code 128 Function Character Transmission = Don't Send</p>
 <p>Code 128 Function Character Transmission = Send</p>	

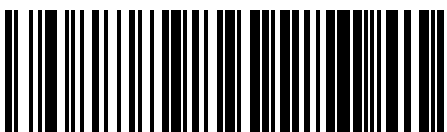
### Code 128 Sub-Code Change Transmission

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

	 <p>Code 128 Sub-Code Change Transmission = Disable</p>
 <p>Code 128 Sub-Code Change Transmission = Enable</p>	

## 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 307 for more detailed programming instructions.

 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.

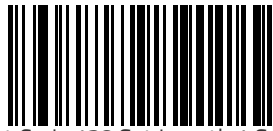
**Fixed Length:** For fixed length decoding, two different lengths may be set.

	 <p>Code 128 Length Control = Variable Length</p>
 <p>Code 128 Length Control = Fixed Length</p>	

## Code 128 Set Length 1

This feature specifies one of the bar code lengths for **Code 128 Length Control** on page 156. Length 1 is the minimum label length if in **Variable Length** on page 156 Mode, or the first fixed length if in **Fixed Length** on page 156 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 308 for more detailed programming instructions.



Select Code 128 Set Length 1 Setting

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



DEFAULT

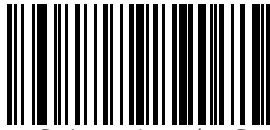
01 = Length 1 is 1 Character



## Code 128 Set Length 2

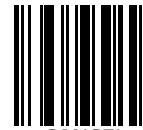
This feature specifies one of the bar code lengths for Code 128 Length Control on page 156. Length 2 is the maximum label length if in Variable Length on page 156 Mode, or the second fixed length if in Fixed Length on page 156 Mode. Length includes the bar code's data characters only.

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 309 for more detailed programming instructions.

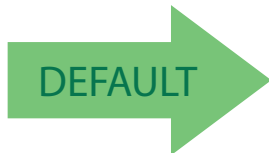


Select Code 128 Length 2 Setting

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



CANCEL



**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.

	 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.

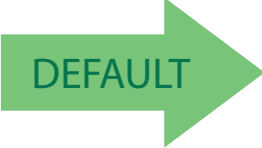
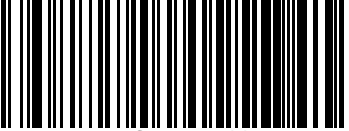
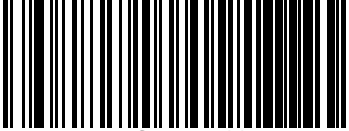
	 <p>GS1-128 = Transmit in Code 128 data format</p>
 <p>GS1-128 = Transmit in GS1-128 data format</p>	
	 <p>GS1-128 = Do not transmit GS1-128 labels</p>

## 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

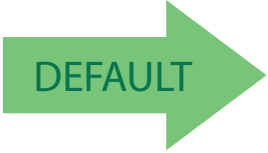
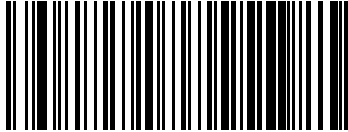
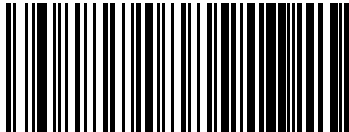
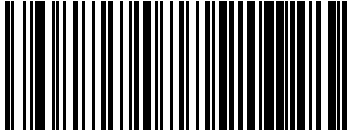
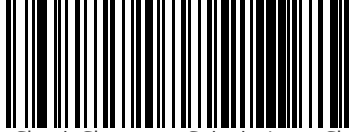



When disabled, the reader will not read I 2 of 5 bar codes.

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

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

## I 2 of 5 Check Character Transmission

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

	 <p>I 2 of 5 Check Character Transmission = Don't Send</p>
 <p>I 2 of 5 Check Character Transmission = Send</p>	

## 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.

	 <p>I 2 of 5 Minimum Reads = 1</p>
 <p>I 2 of 5 Minimum Reads = 2</p>	
	 <p>I 2 of 5 Minimum Reads = 3</p>
 <p>I 2 of 5 Minimum Reads = 4</p>	



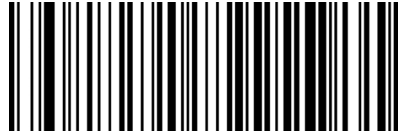
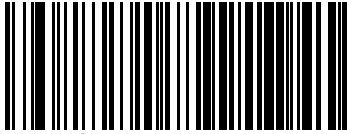
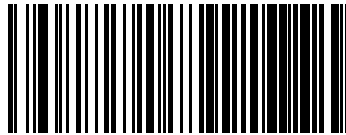


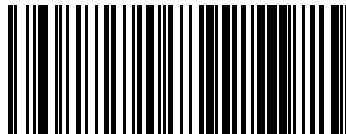

## I 2 of 5 Decoding Level



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 307 for more detailed programming instructions.

	 <p>2 of 5 Decoding Level = Disable</p>
 <p>2 of 5 Decoding Level = 1</p>	
	 <p>2 of 5 Decoding Level = 2</p>
 <p>2 of 5 Decoding Level = 3</p>	
	 <p>2 of 5 Decoding Level = 4</p>
 <p>2 of 5 Decoding Level = 5</p>	

## 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.

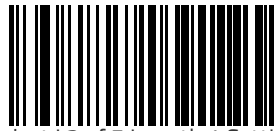
	 I 2 of 5 Length Control = Variable Length
 I 2 of 5 Length Control = Fixed Length	



## I 2 of 5 Set Length 1

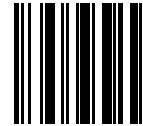
This feature specifies one of the bar code lengths for I 2 of 5 Length Control on page 165. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters in increments of two. See "Set Length 1" on page 308 for more detailed programming instructions.

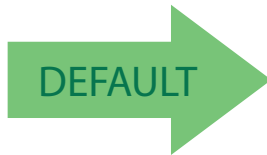


Select I 2 of 5 Length 1 Setting

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



CANCEL



**06 = Length 1 is 6 Characters**



## I 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for **I 2 of 5 Length Control** on page 165. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters in increments of two. A setting of 0 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 309 for more detailed programming instructions.



Select I 2 of 5 Length 2 Setting

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



DEFAULT

50 = Length 2 is 50 Characters



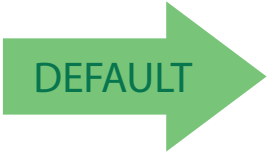


### I 2 of 5 Character Correlation

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.

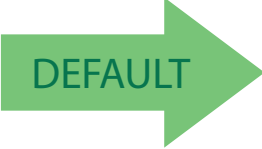
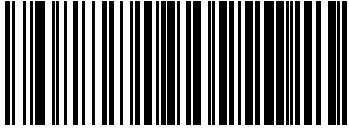
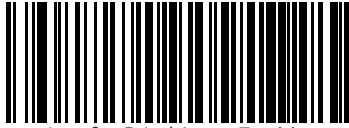
### I 2 of 5 Zero Pattern

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 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.

	 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	

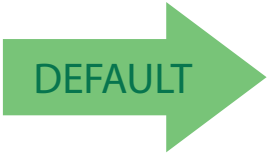


## Datalogic 2 of 5

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.

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



## Datalogic 2 of 5 Decoding Level



The Datalogic 2 of 5 Decoding Level feature is set using "1 2 of 5 Decoding Level" on page 164.

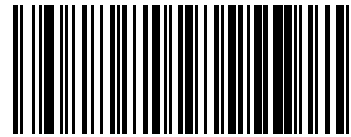
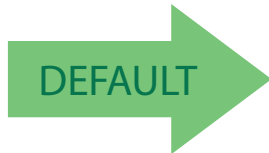
**NOTE**

## Datalogic 2 of 5 Length Control

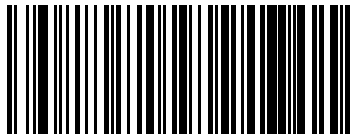
This feature specifies either variable length decoding or fixed length decoding for the Datalogic 2 of 5 symbology.

**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

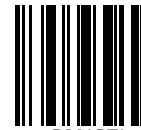
This feature specifies one of the bar code lengths for [Datalogic 2 of 5 Length Control on page 172](#). Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. The length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters in increments of two. Length includes the bar code's data characters. See "[Set Length 1](#)" on page 308 for detailed programming instructions.

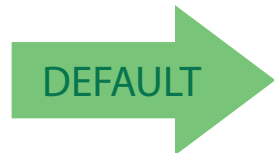


Select Datalogic 2 of 5 Length 1 Setting

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



CANCEL



**06 = Length 1 is 6 Characters**



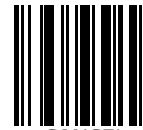
## Datalogic 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for **Datalogic 2 of 5 Length Control** on page 172. Length 2 is the maximum label length if in **Variable Length** on page 165 Mode, or the second fixed length if in **Fixed Length** on page 165 Mode. The length includes the bar code's check and data characters. The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "**Set Length 2**" on page 309 for more detailed programming instructions.

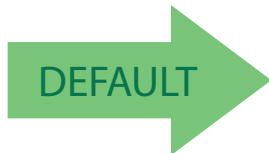


Select Datalogic 2 of 5 Length 2 Setting

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



CANCEL

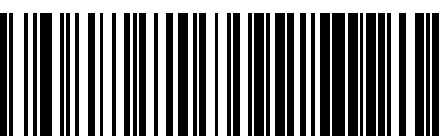


**50 = Length 2 is 50 Characters**



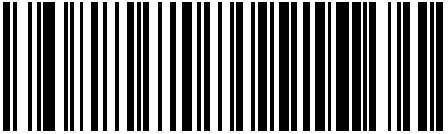
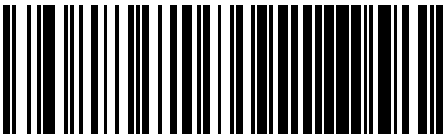
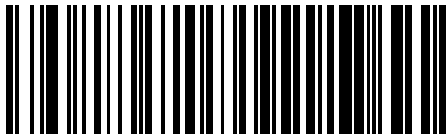
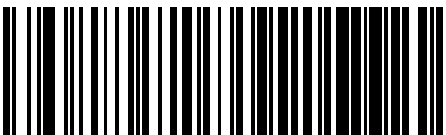
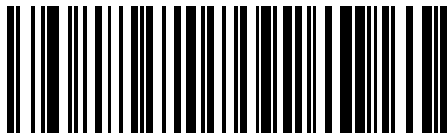
## Datalogic 2 of 5 Interdigit Maximum Ratio

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

 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 1</p>	
	 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 2</p>
 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 3</p>	
	 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 4</p>
 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 5</p>	



## Datalogic 2 of 5 Interdigit Maximum Ratio (continued)

	 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 6</p>
 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 7</p>	
	 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 8</p>
 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 9</p>	
	 <p>Datalogic 2 of 5 Interdigit Maximum Ratio = 10</p>

## 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.

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

## Datalogic 2 of 5 Stitching

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

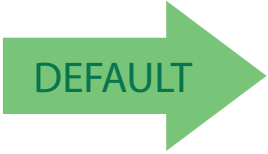
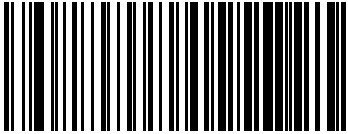
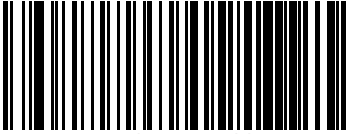
	 Datalogic 2 of 5 Stitching = Disable
 Datalogic 2 of 5 Stitching = Enable	



## Codabar

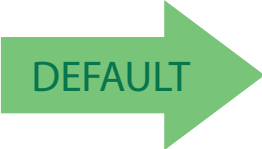
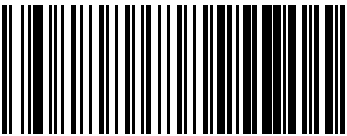
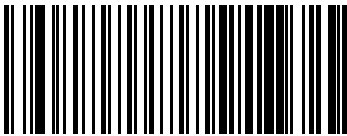
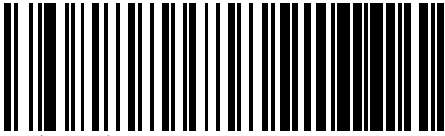
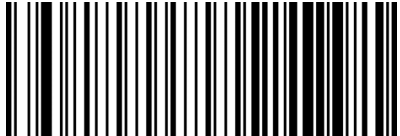
### Codabar Enable/Disable

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

	 Codabar = Disable
 Codabar = Enable	

## Codabar Check Character Calculation

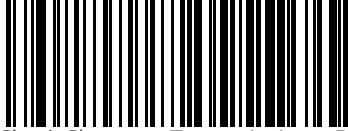
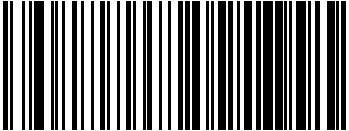

Enable this option to enables/disables calculation and verification of an optional Codabar check character. When disabled, any check characters in the label are treated as data characters.

	 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 Calculation = Enable NW-7	



### Codabar Check Character Transmission

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

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

### 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	


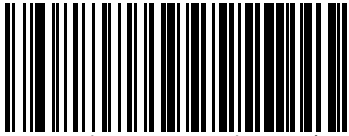
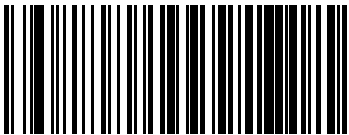
## Codabar Start/Stop Character Set

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.

 <p>Codabar Quiet Zones = Quiet Zone on one side</p>	
	 <p>Codabar Quiet Zones = Quiet Zones on two sides</p>
 <p>Codabar Quiet Zones = Auto</p>	
	 <p>Codabar Quiet Zones = Virtual Quiet Zones on two sides</p>
 <p>Codabar Quiet Zones = Small Quiet Zones on two sides</p>	



## Codabar Minimum Reads

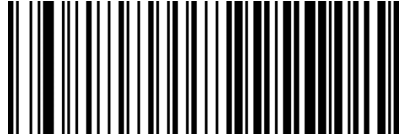
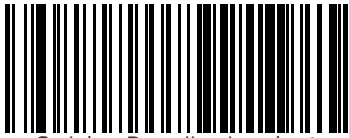
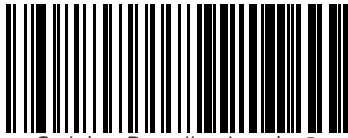
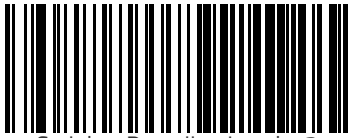

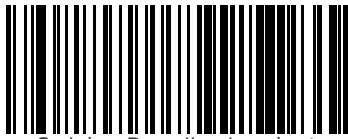
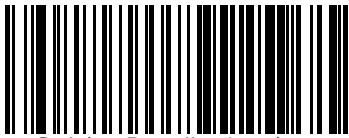
This feature specifies the minimum number of consecutive times a Codabar label must be decoded before it is accepted as good read.

	 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 307 for more detailed programming instructions.

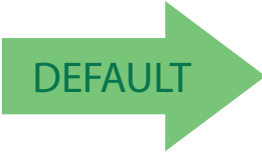
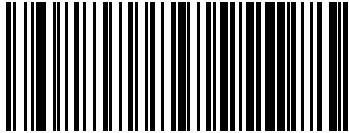
	 Codabar Decoding Level = Disable
 Codabar Decoding Level = 1	
	 Codabar Decoding Level = 2
 Codabar Decoding Level = 3	
	 Codabar Decoding Level = 4
 Codabar Decoding Level = 5	

## 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.

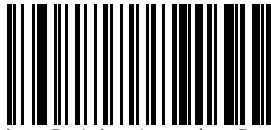
	 <p>Codabar Length Control = Variable Length</p>
 <p>Codabar Length Control = Fixed Length</p>	



### Codabar Set Length 1

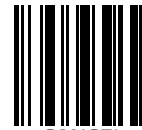
This feature specifies one of the bar code lengths for **Codabar Length Control** on page 185. Length 1 is the minimum label length if in **Variable Length** on page 185 Mode, or the first fixed length if in **Fixed Length** on page 185 Mode. Length includes the bar code's start, stop, check and data characters. The length must include at least one data character.

The length can be set from 3 to 50 characters in increments of two. See "**Set Length 1**" on page 308 for more detailed programming instructions.

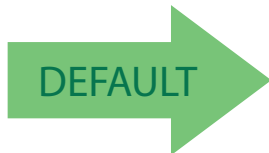


Select Codabar Length 1 Setting

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



CANCEL



**03 = Length 1 is 3 Characters**

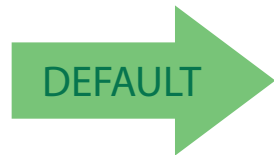
## Codabar Set Length 2

This feature specifies one of the bar code lengths for [Codabar Length Control on page 185](#). Length 2 is the maximum label length if in [Variable Length on page 185 Mode](#), or the second fixed length if in [Fixed Length on page 185 Mode](#). The length includes the bar code's start, stop, check and data characters. The length must include at least one data character.

The length can be set from 3 to 50 characters in increments of two. A setting of 00 specifies to ignore this length (only one fixed length). See "[Set Length 2](#)" on page 309 for more detailed programming instructions.



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

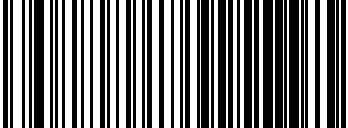
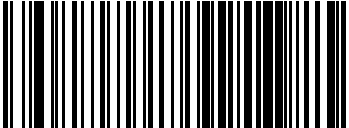
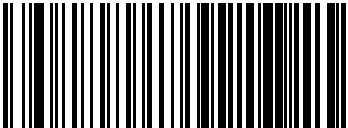
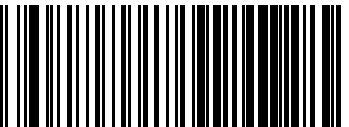

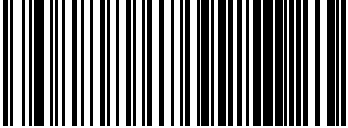
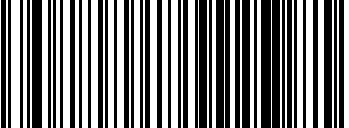


**50 = Length 2 is 50 Characters**

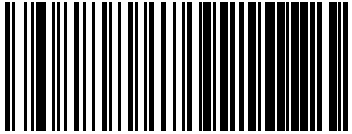
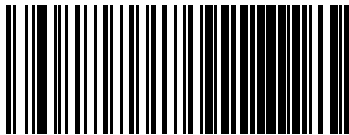
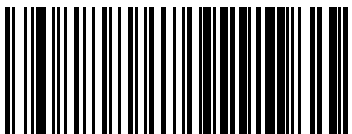
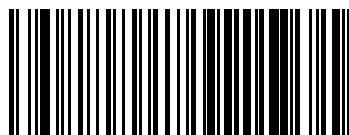



## Codabar Interdigit Ratio

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

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

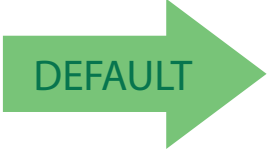

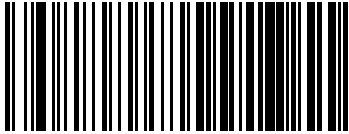
### Codabar Interdigit Ratio (continued)

	 <p>Codabar Interdigit Ratio = 6</p>
 <p>Codabar Interdigit Ratio = 7</p>	
	 <p>Codabar Interdigit Ratio = 8</p>
 <p>Codabar Interdigit Ratio = 9</p>	
	 <p>Codabar Interdigit Ratio = 10</p>



### 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.

	 <p>Codabar Character Correlation = Disable</p>
 <p>Codabar Character Correlation = Enable</p>	

### 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.

	 <p>Codabar Stitching = Disable</p>
 <p>Codabar Stitching = Enable</p>	

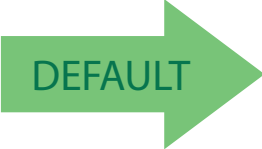
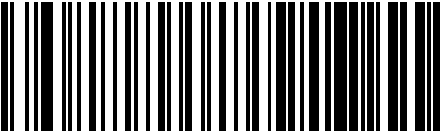


## ABC Codabar

The following options apply to the ABC Codabar symbology.

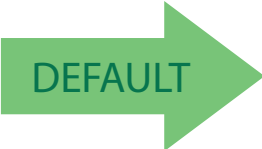
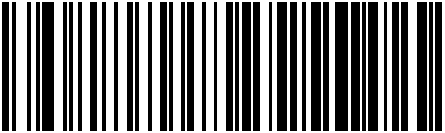
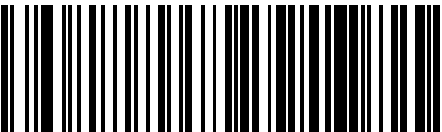
### ABC Codabar Enable/Disable

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

	 <p>ABC Codabar = Disable</p>
 <p>ABC Codabar = Enable</p>	

### ABC Codabar Concatenation Mode

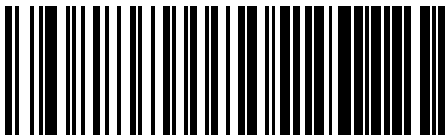
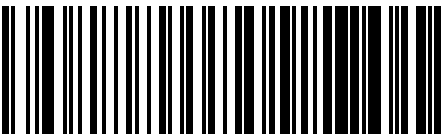
Specifies the concatenation mode between Static and Dynamic.

	 <p>ABC Codabar Concatenation Mode = Static</p>
 <p>ABC Codabar Concatenation Mode = Dynamic</p>	



### ABC Codabar Dynamic Concatenation Timeout

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

	 <p>ABC Codabar Dynamic Concatenation Timeout = 50 msec</p>
 <p>ABC Codabar Dynamic Concatenation Timeout = 100 msec</p>	
	 <p>ABC Codabar Dynamic Concatenation Timeout = 200 msec</p>
 <p>ABC Codabar Dynamic Concatenation Timeout = 500 msec</p>	
	 <p>ABC Codabar Dynamic Concatenation Timeout = 750 msec</p>
 <p>ABC Codabar Dynamic Concatenation Timeout = 1 Second</p>	

## ABC Codabar Force Concatenation

Forces labels starting or ending with D to be concatenated.

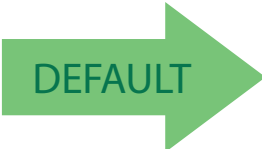
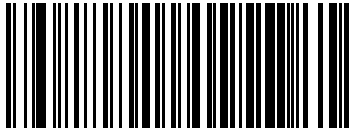

	 ABC Codabar Force Concatenation = Disable
 ABC Codabar Force Concatenation = Enable	

## 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	




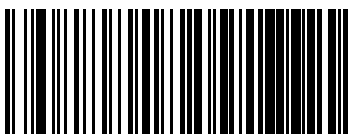

### Code 11 Check Character Calculation

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** on page 196. Length 1 is the minimum label length if in **Variable Length** on page 196 Mode, or the first fixed length if in **Fixed Length** on page 196 Mode. Length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters, in increments of two. See "Set Length 1" on page 308 for more detailed programming instructions.



Select Code 11 Set Length 1 Setting

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



DEFAULT

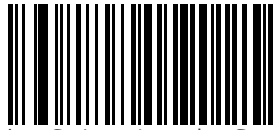
04 = Length 1 is 4 Characters



## Code 11 Set Length 2

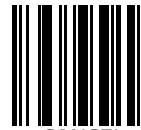
This feature specifies one of the bar code lengths for **Code 11 Length Control** on page 196. Length 2 is the maximum label length if in **Variable Length** on page 196 Mode, or the second fixed length if in **Fixed Length** on page 196 Mode. Length includes the bar code's check and data characters.

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 309 for more detailed programming instructions.

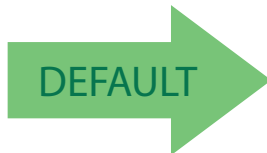


Select Code 11 Length 2 Setting

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



CANCEL

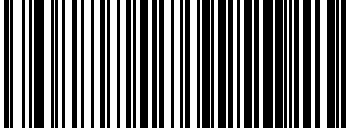
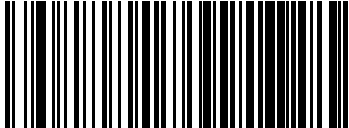
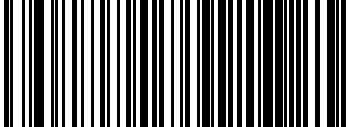
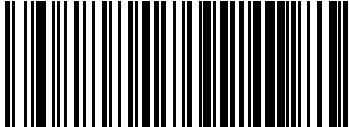

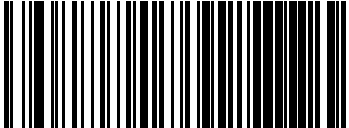
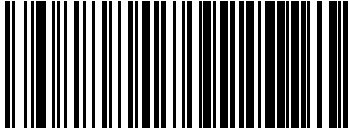


**50 = Length 2 is 50 Characters**




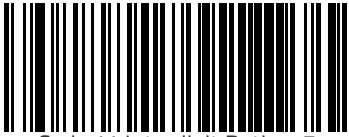
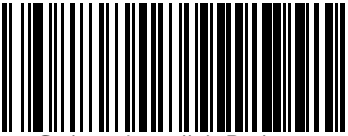
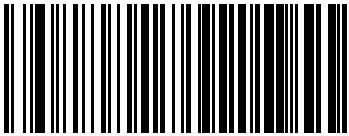
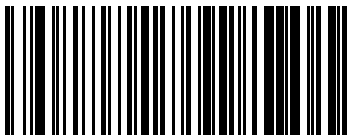
## Code 11 Interdigit Ratio

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
 Code 11 Interdigit Ratio = 3	
	 Code 11 Interdigit Ratio = 4
 Code 11 Interdigit Ratio = 5	

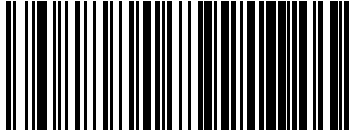
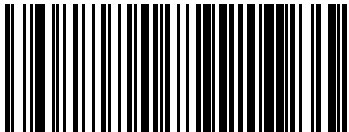
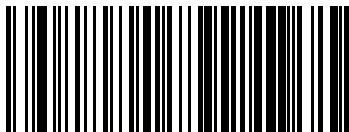

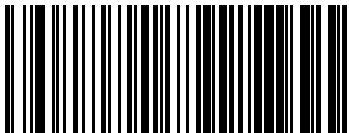
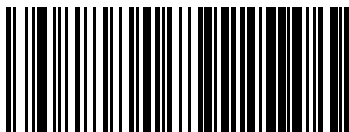


## Code 11 Interdigit Ratio (continued)

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

## Code 11 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "[Decoding Levels](#)" on page 307 for more detailed programming instructions.

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



### Code 11 Character Correlation

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

	 <p>Code 11 Character Correlation = Disable</p>
 <p>Code 11 Character Correlation = Enable</p>	

### 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.

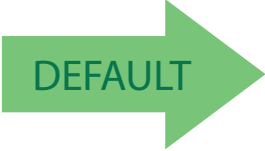
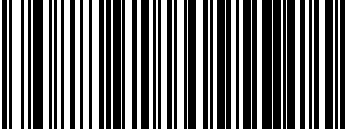
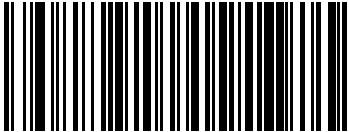
	 <p>Code 11 Stitching = Disable</p>
 <p>Code 11 Stitching = Enable</p>	

## 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



The Standard 2 of 5 Decoding Level feature is set using "1 2 of 5 Decoding Level" on page 164.

### NOTE

## 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

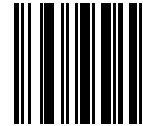
This feature specifies one of the bar code lengths for **Standard 2 of 5 Length Control** on page 205. Length 1 is the minimum label length if in **Variable Length** on page 205 Mode, or the first fixed length if in **Fixed Length** on page 205 Mode. Length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "**Set Length 1**" on page 308 for more detailed programming instructions.

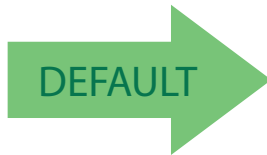


Select Standard 2 of 5 Length 1 Setting

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



CANCEL



**08 = Length 1 is 8 Characters**



## Standard 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for **Standard 2 of 5 Length Control** on page 205. Length 2 is the maximum label length if in **Variable Length** on page 205 Mode, or the second fixed length if in **Fixed Length** on page 205 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 309 for more detailed programming instructions.



Select Standard 2 of 5 Length 2 Setting

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



DEFAULT

50 = Length 2 is 50 Characters



### Standard 2 of 5 Character Correlation

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

	 <p>Standard 2 of 5 Character Correlation = Disable</p>
 <p>Standard 2 of 5 Character Correlation = Enable</p>	

### 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.

	 <p>Standard 2 of 5 Stitching = Disable</p>
 <p>Standard 2 of 5 Stitching = Enable</p>	

## Industrial 2 of 5

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


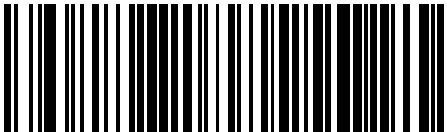
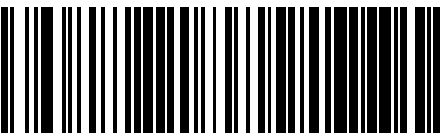
### Industrial 2 of 5 Enable/Disable

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

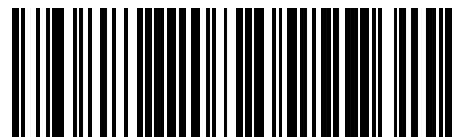
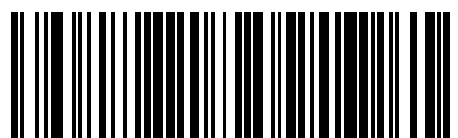

Enables/Disables calculation and verification of an optional Industrial 2 of 5 check character.

	 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.

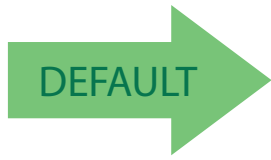
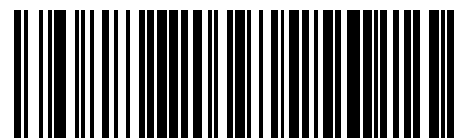
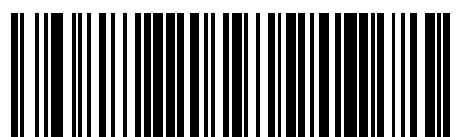
	 Industrial 2 of 5 Check Character Transmission = Disable
 Industrial 2 of 5 Check Character Transmission = Enable	

## 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.

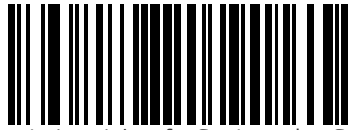
**Fixed Length:** For fixed length decoding, two different lengths may be set.

	 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** on page 210. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 50 characters, and includes check and data characters. See "**Set Length 1**" on page 308 for more detailed programming instructions.



Select Industrial 2 of 5 Set Length 1 Setting

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




DEFAULT

01 = Length 1 is 1 Character



## Industrial 2 of 5 Set Length 2

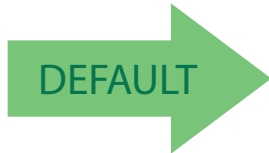
This feature specifies one of the bar code lengths for **Industrial 2 of 5 Length Control** on page 210. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's check, data, and full-ASCII shift characters.

The length can be set from 1 to 50 characters. The length includes check and data characters. A setting of 00 specifies to ignore this length (only one fixed length). See "**Set Length 2**" on page 309 for more detailed programming instructions.



Select Industrial 2 of 5 Length 2 Setting

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



**50 = Length 2 is 50 Characters**

## Industrial 2 of 5 Minimum Reads

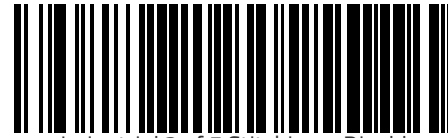
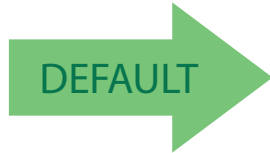
This feature specifies the minimum number of consecutive times an Industrial 2 of 5 label must be decoded before it is accepted as good read.

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

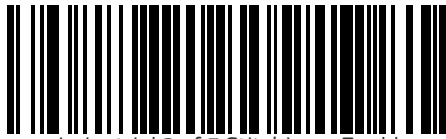


### Industrial 2 of 5 Stitching

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



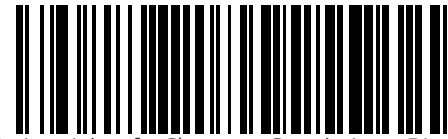
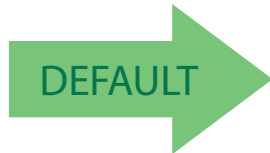
Industrial 2 of 5 Stitching = Disable



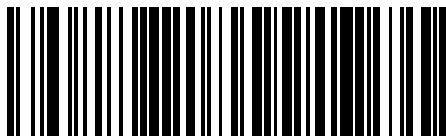
Industrial 2 of 5 Stitching = Enable

### 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 Check Character Transmission

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



## ISBT 128

The following options apply to the ISBT 128 symbology.

### ISBT 128 Concatenation

Enables/disables ISBT128 concatenation of 2 labels.

	 <p>ISBT 128 Concatenation = Disable</p>
 <p>ISBT128 Concatenation = Enable</p>	

### ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.



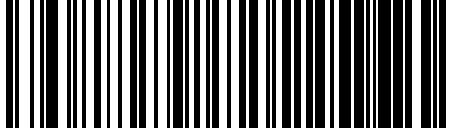
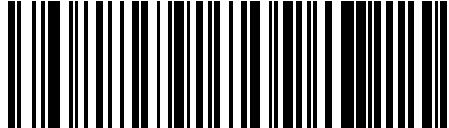
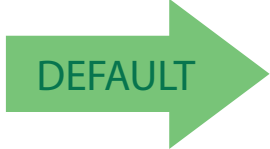

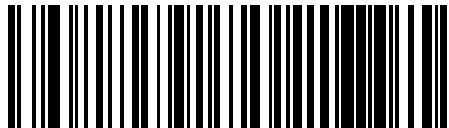

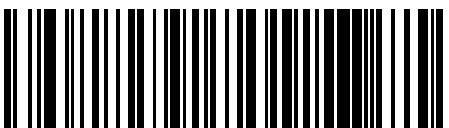
**NOTE**

This option is only valid when ISBT 128 Concatenation on page 216 is enabled (see page <Links>11-216).

	 <p>ISBT 128 Concatenation Mode = Static</p>
 <p>ISBT 128 Concatenation Mode = Dynamic</p>	

## ISBT 128 Dynamic Concatenation Timeout

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

	 <p>ISBT 128 Dynamic Concatenation Timeout = 50 msec</p>
 <p>ISBT 128 Dynamic Concatenation Timeout = 100 msec</p>	
	 <p>ISBT 128 Dynamic Concatenation Timeout = 200 msec</p>
 <p>ISBT 128 Dynamic Concatenation Timeout = 500 msec</p>	
	 <p>ISBT 128 Dynamic Concatenation Timeout = 750 msec</p>
 <p>ISBT 128 Dynamic Concatenation Timeout = 1 second</p>	



## ISBT 128 Force Concatenation

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



**NOTE**

This option is only valid when ISBT 128 Concatenation on page 216 is enabled. (see page <Links>11-216).

	 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 Check Character Calculation

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



## MSI Check Character Transmission

Enables/disables transmission of an MSI check character.

	 <p>MSI Check Character Transmission = Disable</p>
 <p>MSI Check Character Transmission = Enable</p>	

## 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.

	 <p>MSI Length Control = Variable Length</p>
 <p>MSI = Fixed Length</p>	

## MSI Set Length 1

This feature specifies one of the bar code lengths for **MSI Length Control** on [page 220](#). Length 1 is the minimum label length if in **Variable Length** on [page 220 Mode](#), or the first fixed length if in **Fixed Length** on [page 220 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 308](#) for more detailed programming instructions.



Select MSI Set Length 1 Setting

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



DEFAULT

01 = Length 1 is 1 Character



## MSI Set Length 2

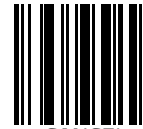
This feature specifies one of the bar code lengths for [MSI Length Control on page 220](#). Length 2 is the maximum label length if in [Variable Length on page 220 Mode](#), or the second fixed length if in [Fixed Length on page 220 Mode](#). Length includes the bar code's check, data, and full-ASCII 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 309 for more detailed programming instructions.

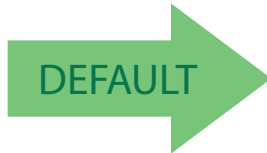


Select MSI Length 2 Setting

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



CANCEL



**50 = Length 2 is 50 Characters**



## MSI Minimum Reads

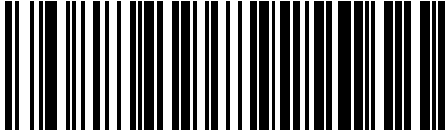
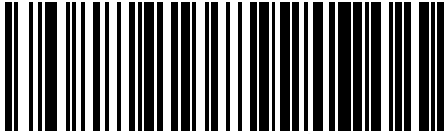
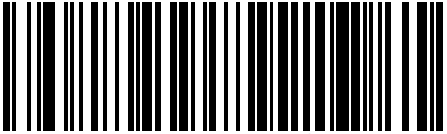
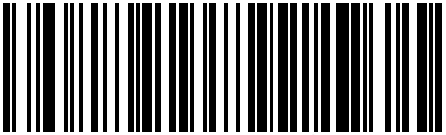

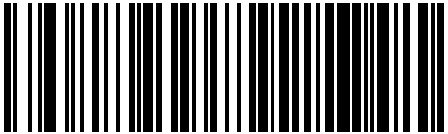
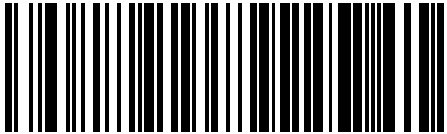
This feature specifies the minimum number of consecutive times an MSI label must be decoded before it is accepted as good read.

	 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 307 for more detailed programming instructions.

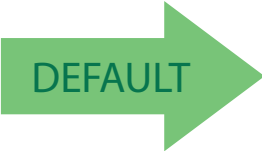
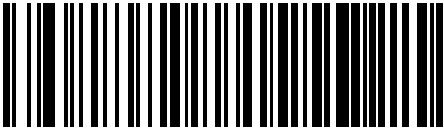
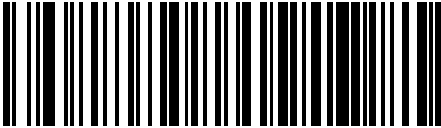
	 MSI Decoding Level = Disable
 MSI Decoding Level = 1	
	 MSI Decoding Level = 2
 MSI Decoding Level = 3	
	 MSI Decoding Level = 4
 MSI Decoding Level = 5	

## 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.

	 <p>Code 93 Check Character Transmission = Disable</p>
 <p>Code 93 Check Character Transmission = Enable</p>	

### 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.

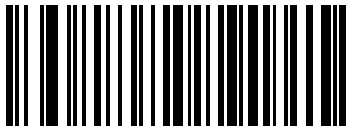

**Fixed Length:** For fixed length decoding, two different lengths may be set.

	 <p>Code 93 Length Control = Variable Length</p>
 <p>Code 93 = Fixed Length</p>	

## Code 93 Set Length 1

This feature specifies one of the bar code lengths for **Code 93 Length Control** on page 226. Length 1 is the minimum label length if in **Variable Length** on page 226 Mode, or the first fixed length if in **Fixed Length** on page 226 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 308 for more detailed programming instructions.

 <p>Select Code 93 Set Length 1 Setting</p>	
<p>Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.</p>	 <p>CANCEL</p>


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



## Code 93 Set Length 2

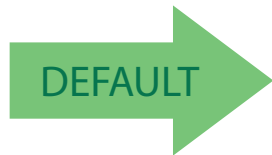
This feature specifies one of the bar code lengths for **Code 93 Length Control** on page 226. Length 2 is the maximum label length if in **Variable Length** on page 226 Mode, or the second fixed length if in **Fixed Length** on page 226 Mode. Length includes the bar code's check, data, and full-ASCII 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 309 for more detailed programming instructions.



Select Code 93 Length 2 Setting

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



**50 = Length 2 is 50 Characters**

## Code 93 Minimum Reads

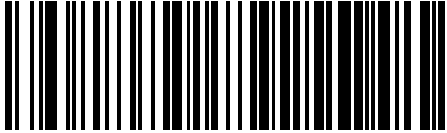


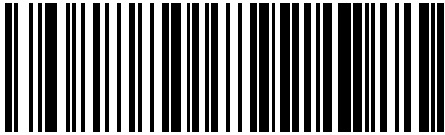

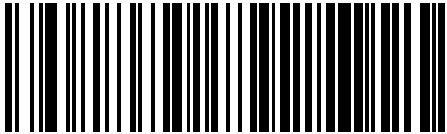
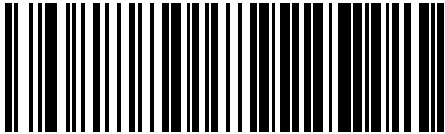
This feature specifies the minimum number of consecutive times a Code 93 label must be decoded before it is accepted as good read.

	 <p>Code 93 Minimum Reads = 1</p>
 <p>Code 93 Minimum Reads = 2</p>	
	 <p>Code 93 Minimum Reads = 3</p>
 <p>Code 93 Minimum Reads = 4</p>	



### Code 93 Decoding Level

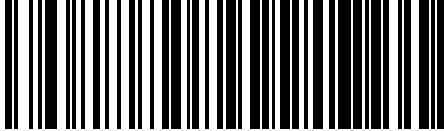
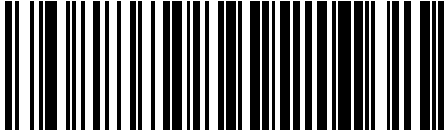
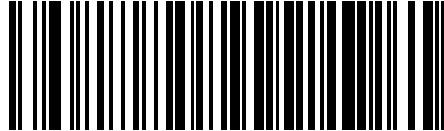
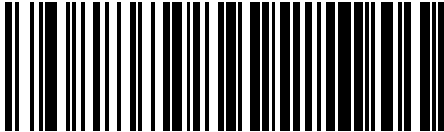
Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See "Decoding Levels" on page 307 for more detailed programming instructions.

	 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.

	 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.

	 <p>Code 93 Stitching = Disable</p>
 <p>Code 93 Stitching = Enable</p>	

### Code 93 Character Correlation

Enables/disables Character Correlation for Code 93.

	 <p>Code 93 Character Correlation = Disable</p>
 <p>Code 93 Character Correlation = Enable</p>	

## Codablock F

The following options apply to the Codablock F symbology.

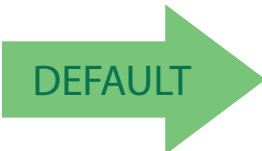
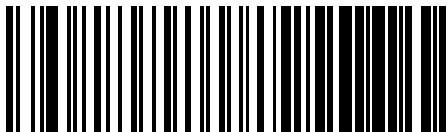
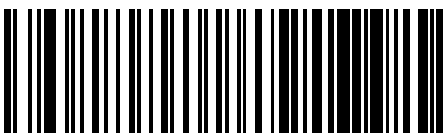
### Codablock F Enable/Disable

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.

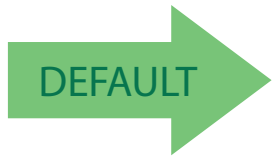

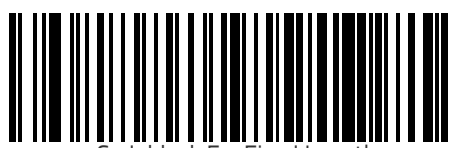
	 <p>Codablock F AIM Check = Not AIM compliant</p>
 <p>Codablock F AIM Check = AIM compliant</p>	

### 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.

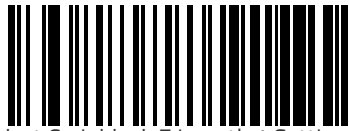
**Fixed Length:** For fixed length decoding, two different lengths may be set.

	 <p>Codablock F Length Control = Variable Length</p>
 <p>Codablock F = Fixed Length</p>	

## Codablock F Set Length 1

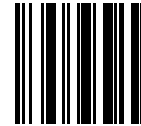
This feature specifies one of the bar code lengths for **Codablock F Length Control** on page 234. Length 1 is the minimum label length if in **Variable Length** on page 234 Mode, or the first fixed length if in **Fixed Length** on page 234 Mode. Length includes the bar code's data characters only.

The length can be set from 003 to 255 characters. See "**Set Length 1**" on page 308 for more detailed programming instructions.



Select Codablock F Length 1 Setting

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



CANCEL

DEFAULT

003 = Length 1 is 3 Characters



## Codablock F Set Length 2

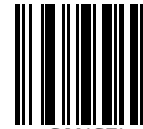
This feature specifies one of the bar code lengths for Codablock F Length Control on page 234. Length 2 is the maximum label length if in Variable Length on page 234 Mode, or the second fixed length if in Fixed Length on page 234 Mode. Length includes the bar code's check, data, and full-ASCII shift 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 309 for more detailed programming instructions.

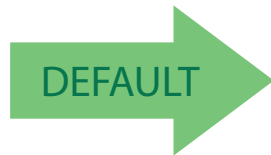


Select Codablock F Length 2 Setting

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



CANCEL



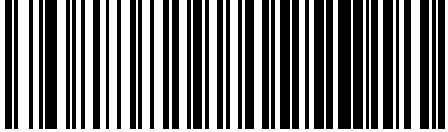

**100 = Length 2 is 100 Characters**

## 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.

	 <p>Code 4 Hex to Decimal Conversion = Disable</p>
 <p>Code 4 Hex to Decimal Conversion = Enable</p>	

### Code 5

The following options apply to the Code 5 symbology.

#### Code 5 Enable/Disable

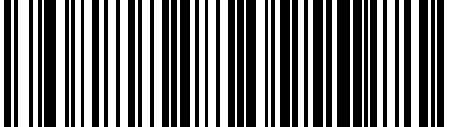
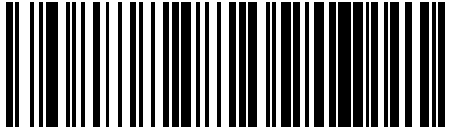
Enables/Disables ability of reader to decode Code 5 labels.

	 <p>Code 5 = Disable</p>
 <p>Code 5 = Enable</p>	



## 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.


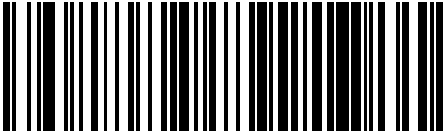
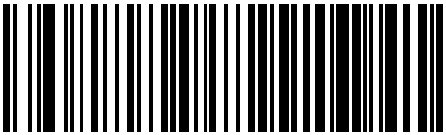
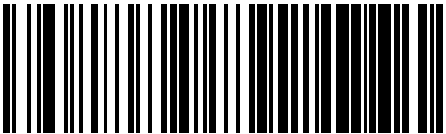

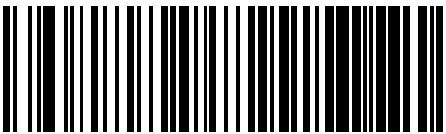
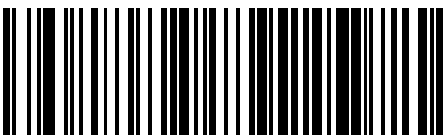
### Code 4 and 5 Decoding Level

Decoding Levels are used to configure a bar code symbology decoder to be very aggressive to very conservative, depending on customer needs. See "Decoding Levels" on page 307 for more detailed programming instructions.



**NOTE**

This configuration item applies to Code 4 and Code 5.

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

	 <p>Code 4 or Code 5 Minimum Reads = 1</p>
 <p>Code 4 or Code 5 Minimum Reads = 2</p>	
	 <p>Code 4 or Code 5 Minimum Reads = 3</p>
 <p>Code 4 or Code 5 Minimum Reads = 4</p>	




## 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.

## BC412

The following options apply to the BC412 symbology.

### BC412 Enable/Disable

Enables/Disables ability of reader to decode BC412 labels.


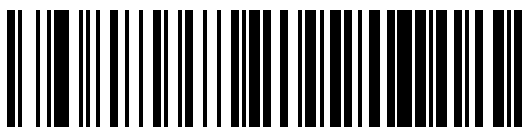
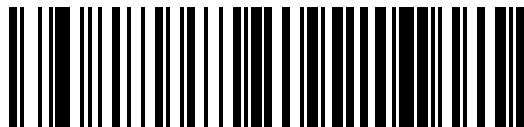
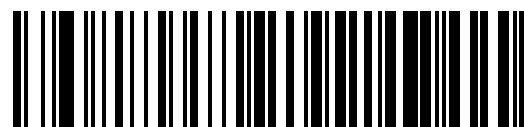
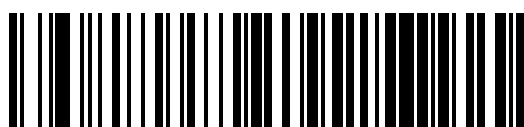
## BC412 Check Character Calculation

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


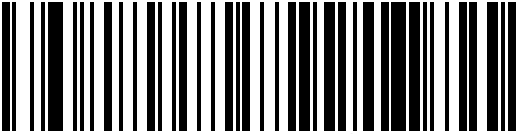
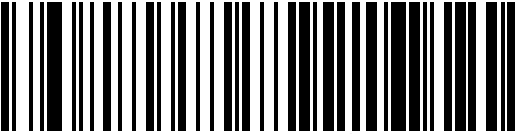
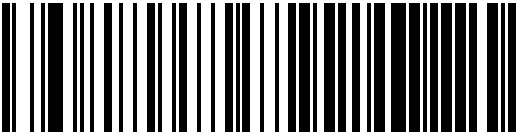

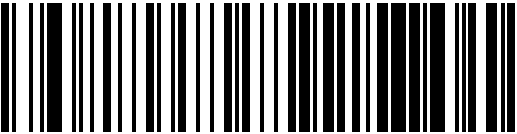
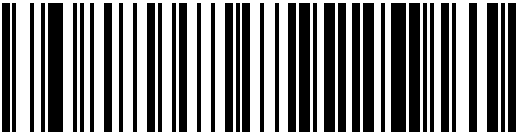
This feature specifies the minimum number of consecutive times a BC412 label must be decoded before it is accepted as good read.

	 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 307 for more detailed programming instructions.

	 BC412 Decoding Level = Disable
 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.

	 <p>BC412 Length Control = Variable Length</p>
 <p>BC412 Length Control = Fixed Length</p>	



## BC412 Set Length 1

This feature specifies one of the bar code lengths for BC412 Length Control on page 245. Length 1 is the minimum label length if in Variable Length on page 245 Mode, or the first fixed length if in Fixed Length on page 245 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 308 for more detailed programming instructions.

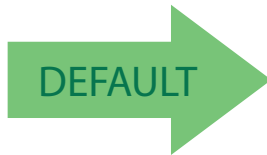


Select BC412 Set Length 1 Setting

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



CANCEL



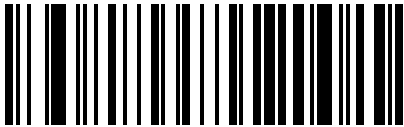
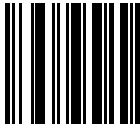
01 = Length 1 is 1 Character

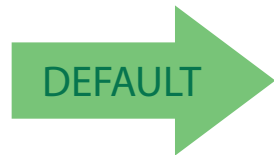


## BC412 Set Length 2

This feature specifies one of the bar code lengths for **BC412 Length Control** on page 245. Length 2 is the maximum label length if in **Variable Length** on page 245 Mode, or the second fixed length if in **Fixed Length** on page 245 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 309 for more detailed programming instructions.

 Select Code 39 Length 2 Setting	
<p>Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.</p>	 CANCEL



**50 = Length 2 is 50 Characters**



## Plessey

The following options apply to the Plessey symbology.

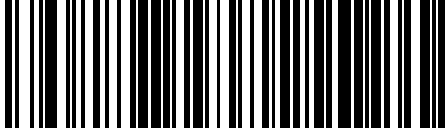




### Plessey Enable/Disable

Enables/Disables ability of reader to decode Plessey labels.

## Plessey 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	

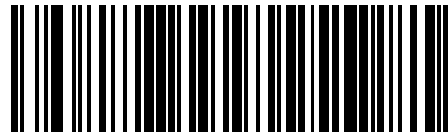
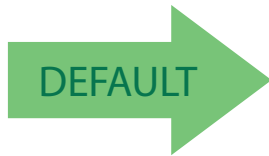


## Plessey Length Control

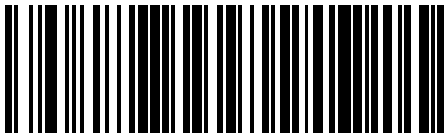
This feature specifies either variable length decoding or fixed length decoding for the Plessey symbology.

**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

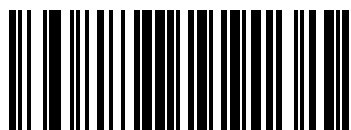
## Plessey Set Length 1

This feature specifies one of the barcode lengths for Plessey Length Control on page 250. Length 1 is the minimum label length if in Variable Length on page 250 Mode, or the first fixed length if in Fixed Length on page 250 Mode. Length includes the barcode's data characters only. The length can be set from 01 to 50 characters.

Table 3 provides some examples for setting Length 1. See page 308 for detailed instructions on setting this feature.

**Table 3. Plessey Length 1 Setting Examples**

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



Select Plessey Set Length 1 Setting

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



CANCEL

DEFAULT

01 = Length 1 is 1 Character

## Plessey Set Length 2

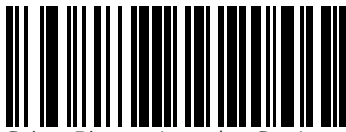
This feature specifies one of the barcode lengths for Plessey Length Control on page 250. Length 2 is the maximum label length if in Variable Length on page 250 Mode, or the second fixed length if in Fixed Length on page 250 Mode. Length includes the barcode’s check, data, and full-ASCII shift characters. 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 4 provides examples for setting Length 2. See page 309 for detailed instructions on setting this feature.

**Table 4. 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				

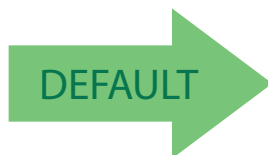


Select Plessey Length 2 Setting

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**

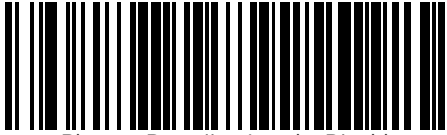
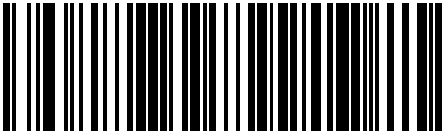
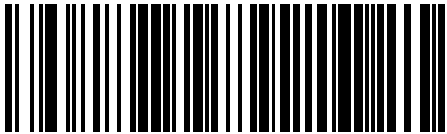
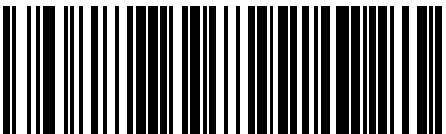


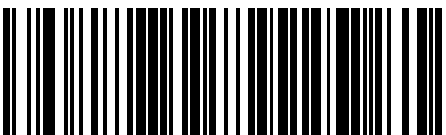
## Plessey Minimum Reads

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

	 <p>Plessey Minimum Reads = 1</p>
 <p>Plessey Minimum Reads = 2</p>	
	 <p>Plessey Minimum Reads = 3</p>
 <p>Plessey Minimum Reads = 4</p>	

## Plessey Decoding Level

Specifies the decoding level for Plessey. Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See [page 307](#) for more information on this feature.

	 <p>Plessey Decoding Level = Disable</p>
 <p>Plessey Decoding Level = 1 (conservative)</p>	
	 <p>Plessey Decoding Level = 2</p>
 <p>Plessey Decoding Level = 3</p>	
	 <p>Plessey Decoding Level = 4</p>
 <p>Plessey Decoding Level = 5 (aggressive)</p>	




## Plessey Stitching

Enables/disables fixed length stitching for Plessey.

	 <p>Plessey Stitching = Disable</p>
 <p>Plessey Stitching = Enable</p>	

## Plessey Character Correlation

Enables/disables Character Correlation for Plessey.

	 <p>Plessey Character Correlation = Disable</p>
 <p>Plessey Character Correlation = Enable</p>	

# NOTES

# WIRELESS FEATURES

This section provides options and programming related to the reader's wireless communication features. Reference [Appendix B](#) for a listing of standard factory settings.

<b>WIRELESS BEEPER FEATURES</b> starting on page 258 <ul style="list-style-type: none"><li>•Good Transmission Beep on page 258</li><li>•Beep Frequency on page 258</li><li>•Beep Duration on page 259</li><li>•Beep Volume on page 260</li><li>•Disconnect Beep on page 260</li><li>•Docking Beep on page 261</li><li>•Leash Alarm on page 261</li></ul>
<b>CONFIGURATION UPDATES</b> starting on page 263 <ul style="list-style-type: none"><li>•Automatic Configuration Update on page 263</li><li>•Copy Configuration to Scanner on page 263</li><li>•Copy Configuration to Base Station on page 264</li></ul>
<b>BATCH FEATURES</b> starting on page 265 <ul style="list-style-type: none"><li>•Batch Mode on page 265</li><li>•Send Batch on page 265</li><li>•Erase Batch Memory on page 266</li><li>•RF Batch Mode Transmit Delay on page 267</li></ul>
<b>DIRECT RADIO AUTO LINK</b> starting on page 268
<b>BLUETOOTH-ONLY FEATURES</b> starting on page 269 <ul style="list-style-type: none"><li>•Source Radio Address Transmission on page 269</li><li>•Source Radio Address Delimiter Character on page 270</li><li>•Link Timeout on page 270</li><li>•BT Security Features on page 271</li><li>•BT Security Mode on page 271</li><li>•BT Pin Code on page 272</li><li>•Select PIN Code Length on page 272</li><li>•BT HID Variable PIN Code on page 273</li><li>•BT HID ALT Mode on page 273</li><li>•BT HID Country Mode on page 274</li><li>•BT HID Caps Lock State Control on page 274</li><li>•BT HID Intercharacter Delay Control on page 274</li><li>•BT HID Toggle On-Screen Keyboard on page 274</li><li>•BT Friendly Name on page 274</li><li>•BT Poll Rate on page 275</li><li>•Powerdown Timeout on page 276</li></ul>
<b>FEATURES FOR STAR MODELS ONLY</b> starting on page 277 <ul style="list-style-type: none"><li>•STAR Radio Protocol Timeout on page 277</li><li>•STAR Radio Transmit Mode on page 278</li></ul>



Enter/Exit Programming Mode

## WIRELESS BEEPER FEATURES

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

### Good Transmission Beep

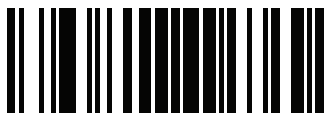
Enables/disables the Good Transmission Beep indication. When enabled, a beep occurs when a Label is correctly transmitted to the base.

	 Good Transmission Beep = Disable
 Good Transmission Beep = Enable	

### Beep Frequency

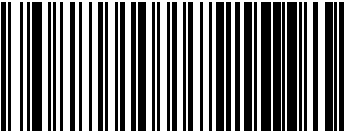
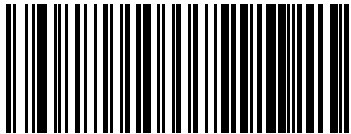

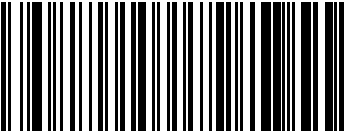
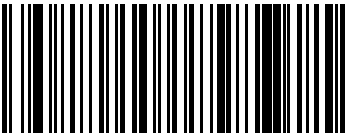
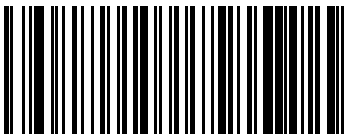
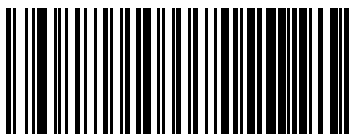


Adjusts radio-specific beep indications to sound at a low, medium or high frequency, selectable from the list below. (Controls the beeper's pitch/tone.)

	 Beep Frequency = Low
 Beep Frequency = Medium	
	 Beep Frequency = High



## Beep Duration

This feature controls the duration of beep indications.

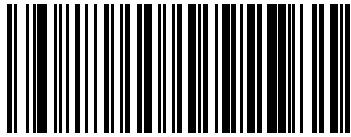
	 Beep Duration = 60 msec
 Beep Duration = 80 msec	
	 Beep Duration = 100 msec
 Beep Duration = 120 msec	
	 Beep Duration = 140 msec
 Beep Duration = 160 msec	
	 Beep Duration = 180 msec
 Beep Duration = 200 msec	



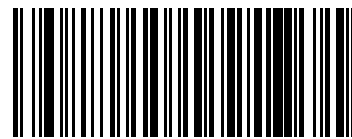
Enter/Exit Programming Mode

## Beep Volume

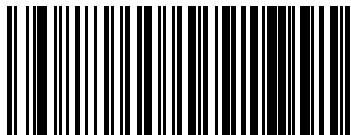
Selects the beeper volume (loudness) of radio-specific beep indications. There are three selectable volume levels.



Beep Volume = Low



Beep Volume = Medium



Beep Volume = High



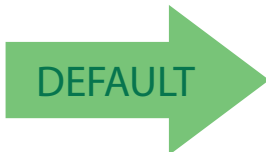
## Disconnect Beep

Enables/disables the beep indication.

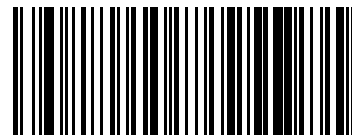


NOTE

The defaults are different for the STAR and BT models.



STAR default



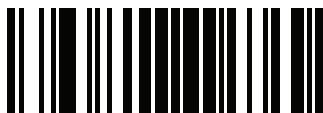
Disconnect Beep = Disable



Disconnect Beep = Enable



BT default



## Enter/Exit Programming Mode

### Docking Beep

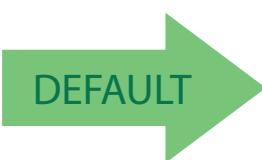
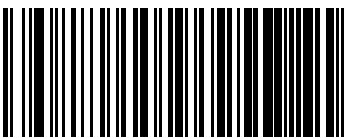
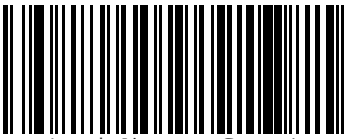
Enables/disables a beep indication when the handheld is placed in the Base Station.

	 Docking Beep = Disable
 Docking Beep = Enable	

### Leash Alarm

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

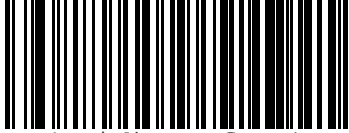
For this mode to be effective, the reader must be linked to the Base Station. If the reader is asleep or disconnected from the Base Station, there is no way for it to know where it is relative to the Base Station because communication is not active between the devices.

	 Leash Alarm = Disabled
 Leash Alarm = 1 Second	
	 Leash Alarm = 2 Seconds

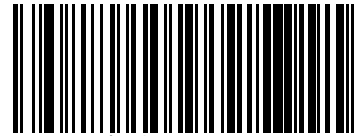


Enter/Exit Programming Mode

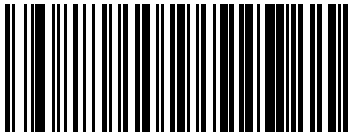
## Leash Alarm (continued)



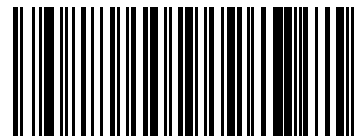
Leash Alarm = 3 Seconds



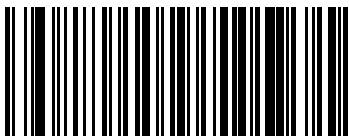
Leash Alarm = 4 Seconds



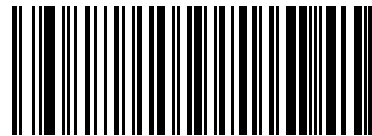
Leash Alarm = 5 Seconds



Leash Alarm = 10 Seconds

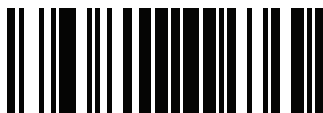


Leash Alarm = 25 Seconds



Leash Alarm = 30 Seconds





## CONFIGURATION UPDATES

See page 310 in “References” for detailed information and examples of these features.

### Automatic Configuration Update

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

	 Automatic Configuration Update = Disable
 Automatic Configuration Update = Enable	

### Copy Configuration to Scanner

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



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



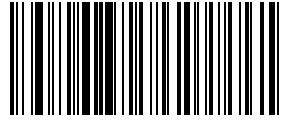
Copy Configuration to Scanner



Enter/Exit Programming Mode

## Copy Configuration to Base Station

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



Copy Configuration to Base Station




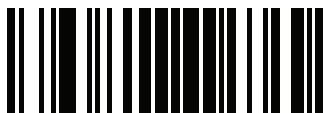
NOTE

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

## Automatic Flash Update

This feature enables/disables the automatic flash update of a reader.

	 Automatic Flash Update = Disable
 Automatic Flash Update = Enable	



## BATCH FEATURES

### Batch Mode

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

- Disabled — The handheld will not store/batch labels.
- Automatic — The handheld will store labels to RAM when the handheld goes out of range and is disconnected from the remote device.
- Manual — The handheld will always store labels to Flash memory. The user must manually send the stored labels to the remote device using a special "batch send" label.

	 Batch Mode = Disabled
 Batch Mode = Automatic	
	 Batch Mode = Manual

### Send Batch

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



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





Enter/Exit Programming Mode

---

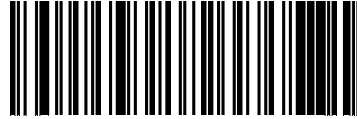
## Erase Batch Memory

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

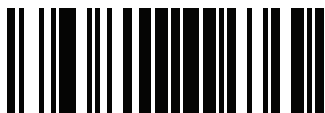


**NOTE**

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


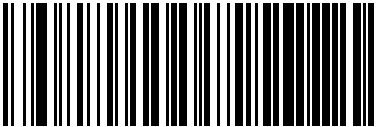
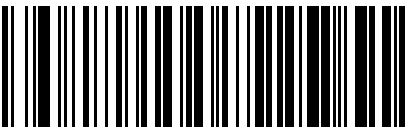
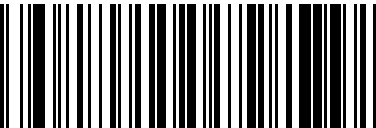
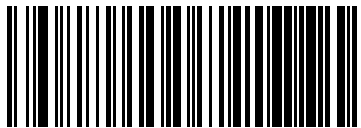
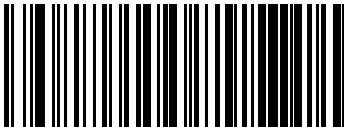
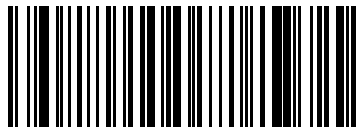


Erase Batch Memory



## RF Batch Mode Transmit Delay

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

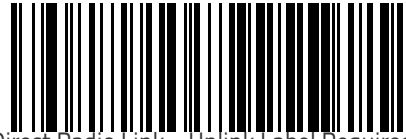
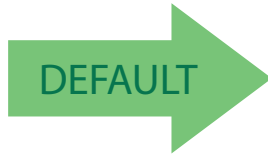
	 RF Batch Mode Transmit Delay = No Delay
 RF Batch Mode Transmit Delay = 50 mS	
	 RF Batch Mode Transmit Delay = 100 mS
 RF Batch Mode Transmit Delay = 0.5 seconds	
	 RF Batch Mode Transmit Delay = 1 second
 RF Batch Mode Transmit Delay = 2.5 seconds	



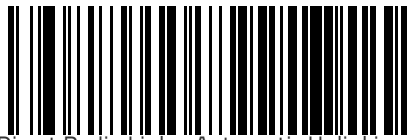
Enter/Exit Programming Mode

## DIRECT RADIO AUTOLINK

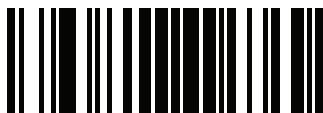
This feature enables/disables the ability to link a wireless handheld to a base station without scanning the Unlink label first.



Direct Radio Link = Unlink Label Required



Direct Radio Link = Automatic Unlinking



# Bluetooth-Only Features

The features in this section are valid only for QuickScan Bluetooth models.

## RF ADDRESS STAMPING

These features allow configuration of source radio data inclusion.

### Source Radio Address Transmission

Enables/disables the ability of source radio address information to be transmitted to the host and, if so, at what position with respect to the label data. See page 310 in “References” for detailed information and examples for setting this feature.



NOTE

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

	 Source Radio Address Transmission = Do Not Include
 Source Radio Address Transmission = Prefix	



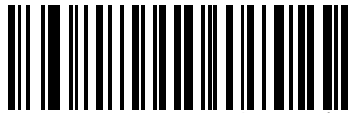
### Source Radio Address Delimiter Character

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



NOTE

This feature only applies if "Source Radio Address Transmission" on page 269 is enabled.



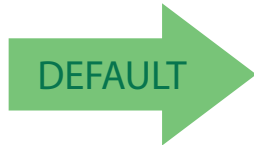
Set Source Radio Address Delimiter Character

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

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



CANCEL



00 = No Delimiter Character

### Link Timeout

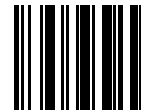
This feature specifies the wait time in one-second ticks for response from the remote. The selectable timeout range is 01 to 40 (01-0x28) seconds in one second increments.



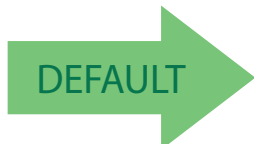
Set Link Timeout

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

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

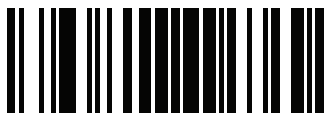


CANCEL



02 Link Timeout value is 2 seconds





## BT SECURITY FEATURES

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

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



NOTE

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

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

1. Enable BT Security Mode by scanning the “Enable” bar code below.
2. Select a PIN code length of either 4 or 16 characters by scanning the appropriate bar code in "Select PIN Code Length" on page 272.
3. Scan the relevant bar code from "Set PIN Code" on page 272, then scan the desired alphanumeric characters from the keypad in [Appendix D](#) to set the PIN code.

See [page 312](#) in “References” for more detailed information and examples for this feature.

### BT Security Mode

This feature enables/disables authentication and encryption of the BT link. Use the feature "BT Pin Code" on page 272 to specify the PIN code used to authenticate the BT Link.



NOTE

Changing the security mode setting as well as changing the BT pin code will unlink the devices. If the Automatic Configuration Update is set to the default “Enabled” setting, the devices must only be relinked. If the Automatic Configuration Update is set to “Disabled,” the Security Mode setting must also be updated in the Base Station using Aladdin. After the Base Station has been updated, the devices must be relinked. In any of the cases of unlinking discussed here the gun must be lodged onto base station to try the relinking.

	 BT Security Mode = Disable
 BT Security Mode = Enable	

## BT Pin Code

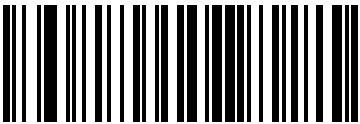
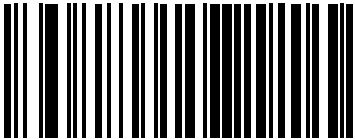

After enabling Security Mode (see "BT Security Mode" on page 271), specify whether you want to set a 4-digit or a 16-digit PIN Code. See page 312 for detailed information and examples for setting this feature.

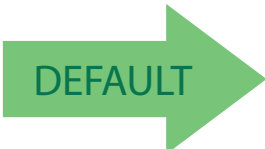
### Select PIN Code Length

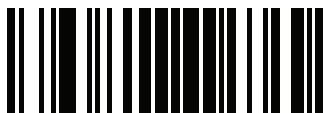
	 <p>Select 4-character BT PIN Code</p>
 <p>Select 16-character BT PIN Code</p>	

### Set PIN Code

Determine the desired characters for the PIN code, then convert to hexadecimal using the ASCII Chart on the inside back cover of this manual. See page 312 for detailed information and examples for setting this feature.

 <p>Set 4-character BT Pin Code</p>	
<p>To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the desired bar code, followed by the digits from the Alphanumeric characters in <a href="#">Appendix D</a>. Keypad representing your desired character(s). End by scanning the ENTER/EXIT bar code again.</p>	 <p>Set 16-character BT PIN Code</p>
 <p>CANCEL</p>	<p>Make a mistake? Scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.</p>

	<p><b>31323334 = Default PIN Code is 1234</b></p>
---	---



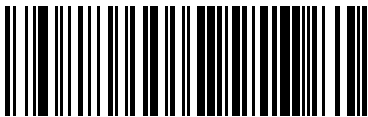


Enter/Exit Programming Mode

## BT HID FEATURES

### BT HID Variable PIN Code

This feature specifies the selection available for Static or Variable Pin Code, when BT HID profile is configured.

 <p>Use Static PIN Code</p>	
	 <p>Use Variable PIN Code</p>

### BT HID ALT Mode

This feature Enables/Disables the ability to transmit correctly a label content to the host regardless of the BT HID Country Mode selected, when BT HID profile is configured.

 <p>HID ALT Mode = Disable</p>	
	 <p>HID ALT Mode = Enable</p>



Enter/Exit Programming Mode

### BT HID Country Mode

When the reader is connected with a Bluetooth Adapter in HID mode, this feature allows to set the country where the PC is localized. Read one of the configuration command labels listed at [page 48](#).

### BT HID Caps Lock State Control

This option specifies the format in which the reader sends character data. Please refer to [page 51](#) for programming this feature.

### BT HID Intercharacter Delay Control

Please refer to [page 290](#) for programming this feature.

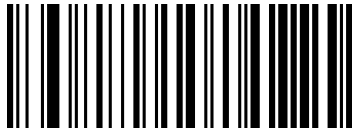
### BT HID Toggle On-Screen Keyboard

When scanner is connected to Apple™ Bluetooth® devices via HID profile, a double click on the trigger of the barcode reader will toggle the on-screen virtual keyboard.

### BT Friendly Name

You can set a meaningful name for QuickScan QBT2131 that will appear in the application during device discovery.

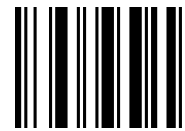
To set a new Bluetooth Friendly Name, scan the barcode below and follow the instructions.



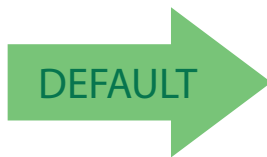
Set Bluetooth Friendly Name

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE bar code above, then the bar code at left followed by a maximum 64 digits from the Alphanumeric characters in [Appendix D - Keypad](#). The digits must be the hexadecimal ASCII representation of the desired characters. If less than the expected string of 32 characters are selected, scan the ENTER/EXIT bar code to terminate the string.

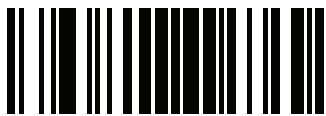
Make a mistake? Scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.



CANCEL



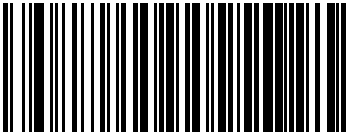
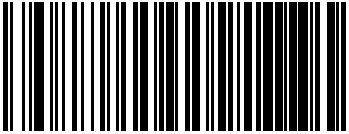
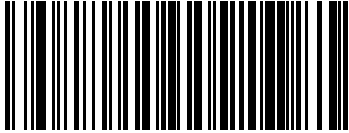

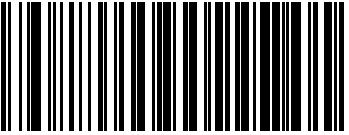


**QUICKSCAN-QBT2131**  
**[SERIAL\_NUMBER\_SCANNER]**



## OTHER BT FEATURES

### BT Poll Rate

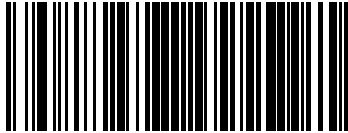
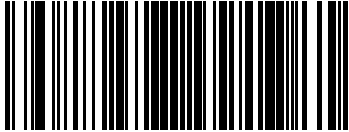
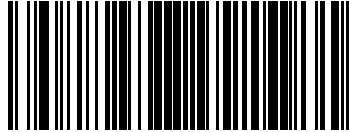
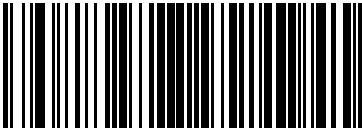

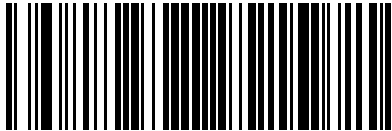
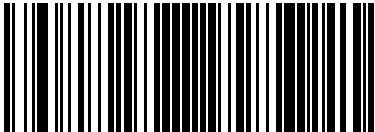
This feature specifies the time between BT polls.

 BT Poll Rate = Maximum BT Poll Rate	
	 BT Poll Rate = 10 ms
 BT Poll Rate = 20 ms	
	 BT Poll Rate = 50 ms
 BT Poll Rate = 100 ms	
	 BT Poll Rate = 200 ms



## Powerdown Timeout

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

	 Powerdown Timeout = Disable
 Powerdown Timeout = 10 minutes	
	 Powerdown Timeout = 20 minutes
 Powerdown Timeout = 30 minutes	
	 Powerdown Timeout = 60 Minutes (1 Hour)
 Powerdown Timeout = 120 Minutes (2 Hours)	

---

# Features for Star Models Only

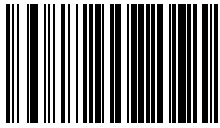
The features in this section are valid only for the QuickScan QM21XX Star model:

- STAR Radio Protocol Timeout on page 277
- STAR Radio Transmit Mode on page 278

## STAR Radio Protocol Timeout

This parameter sets the valid wait time before transmission between the hand-held reader and Base Station is considered failed.

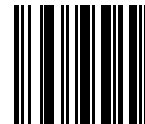
When setting this parameter, take into consideration the radio traffic (number of readers in the same area). The selectable range for this feature is from 02 to 25 seconds. See [page 311](#) in “References” for detailed information and examples for setting this feature.



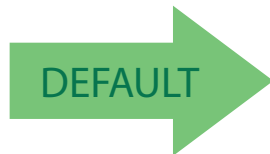
Set Radio Protocol Timeout

---

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



CANCEL



**02 = 2 Seconds Radio Protocol Timeout**

## STAR Radio Transmit Mode

Specifies the transmission protocol for Star communications.

Options are:

- ACK from cradle to scanner — signals a good transmission as soon as the Base Station receives a label
- ACK when sent to host — scanner signals a good transmission as soon as the Base Station has sent the label to the host
- ACK from host — scanner signals a good transmission as soon as the Base Station has sent the label to the host and host has replied with an acknowledge message.

	 ACK from cradle
 ACK when sent to host	
	 ACK from host



NOTE

ACK from host works only for RS232 or USB-COM interfaces with ACK/NACK disabled. If ACK from host is configured with any other interface conditions, it works like ACK when sent to host.

See "Message Formatting" on page 279 for details.



NOTE

The Base Station can receive a host message only if Host Commands Obey/Ignore (page 29) is set to Ignore.





# Chapter 5

## Message Formatting

### Message Formatting



Message Formatting should only be available for the QuickScan™ 21XX Star models.

A message from the Host to the base must follow these rules:

- If Address stamping options or address delimiter are enabled on the base, the Host replay must have address field and delimiter too. Otherwise the message will be ignored. Address delimiter is present only when address stamping is enabled.
- Address stamping is necessary to correctly route the message to the QuickScan I 21X1, especially when more than one handheld is linked to the same base. Address stamping could be disabled if the system is in point to point configuration. If address stamping is not enabled, the messages are addressed to the first handheld linked to the base.
- The maximum character length for messages is 48.
- Messages end with “CR” 0x0D ASCII character. The CR character cannot be contained in the middle.
- Messages cannot start with '\$' or # because these are reserved for Service mode command
- Base station can receive host message only if Host Commands Obey/Ignore is set to Ignore.
- Message could be sent to the HH in response to a Label when “Transmit mode” require Ack from Host (see transmit mode parameter) or at any time. When messages are sent not in response to a label must start with DC2 0x12 ASCII character and could be sent in any transmit mode setting.
- Message could be sent to all HH linked to base by using a Multicast message:  
“00 00 00 00 2A AA”
- In order to receive a message, handhelds must not be in sleep state.

The format of the ACK from Host message (used for transmission mode 02) is:

[Scanner\_Addr] [Scanner\_Addr\_delimiter] MESSAGE <CR>

The format of a generic message From Host to HH is:

[Scanner\_Addr] [Scanner\_Addr\_delimiter] DC2 MESSAGE <CR>

---

where DC2 is ASCII 0x12 (^R) character.

[Items in square brackets are optional.]

- If you want to control the Scanner's beeper from the host, you will also probably want to disable the good transmission beep that is emitted when the code is received from the cradle. (See "[Wireless Beeper Features](#)" on page 258).

The message field can store plain text and escape sequences.

- Escape sequences are interpreted as commands.

## LED and Beeper Control

<code>HF101b</code>	Emit short High tone + short delay
<code>HF104b</code>	Emit short Low tone + short delay
<code>HF105b</code>	Emit long Low tone + short delay
<code>HF107b</code>	Emit good read tone
<code>HF107c</code>	Emit bad tx tone
<code>HF108b</code>	Wait 100 ms
<code>HF109b</code>	Turn on the green LED
<code>HF10Ab</code>	Turn off the green LED
<code>HF10Cb</code>	Turn on the green spot
<code>HF10Db</code>	Turn off the green spot
<code>HF10Eb</code>	Beeper for Find me function (new)
<code>HF10Fb</code>	Power-off (new)

The LED control escape sequences are intended to activate the LEDs for short periods of time and can be used in combination with the Beeper. The LED and Beeper will be controlled by the system after the entire command sequence is interpreted.

### Example:

- `HF109bHF107bHF10Ab` Turns on the green LED, emits a good read tone, and turns off the green LED.
- `HF109bHF108bHF10Ab` Turns on the green LED for 100 ms and then turns off the green LED.

Escape sequences different from those listed will be ignored.



## Chapter 6 References

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

<b>RS-232 PARAMETERS</b> on page 282 <ul style="list-style-type: none"><li>▪ <b>INTERCHARACTER DELAY</b> on page 282</li><li>▪ <b>ACK CHARACTER</b> on page 283</li><li>▪ <b>NAK CHARACTER</b> on page 284</li><li>▪ <b>ACK NAK TIMEOUT VALUE</b> on page 285</li><li>▪ <b>ACK NAK RETRY COUNT</b> on page 286</li><li>▪ <b>DISABLE CHARACTER</b> on page 287</li><li>▪ <b>ENABLE CHARACTER</b> on page 288</li></ul>
<b>KEYBOARD WEDGE</b> on page 289 <ul style="list-style-type: none"><li>▪ <b>WEDGE QUIET INTERVAL</b> on page 289</li><li>▪ <b>INTERCHARACTER DELAY</b> on page 290</li><li>▪ <b>INTERCODE DELAY</b> on page 291</li></ul>
<b>DATA EDITING</b> on page 292 <ul style="list-style-type: none"><li>▪ <b>DATA EDITING OVERVIEW</b> on page 292</li><li>▪ <b>GLOBAL PREFIX/SUFFIX</b> on page 293</li><li>▪ <b>GLOBAL AIM ID</b> on page 294</li><li>▪ <b>LABEL ID: PRE-LOADED SETS</b> on page 295</li><li>▪ <b>LABEL ID: SET INDIVIDUALLY PER SYMBOLOGY</b> on page 297</li><li>▪ <b>SET GLOBAL MID LABEL ID CHARACTER(S)</b> on page 299</li><li>▪ <b>CHARACTER CONVERSION</b> on page 299</li></ul>
<b>READING PARAMETERS</b> on page 301 <ul style="list-style-type: none"><li>▪ <b>LABEL GONE TIMEOUT</b> on page 301</li><li>▪ <b>GOOD READ LED DURATION</b> on page 302</li><li>▪ <b>SCAN MODE</b> on page 303</li><li>▪ <b>SCANNING ACTIVE TIME</b> on page 304</li><li>▪ <b>FLASH ON TIME</b> on page 305</li><li>▪ <b>FLASH OFF TIME</b> on page 306</li></ul>
<b>SYMBOLOGY SETTINGS</b> on page 307 <ul style="list-style-type: none"><li>▪ <b>DECODING LEVELS</b> on page 307</li><li>▪ <b>SET LENGTH</b> on page 308</li></ul>
<b>RF FEATURES</b> on page 310 <ul style="list-style-type: none"><li>▪ <b>AUTOMATIC CONFIGURATION UPDATE</b> on page 310</li><li>▪ <b>RF ADDRESS STAMPING</b> on page 310</li><li>▪ <b>BT PIN CODE</b> on page 312</li></ul>

# RS-232 Parameters

## Intercharacter Delay

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

To set the delay:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCHARACTER DELAY SETTING on [page 38](#).
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



### NOTE

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

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

This completes the procedure. See [Table 5](#) for some examples of how to set this feature.

**Table 5. Intercharacter Delay Setting Examples**

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

## ACK Character

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



### NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 33 has been set as 7 Data Bits.

To set this feature:

1. Determine the desired character or value.
2. Use the [ASCII Chart on page 351](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ACK CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See [Table 6](#) for some examples of how to set this feature.

**Table 6. ACK Character Setting Examples**

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

## NAK Character

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



### NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 33 has been set as 7 Data Bits.

To set this feature:

1. Determine the desired character or value.
2. Use the [ASCII Chart on page 351](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT NAK CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See [Table 7](#) for some examples of how to set this feature.

**Table 7. NAK Character Setting Examples**

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

## ACK NAK Timeout Value

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

To set this value:

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



### NOTE

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

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

This completes the procedure. See [Table 21](#) for some examples of how to set this feature.

**Table 8. ACK NAK Timeout Value Setting Examples**

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

## ACK NAK Retry Count

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

To set this feature:

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



### NOTE

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

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

This completes the procedure. See [Table 9](#) for some examples of how to set this feature.

**Table 9. 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 on page 33 has been set as 7 Data Bits.

To set the value:

1. Determine the desired character or value. A setting of 0xFF indicates the the Disable Character is not used (not available).
2. Use the [ASCII Chart on page 351](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT DISABLE CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See [Table 10](#) for some examples of how to set this feature.

**Table 10. Disable Character Setting Examples**

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

## Enable Character

Specifies the value of the RS-232 host command used to enable the reader. ASCII characters or any hex value from 0 to 0xFF can be selected.



### NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 33 has been set as 7 Data Bits.

To set this feature:

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

1. Determine the desired character or value.
2. Use the [ASCII Chart on page 351](#) on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ENABLE CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric characters from the keypad in [Appendix D, Keypad](#), that represent the desired character/value in step 2 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

This completes the procedure. See [Table 11](#) for some examples of how to set this feature.

**Table 11. Enable Character Setting Examples**

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

# Keyboard Wedge

## 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.



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

### NOTE

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 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 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 Programming Mode.

This completes the procedure to set the Wedge Quiet Interval. See [Table 12](#) for some examples of how to set this feature.

**Table 12. Timeout 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.



### NOTE

This feature applies to the Keyboard Wedge interface and BT HID.

To set the delay:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCHARACTER DELAY SETTING on [page 38](#).
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



### NOTE

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

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

This completes the procedure. See [Table 13](#) for some examples of how to set this feature.

**Table 13. Intercharacter Delay Setting Examples**

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

## Intercode Delay

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

Follow these instructions to set this feature:

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



### NOTE

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

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

This completes the procedure. See [Table 14](#) for some examples of how to set this feature.

**Table 14. Wedge Intercode Delay Examples**

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

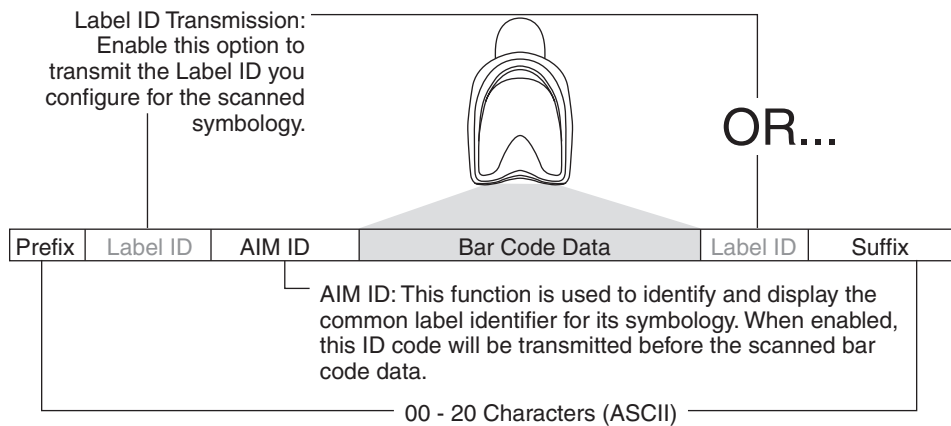
# Data Editing

## Data Editing Overview

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

There are several types of selectable data characters that can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. Figure 9 shows the available elements you can add to a message string:

**Figure 9. Breakdown of a Message String**



### NOTE

**Additional advanced editing is available. See the Advanced Formatting features in the Datalogic Aladdin Configuration Application or contact** 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. Technical Support on page 2 for more information.

### Please Keep In Mind...

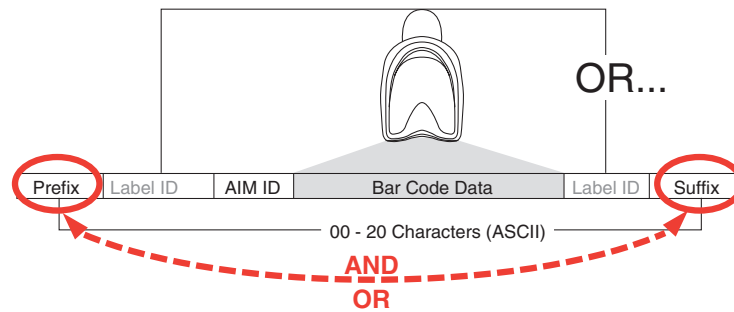
- Modifying a message string is not a mandatory requirement. Data editing is sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.
- A prefix or suffix may be applied (reference the [Symbologies on page 91](#) chapter for these settings) across all symbologies (set via the Global features in this chapter).
- You can add any character from the [ASCII Chart on page 351](#) (from 00–FF) on the inside back cover of this manual as a prefix, suffix or Label ID.

Enter prefixes and suffixes in the order in which you want them to appear on the output.

## Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the bar code data) and/or as a suffix (in a position following the bar code data) as indicated in Figure 10.

Figure 10. Prefix and Suffix Positions



### Example: Setting a Prefix

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

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



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

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

Scanned bar code data:12345

Resulting message string output: \$12345

This option sets up to 20 characters each from the set of ASCII characters or any hex value from 00 to FF. To configure this feature, scan the ENTER/EXIT bar code to place the unit in Programming Mode, then the "Set Global Prefix" or "Set Global Suffix," bar code followed by the digits (in hex) from the Alphanumeric

characters in [Appendix D, Keypad](#) representing your desired character(s). If less than the expected string of 20 characters are selected, scan the ENTER/EXIT bar code to terminate the string. Reference the section, "Example: Setting a Prefix" on page 293, for more information. Exit programming mode by scanning the ENTER/EXIT bar code once again.

## Global AIM ID



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

### NOTE

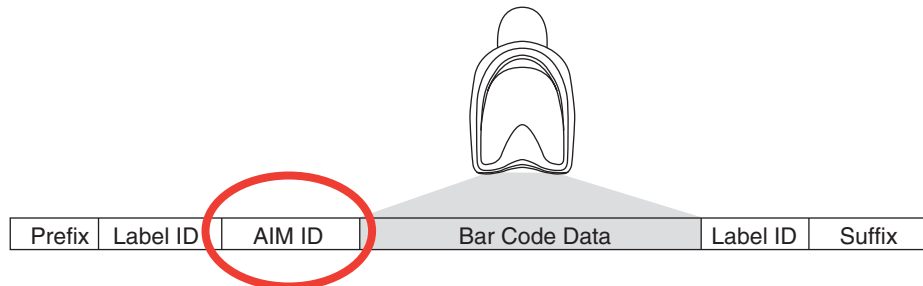
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. AIM label identifiers consist of three characters as follows:

- 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 <sup>a</sup>	Code 128/GS1-128	C
Code 39 and Code 32	A	GS1 DataBar Omnidirectional, GS1 DataBar Expanded	e
Codabar	F	Standard 2 of 5	S
Interleaved 2 of 5	I	ISBN	X <sup>b</sup>
Code 93	G	Code 11	H

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

Figure 11. AIM ID





## Label ID: Pre-loaded Sets

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

**Table 15. Label ID Pre-loaded Sets**

Symbology	USA Label ID set		EU Label ID set	
	ASCII character	Hex value	ASCII character	Hexadecimal value
ABC Codabar	S	530000	S	530000
CODABAR	%	250000	R	520000
Codablock F	l	6C0000	m	6D0000
Code 39 CIP	Y	590000	Y	590000
Code 93	&	260000	U	550000
CODE11	CE	434500	b	620000
CODE128	#	230000	T	540000
CODE32	A	410000	X	580000
CODE39	*	2A0000	V	560000
CODE4	4	340000	4	340000
CODE5	j	6A0000	j	6A0000
DATALOGIC 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
EAN8 P8	FF	464600	*	2A0000
FOLLETT 20F5	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
I20F5	i	690000	N	4E0000
IATA	IA	494100	&	260000

Symbology	USA Label ID set		EU Label ID set	
	Label	Count	Label	Count
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 65. Reference Figure 12 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 66.
4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.
5. Turn to the [ASCII Chart on page 351](#) 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 337](#) 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 16](#).



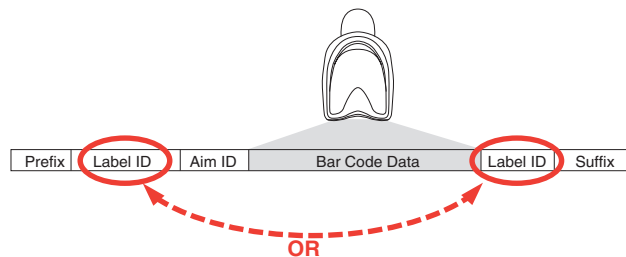
### NOTE

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 12. Label ID Position Options**



## Label ID: Set Individually Per Symbology — continued

Table 16. 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 65	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 66.	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 337. 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.	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)			
<b>Result:</b>		DB*[bar code data]	[bar code data]=C3	+ [bar code data]	[bar code data]PH

## Set Global Mid Label ID Character(s)

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

1. Scan the ENTER/EXIT bar code.
2. Determine the desired character(s) (you may choose up to twenty) which will represent the Mid Label ID for two label pairs. If the first character is 00, then nothing is added between the two labels.
3. Turn to the [ASCII Chart on page 351](#) 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 337](#) 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 16](#).



### NOTE

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

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



**NOTE**

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

## Reading Parameters

### Label Gone Timeout

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

Follow these instructions to set this feature:

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



**NOTE**

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

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

This completes the procedure. See [Table 17](#) for some examples of how to set this feature.

**Table 17. Timeout Setting Examples**

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

## Good Read LED Duration

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

Follow these instructions to set this feature:

1. Determine the desired setting in milliseconds. A setting of 0 means that the good read LED stays on until the next time the trigger is pulled.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT GOOD READ LED DURATION SETTING.
5. Scan the appropriate three digits from the keypad in [Appendix D, Keypad](#) representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



### NOTE

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

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

This completes the procedure. See [Table 18](#) for some examples of how to set this feature.

**Table 18. 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				



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## Scan Mode

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

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

- [Scanning Active Time on page 88](#) has elapsed
- a label has been read
- the trigger is released

This mode is associated with typical handheld reader operation: when the trigger is pulled, scanning starts and the product scans until the trigger is released, or a label is read, or the maximum [Scanning Active Time on page 88](#) has elapsed.

**Trigger Hold Multiple :** When the trigger is pulled, scanning starts and the product scans until the trigger is released or [Scanning Active Time on page 88](#) has elapsed. Reading a label does not disable scanning. [Double Read Timeout on page 76](#) prevents undesired multiple reads of the same label while in this mode.

**Trigger Pulse Multiple:** When the trigger is pulled, continuous scanning is activated until [Scanning Active Time on page 88](#) has elapsed or the trigger has been released and pulled again. [Double Read Timeout on page 76](#) prevents undesired multiple reads of the same label while in this mode.

**Flashing:** The reader flashes<sup>1</sup> on and off regardless of the trigger status. Flash rate is controlled by [Flash On Time on page 89](#) and [Flash Off Time on page 90](#). When Flash is ON the reader reads continuously. When Flash is OFF scanning is deactivated.

**Always On:** No trigger pull is required to read a bar code. Scanning is continually on. [Double Read Timeout on page 76](#) prevents undesired multiple reads while in this mode.

**Autosense<sup>®</sup> Stand Mode:** No trigger pull is required to read a bar code. Scanning is turned on automatically when an item is placed in reader's field of view. If the trigger is pulled, the reader acts as if it in single read mode. [Double Read Timeout on page 76](#) prevents undesired multiple reads of the same label while in this mode.

---

1. Controlled by [Flash On Time on page 89](#).

## Scanning Active Time

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

Follow these instructions to set this feature:

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



**NOTE**

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

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

This completes the procedure. See [Table 19](#) for some examples of how to set this feature.

**Table 19. Scanning Active Time Setting Examples**

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

## Flash On Time

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

Follow these instructions to set this feature.

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



### NOTE

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

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

This completes the procedure. See [Table 20](#) for some examples of how to set this feature.

**Table 20. Flash On Time Setting Examples**

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

## Flash Off Time

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

Follow these instructions to set this feature.

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



### NOTE

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

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

This completes the procedure. See [Table 21](#) for some examples of how to set this feature.

**Table 21. Flash Off Time Setting Examples**

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

---

# Symbology Settings

## Decoding Levels

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

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

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

# Set Length

## Set Length 1

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

Reference the [Symbologies on page 91](#) section to view the selectable range (number of characters) for the symbology being set.

Follow these instructions to set this feature:

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



### NOTE

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

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

This completes the procedure. See [Table 22](#) for some examples of how to set this feature.

**Table 22. 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 1 SETTING for the desired symbology				
4	Scan Two Characters From Appendix D, Keypad	'0' and '1'	'0' and '7'	'5' and '2'	'7' AND '4'
5	Scan ENTER/EXIT PROGRAMMING MODE				

## Set Length 2

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

Reference the [Symbologies on page 91](#) section to view the selectable range (number of characters) for the symbology being set.. A setting of 00 specifies to ignore this length (only one fixed length).

Follow these instructions to set this feature:

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



### NOTE

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

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

This completes the procedure. See [Table 23](#) for some examples of how to set this feature.

**Table 23. 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				

# RF Features

## Automatic Configuration Update

When this feature is enabled on both reader and base station, the base station and reader will keep their configurations synchronized. If a reader's configuration is altered by reading programming labels, this change is automatically transferred and updated in a linked base station. Likewise, if the base station's configuration is changed using Aladdin or by host commands, then the reader's configuration will automatically be updated if this feature is enabled.

## RF Address Stamping

### Source Radio Address Delimiter Character

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



NOTE

This feature only applies if "Source Radio Address Transmission" on page 269 is enabled.

Follow these instructions to select the delimiter character:

1. Determine the desired character, then find its hexadecimal equivalent on the [ASCII Chart](#) on the inside back cover. A setting of 00 specifies no delimiter character.
2. Go to [page 270](#) and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
3. Scan the bar code: SET SOURCE RADIO ADDRESS DELIMITER CHARACTER.
4. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the hexadecimal characters which were determined in the steps above. You will hear a two-beep indication after the last character.



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.

**Table 24. Source Radio Address Delimiter Character Setting Examples**

STEP	ACTION	EXAMPLES			
1	Desired Setting	No delimiter character	, (comma)	- (dash)	/ (slash)
2	Scan ENTER/EXIT PROGRAMMING MODE				
3	Scan SET SOURCE RADIO ADDRESS DELIMITER CHARACTER				
4	Scan Two Characters From Appendix D, Keypad	'0' and '0'	'2' and 'C'	'2' and 'D'	'2' AND 'F'
5	Scan ENTER/EXIT PROGRAMMING MODE				



## STAR Radio Protocol Timeout

This parameter sets the valid wait time before transmission between the hand-held reader and Base Station is considered failed.

When setting this parameter, take into consideration the radio traffic (number of readers in the same area). The selectable range for this feature is from 02 to 25 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: 2 = 02, 5 = 05, 25 = 25, etc
3. Go to [page 277](#) and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT RADIO PROTOCOL TIMEOUT.
5. Scan the appropriate two digits from the keypad in [Appendix D, Keypad](#), that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.



### NOTE

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

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

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

**Table 25. STAR Radio Protocol Timeout Examples**

STEP	ACTION	EXAMPLES			
1	Desired Setting	2 Seconds	5 Seconds	10 Seconds	25 Seconds
2	Pad with leading zero(es)	02	05	10	25
3	Scan ENTER/EXIT PROGRAMMING MODE				
4	Scan SELECTSTAR RADIO PROTOCOL TIMEOUT SETTING				
5	Scan Two Characters From Appendix D, Keypad	'0' and '2'	'0' and '5'	'1' and '0'	'2' AND '5'
6	Scan ENTER/EXIT PROGRAMMING MODE				

## BT-Only Features

### BT Pin Code

This option specifies the 4-character or 16-character pin code to be used for authentication of the BT link. To set the pin code:

1. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode, then enable "BT Security Mode" on page 271.
2. Specify the desired pin code length (4 or 16) by scanning the appropriate bar code in "Select PIN Code Length" on page 272.
3. Determine the desired characters. For example, D254 or STOR12345678135M
4. Convert the characters to hexadecimal using the [ASCII Chart](#) on the inside back cover of this manual.
5. Go to [page 272](#) and Scan the bar code: SET 4 CHAR PIN CODE or SET 16-CHAR PIN CODE.
6. Scan the appropriate alphanumeric characters from the keypad in [Appendix D, Keypad](#), representing the hexadecimal entries determined in the steps above. You will hear a two-beep indication after the last character.



NOTE

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

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



NOTE

Changing the pin code setting will unlink the devices. If the Automatic Configuration Update is set to the default enabled setting, the devices must only be relinked. If the Automatic Configuration Update is set to the disabled setting, the Pin Code setting must also be updated in the Base Station using Aladdin. After the Base Station has been updated, the devices must be relinked.

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

**Table 26. BT Pin Code Setting Examples**

STEP	ACTION	EXAMPLES	
1	Desired Setting	D254	STOR12345678135M
2	Convert the characters to hexadecimal	44 32 35 34	53 54 4F 52 31 32 33 34 35 36 37 38 31 33 35 4D
3	Scan ENTER/EXIT PROGRAMMING MODE		
4	Scan SET BT PIN CODE		
5	Scan 8 or 32 Alphanumeric Characters From Appendix D, Keypad	44323534	53544F5231323334353637383133354D
6	Scan ENTER/EXIT PROGRAMMING MODE		



# Appendix A

## Technical Specifications

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

Item	QD2131	QM21X1	QBT21X1
<b>Physical Characteristics</b>			
Dimensions	Height 6.4"/163 mm Length 3.6"/91 mm Width 1.6"/41 mm		
Weight (without cable)	5.3 ounces (150 g)	Reader - 6.7 ounces (190 g) Cradle - 7.8 ounces (221 g)	
Color	Black or White		
<b>Electrical Characteristics</b>			
Voltage & Current	Input Voltage: 4.5 - 14.0 VDC Operating (typical): 140 mA Operating (max): 380 mA Idle/standby (typical): 50 mA	N/A	
Battery Type	N/A	Li-Ion battery pack	
Typical charge time for full charge from full discharge	N/A	6 hours with Host Power through the micro USB cable connection	
	N/A	4 hours with Base and 12V external power supply adapter <sup>a</sup>	
	N/A	Max 22 hours with Base and Host power (in this case no supply adapter is needed) <sup>a</sup>	
Operating autonomy (continuous reading)	N/A	30,000 reads (typical)	
Cradle consumption and DC input supply range	N/A	Volt 4.75-14 VDC; Power <8W <sup>b</sup> ; Max 500mA when in host/bus powered mode <sup>b</sup> .	

<sup>a</sup>. Charge Times are much lower when battery is within daily typical operating condition.

<sup>b</sup>. Typical input current measured under factory default configuration.

Item	QD2131	QM/QBT21X1
<b>Performance Characteristics</b>		
Light Source	LEDs	
Roll (Tilt) Angle <sup>a</sup>	Up to 45°	Up to ± 45°
Pitch Angle <sup>a</sup>	± 65°	
Skew (Yaw) Angle <sup>a</sup>	70°	
Field of View <sup>a</sup>	56 ± 2°	
<b>Depth of Field (Typical)<sup>b</sup></b>	<u>Code 39</u> 5 mils: 0.8" - 7" (2 - 18 cm) 7.5 mils: 0.8" - 12" (2 - 30 cm) 10 mils: 0.8" - 17" (2 - 44 cm) 20 mils: up to 29.5" (75 cm)	<u>Code 39</u> 5 mils: 0.8 to 5.9"(2.0 to 15 cm) 7.5 mils: 0.8 to 9.8" (2.0 to 25 cm) 10 mils: 0.8 to 14.2" (2.0 to 36 cm) 20 mils: up to 27.5" (up to 70 cm )
	<u>EAN</u> 13 mils: 0.8" - 23" (2 - 58 cm)	<u>EAN</u> 13 mils 0.4 to 17.7" (1.0 to 45 cm)
Minimum Element Width	4 mils - 0,01 cm	
Print Contrast Minimum	25% minimum reflectance	

<sup>a</sup>. Based on ISO 15423 specifications

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

Item	QD2131	QM/QBT21X1
<b>Decode Capability</b>		
UPC/EAN/JAN (A, E, 13, 8); UPC/EAN/JAN (including P2 /P5); UPC/EAN/JAN (including; ISBN / Bookland & ISSN); UPC/EAN Coupons; Code 39 (including full ASCII); Code 39 Trioptic; Code39 CIP (French Pharmaceutical); LOGMARS (Code 39 w/ standard check digit enabled); Danish PPT; Code 32 (Italian Pharmacode 39); Code 128; Code 128 ISBT; Interleaved 2 of 5; Standard 2 of 5; Interleaved 2 of 5 CIP (HR); Industrial 2 of 5; Datalogic 2 of 5 (China Post Code/Chinese 2 of 5); IATA 2of5 Air cargo code; Code 11; Codabar; Codabar (NW7); ABC Codabar; Code 93; MSI; PZN; Plessey; Anker Plessey; Follet 2 of 5; GS1 DataBar Omnidirectional; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.		
<b>Interfaces Supported</b>		
RS-232 Std, RS-232 Wincor-Nixdorf, RS-232 OPOS, USB Com Std., USB Keyboard, USB Alternate Keyboard, USB OEM, Keyboard Wedge (AT with or w/o Alternate Key, IBM AT PS2 with or w/o Alternate Key, USB Composite (keyboard + COM).		

Item	QD2131	QM/QBT21X1
<b>User Environment</b>		
Operating Temperature	32° to 122° F (0° to 50° C)	
Charging Temperature	N/A	32° to 104° F (0° to 40° C)
Storage Temperature	-40° to 70 °C (-40° to 158° F)	
Humidity	Operating: 0% to 95% relative humidity, non-condensing	
Drop Specifications	Scanner withstands 18 drops from 1.5 m (4.9 feet) to concrete	
Ambient Light Immunity	Up to 120,000 Lux	
Contaminants Spray/rain Dust/particulates	IEC 529-IP42 (scanner only)	
ESD Level	16 KV	

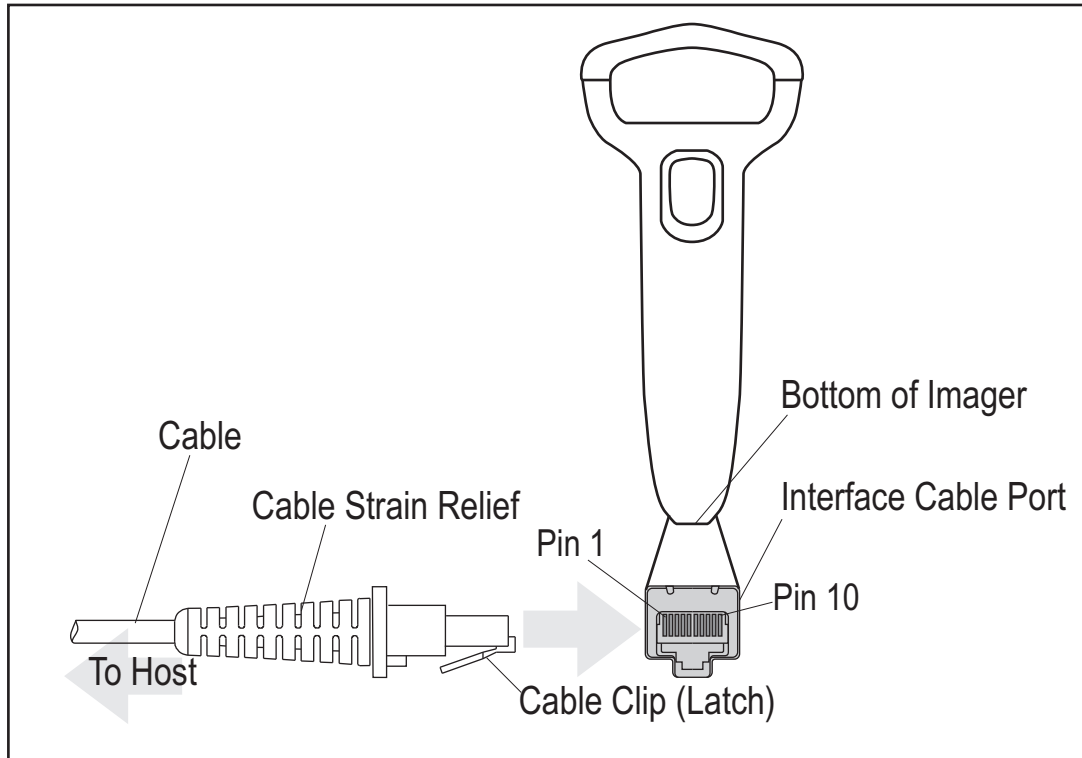
For additional regulatory, safety and legal information Please Find the Regulatory Addendum included with your product or available at the [www.data-logic.com](http://www.data-logic.com) website folder for the product.

	QD2131	QM21X1	QBT21X1
<b>Radio Features</b>			
Frequency Range	N/A	433 MHz	2400 to 2483.5 MHz
Range (in open air)	N/A	25 m (typical)	

## Standard Cable Pinouts (corded models)

Figure 13 and Table 26 provide standard pinout information for the reader's cable.

**Figure 13. Standard Cable Pinouts**



The signal descriptions in Table 27 apply to the connector on the reader and are for reference only.

**Table 27. Standard Cable Pinouts - Reader Side**

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

## LED and Beeper Indications

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

INDICATION	DESCRIPTION	LED	BEEPER
Power-up Beep	The reader is in the process of powering-up.		Reader beeps four times at highest frequency and volume upon power-up.
Good Read Beep	A label has been successfully scanned by the reader.	LED behavior for this indication is configurable via the feature ' <a href="#">Good Read: When to Indicate</a> '	The reader will beep once at current frequency, volume, mono/bi-tonal setting and duration upon a successful label scan.
ROM Failure	There is an error in the reader's software/programming	Flashes	Reader sounds one error beep at highest volume.
Limited Scanning Label Read	Indicates that a host connection is not established when the USB interface is enabled.	N/A	Reader 'chirps' six times at the highest frequency and current volume.
Reader Active Mode	The reader is active and ready to scan.	The LED is lit steadily <sup>a</sup>	N/A
Reader Disabled	The reader has been disabled by the host.	The LED blinks continuously	N/A
Green Spot is on continuously	While in Stand Mode or Trigger Object Sense mode the green spot shall be on while in stand watch state.	N/A	N/A
Green Spot <sup>a</sup> flashes momentarily	Upon successful read of a label, the software shall turn the green spot on for the time specified by the configured value.	N/A	N/A

<sup>a</sup>. Except when in sleep mode or when a [Good Read LED Duration](#) other than 00 is selected

## Programming Mode

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

INDICATION	DESCRIPTION	LED	BEEPER
Label Programming Mode Entry	A valid programming label has been scanned.	LED blinks continuously	Reader sounds four low frequency beeps.
Label Programming Mode Rejection of Label	A label has been rejected.	N/A	Reader sounds three times at lowest frequency & current volume.
Label Programming Mode Acceptance of Partial Label	In cases where multiple labels must be scanned to program one feature, this indication acknowledges each portion as it is successfully scanned.	N/A	Reader sounds one short beep at highest frequency & current volume.
Label Programming Mode Acceptance of Programming	Configuration option(s) have been successfully programmed via labels and the reader has exited Programming Mode.	N/A	Reader sounds one high frequency beep and four low frequency beeps followed by reset beeps.
Label Programming Mode Cancel Item Entry	Cancel label has been scanned.	N/A	Reader sounds two times at low frequency and current volume.

## Error Codes

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

NUMBER OF LED FLASHES/BEEPS	ERROR	CORRECTIVE ACTION
1	Configuration	Contact Helpdesk for assistance
2	Interface PCB	
4	Reader Module	
5	[Reserved]	
6	Digital PCB	
14	CPLD/Code Mismatch	





## Appendix B Standard Defaults

The most common configuration settings are listed in the “Default” column of Table 28. The settings in this table are as applied to a standard RS-232 interface. See Table 29 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 28. Standard Defaults**

Parameter	Default	Your Setting
<b>Global Interface Features</b>		
Host Commands — Obey/Ignore	Obey	
USB Suspend Mode	Enable	
<b>RS-232</b>		
Baud Rate	9600	
Data Bits	8 Data Bits	
Stop Bits	1 Stop Bit	
Parity	None	
Handshaking Control	Disable	
<b>RS-232/USB-COM</b>		
Intercharacter Delay	No Delay	
Beep On ASCII BEL	Disable	
Beep On Not on File	Enable	
ACK Character	'ACK'	
NAK Character	'NAK'	
ACK NAK Timeout Value	600 ms	

Parameter	Default	Your Setting
ACK NAK Retry Count	3 Retries	
ACK NAK Error Handling	Ignore Errors Detected	
Indicate Transmission Failure	Enable	
Disable Character	'D'	
Enable Character	'E'	
<b>Keyboard Wedge</b>		
Country Mode	U.S. Keyboard	
Caps Lock State	Caps Lock OFF	
Numlock	Numlock Key Unchanged	
Keyboard Numeric Keypad	Standard Keys	
Keyboard Send Control Characters	Disable	
Wedge Quiet Interval	100ms	
Intercode Delay	100 ms	
USB Keyboard Speed	1 ms	
<b>USB-OEM</b>		
USB-OEM Device Usage	Handheld Scanner	
USB-OEM Interface Options	Ignore	
<b>Data Editing</b>		
Global Prefix/Suffix	No Global Prefix Global Suffix = 0x0D (CR)	
Global AIM ID	Disable	
GS1-128 AIM ID	Enable	
Label ID Control	Disable	
Set Global Mid Label ID Character(s)	No Characters	
Case Conversion	Disable	
Character Conversion	No Char Conversion	
<b>Reading Parameters</b>		
Double Read Timeout	0.4 Second	
Label Gone Timeout	160 ms	

Parameter	Default	Your Setting
LED and Beeper Indicators	Enabled	
Power On Alert	4 Beeps	
Good Read: When to Indicate	After Decode	
Good Read Beep Type	Mono	
Good Read Beep Frequency	Medium for corded High for cordless	
Good Read Beep Length	100 ms for corded 80 ms for cordless	
Good Read Beep Volume	Illumination Off during beep	
Good Read Beep Volume	High	
Good Read LED Duration	LED on until next trigger pull	
Scan Mode	Trigger Single	
Stand Mode Triggered Timeout	0.5 Seconds	
Scanning Active Time	5 Seconds	
Stand Mode Flash	Disable	
Flash On Time	1 Second	
Flash Off Time	600 ms	
Green Spot Duration	Medium	
Green Spot Duration	300 ms	
<b>Symbologies</b>		
Coupon Control	Enable only UPC/ EAN	
UPC-A		
UPC-A Enable/Disable	Enable	
UPC-A Check Character Transmission	Enable	
Expand UPC-A to EAN-13	Don't Expand	
UPC-A Number System Character Transmission	Transmit	
In-Store Minimum Reads	2	
UPC-E		
UPC-E Enable/Disable	Enable	
UPC-E Check Character Transmission	Send	

Parameter	Default	Your Setting
Expand UPC-E to EAN-13	Don't Expand	
Expand UPC-E to UPC-A	Don't Expand	
UPC-E Number System Character Transmission	Transmit	
UPC-E Minimum Reads	2	
EAN 13		
EAN 13 Enable/Disable	Enable	
EAN 13 Check Character Transmission	Send	
EAN-13 Flag 1 Character	Transmit	
EAN-13 ISBN Conversion	Disable	
ISSN Enable/Disable	Disable	
EAN 13 Minimum Reads	1	
EAN 8		
EAN 8 Enable/Disable	Enable	
EAN 8 Check Character Transmission	Send	
Expand EAN 8 to EAN 13	Disable	
EAN 8 Both Guards Substitution	Disable	
EAN 8 Guard Insertion	Disable	
EAN 8 Guard Substitution	Disable	
EAN 8 Minimum Segment Length Block	8	
EAN 8 Minimum Reads	1	
EAN 8 Stitch Exact Label Halves	Disable	
EAN 8 Stitch Unlike Label Halves	Disable	
EAN Two Label		
EAN Two Label Enable/Disable	Disable	
EAN Two Label Combined Transmission	Disable	
EAN Two Label Minimum Reads	1 Read	
UPC/EAN Global Settings		
UPC/EAN Decoding Level	2	
UPC/EAN Correlation	Disable	
UPC/EAN Price Weight Check	Disable	
UPC-A Minimum Reads	1 Read	

Parameter	Default	Your Setting
UPC/EAN Guard Insertion	Disable	
UPC/EAN Stitch Exact Label Halves	Disable	
UPC/EAN Stitch Unlike Label Halves	Disable	
UPC/EAN Minimum Segment Length	5	
Add-Ons		
Optional Add-ons	Disable P2, P5 and P8	
Optional Add-On Timer	70 ms	
P2 Add-Ons Minimum Reads	2	
P5 Add-Ons Minimum Reads	1	
GS1-128 Add-Ons Minimum Reads	1	
GS1 DataBar Omnidirectional		
GS1 DataBar Omnidirectional Enable/Disable	Disable	
GS1 DataBar Omnidirectional GS1-128 Emulation	Disable	
GS1 DataBar Omnidirectional Minimum Reads	1	
GS1 DataBar Expanded		
GS1 DataBar Expanded Enable/Disable	Disable	
GS1 DataBar Expanded GS1-128 Emulation	Disable	
GS1 DataBar Expanded Minimum Reads	1	
GS1 DataBar Expanded Length Control	Variable	
GS1 DataBar Expanded Set Length 1	1	
GS1 DataBar Expanded Set Length 2	74	
GS1 DataBar Limited		
GS1 DataBar Limited Enable/Disable	Disable	
GS1 DataBar Limited GS1-128 Emulation	Disable	
GS1 DataBar Limited Minimum Reads	1	
Code 39		
Code 39 Enable/Disable	Enable	
Code 39 Check Character Calculation	Don't Calculate	
Code 39 Check Character Transmission	Send	
Code 39 Start/Stop Character Transmission	Don't Transmit	

Parameter	Default	Your Setting
Code 39 Full ASCII	Disable	
Code 39 Quiet Zones	Auto	
Code 39 Minimum Reads	2	
Code 39 Decoding Level	3	
Code 39 Length Control	Variable	
Code 39 Set Length 1	2	
Code 39 Set Length 2	50	
Code 39 Interdigit Ratio	4	
Code 39 Character Correlation	Disable	
Code 39 Stitching	Cordless Enable Corded Disable	
Code 32		
Code 32 Enable/Disable	Disable	
Code 32 Check Character Transmission	Don't Send	
Code 32 Start/Stop Character Transmission	Don't Transmit	
Code 39 CIP		
Code 39 CIP Enable/Disable	Disable	
Code 128		
Code 128 Enable/Disable	Enable	
Expand Code 128 to Code 39	Don't Expand	
Code 128 Check Character Transmission	Don't Send	
Code 128 Quiet Zones	Auto	
Code 128 Minimum Reads	1	
Code 128 Decoding Level	3	
Code 128 Length Control	Variable	
Code 128 Set Length 1	1	
Code 128 Set Length 2	80	
Code 128 Character Correlation	Disable	
Code 128 Stitching	Enable	
GS1-128		
GS1-128 Enable	Transmit in Code 128 Data Format	

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

Parameter	Default	Your Setting
Codabar Start/Stop Character Match	Don't Require Match	
Codabar Quiet Zones	Auto	
Codabar Minimum Reads	2	
Codabar Decoding Level	3	
Codabar Length Control	Variable	
Codabar Set Length 1	3	
Codabar Set Length 2	50	
Codabar Interdigit Ratio	4	
Codabar Character Correlation	Disable	
Codabar Stitching	Disable	
ABC Codabar		
ABC Codabar Enable/Disable	Disable	
ABC Codabar Concatenation Mode	Static	
ABC Codabar Dynamic Concatenation Timeout	200mS	
ABC Codabar Force Concatenation	Disable	
Code 11		
Code 11 Enable/Disable	Disable	
Code 11 Check Character Calculation	Check C and K	
Code 11 Check Character Transmission	Send	
Code 11 Minimum Reads	2	
Code 11 Length Control	Variable	
Code 11 Set Length 1	4	
Code 11 Set Length 2	50	
Code 11 Interdigit Ratio	4	
Code 11 Decoding Level	3	
Code 11 Character Correlation	Disable	
Code 11 Stitching	Disable	
Standard 2 of 5		
Standard 2 of 5 Enable/Disable	Disable	
Standard 2 of 5 Check Character Calculation	Disable	



Parameter	Default	Your Setting
Standard 2 of 5 Check Character Transmission	Send	
Standard 2 of 5 Minimum Reads	2	
Standard 2 of 5 Decoding Level	3	
Standard 2 of 5 Length Control	Variable	
Standard 2 of 5 Set Length 1	8	
Standard 2 of 5 Set Length 2	50	
Standard 2 of 5 Character Correlation	Disable	
Standard 2 of 5 Stitching	Disable	
Industrial 2 of 5		
Industrial 2 of 5 Enable/Disable	Disable	
Industrial 2 of 5 Check Character Calculation	Disable	
Industrial 2 of 5 Check Character Transmission	Enable	
Industrial 2 of 5 Length Control	Variable	
Industrial 2 of 5 Set Length 1	1 Character	
Industrial 2 of 5 Set Length 2	50 Characters	
Industrial 2 of 5 Minimum Reads	1 Read	
Industrial 2 of 5 Stitching	Disable	
Industrial 2 of 5 Character Correlation	Disable	
IATA		
IATA Enable/Disable	Disable	
IATA Check Character Transmission	Enable	
ISBT 128		
ISBT 128 Concatenation	Disable	
ISBT 128 Concatenation Mode	Static	
ISBT 128 Dynamic Concatenation Timeout	200ms	
ISBT 128 Force Concatenation	Disable	
ISBT 128 Advanced Concatenation Options	Disable	
MSI		
MSI Enable/Disable	Disable	
MSI Check Character Calculation	Enable Mod10	
MSI Check Character Transmission	Enable	

Parameter	Default	Your Setting
MSI Length Control	Variable	
MSI Set Length 1	1 Character	
MSI Set Length 2	50 Characters	
MSI Minimum Reads	4 Reads	
MSI Decoding Level	Level 3	
Code 93		
Code 93 Enable/Disable	Disable	
Code 93 Check Character Calculation	Disable	
Code 93 Check Character Transmission	Enable	
Code 93 Length Control	Variable	
Code 93 Set Length 1	1 Character	
Code 93 Set Length 2	50 Characters	
Code 93 Minimum Reads	1 Read	
Code 93 Decoding Level	Level 3	
Code 93 Quiet Zones	Auto	
Code 93 Stitching	Enable	
Code 93 Character Correlation	Enable	
Codablock F		
Codablock F Enable/Disable	Disable	
Codablock F EAN Enable/Disable	Disable	
Codablock F AIM Check	Enable Check C	
Codablock F Length Control	Variable	
Codablock F Set Length 1	3 Characters	
Codablock F Set Length 2	100 Characters	
Code 4		
Code 4 Enable/Disable	Disable	
Code 4 Check Character Transmission	Enable	
Code 4 Hex to Decimal Conversion	Enable	
Code 5		
Code 5 Enable/Disable	Disable	
Code 5 Check Character Transmission	Enable	

Parameter	Default	Your Setting
Code 5 Hex to Decimal Conversion	Enable	
Code 4 and Code 5 Common Configuration Items		
Code 4 and 5 Decoding Level	3	
Code 4 and Code 5 Minimum Reads	1	
Follett 2 of 5		
Follett 2 of 5 Enable/Disable	Disable	
BC412		
BC412 Enable/Disable	Disable	
BC412 Check Character Calculation	Don't Calculate	
BC412 Minimum Reads	2 Reads	
BC412 Decoding Level	3	
BC412 Length Control	Variable Length	
BC412 Set Length 1	1 Character	
BC412 Set Length 2	50 Characters	
<b>Plessey</b>		
Plessey Enable/Disable	Disable	
Plessey Check Character Calculation	Enable Plessey std. check char. verification	
Plessey Check Character Transmission	Enable	
Plessey Length Control	Variable	
Plessey Set Length 1	1	
Plessey Set Length 2	50	
<b>WIRELESS FEATURES</b>		
Good Transmission Beep	Enable	
Beep Frequency	Low	
Beep Duration	80 msec	
Beep Volume	High	
Disconnect Beep	Enable	
Docking Beep	Enable	
Leash Alarm	Disable	
Automatic Configuration Update	Enable	

Parameter	Default	Your Setting
Copy Configuration to Scanner		
Copy Configuration to Base Station		
Batch Mode	Disable	
RF Batch Mode Transmit Delay	No Delay	
Source Radio Address Transmission	Do not include	
Source Radio Address Delimiter Character	No Delimiter Character	
BT Security Features	2 seconds	
BT Security Mode	Disable	
Select PIN Code Length	Select 4-character BT PIN Code	
Set PIN Code	31323334 = Default PIN Code is 1234	
BT Poll Rate	20 ms	
Powerdown Timeout	30 minutes	
<b>Features for Star Models Only</b>		
STAR Radio Protocol Timeout	2 seconds	
STAR Radio Transmit Mode	ACK from cradle	

## Default Exceptions

Table 28 lists standard default settings as applied to a standard RS-232 interface. Table 29 provides a listing of default exceptions to that list as applied to the other interface types.

**Table 29. Default Exceptions by Interface Type<sup>3</sup>**

Parameter	Default Exception
<b>Interfaces: USB-OEM</b>	
Global Suffix	No Global Suffix
Double Read Timeout	500 msec
<b>Interfaces: All Keyboard Wedge, USB Keyboard</b>	
No unique settings	
<b>Interface: RS-232 WN</b>	
Expand UPC-A to EAN-13	Enable
UPC-E Check Character Transmission	Disable

Parameter	Default Exception
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
Interelaved 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 `
<b>Interface: RS-232 OPOS</b>	

Parameter	Default Exception
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
Interelaved 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.



UPC-A

EAN-13



Code 39

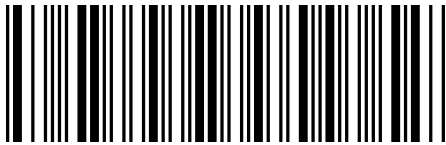
Code 128



Interleaved 2 of 5

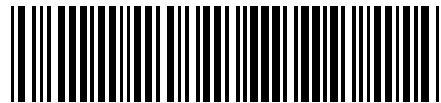
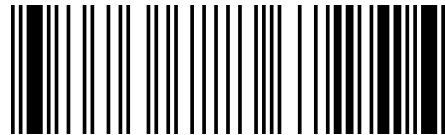
---

Code 32



Codabar

Code 93



Code 11



## GS1 DataBar (RSS)



### NOTE

GS1 DataBar variants must be enabled to read the bar codes below (see "GS1 DataBar (RSS)" on page 335).



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)





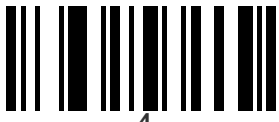
---



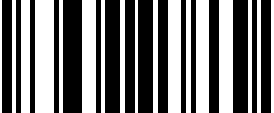

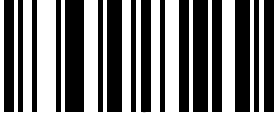
# NOTES



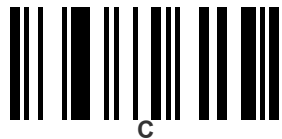





## Appendix D Keypad

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

 <p>A</p>	
	 <p>B</p>
 <p>C</p>	
	 <p>D</p>
 <p>E</p>	
	 <p>F</p>

---

# NOTES



# Appendix E

## Scancode Tables

### Control Character Emulation

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

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

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

**Control Character 02**: Special keys are located from 00 to 0x1F and characters from 0x80 to 0xFE are intended as an extended ASCII table (Microsoft Windows Codepage 1252 — see page 346).

### Single Press and Release Keys

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

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

## Interface Type PC AT PS/2 or USB-Keybaord

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

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



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

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

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

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	Alt+000	Alt+001	Alt+002	Alt+003	Alt+004	Alt+005	Alt+006	Alt+007	Alt+008	HT TAB	Alt+010	Alt+011	Alt+012	CR Enter	Alt+014	Alt+015
1x	Alt+016	Alt+017	Alt+018	Alt+019	Alt+020	Alt+021	Alt+022	Alt+023	Alt+024	Alt+025	Alt+026	ESC Esc	Alt+028	Alt+029	Alt+030	Alt+031
2x	A+032	A+033	A+034	A+035	A+036	A+037	A+038	A+039	A+040	A+041	A+042	A+043	A+044	A+045	A+046	A+047
3x	A+048	A+049	A+050	A+051	A+052	A+053	A+054	A+055	A+056	A+057	A+058	A+059	A+060	A+061	A+062	A+063
4x	A+064	A+065	A+066	A+067	A+068	A+069	A+070	A+071	A+072	A+073	A+074	A+075	A+076	A+077	A+078	A+079
5x	A+080	A+081	A+082	A+083	A+084	A+085	A+086	A+087	A+088	A+089	A+090	A+091	A+092	A+093	A+094	A+095
6x	A+096	A+097	A+098	A+099	A+100	A+101	A+102	A+103	A+104	A+105	A+106	A+107	A+108	A+109	A+110	A+111
7x	A+112	A+113	A+114	A+115	A+116	A+117	A+118	A+119	A+120	A+121	A+122	A+123	A+124	A+125	A+126	A+127
8x	_	Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	Home	End	Pg Up	Pg Dwn	á	â	ß	à	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓
Ax	Cr↑	A+0161	A+0162	A+0163	A+0164	A+0165	A+0166	A+0167	A+0168	A+0169	A+0170	A+0171	A+0172	A+0173	A+0174	A+0175
Bx	A+0176	A+0177	A+0178	A+0179	A+0180	A+0181	A+0182	A+0183	A+0184	A+0185	A+0186	A+0187	A+0188	A+0189	A+0190	A+0191
Cx	A+0192	A+0193	A+0194	A+0195	A+0196	A+0197	A+0198	A+0199	A+0200	A+0201	A+0202	A+0203	A+0204	A+0205	A+0206	A+0207
Dx	A+0208	A+0209	A+0210	A+0211	A+0212	A+0213	A+0214	A+0215	A+0216	A+0217	A+0218	A+0219	A+0220	A+0221	A+0222	A+0223
Ex	A+0224	A+0225	A+0226	A+0227	A+0228	A+0229	A+0230	A+0231	A+0232	A+0233	A+0234	A+0235	A+0236	A+0237	A+0238	A+0239
Fx	A+0240	A+0241	A+0242	A+0243	A+0244	A+0245	A+0246	A+0247	A+0248	A+0249	A+0250	A+0251	A+0252	A+0253	A+0254	A+0255

## Interface type PC AT PS/2 Alt Mode or USB-Keyboard Alt Mode (continued)

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	Ar↓	Ar↑	Al↓	Al↑	Cl↓	Cl↑	Cr↓	Cr↑	BS	Tab	à	S+ Tab	Enter Keyprd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	ß	â	á	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	A+032	A+033	A+034	A+035	A+036	A+037	A+038	A+039	A+040	A+041	A+042	A+043	A+044	A+045	A+046	A+047
3x	A+048	A+049	A+050	A+051	A+052	A+053	A+054	A+055	A+056	A+057	A+058	A+059	A+060	A+061	A+062	A+063
4x	A+064	A+065	A+066	A+067	A+068	A+069	A+070	A+071	A+072	A+073	A+074	A+075	A+076	A+077	A+078	A+079
5x	A+080	A+081	A+082	A+083	A+084	A+085	A+086	A+087	A+088	A+089	A+090	A+091	A+092	A+093	A+094	A+095
6x	A+096	A+097	A+098	A+099	A+100	A+101	A+102	A+103	A+104	A+105	A+106	A+107	A+108	A+109	A+110	A+111
7x	A+112	A+113	A+114	A+115	A+116	A+117	A+118	A+119	A+120	A+121	A+122	A+123	A+124	A+125	A+126	A+127
8x	A+0128	A+0129	A+0130	A+0131	A+0132	A+0133	A+0134	A+0135	A+0136	A+0137	A+0138	A+0139	A+0140	A+0141	A+0142	A+0143
9x	A+0144	A+0145	A+0146	A+0147	A+0148	A+0149	A+0150	A+0151	A+0152	A+0153	A+0154	A+0155	A+0156	A+0157	A+0158	A+0159
Ax	A+0160	A+0161	A+0162	A+0163	A+0164	A+0165	A+0166	A+0167	A+0168	A+0169	A+0170	A+0171	A+0172	A+0173	A+0174	A+0175
Bx	A+0176	A+0177	A+0178	A+0179	A+0180	A+0181	A+0182	A+0183	A+0184	A+0185	A+0186	A+0187	A+0188	A+0189	A+0190	A+0191
Cx	A+0192	A+0193	A+0194	A+0195	A+0196	A+0197	A+0198	A+0199	A+0200	A+0201	A+0202	A+0203	A+0204	A+0205	A+0206	A+0207
Dx	A+0208	A+0209	A+0210	A+0211	A+0212	A+0213	A+0214	A+0215	A+0216	A+0217	A+0218	A+0219	A+0220	A+0221	A+0222	A+0223
Ex	A+0224	A+0225	A+0226	A+0227	A+0228	A+0229	A+0230	A+0231	A+0232	A+0233	A+0234	A+0235	A+0236	A+0237	A+0238	A+0239
Fx	A+0240	A+0241	A+0242	A+0243	A+0244	A+0245	A+0246	A+0247	A+0248	A+0249	A+0250	A+0251	A+0252	A+0253	A+0254	A+0255

# Digital Interface

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 C(S)+@	SOH C(S)+A	STX C(S)+B	ETX C(S)+C	EOT C+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS C(S)+H	HT TAB	LF C(S)+J	VT C(S)+K	FF C(S)+L	CR Enter	SO C(S)+N	SI C(S)+O
1x	DLE C(S)+P	DC1 C(S)+Q	DC2 C(S)+R	DC3 C(S)+S	DC4 C(S)+T	NAK C(S)+U	SYN C(S)+V	ETB C(S)+W	CAN C(S)+X	EM C(S)+Y	SUB C(S)+Z	ESC Esc	FS C(S)+\	GS C+]	RS C(S)+^	US C(S)+_
2x	Space	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	r	s	t	u	v	w	x	y	z	{		}	~	Del
8x		Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	F13	F14	F15	F16	á	â	ß	à					Cl↓	Cl↑	

# Digital Interface (continued)

Table 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					CI↓	CI↑			BS	Tab	à	S+ Tab	Enter Keypd	Enter	Ins	
1x			ß	â	á	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Space	!	“	#	\$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	r	s	t	u	v	w	x	y	z	{		}	~	Del

# IBM XT

Table 36. Scancode Set When Control Character is 00 or 01

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	NULL C(S)+@	SOH C(S)+A	STX C(S)+B	ETX C(S)+C	EOT C+D	ENQ C(S)+E	ACK C(S)+F	BEL C(S)+G	BS C(S)+H	HT TAB	LF C(S)+J	VT C(S)+K	FF C(S)+L	CR Enter	SO C(S)+N	SI C(S)+O
1x	DLE C(S)+P	DC1 C(S)+Q	DC2 C(S)+R	DC3 C(S)+S	DC4 C(S)+T	NAK C(S)+U	SYN C(S)+V	ETB C(S)+W	CAN C(S)+X	EM C(S)+Y	SUB C(S)+Z	ESC Esc	FS C(S)+\	GS C+]	RS C(S)+^	US C(S)+_
2x	Space	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	'	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{		}		Del
8x		Sh↓	Sh↑	Ins	Ent (keyp)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
9x	F12	Home	End	Pg Up	Pg Dwn	á	â	ß	à	Ar↓	Ar↑	Al↓	Al↑	Cl↓	Cl↑	Cr↓
Ax	Cr↑															

# IBM XT (continued)

Table 37. 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↑	AI↓	AI↑	CI↓	CI↑	Cr↓	Cr↑	BS	Tab	à	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Home	ß	â	á	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Space	!	“	#	\$	%	&	‘	(	)	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6x	‘	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	R	s	t	u	v	w	x	y	z	{		}		Del

# Microsoft Windows Codepage 1252

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

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	<u>NUL</u> 0000	<u>STX</u> 0001	<u>SOT</u> 0002	<u>ETX</u> 0003	<u>EOT</u> 0004	<u>ENQ</u> 0005	<u>ACK</u> 0006	<u>BEL</u> 0007	<u>BS</u> 0008	<u>HT</u> 0009	<u>LF</u> 000A	<u>VT</u> 000B	<u>FF</u> 000C	<u>CR</u> 000D	<u>SO</u> 000E	<u>SI</u> 000F
10	<u>DLE</u> 0010	<u>DC1</u> 0011	<u>DC2</u> 0012	<u>DC3</u> 0013	<u>DC4</u> 0014	<u>NAK</u> 0015	<u>SYN</u> 0016	<u>ETB</u> 0017	<u>CAN</u> 0018	<u>EM</u> 0019	<u>SUB</u> 001A	<u>ESC</u> 001B	<u>FS</u> 001C	<u>GS</u> 001D	<u>RS</u> 001E	<u>US</u> 001F
20	<u>SP</u> 0020	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	<u>DEL</u> 007F
80	€ 20AC	•	ƒ 0192	„ 201E	… 2026	† 2020	‡ 2021	ˆ 02C6	‰ 2030	Š 0160	< 2039	Œ 0152	•	Ž 017D	•	•
90	•	˘ 2018	˙ 2019	˚ 201C	˛ 201D	• 2022	– 2013	— 2014	˜ 02DC	™ 2122	Š 0161	> 203A	œ 0153	•	Ž 017E	Ÿ 0178
A0	<u>NSP</u> 00A0	ı 00A1	ç 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	ø 00F0	ñ 00F1	ò 00F2	ó 00F3	ô 00F4	õ 00F5	ö 00F6	÷ 00F7	ø 00F8	ù 00F9	ú 00FA	û 00FB	ü 00FC	ý 00FD	þ 00FE	ÿ 00FF



# ASCII Chart

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

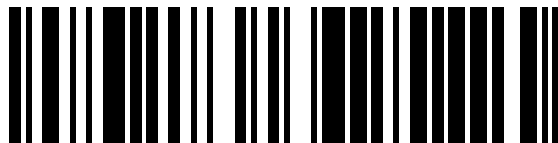


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