DATALOGIC

Gryphon™ Family

General Purpose Handheld
Linear Imager or Laser Barcode Readers

Gryphon I GD4100/GM4100
Gryphon BT4100/ L GD4300

Product Reference Guide

Datalogic Scanning, Inc.
959 Terry Street
Eugene, Oregon 97402
USA
Telephone: (541) 683-5700
Fax: (541) 345-7140

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Patents
This product is covered by one or more of the following patents:
US Pat.: 6,512,218 B1; 6,808,114 B1; 6,877,664 B1; 6,997,385 B2; 7,053,954 B1; 7,102,116 B2; 7,282,688 B2; 7,387,246 B2.
European Pat.: 996,284 B1; 999,514 B1; 1,128,315 B1; 1,396,811 B1.
Additional patents pending.

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Chapter 1
Introduction

About this Manual

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

Overview

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

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

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

Chapter 4, Wireless Features describes options and programming related to radio communication features for the RF variants of the Gryphon family.

Chapter 5, Laser Features describes options and programming specific to laser models.

Chapter 6, References provides background information and detailed instructions for more complex programming items.

Chapter 7, Message Formatting provides details for programming options.

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

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

Appendix C, Sample Barcodes offers sample barcodes of several common symbologies.

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

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

Manual Conventions

The following conventions are used in this document:

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

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

CAUTION

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

References

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

Technical Support

Datalogic Website Support

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

Reseller Technical Support

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

Telephone Technical Support

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

About the Reader

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 barcodes within this guide.

Several models of the Gryphon are available, and are covered in this manual:

- Gryphon I GD4100 - Corded linear imager barcode reader
- Gryphon I GM4100 - Cordless linear imager barcode reader with Datalogic STAR™.
- Gryphon L GD4300 - Model with Laser scan engine.
- Gryphon I BT 4100 - Model with Bluetooth options.

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 barcodes to print.

Advancements in the LED technology used in the imager-based readers significantly improve the illumination of the target field of view, resulting in higher scan efficiency. 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.

See "Interface Selection" on page 28 for a listing and descriptions of available interface sets by model type.

The BC40xx™ Radio Base

Base LEDs

LEDs on the Gryphon I Base provide information about the Base's status, as shown in Figure 1.

Figure 1. Gryphon I Base LEDs

The following table describes the significance of each LED:

	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 = Battery charging is in progress.
	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.

See Base Station Indications on page 327 for more specific details on the LEDs.

Base Button

The Base contains a button which is used primarily to perform a paging function. Pressing the button causes a sound signal to be emitted by all scanners linked with this Base, as long as the scanner is awake (see Powerdown Timeout on page 265) and reception is enabled (see Sleep Mode Timeout on page 94). The button can also be used to "force device connection" via the Datalogic Aladdin Software tool (available for free download from the Datalogic website). See the Aladdin Online Help for details.

Star Model

For the Star model, press and hold (longer than one second) to initiate paging.

BT Model

For the BT model, press quickly (less than one second) to initiate paging.
Press and hold (longer than one second) to enable radio linking.

BC40XX UV Counterfeit Detection

The BC40XX Radio Base is available with a UV Counterfeit Money Detector, typically used to verify the authenticity of bank notes. Other uses for counterfeit detection are passport, ticket, credit card, travelers' check and similar applications where it is possible to detect fluorescent marks with UV light.

The detector contains eight special UV LEDs, as shown below:

The Counterfeit Detector is based on UV fluorescent emission. Real banknotes under ultraviolet rays usually absorb the UV light and will show special marks made with fluorescent inks. On the other hand, most counterfeit banknotes only reflect the UV lights, without showing fluorescent marks.

To use:

1. Quickly press the Base button to light the UV LEDs.
2. Hold the item to be verified under the LED lights to ensure that the special fluorescent marks are visible.

3. The LEDs are set to switch off automatically after about 2 minutes. To keep the UV LEDs in always-on mode, quickly press the Base button a second time within 10 seconds of the first press. To switch them off, simply press the button again.

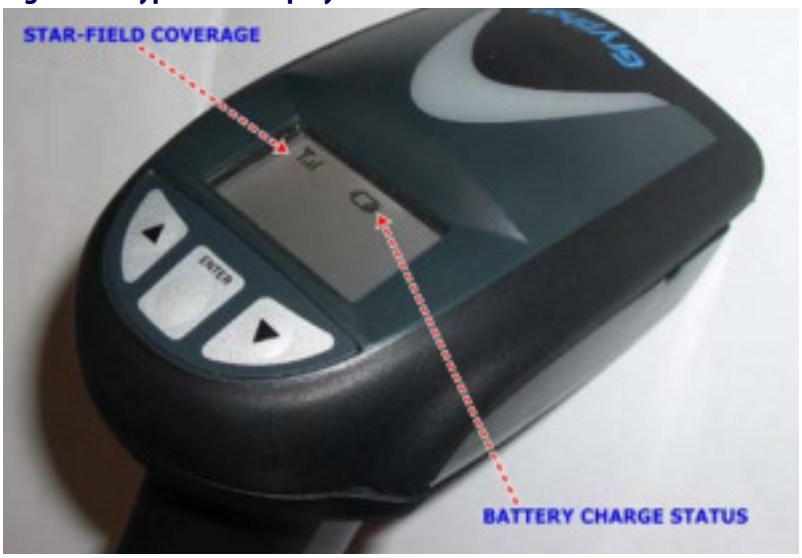
An external power supply is necessary for full functionality of the Base station with UV Counterfeit Detector. Use only the recommended AC adapter 12Vdc.

Display

The Gryphon GM4100 is available with an optional Display. The Display features 4 lines and 16 characters, and offers icons and three additional keys to allow a better interaction with a remote host.

Fonts, contrast, backlight and other parameters can be configured for the Display. See Display Features on page 272 and Message Formatting on page 317 for more information.

Figure 2. Gryphon™ I Display



Battery Safety

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

Before installing the Battery, read "Battery Safety" on this and the following pages. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

WARNING

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 below:

- **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.

CAUTION

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.

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 types of batteries, 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,

The typical manufacturer advertised useful life of LI batteries is one to three years, depending 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 that is showing excessive loss of capacity, it should be properly recycled / disposed of and replaced. For most applications, batteries should be replaced after one year of service to maintain customer satisfaction and minimize safety concerns.

Collect and recycle waste batteries separately from the device in compliance with European Directive 2006/66/EC, 2002/95/EC, 2002/96/EC and subsequent modifications, US and China regulatory and others laws and regulations about the environment.

Programming the Reader

Configuration Methods

Programming Barcodes

The reader is factory-configured with a standard set of default features. After scanning the interface barcode, you can select other options and customize your reader through use of the instructions and programming barcode labels available in the corresponding features section for your interface. Customizable settings for many features are found in "Configuration Using Barcodes" starting on page 37.

Some programming labels, like "Restore Custom Defaults" on page 33, require only the scan of the single label to enact the change. Most, however, require the reader to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT barcode once to enter Programming Mode. Once the reader is in Programming Mode, scan a number of parameter settings before scanning the ENTER/EXIT barcode a second time, which will then accept your changes, exit Programming Mode and return the reader to normal operation.

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

Datalogic Aladdin™

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

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

Chapter 2
Setup

Unpacking

Check carefully to ensure the reader and any accessories ordered are present and undamaged. If any damage occurred during shipment, contact Datalogic Technical Support. Information is shown on page 10.

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

Setting Up the Reader

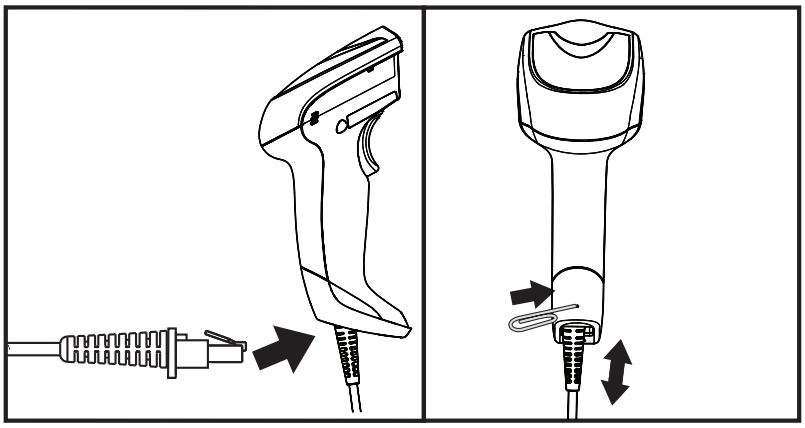
Depending on whether you are using a Corded or Mobile version of the Gryphon, follow the steps provided in this section to connect and get your reader up and communicating with its host.

1. Begin by Installing the Interface Cable (Corded) or Connecting the Base Station (Mobile)
2. Go to Interface Selection and set the desired interface.
3. Configure Interface Settings (only if not using factory settings for that interface)
4. Go to Configuring Other Features (if modifications are needed from factory settings)

Installing the Interface Cable

For Corded versions, connect the reader cable by inserting the cable into the handle as shown in Figure 3. To remove it, insert a paper clip into the release aperture, then unplug the cable.

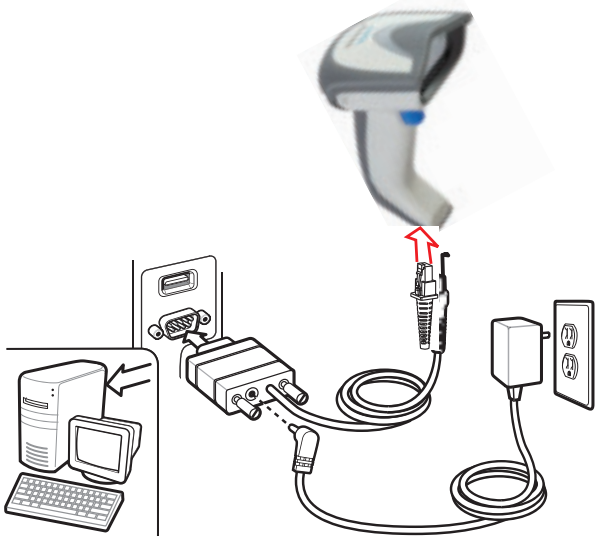
Figure 3. Connect/disconnect the cable



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 4. 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.

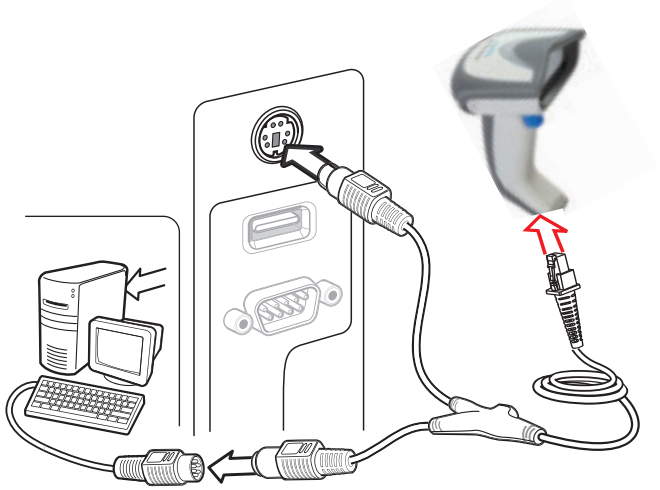
Figure 4. RS-232 Connection



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. Reference Figure 5.

Figure 5. Keyboard Wedge Interface connection



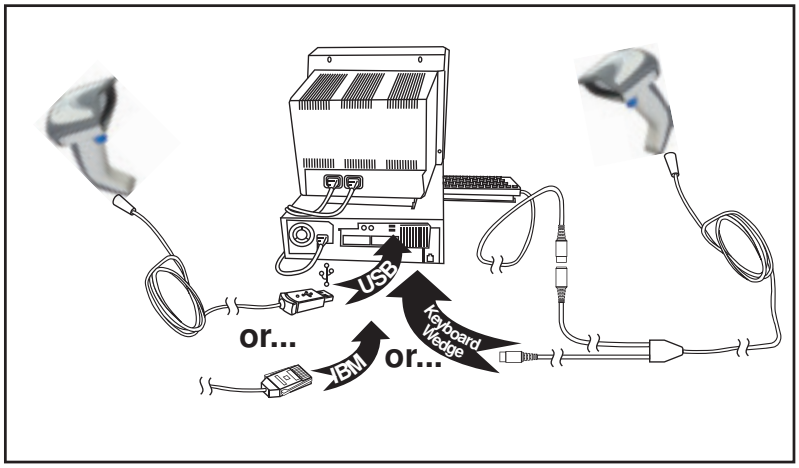
USB Connection

Connect the reader to a USB port on the terminal/PC using the correct USB cable for the interface type you ordered. Reference Figure 6.

Figure 6. USB connection

Other connection types are described below and illustrated in Figure 7.

Figure 7. Other Interface Connections



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.

RF Models

The power supply connects directly to the base (not on the cable's jack) for all configurations. For all interfaces (except RS-232) a power supply is recommended but not necessary, because the base can be powered from the Host. When the base is powered from the Host, select a slow charge rate.

Configuring the Base Station

The base charger/station may be configured in desk application to hold the reader in two different positions, either a horizontal or standing position, in order to provide the most comfortable use depending on needs.

Standing Horizontal

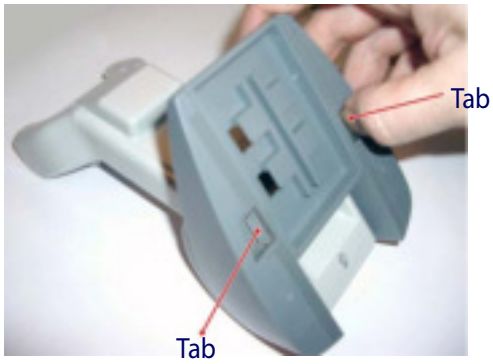
Changing the Base Station Position

The base station is configured by installing one of two sets of mechanical parts that come with the cordless kit. The default mounts (shown below) provide three options: vertical (wall) mounting, standing (45°), or horizontal mounting with a higher mechanical retention of the scanner. Use the other mounts only for horizontal mounting, with lower retention of the scanner. The different parts may be interchanged to customize retention preferences.

A tool such as a rigid pen or a flat screwdriver can be used to change the mounts. Do not allow it to touch the contacts.

1. Insert the appropriate parts for the desired base station position, as shown below.

2. Using your thumbs, push open the plastic tabs on the bottom of the base to free the wing holders.



3. The stand can now be repositioned in either horizontal or standing position.

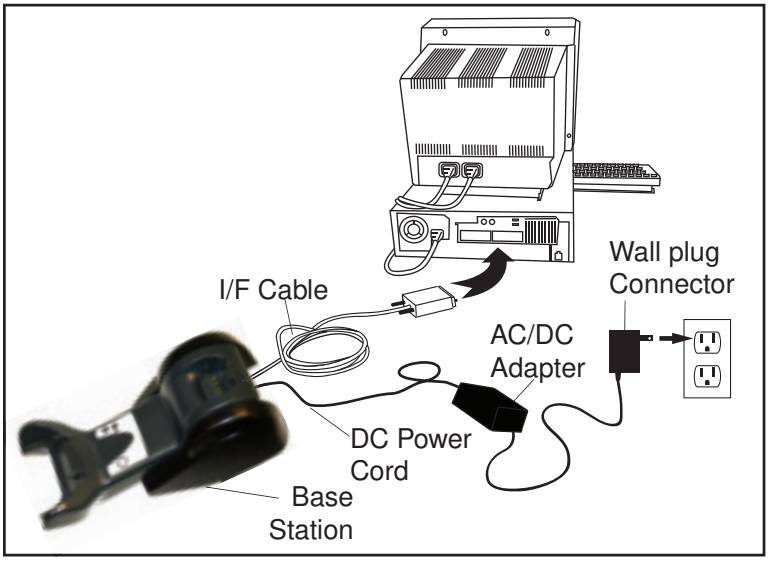
Connecting the Base Station

Figure 8 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.

Gryphon Mobile can also be Powered by the Terminal. The external power supply is recommended but not necessary. When powered by the Terminal, the battery charger is automatically set as Slow charge.

Base Station Connection and Routing: Fully insert the Power Cable and Interface (I/F) Cable connectors into their respective ports in the underside of the Base Station (see Figure 8). Then connect to an AC Adapter, and plug the AC power cord into the (wall) outlet.

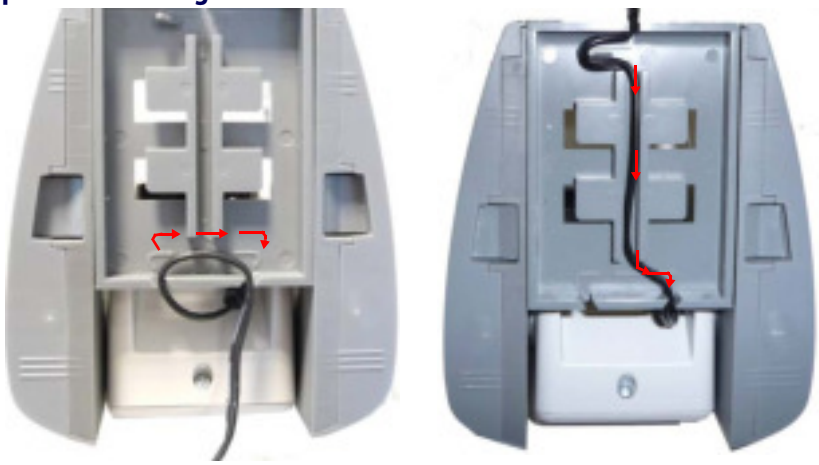
Figure 8. Connecting the Base Station



Securing the DC Power Cord (Optional)

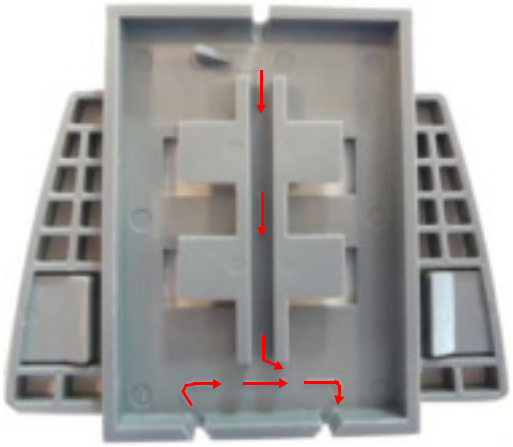
The DC power cord for the adapter can be secured to the bottom of the base in order to maximize the mechanical retention of the cable itself. The routing of the power cord can be changed to accommodate the base station positioning: horizontal, stand or wall mounting. The cables can be looped around to the front of the Base Station, or fed directly out the back of the Base Station, as shown in Figure 9 on page 23.

Figure 9. Options for routing the DC cord



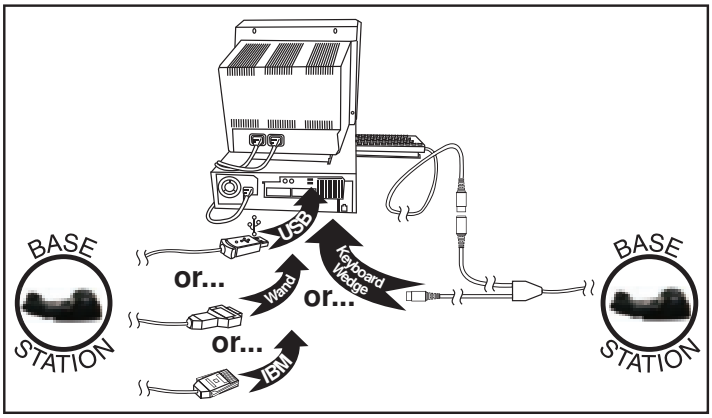
Please refer to the arrows depicted on the bottom of the base when placing the cables, detailed in Figure 10.

Figure 10. Arrows showing routing



Host Connection: Verify before connection that the reader's cable type is compatible with your host equipment. Most connections plug directly into the host device as shown below. 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 11. Connecting to the Host

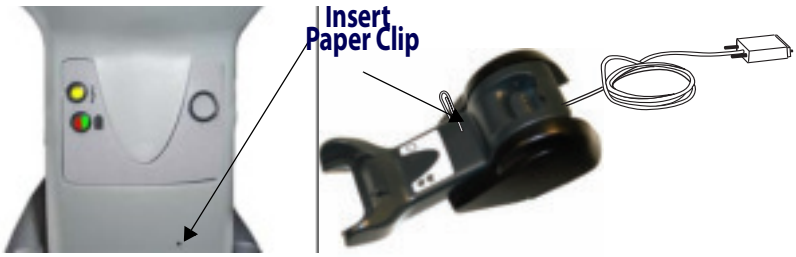


Power Connection : Plug the AC Adapter in to an approved AC wall socket with the cable facing downwards (as shown in Figure 8) to prevent undue strain on the socket.

Gryphon Mobile can also be Powered by the Terminal. The external power supply is recommended but not necessary. When powered by the Terminal, the battery charger is automatically set as Slow charge.

Disconnecting the Cable: To detach the cable, insert a paper clip or similar object into the hole on the base, as shown in Figure 12.

Figure 12. Disconnecting the Cable



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.

Unlink

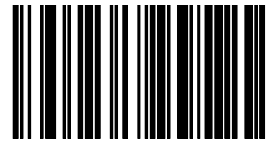
Linking a BT Reader to a PC

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

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 Link to a PC in Server Mode barcode 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

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.

GRYPHON™ I System and Network Layouts

Stand Alone Layouts

Figure 13. Single Reader Layout

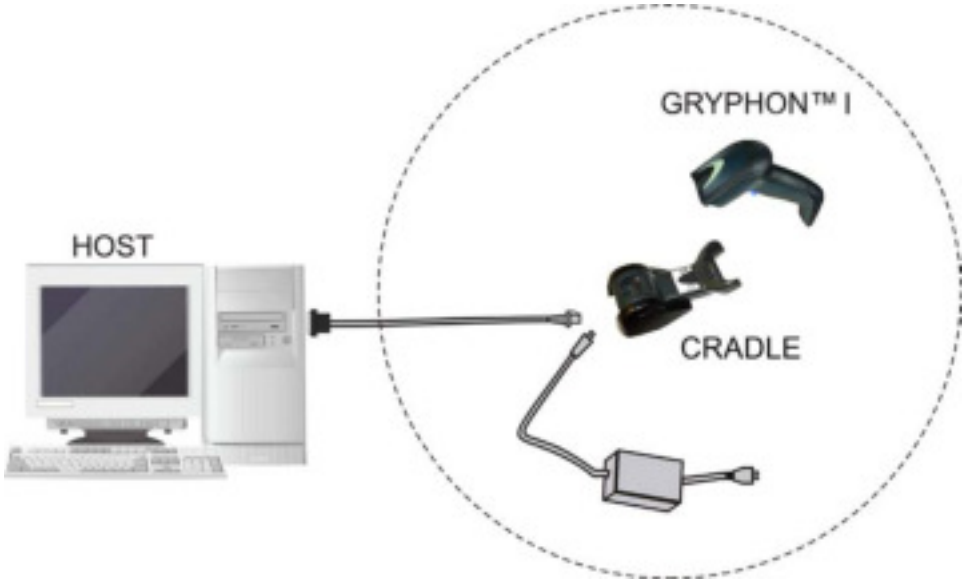
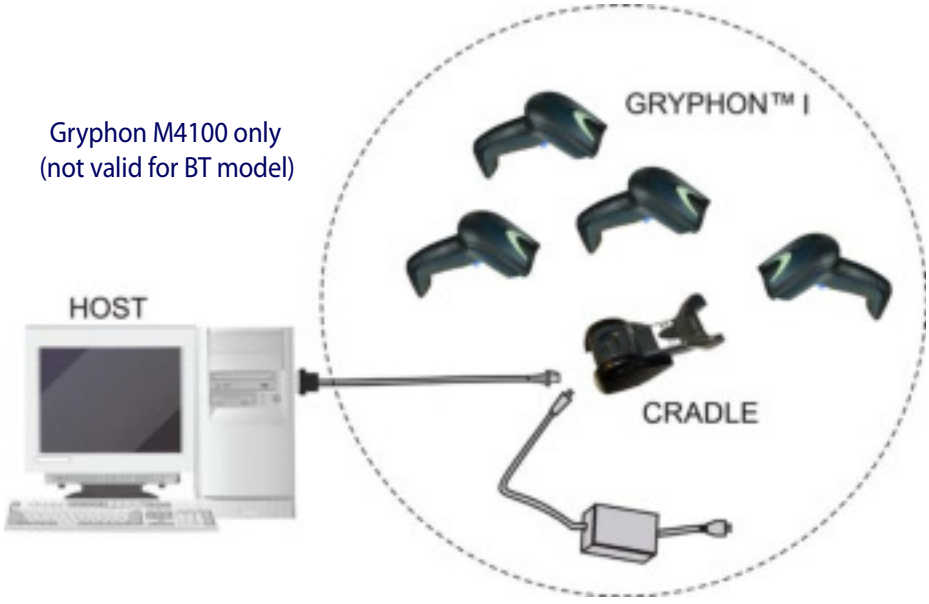
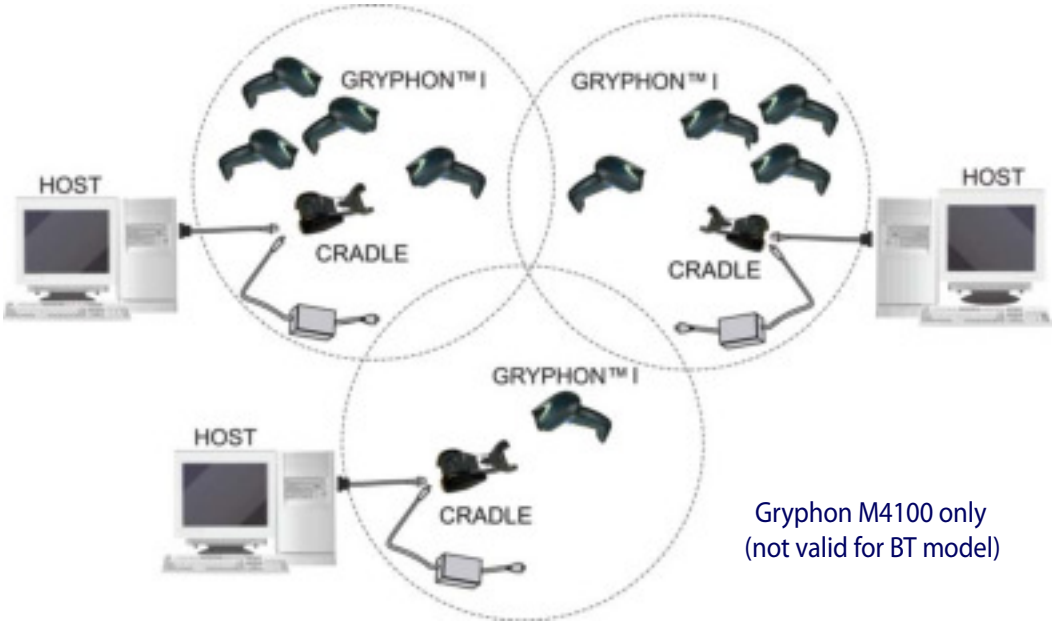


Figure 14. Multiple Reader Layout



In stand alone systems, each cradle is connected to a single Host.

Figure 15. Multiple Stand Alone Layouts



Many stand alone connections can operate in the same physical area without interference, provided all readers and cradles in the system have different addresses.

Interface Selection

Upon completing the physical connection between the reader and its host, proceed to Table 1 starting on page 29 to select the interface type the reader is connected to (for example: RS-232, Keyboard Wedge, USB, etc.). Scan the appropriate barcode in that section to configure your system's correct interface type.

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

General Purpose Models

- RS-232
- RS-232 OPOS
- USB
- Keyboard Wedge
- Wand Emulation

Retail Point of Sale Models

- RS-232
- RS-232 OPOS
- USB
- IBM 46XX

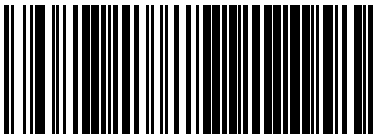
Setting the Interface

Scan the programming barcode from this section which selects the appropriate interface type matching the system the reader will be connected to. Next, proceed to the corresponding section in this manual (also listed in Table 1starting on page 29) to configure any desired settings and features associated with that interface.

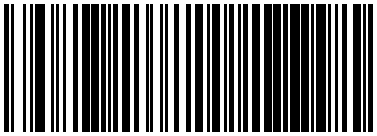
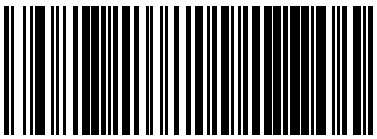
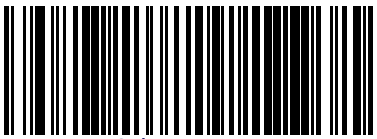
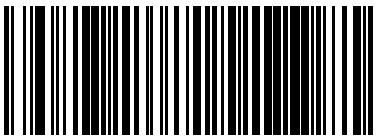
Unlike some programming features and options, interface selections require that you scan only one programming barcode label. DO NOT scan an ENTER/EXIT barcode prior to scanning an interface selection barcode.

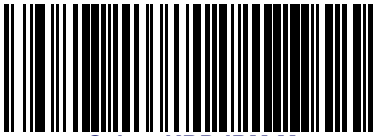
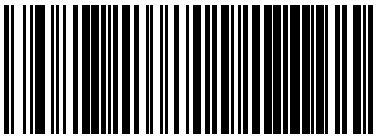
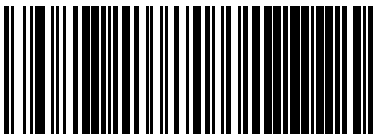
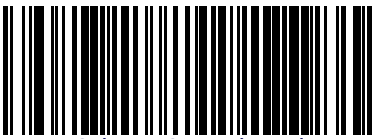
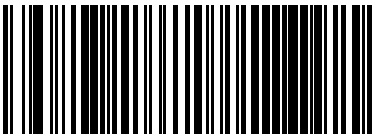
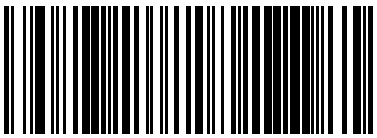
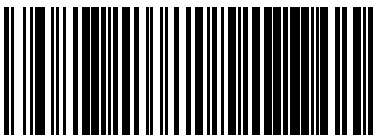
Some interfaces require the scanner to start in the disabled state when powered up. If additional scanner configuration is desired while in this state, pull the trigger and hold it for five seconds. The scanner will change to a state that allows programming with barcodes.

Table 1. Available Interfaces

RS-232		FEATURES
RS-232 standard interface	Select RS232-STD	Set RS-232 Interface Features starting on page 41
Select RS232-WN	RS-232 Wincor-Nixdorf	
RS-232 for use with OPOS/UPOS/JavaPOS	Select RS-232 OPOS	
 Select USB-COM-STD[a]	USB Com to simulate RS-232 standard interface	
IBM		**FEATURES**
Select IBM-P5B	IBM-46xx Port 5B reader interface	Set IBM Interface Features starting on page 69
IBM-46xx Port 9B reader interface	Select IBM-P9B	
USB-OEM		**FEATURES**
Select USB-OEM	USB-OEM (can be used for OPOS/UPOS/JavaPOS)	Set USB-OEM Interface Features starting on page 67

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

KEYBOARD		FEATURES
AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/Standard Key Encoding	 Select KBD-AT	Set KEYBOARD WEDGE Interface Features starting on page 55
Select KBD-AT-NK	**Keyboard Wedge for IBM AT PS2 with standard key encoding but without external keyboard**	
AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/Alternate Key	 Select KBD-AT-ALT	
Select KBD-AT-ALT-NK	**Keyboard Wedge for IBM AT PS2 with alternate key encoding but without external keyboard**	
PC/XT w/Standard Key Encoding	 Select KBD-XT	
 Select KBD-IBM-3153	Keyboard Wedge for IBM Terminal 3153	

KEYBOARD — cont.		FEATURES
Keyboard Wedge for IBM Terminals 31xx, 32xx, 34xx, 37xx make only keyboard	 Select KBD-IBM-M	Set KEYBOARD WEDGE Interface Features starting on page 55
 Select KBD-IBM-MB	**Keyboard Wedge for IBM Terminals 31xx, 32xx, 34xx, 37xx make break keyboard**	
Keyboard Wedge for DIGITAL Terminals VT2xx, VT3xx, VT4xx	 Select KBD-DIG-VT	
 Select USB Keyboard	USB Keyboard with standard key encoding	
USB Keyboard with alternate key encoding	 Select USB Alternate Keyboard	
 Select USB-KBD-APPLE	USB Keyboard for Apple computers	
WAND EMULATION		**FEATURES**
Wand Emulation	 Select WAND	Set WAND Interface Features starting on page 73

Customizing Configuration Settings

Configure Interface Settings

If after scanning the interface barcode from the previous table, your installation requires you to select options to further customize your reader, turn to the appropriate section for your interface type in "Configuration Using Barcodes" starting on page 37.

- "RS-232 ONLY Interface" on page 41
- "RS-232/USB-Com Interfaces" on page 46
- "Keyboard Interface" on page 55
- "USB-OEM Interface" on page 67
- "IBM 46XX Interface" on page 69
- "Wand Emulation Interface" on page 73

Global Interface Features

See "Global Interface Features" on page 39 for settings configurable by all interface types.

Configuring Other Features

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

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

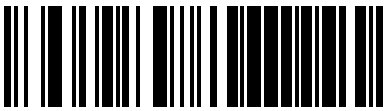
Code Selection**:** Includes options concerning the barcode label types (symbologies). These settings allow you to enable/disable symbologies, set label lengths, require check digit, etc.

Wireless Features**:** Contains programming options for RF and Bluetooth models only.

Laser Features**:** Describes options and programming specific to laser models.

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

Restore Custom Defaults

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

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

Restore Custom Default Configuration

Restore Factory Configuration

If you want to restore the Factory Configuration for your imager, scan either the Restore USA Factory Configuration barcode or the Restore EU Factory Configuration barcode below. Both labels restore the scanner configuration to the factory settings, including the interface type. The USA label restores Label IDs to those historically used in the USA. The EU label restores Label IDs to those historically used in Europe. The Label ID sets for USA and EU are shown in the "Label ID" section on page 81 of this manual.

Restore USA Factory Configuration

Restore EU Factory Configuration

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

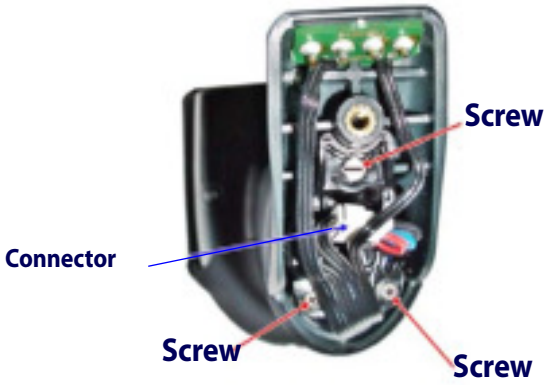
Replacing the Battery

Before replacing the Battery, read "Battery Safety" starting on page 15. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

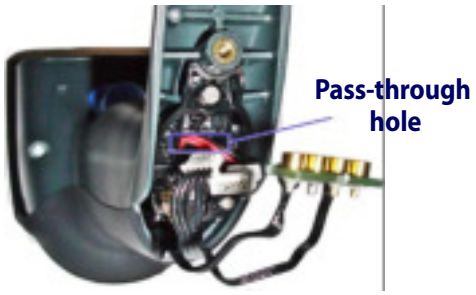
To change the battery of your reader, complete the following instructions.

1. With a screwdriver, unscrew the battery cover screw.

2. Unscrew and remove the three screws securing the battery holder, and unplug the white connector.



3. Carefully lift out the gold contacts circuit, and remove the battery holder while letting the white connector pass through the hole in the battery holder (as shown in the picture below).



4. Remove the old battery from its place (if present), and insert the new battery in the same position.

5. Replace the battery holder and three screws, plug in the connector, and return the contacts circuit to its previous location.

When inserting the new battery into the handle, take care to position the battery and the connector as shown.

6. Insert the cover in the handle and screw it back into place.

Battery replacement is now complete.

NOTES

Chapter 3
Configuration Using Barcodes

This and following sections provide programming barcodes to configure your reader by changing the default settings. For details about additional methods of programming, see Configuration Methods on page 19.

You must first enable your reader to read barcodes in order to use this section. If you have not done this, go to Setup, starting on page 17 and complete the appropriate procedure.

Configuration Parameters

Once the reader is set up, you can change the default parameters to meet your application needs. Refer to "Standard Defaults" starting on page 329 for initial configuration in order to set the default values and select the interface for your application.

The following configuration parameters are applicable to all Gryphon models covered in this manual, unless otherwise indicated. The items are divided into logical groups, making it easy to find the desired function based on its reference group.

Interface Configuration:

- "RS-232 ONLY Interface" on page 41
- "RS-232/USB-Com Interfaces" on page 46
- "Keyboard Interface" on page 55
- "USB-OEM Interface" on page 67
- "IBM 46XX Interface" on page 69
- "Wand Emulation Interface" on page 73

Parameters common to all interface applications:

- "Data Format" on page 77 gives options to control the messages sent to the Host system.
- "Reading Parameters" on page 91 control various operating modes and indicators status functioning.

Symbology-specific parameters:

- "Code Selection" on page 107 provides configuration of a personalized mix of codes, code families and their options.

Model-specific parameters:

- "Wireless Features" on page 257 offers configuration of radio control parameters for RF and Bluetooth models.
- "Laser Features" on page 281 provides options specific to laser models.

Reading Configuration Barcodes

You must first enable your reader to read barcodes in order to use this section. If you have not done this, go to Setup, starting on page 17 **and complete the appropriate procedure.**

To program features:

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

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

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

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

For detailed descriptions, programming information and examples for setting selected configuration items, see References, starting on page 285.

GLOBAL INTERFACE FEATURES

The following interface features are configurable by all interface types.

Host Commands — Obey/Ignore

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

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

DEFAULT	Host Commands = Obey
Host Commands = Ignore	

USB Suspend Mode

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

DEFAULT	USB Suspend Mode = Disable
USB Suspend Mode = Enable	

NOTES

RS-232 ONLY INTERFACE

BAUD RATE on page 42
DATA BITS on page 43
STOP BITS on page 43
PARITY on page 44
HANDSHAKING CONTROL on page 45

Use the programming barcodes 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 the next section, "RS-232/USB-Com Interfaces" starting on page 4-46.

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

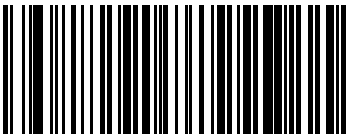
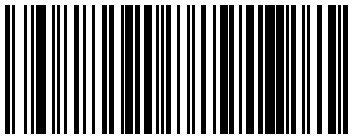
Baud Rate

See page 285 for information on this feature.

	Baud Rate = 1200
Baud Rate = 2400	
	Baud Rate = 4800
Baud Rate = 9600	DEFAULT
	Baud Rate = 19,200
Baud Rate = 38,400	
	Baud Rate = 57,600
Baud Rate = 115,200	

Data Bits

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

	 7 Data Bits
 8 Data Bits	DEFAULT

Stop Bits

Set the number of stop bits to match host device requirements. See page 285 for more information on this feature.

DEFAULT	1 Stop Bit
2 Stop Bits	

Parity

This feature specifies parity required for sending and receiving data. Select the parity type according to host device requirements. See page 285 for more information.

DEFAULT	Parity = None
Parity = Even	
	Parity = Odd

Handshaking Control

See page 285 for more information about this feature.

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

RS-232/USB-COM INTERFACES

INTERCHARACTER DELAY on page 47
BEEP ON ASCII BEL on page 47
BEEP ON NOT ON FILE on page 48
ACK NAK OPTIONS on page 49
ACK CHARACTER on page 50
NAK CHARACTER on page 50
ACK NAK TIMEOUT VALUE on page 51
ACK NAK RETRY COUNT on page 51
ACK NAK ERROR HANDLING on page 52
INDICATE TRANSMISSION FAILURE on page 52
DISABLE CHARACTER on page 53
ENABLE CHARACTER on page 53

The programming barcodes in this chapter allow modifications to the standard RS-232 and USB-Com interfaces. Reference Appendix B, Standard Defaults for a listing of standard factory settings.

Intercharacter Delay

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

See page 286 for more information.

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

DEFAULT

00 = No Intercharacter Delay

Beep On ASCII BEL

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

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

Beep On Not on File

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

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

ACK NAK Options

This enables/disables the ability of the reader to support the RS-232 ACK/NAK protocol. See page 287 for more information.

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

ACK Character

This setting specifies an ASCII character or hex value to be used as the ACK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See page 287 for more information.

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

Select ACK Character Setting

DEFAULT

0x06 'ACK' Character

NAK Character

This setting specifies an ASCII character or hex value to be used as the NAK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See page 288 for more information.

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

Select NAK Character Setting

DEFAULT

0x15 'NAK' Character

ACK NAK Timeout Value

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

See page 288 for more information on setting this feature.

Select ACK NAK Timeout Value 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 ACK NAK Timeout value is 200ms

ACK NAK Retry Count

This feature specifies the number of times the reader retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries. See page 289 for more information.

Select ACK NAK Retry Count 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

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.

DEFAULT

ACK NAK Error Handling = Ignore Errors Detected

ACK NAK Error Handling = Process Error as Valid ACK Character

ACK NAK Error Handling = Process Error as Valid NAK Character

Indicate Transmission Failure

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

Indicate Transmission Failure = Disable Indication

Indicate Transmission Failure = Enable Indication

DEFAULT

Disable Character

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

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

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

See page 291 for more information on setting this feature.

Select Disable Character Setting

DEFAULT

0x44 = Disable Character is 'D'

Enable Character

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

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

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

See page 292 in "References" for more information on setting this feature.

Select Enable Character Setting

DEFAULT

0x45 = Enable Character is 'E'

NOTES

KEYBOARD INTERFACE

COUNTRY MODE on page 56
CAPS LOCK STATE on page 59
NUMLOCK on page 59
SEND CONTROL CHARACTERS on page 60
WEDGE QUIET INTERVAL on page 61
INTERCHARACTER DELAY on page 62
INTERCODE DELAY on page 63
USB KEYBOARD SPEED on page 64

Use the programming barcodes in this chapter to select options for USB Keyboard and Wedge Interfaces. Reference Appendix B, Standard Defaults for a listing of standard factory settings.

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

Country Mode

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

Only the following interfaces support ALL Country Modes.

- USB Keyboard (without alternate key encoding)
- AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/Std Key Encoding
- Keyboard Wedge for IBM AT PS2 with standard key encoding but without external keyboard
- AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 without Alternate Key
- Keyboard Wedge for IBM AT PS2 without alternate key encoding but without external keyboard

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

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

Country Mode — continued

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

Country Mode — continued

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

Caps Lock State

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

DEFAULT	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.

DEFAULT	Numlock = Numlock key unchanged
Numlock = Numlock key toggled	

Send Control Characters

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

Options are as follows:

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

Control Character 01 . Characters from 00 to 0x1F are sent as control character Ctrl+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 "Microsoft Windows Codepage 1252"on page 357).

DEFAULT	Wedge Send Control Characters = 00
Wedge Send Control Characters = 01	
	Wedge Send Control Characters = 02

Wedge Quiet Interval

This option specifies the amount of time to look for keyboard activity before the reader breaks the keyboard connection in order to transmit data to host. The selectable range for this feature is from 0 to 990ms in 10ms increments.

This feature applies ONLY to the Keyboard Wedge interface.

See page 293 in "References" for detailed information and examples for setting this feature.

Select Wedge Quiet Interval 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

10 = Quiet Interval of 100 ms

Intercharacter Delay

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

This feature applies ONLY to the Keyboard Wedge interface.

See page 294 in "References" for detailed information and examples for setting this feature.

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

DEFAULT

00 = No Intercharacter Delay

Intercode Delay

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

See page 295 in "References" for detailed information and examples for setting this feature.

Set Intercode Delay	
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

00 = No Wedge Intercode Delay

USB Keyboard Speed

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

This feature applies ONLY to the USB Keyboard interface.

DEFAULT

USB Keyboard Speed = 1ms

USB Keyboard Speed = 2ms

USB Keyboard Speed = 3ms

USB Keyboard Speed = 4ms

USB Keyboard Speed = 5ms

USB Keyboard Speed — continued

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

NOTES

USB-OEM INTERFACE

USB-OEM DEVICE USAGE on page 68

INTERFACE OPTIONS on page 68

Feature settings for USB interfaces differ depending upon which host type the reader will be connected with. Use the feature settings in this chapter and "IBM 46XX Interface"on page 69 to specifically configure for the USB-OEM interface. Other USB interfaces are included in the appropriate chapter for their host type.

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 barcode scanners. Depending on what other scanners you may already have connected to a USB-OEM POS, you may need to change this setting to enable all devices to communicate.

Options are:

- Table Top Scanner
- Handheld Scanner

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

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

Interface Options

This feature provides for an interface-specific control mechanism.

	Obey Scanner Configuration Host Commands
Ignore Scanner Configuration Host Commands	DEFAULT

IBM 46XX INTERFACE

46XX NUMBER OF HOST RESETS on page 70
TRANSMIT LABELS IN CODE 39 FORMAT on page 72
INTERFACE OPTIONS on page 72

Use the barcodes in this section to configure programmable features for available IBM 46XX interfaces.

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

46xx Number of Host Resets

Specifies how many consecutive resets are processed before the reader starts a five-second period to allow the user to enter Programming Mode and configure the reader. The configurable range for this feature is 1 to 15 resets.

	46xx Number of Host Resets = 1
46xx Number of Host Resets = 2	
	46xx Number of Host Resets = 3
46xx Number of Host Resets = 4	
	46xx Number of Host Resets = 5
46xx Number of Host Resets = 6	DEFAULT
	46xx Number of Host Resets = 7

46xx Number of Host Resets — cont.

46xx Number of Host Resets = 8	
	46xx Number of Host Resets = 9
46xx Number of Host Resets = 10	
	46xx Number of Host Resets = 11
46xx Number of Host Resets = 12	
	46xx Number of Host Resets = 13
46xx Number of Host Resets = 14	
	46xx Number of Host Resets = 15

Transmit Labels in Code 39 Format

This feature enable/disables translation to Code 39 before transmitting label data to an IBM-46XX or a USB-OEM host. Only the symbology identifier is modified for the translation. The data is not converted to Code 39 or verified to be valid for Code 39.

Options are:

IBM Standard Format. Send labels in standard IBM format.

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

- USB-OEM: Code128, Code 93, and Codabar
- IBM-Port 5B: Code 128, Code 93, and Codabar
- IBM-Port 9B: Code 93 and Codabar

DEFAULT	Transmit Labels in Code 39 Format = IBM Standard Format
Transmit Labels in Code 39 Format = Code 39 Format	

Interface Options

This feature provides for an interface-specific control mechanism.

	Obey Scanner Configuration Host Commands
Ignore Scanner Configuration Host Commands	DEFAULT

WAND EMULATION INTERFACE

WAND SIGNAL SPEED on page 74
WAND POLARITY on page 74
WAND IDLE STATE on page 75
TRANSMIT NOISE on page 75
LABEL SYMBOLOGY CONVERSION on page 76

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

Wand Signal Speed

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

- 330 microseconds
- 660 microseconds

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

Wand Polarity

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

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

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

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

Wand Idle State

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

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

	Wand Idle State = Low
Wand Idle State = High	DEFAULT

Transmit Noise

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

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

Label Symbology Conversion

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

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

DEFAULT

Label Symbology Conversion = No conversion

Label Symbology Conversion = Convert to Code 39

Label Symbology Conversion = Convert to Code 39 Full ASCII

Label Symbology Conversion = Convert to Code 128

DATA FORMAT

GLOBAL PREFIX/SUFFIX on page 78

GLOBAL AIM ID on page 79

GS1-128 AIM ID on page 80

LABEL ID starting on page 81
- Label ID: Pre-loaded Sets
- Label ID: Set Individually Per Symbology
- Label ID Control
- Label ID Symbology Selection
- Set Global Mid Label ID Characters

CASE CONVERSION on page 90

CHARACTER CONVERSION on page 90

CAUTION

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

The features in this chapter can be used to build specific user-defined data into a message string. See "References" starting on page 298 for more detailed instructions on setting these features.

Global Prefix/Suffix

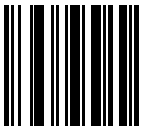
This option sets up to 20 characters each from the set of ASCII characters or any hex value from 00 to FF. The characters may be added as a prefix (in a position before the barcode data, also called a header) and/or as a suffix (in a position following the barcode data, also called a footer). See page 299 for more detailed instructions on setting this feature.

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

Set Global Prefix

Set Global Suffix

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


CANCEL

DEFAULT

No Global Prefix
Global Suffix = 0x0D (CR)

Global AIM ID

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

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

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

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

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

DEFAULT

Global AIM ID = Disable

Global AIM ID = Enable

GS1-128 AIM ID

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

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

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

Label ID

A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01-0xFF), used to identify a barcode (symbology) type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" below) or individually per symbology (see "Label ID: Set Individually Per Symbology"on page 81). 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 79.

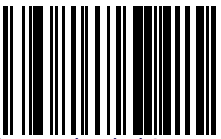
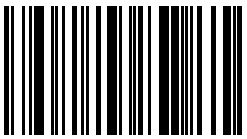
See Label ID, starting on page 301 of “References” for more information on setting this feature.

Label ID: Pre-loaded Sets

The reader supports two pre-loaded sets of Label IDs. See Label ID: Pre-loaded Sets, starting on page 301 for details on the USA set and the EU set.

CAUTION

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

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

Label ID: Set Individually Per Symbology

This feature configures a Label ID individually for a single symbology. See Label ID: Set Individually Per Symbology, starting on page 303 for detailed instructions on setting this feature.

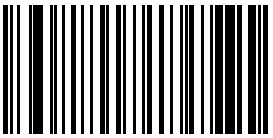
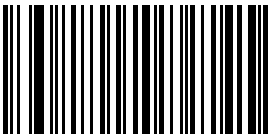
Label ID Control

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

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

Label ID Symbology Selection

This option selects the symbology for which a Label ID is to be configured. See "Label ID"on page 81 or page 303 in “References” for more detailed instructions.

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

Label ID Symbology Selection — continued

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

Label ID Symbology Selection — continued

	Set EAN 8/P5 Label ID Character(s)
Set EAN 8/GS1-128 Label ID Character(s)	
	Set GTIN Label ID Character(s)
Set GTIN/P2 Label ID Character(s)	
	Set GTIN/P5 Label ID Character(s)
Set GTIN/GS1-128 Label ID Character(s)	
	Set Code 39 Label ID Character(s)

Label ID Symbology Selection — continued

Set Code 32 Label ID Character(s)	
	Set Code 39 CIP Label ID Character(s)
Set Code 128 Label ID Character(s)	
	Set GS1-128 Label ID Character(s)
Set ISBT 128 Label ID Character(s)	
	Set Codablock F Label ID Character(s)
Set Interleaved 2 of 5 Label ID Character(s)	
	Set Follett 2 of 5 Label ID Character(s)

Label ID Symbology Selection — continued

Set Interleaved 2 of 5 CIP HR Label ID Character(s)	
	Set Standard 2 of 5 Label ID Character(s)
Set Industrial 2 of 5 Label ID Character(s)	
	Set IATA Label ID Character(s)
Set Datalogic 2 of 5 Label ID Character(s)	
	Set Codabar Label ID Character(s)
Set ABC Codabar Label ID Character(s)	

Label ID Symbology Selection — continued

Set Code 11 Label ID Character(s)

Set DataBar Omnidirectional Label ID Character(s)

Set DataBar Expanded Label ID Character(s)

Set DataBar Limited Label ID Character(s)

Set Code 93 Label ID Character(s)

Set MSI Label ID Character(s)

Set Plessey Label ID Character(s)

Label ID Symbology Selection — continued

Set Anker Plessey Label ID Character(s)	
	Set Code 4 Label ID Character(s)
Set Code 5 Label ID Character(s)	

Set Global Mid Label ID Characters

Specifies mid-label ID that is added for transmission between the labels of a two-label pair.

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

Set Global Mid Label ID Character(s)	

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

No Mid Label ID Character (00)

Case Conversion

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

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

DEFAULT

Case Conversion = Disable (no case conversion)

Case Conversion = Convert to upper case

Case Conversion = Convert to lower case

Character Conversion

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

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

Configure Character Conversion

DEFAULT

0xFFFFFFFFFFFFFFFF
(No character conversion)

READING PARAMETERS

DOUBLE READ TIMEOUT on page 92	**GOOD READ LED DURATION** on page 100
LABEL GONE TIMEOUT on page 93	**SCAN MODE** on page 101
SLEEP MODE TIMEOUT on page 94	**STAND MODE TRIGGERED TIMEOUT** on page 102
POWER ON ALERT on page 96	**STAND DETECTION** on page 103
GOOD READ: WHEN TO INDICATE on page 96	**STAND MODE SENSITIVITY** on page 104
GOOD READ BEEP TYPE on page 97	**SCANNING ACTIVE TIME** on page 104
GOOD READ BEEP FREQUENCY on page 97	**FLASH ON TIME** on page 105
GOOD READ BEEP LENGTH on page 98	**FLASH OFF TIME** on page 105
GOOD READ BEEP VOLUME on page 99	**GREEN SPOT DURATION** on page 106

Double Read Timeout

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

	Double Read Timeout = 0.1 Second
Double Read Timeout = 0.2 Second	
	Double Read Timeout = 0.3 Second
Double Read Timeout = 0.4 Second	DEFAULT
	Double Read Timeout = 0.5 Second
Double Read Timeout = 0.6 Second	
	Double Read Timeout = 0.7 Second

Double Read Timeout — continued

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 page 306 in "References" for detailed instructions and examples for setting this feature.

Select Label Gone Timeout 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

016 = Timeout of 160 ms

Sleep Mode Timeout

This feature sets the amount of time that the reader will be idle before it enters into a low power Sleep Mode. When in Sleep Mode the reader can no longer receive commands from the Host or base station until it is woken up again by a trigger pull or being placed into a base station.

In order for the reader to enter Sleep Mode, the following conditions must be met:

Corded version (GD4100 only). RS-232 interface and trigger single, trigger multiple or trigger pulse.

Mobile version (GM4100 only). Sleep state is allowed only on the handheld (not on the base) when trigger single, trigger multiple or trigger pulse are set, and when the reader is not charging the battery.

This feature is not applicable to the Gryphon Laser or Gryphon BT models

Sleep Mode Timeout = Disable	DEFAULT
	Sleep Mode Timeout = 1 Second
Sleep Mode Timeout = 2 Seconds	
	Sleep Mode Timeout = 3 Seconds
Sleep Mode Timeout = 4 Seconds	

Sleep Mode Timeout — continued

	Sleep Mode Timeout = 5 Seconds
Sleep Mode Timeout = 6 Seconds	
	Sleep Mode Timeout = 7 Seconds
Sleep Mode Timeout = 8 Seconds	
	Sleep Mode Timeout = 9 Seconds
Sleep Mode Timeout = 10 Seconds	

LED AND BEEPER INDICATORS

Power On Alert

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

	Power On Alert = Disable (No Audible Indication)
Power On Alert = Four Beeps	DEFAULT

Good Read: When to Indicate

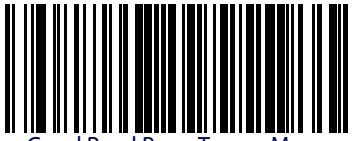
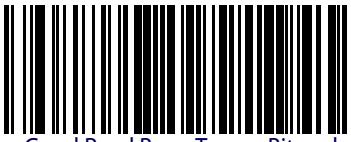
This feature specifies when the reader will provide indication (beep and/or flash its green LED) upon successfully reading a barcode. .

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

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

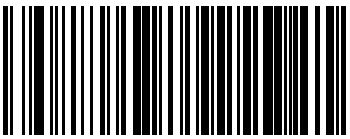
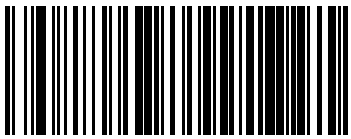
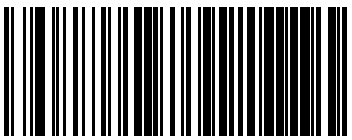
Good Read Beep Type

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

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

Good Read Beep Frequency

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

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

Good Read Beep Length

	Good Read Beep Length = 60 msec
Good Read Beep Length = 80 msec	DEFAULT
	Good Read Beep Length = 100 msec
Good Read Beep Length = 120 msec	
	Good Read Beep Length = 140 msec
Good Read Beep Length = 160 msec	
	Good Read Beep Length = 180 msec
Good Read Beep Length = 200 msec	

Good Read Beep Volume

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

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

Good Read LED Duration

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

See page 307 in "References" for detailed instructions and examples for setting this feature.

Select Good Read LED Duration 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

020 = Good Read LED stays on for 2 seconds.

Indicators are dimmed during sleep.

SCANNING FEATURES

Scan Mode

Selects the reader's scan operating mode. See page 308 in "References" for descriptions.

Scan Mode = Trigger Single	DEFAULT
	Scan Mode = Trigger Hold Multiple
Scan Mode = Trigger Pulse Multiple	
	Scan Mode = Flashing[a]
Scan Mode = Always On[b]	
	Scan Mode = Stand Mode[c]
Scan Mode = Trigger Object Sense c	

a. Recommended scan mode for Gryphon L for hands-free stand mode operation.
b. See "Laser Features" starting on page 5-281 for additional laser programmable timeout options.
c. Not applicable to the Gryphon L.

Stand Mode Triggered Timeout

This feature specifies the time to remain in Trigger Single mode after the trigger is pulled while in Stand Mode.

This timeout is only used when the Scan Mode is configured as Stand Mode.

This feature is valid only for corded models. It is not applicable to the Gryphon L model.

Stand Mode Triggered Timeout = 0.5 Seconds	DEFAULT
	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 = 6 Seconds

Stand Mode Triggered Timeout — continued

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.

This feature is not applicable to the Gryphon L.

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

Stand Mode Sensitivity

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

This feature is not applicable to the Gryphon L.

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

Scanning Active Time

This setting specifies the amount of time that the reader stays in scan ON state once the state is entered. The range for this setting is from 1 to 255 seconds in 1-second increments. See page 309 in "References" for descriptions of each feature

Select Scanning Active Time 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 **005 = Scanning is active for 5 Seconds**

Flash On Time

This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments.See page 310 in "References" for detailed information on setting this feature.

Select Flash ON Time 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

10 = Flash is ON for 1 Second

Flash Off Time

This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See page 311 in "References" for detailed information on setting this feature.

Select Flash OFF Time 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

06 = Flash is OFF for 600ms

Green Spot Duration

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

	Green Spot Duration = Disable (Green Spot is Off)
Green Spot Duration = Short (300 msec)	DEFAULT
	Green Spot Duration = Medium (500 msec)
Green Spot Duration = Long (800 msec)	

CODE SELECTION

The reader supports the following symbologies (barcode types). Symbology-dependent options for each symbology are included in this chapter.

CODE EAN/UPC on page 109	**STANDARD 2 OF 5** on page 178
• Coupon Control	**INDUSTRIAL 2 OF 5** on page 184
• UPC-A	• Code IATA
• UPC-E	**DATALOGIC 2 OF 5** on page 191
• EAN 13 (Jan 13)	**CODABAR** on page 197
• ISSN	• ABC Codabar
• EAN 8 (Jan 8)	**CODE 11** on page 212
• UPC/EAN Global Settings	**GS1 DATABAR™ OMNIDIRECTIONAL** on page 221
CODE 39 on page 136	• GS1 DataBar™ Omnidirectional
• Code 32 (ITAL Pharmaceutical Code)	• GS1 DataBar™ Expanded
• Code 39 CIP (French Pharmaceutical)	• GS1 DataBar™ Limited
CODE 128 on page 151	**CODE 93** on page 229
• GS1-128	**MSI** on page 237
CODE ISBT 128 on page 162	**PLESSEY** on page 244
CODABLOCK F on page 165	**CODE 4** on page 252
INTERLEAVED 2 OF 5 (I 2 OF 5) on page 169	**CODE 5** on page 253
• Follett 2 of 5	
• Interleaved 2 of 5 CIP HR	

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

To set most features:

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

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

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

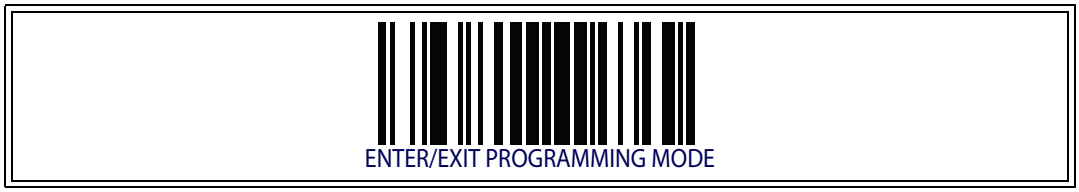
If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

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

DISABLE ALL SYMBOLOGIES

Use this feature to disable all symbologies.

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



This does not disable the reading of programming labels.

CODE EAN/UPC

Coupon Control

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

	Coupon Control = Allow all coupon barcodes to be decoded
Coupon Control = Enable only UPCA coupon decoding	DEFAULT
	Coupon Control = Enable only GS1 DataBar™ coupon decoding

UPC-A

The following options apply to the UPC-A symbology.

UPC-A Enable/Disable

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

	UPC-A = Disable
UPC-A = Enable	DEFAULT

UPC-A Check Character Transmission

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

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

Expand UPC-A to EAN-13

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

DEFAULT	UPC-A to EAN-13 = Don't Expand
UPC-A to EAN-13 = Expand	

UPC-A Number System Character Transmission

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

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

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 a good read.

DEFAULT	UPC-A Minimum Reads = 1
$CABMR02 UPC-A Minimum Reads = 2	
	UPC-A Minimum Reads = 3
UPC-A 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 barcodes.

	UPC-E = Disable
UPC-E = Enable	DEFAULT

UPC-E Check Character Transmission

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

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

Expand UPC-E to EAN-13

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

DEFAULT	UPC-E to EAN-13 = Don't Expand
UPC-E to EAN-13 = Expand	

Expand UPC-E to UPC-A

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

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

UPC-E Number System Character Transmission

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

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

UPC-E Minimum Reads

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

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

GTIN FORMATTING

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

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

DEFAULT	GTIN Formatting = Disable
GTIN Formatting = Enable	

EAN 13 (JAN 13)

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

EAN 13 Enable/Disable

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

	EAN 13 = Disable
EAN 13 = Enable	DEFAULT

EAN 13 Check Character Transmission

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

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

EAN-13 Flag 1 Character

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

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

EAN-13 ISBN Conversion

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

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

EAN 13 Minimum Reads

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

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

ISSN

The following options apply to the ISSN symbology.

ISSN Enable/Disable

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

DEFAULT	ISSN = Disable
ISSN = Enable	

EAN 8 (JAN 8)

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

EAN 8 Enable/Disable

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

	EAN 8 = Disable
EAN 8 = Enable	DEFAULT

EAN 8 Check Character Transmission

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

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

Expand EAN 8 to EAN 13

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

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

EAN 8 Minimum Reads

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

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

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 barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs.

See page 296 for more information on this feature.

UPC/EAN Decoding Level = 1 (Conservative)	
DEFAULT	UPC/EAN Decoding Level = 2
UPC/EAN Decoding Level = 3	
	UPC/EAN Decoding Level = 4
UPC/EAN Decoding Level = 5 (Aggressive)	

UPC/EAN Correlation

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

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

UPC/EAN Price Weight Check

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

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

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	

ADD-ONS

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

Optional Add-ons

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

If a UPC/EAN base label and an add-on are both decoded, the reader will transmit the base label and add-on. If a UPC/EAN base label is decoded without an add-on, the base label will be transmitted without an add-on. Conditional add-on settings (if enabled) are considered by the reader before optional add-on settings.

DEFAULT	Optional Add-Ons = Disable P2
Optional Add-Ons = Enable P2	
DEFAULT	Optional Add-Ons = Disable P5
Optional Add-Ons = Enable P5	
DEFAULT	Optional Add-Ons = Disable GS1-128
Optional Add-Ons = Enable GS1-128	

Optional Add-On Timer

This option sets the time the reader will look for an add-on when an add-on fragment has been seen and optional add-ons are enabled. (Also see "Optional GS1-128 Add-On Timer"on page 130.)

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

Optional Add-On Timer — cont.

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

Optional Add-On Timer — cont.

	Optional Add-on Timer = 180ms
Optional Add-on Timer = 200ms	
	Optional Add-on Timer = 220ms
Optional Add-on Timer = 240ms	
	Optional Add-on Timer = 260ms
Optional Add-on Timer = 280ms	
	Optional Add-on Timer = 300ms

Optional GS1-128 Add-On Timer

This option sets the timer expiration value to read the added part after reading the linear EAN/UPC part. For UPC/EAN add-ons other than those of that type, see "Optional Add-On Timer"on page 127.

DEFAULT

Optional GS1-128 Add-On Timer = Disable

Optional GS1-128 Add-On Timer = 10ms

Optional GS1-128 Add-On Timer = 20ms

Optional GS1-128 Add-On Timer = 30ms

Optional GS1-128 Add-On Timer = 40ms

Optional GS1-128 Add-On Timer = 50ms

Optional GS1-128 Add-On Timer — cont.

	Optional GS1-128 Add-On Timer = 60ms
Optional GS1-128 Add-On Timer = 70ms	
	Optional GS1-128 Add-On Timer = 100ms
Optional GS1-128 Add-On Timer = 120ms	
	Optional GS1-128 Add-On Timer = 140ms
Optional GS1-128 Add-On Timer = 160ms	

Optional GS1-128 Add-On Timer — cont.

	Optional GS1-128 Add-On Timer = 180ms
Optional GS1-128 Add-On Timer = 200ms	
	Optional GS1-128 Add-On Timer = 220ms
Optional GS1-128 Add-On Timer = 240ms	
	Optional GS1-128 Add-On Timer = 260ms
Optional GS1-128 Add-On Timer = 280ms	
	Optional GS1-128 Add-On Timer = 300ms

P2 Add-Ons Minimum Reads

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

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

P5 Add-Ons Minimum Reads

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

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

GS1-128 Add-Ons Minimum Reads

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

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

CODE 39

The following options apply to the Code 39 symbology.

Code 39 Enable/Disable

	Code 39 = Disable
Code 39 = Enable	DEFAULT

Code 39 Check Character Calculation

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

	Code 39 Check Character Calculation = Don't Calculate
Code 39 Check Character Calculation = Calculate Std Check	DEFAULT
	Code 39 Check Character Calculation = Calculate Mod 7 Check

Code 39 Check Character Calculation — cont.

Code 39 Check Character Calculation = Enable Italian Post Check	
	Code 39 Check Character Calculation = Enable Daimler Chrysler Check

Code 39 Check Character Transmission

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

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

Code 39 Start/Stop Character Transmission

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

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

Code 39 Full ASCII

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

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

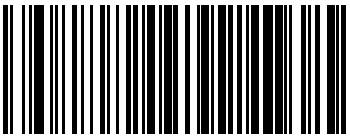
Code 39 Quiet Zones

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

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

Code 39 Minimum Reads

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

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

Code 39 Decoding Level

Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See page 296 for more information on this feature.

This configuration item applies to Code 39 and Code 32.

Code 39 Decoding Level = 1 (Conservative)	
	Code 39 Decoding Level = 2
Code 39 Decoding Level = 3	DEFAULT
	Code 39 Decoding Level = 4
Code 39 Decoding Level = 5 (Aggressive)	

Code 39 Length Control

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

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

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

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

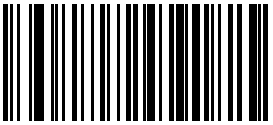
Code 39 Set Length 1

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

Table 2 provides examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

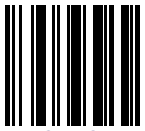
Table 2. Code 39 Length 1 Setting Examples

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



Select Code 39 Set Length 1 Setting

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



CANCEL

DEFAULT

02 = Length 1 is 2 Characters

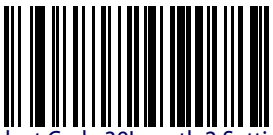
Code 39 Set Length 2

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

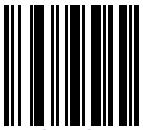
Table 3 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 3. Code 39 Length 2 Setting Examples

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


Select Code 39Length 2 Setting

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


CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Code 39 Interdigit Ratio

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

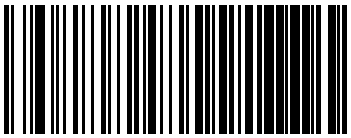
	Code 39 Interdigit Ratio = Disable
Code 39 Interdigit Ratio = 1	
	Code 39 Interdigit Ratio = 2
Code 39 Interdigit Ratio = 3	
DEFAULT	Code 39 Interdigit Ratio = 4
Code 39 Interdigit Ratio = 5	

Code 39 Interdigit Ratio — cont.

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

Code 39 Character Correlation

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

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

Code 39 Stitching

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

	 Code 39 Stitching = Disable
 Code 39 Stitching = Enable	DEFAULT

CODE 32 (ITAL PHARMACEUTICAL CODE)

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

Code 32 Enable/Disable

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

DEFAULT	Code 32 = Disable
Code 32 = Enable	

Code 32 Feature Setting Exceptions

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

"Code 39 Quiet Zones"on page 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 Char Transmission

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

DEFAULT	Code 32 Check Character Transmission = Don't Send
Code 32 Check Character Transmission = Send	

Code 32 Start/Stop Character Transmission

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

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

CODE 39 CIP (FRENCH PHARMACEUTICAL)

The following options apply to the Code 39 CIP symbology.

Code 39 CIP Enable/Disable

Enables/Disables ability of the reader to decode Code 39 CIP labels.

DEFAULT	Code 39 CIP = Disable
Code 39 CIP = Enable	

CODE 128

The following options apply to the Code 128 symbology.

Code 128 Enable/Disable

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

	Code 128 = Disable
Code 128 = Enable	DEFAULT

Expand Code 128 to Code 39

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

DEFAULT	Code 128 to Code 39 = Don't Expand
Code 128 to Code 39 = Expand	

Code 128 Check Character Transmission

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

DEFAULT	Code 128 Check Character Transmission = Don't Send
Code 128 Check Character Transmission = Send	

Code 128 Function Character Transmission

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

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

Code 128 Sub-Code Change Transmission

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

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

Code 128 Quiet Zones

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

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

Code 128 Minimum Reads

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

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

Code 128 Decoding Level

Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See page 296 for more information on this feature.

Code 128 Decoding Level = 1 (Conservative)	
	Code 128 Decoding Level = 2
Code 128 Decoding Level = 3	DEFAULT
	Code 128 Decoding Level = 4
Code 128 Decoding Level = 5 (Aggressive)	

Code 128 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 128 symbology. See page 296 for more information..

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

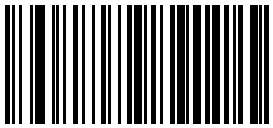
Code 128 Set Length 1

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

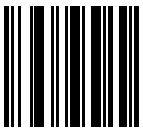
Table 4 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 4. Code 128 Length 1 Setting Examples

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


Select Code 128 Set Length 1 Setting

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


CANCEL

DEFAULT

01 = Length 1 is 1 Character

Code 128 Set Length 2

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

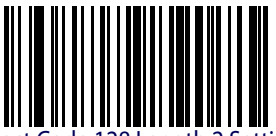
The length can be set from 1 to 80 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 5 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 5. Code 128 Length 2 Setting Examples

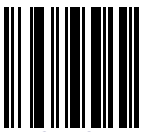
STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	80 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 128 LENGTH 2 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '0'	'0' and '7'	'0' and 'F'	'5' AND 0'
5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

.



Select Code 128 Length 2 Setting

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



CANCEL

DEFAULT

80 = Length 2 is 80 Characters

Code 128 Character Correlation

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

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

Code 128 Stitching

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

	Code 128 Stitching = Disable
Code 128 Stitching = Enable	DEFAULT

GS1-128

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

GS1-128 Enable

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

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

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

CODE ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

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

DEFAULT	ISBN 128 Concatenation = Disable
ISBN 128 Concatenation = Enable	

ISBT 128 Force Concatenation

When enabled, this feature forces concatenation for ISBT.

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

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

ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

This option is only valid when ISBT 128 Concatenationis enabled (see page 162).

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

ISBT 128 Dynamic Concatenation Timeout

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

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

ISBT 128 Advanced Concatenation Options

To set up pairs of label types for concatenation, use the Datalogic Aladdin configuration application or contact Datalogic Technical Support, as described on page 10**.**

CODABLOCK F

The following options apply to the Codablock F symbology.

Codablock F Enable/Disable

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

DEFAULT	Codablock F = Disable
Codablock F = Enable	

Codablock F EAN Enable/Disable

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

DEFAULT	Codablock F EAN = Disable
Codablock F EAN = Enable	

Codablock F AIM Check

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

	Codablock F AIM Check = Disable
Codablock F AIM Check = Enable Check C	DEFAULT

Codablock F Length Control

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

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

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

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

Codablock F Set Length 1

Specifies one of the barcode lengths for Codablock F Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. Characters can be set from 03 to 255 characters.

Table 6 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 6. CODABLOCK F Length 1 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	03 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODABLOCK F LENGTH 1 SETTING**				
4	**Scan Three Characters From** Appendix D, Keypad	'0', '0' and '3'	'0', '0' and '7'	'0','1' and '5'	'0','5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Codablock F 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

03 = Length 1 is 3 Characters

Codablock F Set Length 2

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

Table 7 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 7. CODABLOCK F 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 CODABLOCK F LENGTH 2 SETTING**				
4	**Scan Three Characters From** Appendix D, Keypad	'0', '0' and '0'	'0', '0' and '7'	'0","1' and '5'	'0","5' AND '0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Codablock F Length 2 Setting

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

CANCEL

DEFAULT

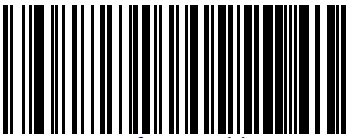
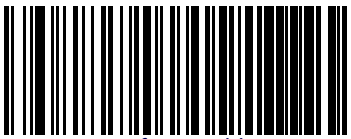
100 = Length 2 is 100 Characters

INTERLEAVED 2 OF 5 (I 2 OF 5)

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

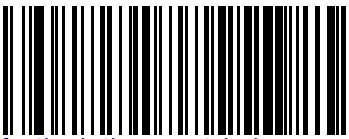
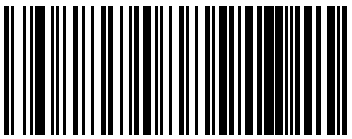
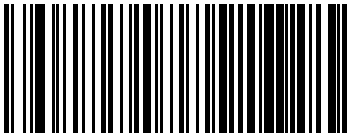
I 2 of 5 Enable/Disable

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

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

I 2 of 5 Check Character Calculation

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

DEFAULT	 I 2 of 5 Check Character Calculation = Disable
 I 2 of 5 Check Character Calculation = Check Standard (Modulo 10)	
	 I 2 of 5 Check Character Calculation = Check German Parcel

I 2 of 5 Check Character Calculation - cont.

I 2 of 5 Check Character Calculation = Check DHL

I 2 of 5 Check Character Calculation = Check Daimler Chrysler

I 2 of 5 Check Character Calculation = Check Bosch

I 2 of 5 Check Character Calculation = Italian Post

I 2 of 5 Check Character Transmission

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

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

I 2 of 5 Check Character Transmission = Send

DEFAULT

I 2 of 5 Minimum Reads

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

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

2 of 5 Decoding Level

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

Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See page 296 for more information on this feature.

2 of 5 Decoding Level = 1 (Conservative)	
	2 of 5 Decoding Level = 2
2 of 5 Decoding Level = 3	DEFAULT
	2 of 5 Decoding Level = 4
2 of 5 Decoding Level = 5 (Aggressive)	

I 2 of 5 Length Control

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

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

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

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

I 2 of 5 Set Length 1

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

Table 8 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 8. I 2 of 5 Length 1 Setting Examples

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

Select I 2 of 5 Length 1 Setting

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

CANCEL

DEFAULT

06 = Length 1 is 6 Characters

I 2 of 5 Set Length 2

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

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

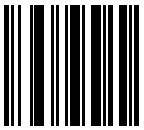
Table 9 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 9. I 2 of 5 Length 2 Setting Examples

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

Select I 2 of 5 Length 2 Setting

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



CANCEL

DEFAULT

50 = Length 2 is 50 Characters

I 2 of 5 Character Correlation

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

DEFAULT

I 2 of 5 Character Correlation = Disable

I 2 of 5 Character Correlation = Enable

I 2 of 5 Stitching

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

DEFAULT

I 2 of 5 Stitching = Disable

I 2 of 5 Stitching = Enable

FOLLETT 2 OF 5

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

Follett 2 of 5 Enable/Disable

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

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

INTERLEAVED 2 OF 5 CIP HR

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

Interleaved 2 of 5 CIP HR Enable/Disable

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

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

STANDARD 2 OF 5

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

Standard 2 of 5 Enable/Disable

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

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

Standard 2 of 5 Check Character Calculation

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

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

Standard 2 of 5 Check Character Transmission

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

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

Standard 2 of 5 Minimum Reads

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

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

Standard 2 of 5 Decoding Level

The Standard 2 of 5 Decoding Level feature is set using "2 of 5 Decoding Level"on page 172.

Standard 2 of 5 Length Control

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

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

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

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

Standard 2 of 5 Set Length 1

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

Table 10 provides some examples for setting Length 1. See page 296 if you want detailed instructions on setting this feature.

Table 10. Standard 2 of 5 Length 1 Setting Examples

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

Select Standard 2 of 5 Length 1 Setting

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

CANCEL

DEFAULT

08 = Length 1 is 8 Characters

Standard 2 of 5 Set Length 2

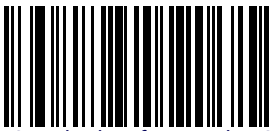
This feature specifies one of the barcode lengths for Standard 2 of 5 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check and data characters.

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

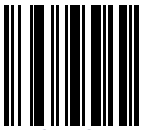
Table 11 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 11. Standard 2 of 5 Length 2 Setting Examples

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


Select Standard 2 of 5 Length 2 Setting

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


CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Standard 2 of 5 Character Correlation

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

DEFAULT

Standard 2 of 5 Character Correlation = Disable

Standard 2 of 5 Character Correlation = Enable

Standard 2 of 5 Stitching

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

DEFAULT

Standard 2 of 5 Stitching = Disable

Standard 2 of 5 Stitching = Enable

INDUSTRIAL 2 OF 5

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

Industrial 2 of 5 Enable/Disable

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

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

Industrial 2 of 5 Check Character Calculation

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

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

Industrial 2 of 5 Check Character Transmission

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

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

Industrial 2 of 5 Length Control

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

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

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

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

Industrial 2 of 5 Set Length 1

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

Table 12 provides some examples for setting Length 1. See page 296 if you want detailed instructions on setting this feature.

Table 12. Industrial 2 of 5 Length 1 Setting Examples

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

Select Industrial 2 of 5 Set Length 1 Setting

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

CANCEL

DEFAULT

01 = Length 1 is 1 Character

Industrial 2 of 5 Set Length 2

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

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

Table 13 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 13. Industrial 2 of 5 Length 2 Setting Examples

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

Select Industrial 2 of5 Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Industrial 2 of 5 Minimum Reads

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

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

Industrial 2 of 5 Stitching

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

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

Industrial 2 of 5 Character Correlation

Enable/disables character correlation for Industrial 2 of 5.

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

CODE IATA

The following options apply to the IATA symbology.

IATA Enable/Disable

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

DEFAULT	IATA = Disable
IATA = Enable	

IATA Check Character Transmission

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

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

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 barcodes.

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

Datalogic 2 of 5 Check Character Calculation

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

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

Datalogic 2 of 5 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.

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

Datalogic 2 of 5 Decoding Level

The Datalogic 2 of 5 Decoding Level feature is set using "2 of 5 Decoding Level"on page 172**.**

Datalogic 2 of 5 Length Control

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

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

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

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

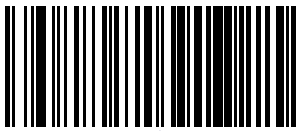
Datalogic 2 of 5 Set Length 1

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

Table 14 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

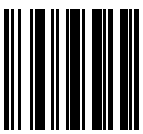
Table 14. Datalogic 2 of 5 Length 1 Setting Examples

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



Select Datalogic 2 of 5 Length 1 Setting

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



CANCEL

DEFAULT

06 = Length 1 is 6 Characters

Datalogic 2 of 5 Set Length 2

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

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

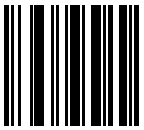
Table 15 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 15. Datalogic 2 of 5 Length 2 Setting Examples

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

Select Datalogic 2 of 5 Length 2 Setting

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


CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Datalogic 2 of 5 Character Correlation

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

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

Datalogic 2 of 5 Stitching

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

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

CODABAR

The following options apply to the Codabar symbology.

Codabar Enable/Disable

When disabled, the reader will not read Codabar barcodes.

DEFAULT	Codabar = Disable
Codabar = Enable	

Codabar Check Character Calculation

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

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

Codabar Check Character Transmission

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

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

Codabar Start/Stop Character Transmission

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

DEFAULT	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	DEFAULT

Codabar Start/Stop Character Match

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

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

Codabar Quiet Zones

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

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

Codabar Minimum Reads

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

DEFAULT	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 barcode symbology decoder to be very aggressive to very conservative, depending on a particular customer's needs. See page 296 for more information on this feature.

Codabar Decoding Level = 1 (Conservative)	
	Codabar Decoding Level = 2
Codabar Decoding Level = 3	DEFAULT
	Codabar Decoding Level = 4
Codabar Decoding Level = 5	

Codabar Length Control

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

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

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

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

Codabar Set Length 1

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

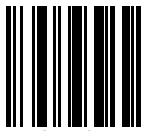
Table 16 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 16. Codabar Length 1 Setting Examples

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

Select Codabar Length 1 Setting

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


CANCEL

DEFAULT

03 = Length 1 is 3 Characters

Codabar Set Length 2

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

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

Table 17 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 17. Codabar Length 2 Setting Examples

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

Select Codabar Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Codabar Interdigit Ratio

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

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

Codabar Interdigit Ratio — cont.

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

Codabar Character Correlation

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

DEFAULT	Codabar Character Correlation = Disable
Codabar Character Correlation = Enable	

Codabar Stitching

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

DEFAULT	Codabar Stitching = Disable
Codabar Stitching = Enable	

ABC CODABAR

The following options apply to the ABC Codabar symbology.

ABC Codabar Enable/Disable

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

DEFAULT	ABC Codabar = Disable
ABC Codabar = Enable	

ABC Codabar Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

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

ABC Codabar Dynamic Concatenation Timeout

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

	ABC Codabar Dynamic Concatenation Timeout = 50 msec
ABC Codabar Dynamic Concatenation Timeout = 100 msec	
DEFAULT	ABC Codabar Dynamic Concatenation Timeout = 200 msec
ABC Codabar Dynamic Concatenation Timeout = 500 msec	
	ABC Codabar Dynamic Concatenation Timeout = 750 msec
ABC Codabar Dynamic Concatenation Timeout = 1 Second	

ABC Codabar Force Concatenation

Forces labels starting or ending with D to be concatenated.

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

CODE 11

The following options apply to the Code 11 symbology.

Code 11 Enable/Disable

When disabled, the reader will not read Code 11 barcodes.

DEFAULT	Code 11 = Disable
Code 11 = Enable	

Code 11 Check Character Calculation

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

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

Code 11 Check Character Transmission

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

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

Code 11 Minimum Reads

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

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

Code 11 Length Control

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

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

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

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

Code 11 Set Length 1

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

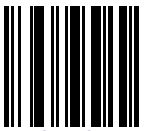
Table 18 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 18. Code 11 Length 1 Setting Examples

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

Select Code 11 Set Length 1 Setting

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



CANCEL

DEFAULT

04 = Length 1 is 4 Characters

Code 11 Set Length 2

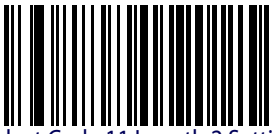
This feature specifies one of the barcode lengths for Code 11 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check and data characters.

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

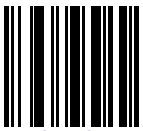
Table 19 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 19. Code 11 Length 2 Setting Examples

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


Select Code 11 Length 2 Setting

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


CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Code 11 Interdigit Ratio

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

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

Code 11 Interdigit Ratio — cont.

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

Code 11 Decoding Level

Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See page 296 for more information on this feature.

Codabar Decoding Level = 1 (Conservative)	
	Codabar Decoding Level = 2
Codabar Decoding Level = 3	DEFAULT
	Codabar Decoding Level = 4
Codabar Decoding Level = 5 (Aggressive)	

Code 11 Character Correlation

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

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

Code 11 Stitching

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

DEFAULT	Code 11 Stitching = Disable
Code 11 Stitching = Enable	

GS1 DATABAR™ OMNIDIRECTIONAL

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

GS1 DataBar™ Omnidirectional Enable/Disable

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

DEFAULT	GS1 DataBar™ Omnidirectional = Disable
GS1 DataBar™ Omnidirectional = Enable	

GS1 DataBar™ Omnidirectional GS1-128 Emulation

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

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

GS1 DataBar™ Omnidirectional Minimum Reads

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

DEFAULT

GS1 DataBar™ Omnidirectional Minimum Reads = 1

GS1 DataBar™ Omnidirectional Minimum Reads = 2

GS1 DataBar™ Omnidirectional Minimum Reads = 3

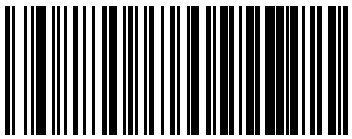
GS1 DataBar™ Omnidirectional Minimum Reads = 4

GS1 DATABAR™ EXPANDED

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

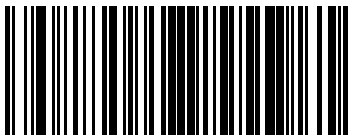
GS1 DataBar™ Expanded Enable/Disable

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

DEFAULT	 GS1 DataBar™ Expanded = Disable
GS1 DataBar™ Expanded = Enable	

GS1 DataBar™ Expanded GS1-128 Emulation

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

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

GS1 DataBar™ Expanded Minimum Reads

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

DEFAULT

GS1 DataBar™ Expanded Minimum Reads = 1

GS1 DataBar™ Expanded Minimum Reads = 2

GS1 DataBar™ Expanded Minimum Reads = 3

GS1 DataBar™ Expanded Minimum Reads = 4

GS1 DataBar™ Expanded Length Control

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

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

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

DEFAULT

GS1 DataBar™ Expanded Length Control = Variable Length

GS1 DataBar™ Expanded Length Control = Fixed Length

GS1 DataBar™ Expanded Set Length 1

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

Table 20 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 20. GS1 DataBar™ Expanded Length 1 Setting Examples

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

Select GS1 DataBar™ Expanded Set Length 1 Setting

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

CANCEL

DEFAULT

01 = Length 1 is 1 Character

GS1 DataBar™ Expanded Set Length 2

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

Table 21 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 21. GS1 DataBar™ Expanded Length 2 Setting Examples

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

Select GS1 DataBar™ Expanded Set Length 2 Setting

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

CANCEL

DEFAULT

74 = Length 2 is 74 Characters

GS1 DATABAR™ LIMITED

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

GS1 DataBar™ Limited Enable/Disable

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

DEFAULT	GS1 DataBar™ Limited = Disable
GS1 DataBar™ Limited = Enable	

GS1 DataBar™ Limited GS1-128 Emulation

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

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

GS1 DataBar™ Limited Minimum Reads

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

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

CODE 93

The following options apply to the Code 93 symbology.

Code 93 Enable/Disable

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

DEFAULT

Code 93 = Disable

Code 93 = Enable

Code 93 Check Character Calculation

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

Code 93 Check Character Calculation = Disable

Code 93 Check Character Calculation = Enable Check C

Code 93 Check Character Calculation = Enable Check K

Code 93 Check Character Calculation = Enable Check C and K

DEFAULT

Code 93 Check Character Transmission

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

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

Code 93 Length Control

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

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

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

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

Code 93 Set Length 1

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

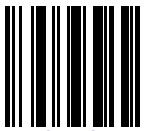
Table 22 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 22. Code 93 Length 1 Setting Examples

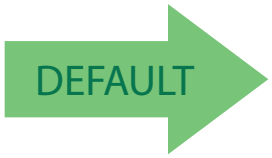
STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Characters	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 93 LENGTH 1 SETTING**				
4	**Scan Two Characters From** Appendix D, Keypad	'0' and '1'	'0' and '7'	'1' and '5'	'5' AND '0'
5	**Scan ENTER/EXIT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

Select Code 93 Set Length 1 Setting

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



CANCEL



01 = Length 1 is 1 Character

Code 93 Set Length 2

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

Table 23 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 23. CODE 93 Length 2 Setting Examples

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

Select Code 93 Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Code 93 Minimum Reads

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

DEFAULT

Code 93 Minimum Reads = 1

Code 93 Minimum Reads = 2

Code 93 Minimum Reads = 3

Code 93 Minimum Reads = 4

Code 93 Decoding Level

Specifies the decoding level for Code 93. 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 296 for more information on this feature.

	Code 93 Decoding Level = Disable
Code 93 Decoding Level = 1 (Conservative)	
	Code 93 Decoding Level = 2
Code 93 Decoding Level = 3	DEFAULT
	Code 93 Decoding Level = 4
Code 93 Decoding Level = 5 (Aggressive)	

Code 93 Quiet Zones

Enables/disables quiet zones for Code 93.

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

Code 93 Stitching

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

	Code 93 Stitching = Disable
Code 93 Stitching = Enable	DEFAULT

Code 93 Character Correlation

Enables/disables Character Correlation for Code 93.

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

MSI

The following options apply to the MSI symbology.

MSI Enable/Disable

Enables/Disables ability of reader to decode MSI labels.

DEFAULT	MSI = Disable
MSI = Enable	

MSI Check Character Calculation

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

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

MSI Check Character Transmission

Enables/disables transmission of an MSI check character.

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

MSI Length Control

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

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

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

DEFAULT	MSI Length Control = Variable Length
MSI = Fixed Length	

MSI Set Length 1

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

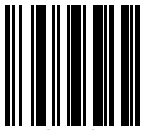
Table 24 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 24. MSI Length 1 Setting Examples

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

Select MSI Set Length 1 Setting

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



CANCEL

DEFAULT

01 = Length 1 is 1 Character

MSI Set Length 2

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

Table 25 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 25. MSI Length 2 Setting Examples

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

Select MSI Length 2 Setting

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

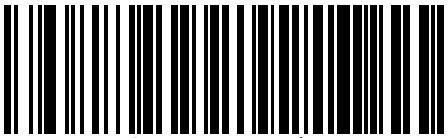
CANCEL

DEFAULT

50 = Length 2 is 50 Characters

MSI Minimum Reads

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

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

MSI Decoding Level

Specifies the decoding level for MSI. 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 296 for more information on this feature.

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

MSI Stitching

Enables/disables fixed length stitching for MSI.

DEFAULT	MSI Stitching = Disable
MSI Stitching = Enable	

MSI Character Correlation

Enables/disables Character Correlation for MSI.

DEFAULT	MSI Character Correlation = Disable
MSI Character Correlation = Enable	

PLESSEY

The following options apply to the Plessey symbology.

Plessey Enable/Disable

Enables/Disables ability of reader to decode Plessey labels.

DEFAULT	Plessey = Disable
Plessey = Enable	

Plessey Check Character Calculation

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

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

Plessey Check Character Transmission

Enables/disables transmission of an MSI check character.

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

Plessey Length Control

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

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

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

DEFAULT	Plessey Length Control = Variable Length
Plessey = Fixed Length	

Plessey Set Length 1

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

Table 26 provides some examples for setting Length 1. See page 296 for detailed instructions on setting this feature.

Table 26. 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. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

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

Table 27 provides examples for setting Length 2. See page 297 for detailed instructions on setting this feature.

Table 27. Plessey Length 2 Setting Examples

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

Select Plessey Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Plessey Minimum Reads

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

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

Plessey Decoding Level

Specifies the decoding level for Plessey. Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See page 296 for more information on this feature.

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

Plessey Stitching

Enables/disables fixed length stitching for Plessey.

DEFAULT

Plessey Stitching = Disable

Plessey Stitching = Enable

Plessey Character Correlation

Enables/disables Character Correlation for Plessey.

DEFAULT

Plessey Character Correlation = Disable

Plessey Character Correlation = Enable

CODE 4

The following options apply to the Code 4 symbology.

Code 4 Enable/Disable

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

DEFAULT	Code 4 = Disable
Code 4 = Enable	

Code 4 Check Character Transmission

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

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

Code 4 Hex to Decimal Conversion

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

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

CODE 5

The following options apply to the Code 5 symbology.

Code 5 Enable/Disable

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

DEFAULT	Code 5 = Disable
Code 5 = Enable	

Code 5 Check Character Transmission

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

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

Code 5 Hex to Decimal Conversion

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

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

CODE 4 AND CODE 5 COMMON CONFIGURATION ITEMS

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

Code 4 and 5 Decoding Level

Decoding Levels are used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. See page 285 for more information on this feature.

This configuration item applies to Code 4 and Code 5.

Code 4 and Code 5 Decoding Level = 1 (conservative)	
	Code 4 and Code 5 Decoding Level = 2
Code 4 and Code 5 Decoding Level = 3	DEFAULT
	Code 4 and Code 5 Decoding Level = 4
Code 4 and Code 5 Decoding Level = 5 (aggressive)	

Code 4 and Code 5 Minimum Reads

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

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

Chapter 4
Wireless Features

The features in this section are valid only for the GM4100 and GBT4100 models.

This section provides options and programming related to the reader's STAR and Bluetooth communication features. Reference Appendix B, Standard Defaults for a listing of standard factory settings.

The following features are valid for both STAR and Bluetooth Wireless models:

WIRELESS BEEPER FEATURES starting on page 258	**CONFIGURATION UPDATES** starting on page 263
• Good Transmission Beep	• Automatic Configuration Update
• Beep Frequency	• Copy Configuration to Scanner
• Beep Duration	• Copy Configuration to Base Station
• Beep Volume	• Automatic Flash Update
• Disconnect Beep	• Request Flash Update
• Base Station Beep	**POWERDOWN TIMEOUT** starting on page 265
• Leash Alarm	**BATCH FEATURES** starting on page 267
	• Batch Mode
RF ADDRESS STAMPING starting on page 269	• Send Batch
• Source Radio Address Transmission	• Erase Batch Memory
• Source Radio Address Delimiter Character	• RF Batch Mode Transmit Delay

- **FEATURES FOR STAR MODELS ONLY** starting on page 270
- **BLUETOOTH-ONLY FEATURES** starting on page 277

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	DEFAULT

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.)

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

Beep Duration

This feature controls the duration of radio-specific beep indications.

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

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	DEFAULT

Disconnect Beep

Enables/disables the beep indication that a handheld has become connected or disconnected from a Base Station.

The defaults are different for the STAR and BT models.

DEFAULT GM 4100 STAR default	Disconnect Beep = Disable
Disconnect Beep = Enable	DEFAULT BT default

Base Station Beep

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

	BT Base Station Beep = Disable
BT Base Station Beep = Enable	DEFAULT

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, reader must be linked to the Base Station and Sleep Mode Timeout on page 94 must be disabled. 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.

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

Leash Alarm — cont.

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 312 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. See page 312 for more information on this feature.

	Automatic Configuration Update = Disable
Automatic Configuration Update = Enable	DEFAULT

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

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

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.

This item is valid only with POS version of Base Station (model 4010).

DEFAULT	Automatic Flash Update = Disable
Automatic Flash Update = Enable	

Request Flash Update

Scan this barcode to request a flash update from a Base Station

NOTE

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

Request Flash Update

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 = 40 minutes	

Powerdown Timeout — continued

Powerdown Timeout = 60 Minutes (1 Hour)	DEFAULT
	Powerdown Timeout = 120 Minutes (2 Hours)
Powerdown Timeout = 4 Hours	
	Powerdown Timeout = 6 Hours
Powerdown Timeout = 8 Hours	
	Powerdown Timeout = 16 Hours
Powerdown Timeout = 24 Hours	

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.

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

Send Batch

Use this barcode to initiate sending of labels stored in batch memory.

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

Send Batch

Erase Batch Memory

Use this barcode to erase any labels stored in batch memory.

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 .

DEFAULT	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	

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 312 in "References" for detailed information and examples for setting this feature.

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

DEFAULT

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.

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

Set Source Radio Address Delimiter Character

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

00 = No Delimiter Character

Features for Star Models Only

The features in this section are valid only for the Gryphon I GM4100 Star model:

- STAR Radio Protocol Timeout
- STAR Radio Transmit Mode

DISPLAY FEATURES starting on page 272

- Contrast
- Font Size
- Backlight
- Display Mode
- Display Timeout
- Keypad Select

STAR Radio Protocol Timeout

This parameter sets the valid wait time before transmission between the handheld 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 314 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

DEFAULT

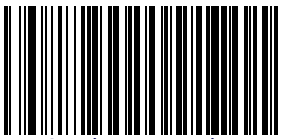
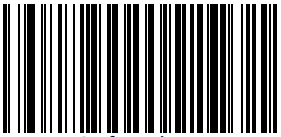
02 = 2 Seconds Radio Protocol Timeout

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.

DEFAULT	ACK from cradle
 ACK when sent to host	
	 ACK from host

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 317 for details.

DISPLAY FEATURES

Contrast

Read the code until the desired contrast is reached.

	Lighter
Darker	

Font Size

DEFAULT	Font size = small
Font size = Medium	
	Font size = Large

Backlight

DEFAULT	Display backlight = off
Display backlight = on	

Display Mode

The user can control the reader display behavior according to various selections. See page 312 in "References" for detailed information about each feature.

DEFAULT	Local Echo mode
Normal mode	
	Clear display after decode

Display Timeout

Specifies how long the display will remain on after a display write. Display is forced on after any display write or after any reading phase. Display and backlight are turned off after this timeout expires.

Display Timeout = Disable	DEFAULT
	Display Timeout = 1 Second
Display Timeout = 2 Seconds	
	Display Timeout = 3 Seconds
Display Timeout = 4 Seconds	

Display Timeout - cont.

	Display Timeout = 5 Seconds
Display Timeout= 6 Seconds	
	Display Timeout = 7 Seconds
Display Timeout = 8 Seconds	
	Display Timeout = 9 Seconds
Display Timeout = 9.9 Seconds (9,900ms max.)	

Keypad Select

This parameter specifies the character that has to be sent from the scanner when one of the three keys are pressed. For example, when key1 is pressed a 0x3C '<' character is sent.

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
3. Scan the barcode: DISPLAY KEYPAD SELECT.
4. Then read 3 HEX characters in the range 01-FE from the keypad in Appendix D, Keypad, corresponding to the left, center and right keys respectively.

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.

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

	Disable Keypad
Enable Keypad Select	
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

3C3D3E

Bluetooth-Only Features

The features in this section are valid only for Gryphon Bluetooth models. Also reference the Setup section for instructions on Linking a BT Reader to a PC, starting on page 25.

BT Security Features

- BT Security Mode
- BT Pin Code

Other BT Features

- BT Poll Rate

BT SECURITY FEATURES

These features enable/disable the BT system to require a configurable pin code to authenticate/connect the BT devices, and encrypt the data.

BT Security Mode

This feature enables/disables authentication and encryption of the BT link. Use the feature "BT Pin Code"on page 278 to specify the pin code used to authenticate the BT Link.

NOTE

Changing the security mode 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 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.

DEFAULT	BT Security Mode = Disable
BT Security Mode = Enable	

BT Pin Code

This option specifies the 4-character pin code to be used for authentication of the BT link. "BT Security Mode"on page 277 must first be enabled to require the pin code.

See page 315 for detailed information and examples for setting this feature.

Select BT Pin Code	
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

31323334 = Default Pin Code is 1234

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	DEFAULT
	BT Poll Rate = 30 ms
BT Poll Rate = 50 ms	
	BT Poll Rate = 100 ms

BT Poll Rate (continued)

BT Poll Rate = 150 ms	
	BT Poll Rate = 200 ms
BT Poll Rate = 500 ms	
	BT Poll Rate = 990 ms

Chapter 5
Laser Features

The features in this section are valid for the Gryphon L GD4300 model only.

LASER SCAN ANGLE on page 282
LASER IDLE MODE on page 282
BI-DIRECTIONAL READ DECODING on page 283
ALWAYS ON SCAN MODE TIMEOUT on page 284

This section provides options and programming related to the reader's laser features. Reference Appendix B, Standard Defaults for a listing of standard factory settings.

For hands-free or stand operations, it is recommended that *Flashing* scan mode be used. See "Scan Mode"on page 101 for programming labels for this feature. For more information, go to page 308 in "References".

Laser Scan Angle

This feature sets the scan angle for the laser. The Narrow scan angle is helpful for selecting and reading a specific barcode among a tight grouping of labels.

DEFAULT	Laser Scan Angle = Normal (47 degrees)
Laser Scan Angle = Narrow (35 degrees)	

Laser Idle Mode

Laser Idle Mode option is applicable for; trigger Single, Trigger Hold Multiple & Trigger Pulse Multiple only.

This configuration provides control over the laser scanning motor when the laser is not actively scanning. The options are:

Dither Disable : Shuts down the motor (laser mirror dithering) during laser engine idle time to reduce overall scanner power consumption.

Dither Enable: Allows the laser engine motor to continue dithering when laser is not active; may provide an improved read response time.

DEFAULT	Dither Disable
Dither Enable	

Bi-Directional Read Decoding

This configuration provides control over the good read and barcode label requirement. This programming option for Gyphon Laser affects all barcode symbologies.

Bi-Directional Read Disable: When Bi-directional reading is disabled, the laser scan is only required to obtain a valid label read in one scanning direction.

Bi-Directional Read Enable: When enabled, the reader is must obtain a valid good read in both scanning directions as part of the label read/decode process. Enabled will provides increased decode reliability.

	Bi-Directional Read Disable
Bi-Directional Read Enable	DEFAULT

Always On Scan Mode Timeout

When the Gryphon Laser is in Always On scanning mode, timeout periods can be configured. If the programmed Always On Timeout elapses, the reader will shut down and a trigger pull is required to resume operation.

	Always On Timeout: 1 Hour
Always On Timeout: 2 Hours	
	Always On Timeout: 3 Hours
Always On Timeout: 4 Hours	
DEFAULT	Always On Timeout: 5 Hours

Chapter 6
References

This section contains explanations and examples of selected barcode features. See the Configuration section for the actual barcode labels used to configure the reader.

RS-232 Parameters

RS-232 Only

Baud Rate

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

Stop Bits

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

Parity

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

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

Handshaking Control

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

- RTS — RTS is asserted during transmissions. CTS is ignored.
- RTS/CTS — RTS is asserted during transmissions. CTS gates transmissions.

- RTS/XON/XOFF — RTS is asserted during transmissions. CTS is ignored. XON and XOFF gate transmissions.
- RTS On/CTS — RTS is always asserted. CTS gates transmissions.

RTS/CTS Scan Control — RTS is asserted during transmissions. CTS gates transmissions and controls enable and disable state of scanner.

RS-232/USB COM Parameters

Intercharacter Delay

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

To set the delay:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Go to page 47 and scan the barcode: SELECT INTERCHARACTER DELAY SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 28 for some examples of how to set this feature.

Table 28. Intercharacter Delay Setting Examples

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

ACK NAK Options

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

Options are:

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

ACK Character

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

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

1. Determine the desired character or value.
2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to page 50 and scan ENTER/EXIT PROGRAMMING MODE to enter Programming Mode.
4. Scan the barcode: 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 barcode to exit.

See Table 29 for some examples of how to set this feature.

Table 29. ACK Character Setting Examples

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

NAK Character

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

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

To set this feature:

1. Determine the desired character or value.
2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to page 50 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT NAK CHARACTER SETTING.
5. Scan the appropriate two 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 barcode to exit Programming Mode.

This completes the procedure. See Table 30 for some examples of how to set this feature.

Table 30. NAK Character Setting Examples

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

ACK NAK Timeout Value

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

To set this value:

1. Determine the desired setting in milliseconds.

2. Divide the desired setting by 200 (setting is in 200ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to page 51 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT ACK NAK TIMEOUT VALUE SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 31 for some examples of how to set this feature.

Table 31. ACK NAK Timeout Value Setting Examples

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

ACK NAK Retry Count

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

To set this feature:

1. Determine the desired setting.
2. Pad the number with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Go to page 51 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT ACK NAK RETRY COUNT SETTING.

5. Scan the appropriate three digits from the keypad in Appendix D Keypad, that represent the number which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 32 for some examples of how to set this feature.

Table 32. 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.

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

To set the value:

1. Determine the desired character or value. A setting of 0xFF indicates the Disable Character is not used (not available).
2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to page 53 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT DISABLE CHARACTER SETTING.
5. Scan the appropriate two 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 barcode to exit Programming Mode.

This completes the procedure. See Table 33 for some examples of how to set this feature.

Table 33. Disable Character Setting Examples

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

Enable Character

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

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

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

To set this feature:

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

1. Determine the desired character or value.
2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to page 53 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT ENABLE CHARACTER SETTING.
5. Scan the appropriate two 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 barcode to exit Programming Mode.

This completes the procedure. See Table 34 for some examples of how to set this feature.

Table 34. Enable Character Setting Examples

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

Keyboard Interface

Wedge Quiet Interval

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

This feature applies ONLY to the Keyboard Wedge interface.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to page 61 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Prog. Mode.
4. Scan the barcode: 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 barcode to abort and not save the entry string. You can then start again at the beginning.

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

This completes the procedure to set the Wedge Quiet Interval. See Table 35 for some examples of how to set this feature.

Table 35. Wedge Quiet Interval Setting Examples

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

Intercharacter Delay

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

This feature applies ONLY to the Keyboard Wedge interface.

To set the delay:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to page 62 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT INTERCHARACTER DELAY SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 28 for some examples of how to set this feature.

Table 36. Intercharacter Delay Setting Examples

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

Intercode Delay

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

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc
3. Go to page 63 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: 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.

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 46 for some examples of how to set this feature.

Table 37. Wedge Intercode Delay Examples

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

Symbologies

Decoding Level

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

- Level 1 results in a very conservative decoder at the expense of not being able to read poorly printed or damaged labels.
- 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.
- 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 barcode labels. If there are many hard to read or damaged labels that cannot be decoded using a conservative setting, increase the decoding level to be more aggressive. If the majority of labels are very good quality labels, or there is a need to decrease the possibility of a decoder error, lower the decoding level to a more conservative level.

Set Length

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

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

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

Set Length 1

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

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

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

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

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

Set Length 2

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

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

Follow these instructions to set this feature:

1. Determine the desired character length (from 1 to 50 — or 0 to ignore this length). Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
2. Go to the Set Length page for your selected symbology and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
3. Scan the barcode to SELECT LENGTH 2 SETTING for your selected symbology.
4. Scan the appropriate two digits from the keypad in Appendix D Keypad that represent the length setting which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure.

Data Editing

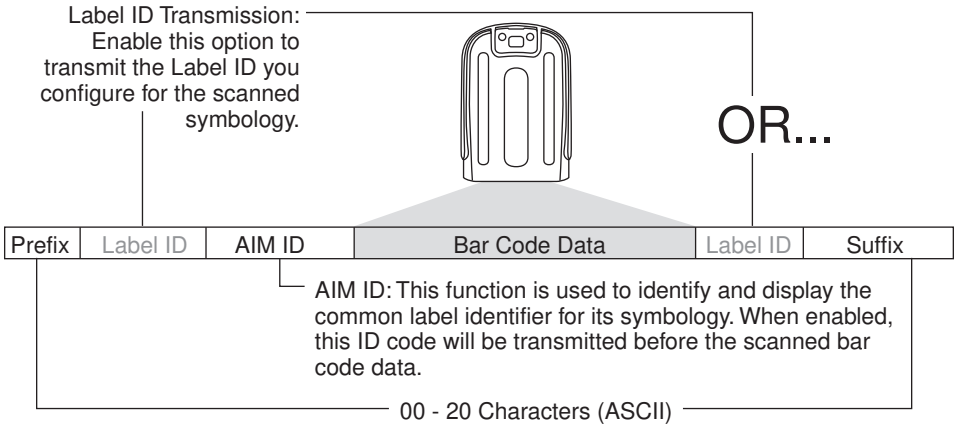
CAUTION

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

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

There are several types of selectable data characters that can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. Figure 16 shows the available elements you can add to a message string:

Figure 16. Breakdown of a Message String



Additional advanced editing is available. See the Advanced formatting features in the Datalogic Aladdin configuration software, or contact Technical Support (described on page 10 for more information.

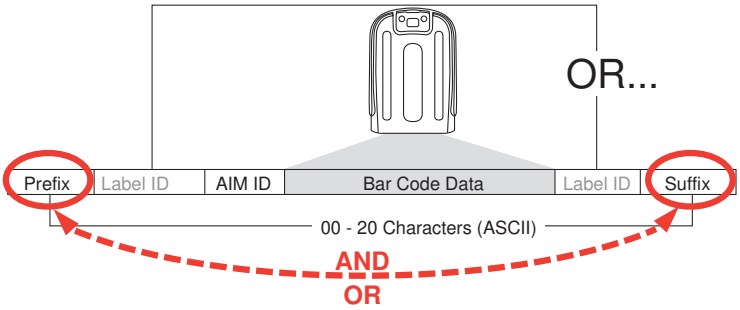
Please Keep In Mind...

- Modifying a message string is not a mandatory requirement. Data editing is a sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.
- A prefix or suffix may be applied only to a specified symbology (reference Code Selection, starting on page 107) or across all symbologies (set via the Global features in this chapter).
- You can add any character from the ASCII Chart (from 00-FF) on the inside back cover of this manual as a prefix, suffix or Label ID.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the barcode data) and/or as a suffix (in a position following the barcode data) as indicated in Figure 17.

Figure 17. Prefix and Suffix Positions



Example: Setting a Prefix

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

1. Determine which ASCII character(s) are to be added to scanned barcode data. In this example, we'll add a dollar sign ('$') as a prefix.
2. Go to page 78 and scan the ENTER/EXIT PROGRAMMING MODE barcode.
3. Scan the SET GLOBAL PREFIX barcode.
4. Reference the ASCII Chart on the inside back cover of this manual to find the hex value assigned to the desired character. The corresponding hex number for the '$' character is 24. To enter this selection code, scan the '2' and '4' barcodes from Appendix D Keypad.

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

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

   Scanned barcode data:**12345**

   Resulting message string output: **$12345**

Global AIM ID

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

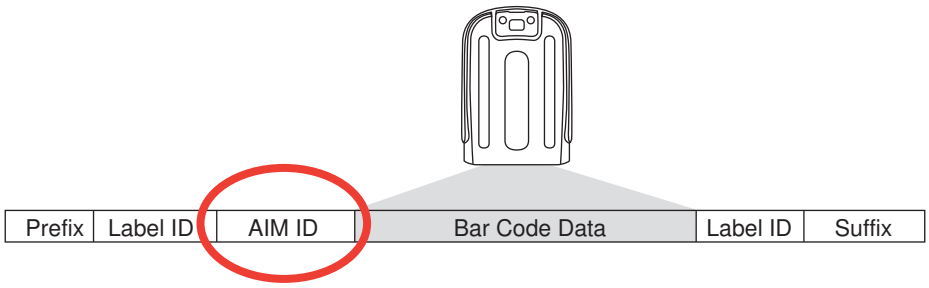
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned barcode data. AIM label identifiers consist of three characters as follows:

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

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

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

Figure 18. AIM ID



Label ID

A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01-0xFF), used to identify a barcode (symbology) type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" below) or individually per symbology (see "Label ID: Set Individually Per Symbology"on page 303). If you wish to program the reader to always include an industry standard label identifier for ALL symbology types, see "Global AIM ID"on page 79.

Label ID: Pre-loaded Sets

The reader supports two pre-loaded sets of Label IDs. Table 38 shows the USA and the EU sets.

CAUTION

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

Table 38. Label ID Pre-loaded Sets

Symbology	USA Label ID set		EU Label ID set	
	ASCII character	Hexidecimal value	ASCII character	Hexidecimal value
ABC Codabar	S	530000	S	530000
Anker Plessey	o	6F0000	o	6F0000
CODABAR	%	250000	R	520000
Codablock F	l	6C0000	m	6D0000
CODE11	CE	434500	b	620000
CODE128	#	230000	T	540000
CODE32	A	410000	X	580000
CODE39	*	2A0000	V	560000
CODE39 CIP	Y	590000	Y	590000
CODE4	4	340000	4	340000
CODE5	j	6A0000	j	6A0000
CODE93	&	260000	U	550000
DATALOGIC 2OF5	s	730000	s	730000
EAN13	F	460000	B	420000
EAN13 P2	F	460000	L	4C0000
EAN13 P5	F	460000	M	4D0000
EAN13 P8	F	460000	#	230000

Label ID Pre-Loaded Sets (continued)

Symbology	USA Label ID set		EU Label ID set	
	ASCII character	Hexidecimal value	ASCII character	Hexidecimal value
EAN8	FF	464600	A	410000
EAN8 P2	FF	464600	J	4A0000
EAN8 P5	FF	464600	K	4B0000
EAN8 P8	FF	464600	*	2A0000
FOLLETT 2OF5	O	4F0000	O	4F0000
GS1 DATABAR EXPANDED	RX	525800	t	740000
GS1 DATABAR LIMITED	RL	524C00	v	760000
GS1 DATABAR OMNIDIRECTIONAL	R4	523400	u	750000
GS1-128		000000	k	6B0000
GTIN	G	470000	$A	244100
GTIN2	G2	473200	$B	244200
GTIN5	G5	473500	$C	244300
GTIN8	G8	473800	$D	244400
IATA	IA	494100	&	260000
Industrial 2 of 5	W	570000	W	570000
Interleaved 2 of 5	i	690000	N	4E0000
Interleaved 2 of 5 CIP HR	e	650000	e	650000
ISBN	I	490000	@	400000
ISBT128	f	660000	f	660000
ISSN	n	6E0000	n	6E0000
MSI	@	400000	Z	5A0000
Plessey	a	610000	a	610000
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

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

1. Go to page 81 and scan the ENTER/EXIT barcode.
2. Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by scanning the appropriate barcode in the section "Label ID Control"on page 82. Reference Figure 19 for Label ID positioning options if multiple identification features are enabled.
3. Scan a barcode to select the symbology for which you wish to configure a custom Label ID from the section "Label ID Symbology Selection"on page 83.
4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.
5. Turn to the ASCII Chart on the inside back cover of this manual and find the equivalent hex digits associated with your choice of Label ID. For example, if you wish to select an equal sign (=) as a Label ID, the chart indicates its associated hex characters as 3D. Turn to Keypad, starting on page 345 and scan the barcodes representing the hex characters determined. For the example given, the characters '3' and 'D' would be scanned. More examples of Label ID settings are provided in Table 39.

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

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

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

Figure 19. Label ID Position Options

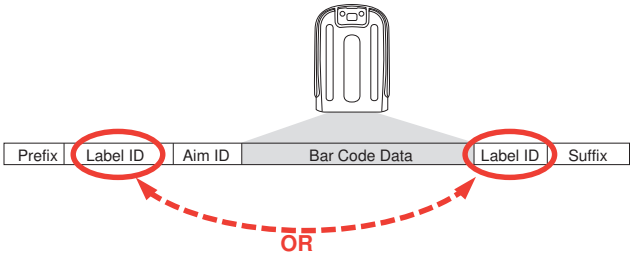


Table 39. Label ID Examples

STEP	ACTION	EXAMPLES			
1.	**Scan the ENTER/EXIT barcode**		(Scanner enters Programming Mode)		
2.	**Determine placement of the Label ID characters BEFORE or AFTER with regard to scanned data using** Label ID Control, starting on page 82	Enable as Prefix	Enable as Suffix	Enable as Prefix	Enable as Suffix
3.	**Scan the barcode selecting the symbology type you wish to designate label ID characters for using** Label ID Symbology Selection, starting on page 83**.**	DataBar Omnidirectional	Code 39	Interleaved 2 of 5	Code 32
4.	**Custom Label ID example (desired characters):**	D B *	= C 3	+	P H
5.	**Find hex equivalents from the** ASCII Chart**(inside back cover), then scan in these digits/characters using the barcodes in the section:** Keypad, starting on page 345**. If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**	44 42 2A	3D 43 33	2B	50 48
6.	**Scan the ENTER/EXIT barcode**		(Scanner exits Label ID entry)		
7.	**Scan the ENTER/EXIT barcode once again**		(Scanner exits Programming Mode)		
	Result:	DB*[barcode data]	[barcode data]=C3	+[barcode data]	[barcode data]PH

Character Conversion

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

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

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

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

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

To set Character Conversion:

1. Go to page 90 and scan the ENTER/EXIT barcode.
2. Scan the “Configure Character Conversion” barcode.
3. Determine the desired string. Sixteen positions must be determined as in the above example. Next, turn to the ASCII Chart on the inside back cover of this manual and find the equivalent hex digits needed to fulfill the string.
4. Turn to Appendix D Keypad and scan the barcodes representing the hex characters determined in the previous step.
5. Scan the ENTER/EXIT barcode to exit Programming Mode.

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

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. Go to page 93 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT LABEL GONE TIMEOUT SETTING.
5. Scan the appropriate three alpha-numeric characters from the keypad in Appendix D Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

If you make a mistake before the last character, scan the CANCEL 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 40 for some examples of how to set this feature.

Table 40. 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 10 milliseconds to 2,550 milliseconds (0.001 to 2.55 seconds) in 100ms increments.

Follow these instructions to set this feature:

1. Determine the desired setting in milliseconds. 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 10 (setting is in 100ms increments). Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 000, 20 = 020, etc.
3. Go to page 100 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: 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.

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 41 for some examples of how to set this feature.

Table 41. Good Read LED Duration Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	Good Read LED stays on until next trigger pull (00)	20ms	150ms	2550ms (2.55 sec.)
2	**Divide by 10 (and pad with leading zeroes)**	000	002	015	255
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT LABEL GONE TIMEOUT SETTING**				
5	**Scan Three Characters From** Appendix D Keypad	'0', '0' and '0'	'0', '0' and '2'	'0', '1' and '5'	'2', '5' and '5'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Scanning Features

Scan Mode

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

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

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

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

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

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

Flashing is the recommended scan mode for Gryphon L hands-free (stand mode) of operation

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

The following two features are valid only for the Gryphon I (desk and mobile), but not the Gryphon Laser model. See "Laser Features"on page 281 for specific parameters for the Laser model.

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

Trigger Object Sense. This mode is similar to Stand Mode, except that a trigger pull is required to activate the decoder.

1. Controlled by Flash On Time.

Scanning Active Time

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

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Go to page 104 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT SCANNING ACTIVE TIME SETTING.
5. Scan the appropriate three digits from the keypad in Appendix D Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 42 for some examples of how to set this feature.

Table 42. 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. Go to page 105 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT FLASH ON TIME SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 43 for some examples of how to set this feature.

Table 43. 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 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**				

Flash Off Time

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

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Go to page 105 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT FLASH OFF TIME SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 44 for some examples of how to set this feature.

Table 44. 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**				

Display Settings

Display Mode

The user can control the reader display behavior according to the following selections:

Local Echo mode: When a barcode is read with the reader:

- The code is sent to the Host.
- The reader display is cleared.
- The code is also sent to the reader display (Local Echo).
- The cursor is positioned after the last printed character on the reader display.

Normal mode: When a barcode is read with the reader:

- The code is sent to the Host.
- The reader display is not cleared. Therefore if any previous data was displayed on the reader screen it remains.
- There is no Local Echo to the reader display.

Clear Display After Decode mode: When a barcode is read with the reader:

- The code is sent to the Host.
- The reader display is cleared. Therefore if any previous data was displayed on the reader screen it is cancelled and the screen remains blank.
- There is no Local Echo of the code to the reader display.

Host messages sent to the reader are always written to the reader display.

RF Features

Configuration Update

Automatic Configuration Update

When this feature is enabled, 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.

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 269 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
3. Scan the barcode: SET SOURCE RADIO ADDRESS DELIMITER CHARACTER.
4. Scan the appropriate two digits from the keypad in Appendix D Keypad, that represent the hexidecimal characters which were determined in the steps above. You will hear a two-beep indication after the last character.

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

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

This completes the procedure. See Table 45 for some examples of how to set this feature.

Table 45. 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 handheld 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 270 and scanScan 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.

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 46 for some examples of how to set this feature.

Table 46. Wedge Intercode Delay 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 SELECT INTERCODE DELAY 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 pin code to be used for authentication of the BT link. "BT Security Mode"on page 277 must first be enabled to require the pin code.

To set the pin code:

1. Determine the desired characters. For example, D254.
2. Convert the characters to hexidecimal using the ASCII Chart on the inside back cover of this manual. In the case of the example, the hexidecimal equivalents would be:

   D = 0x44, 2 = 0x32, 5 = 0x35, and 4 = 0x34
3. Go to page 278 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT BT PIN CODE.
5. Scan the appropriate alpha-numeric characters from the keypad in Appendix D Keypad, representing the hexidecimal entries which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

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 47 for examples of how to set this feature.

Table 47. BT Pin Code Setting Examples

STEP	ACTION	EXAMPLES			
1	Desired Setting	1234	D254	1359	STOR
2	Convert the characters to hexadecimal	31 32 33 34	44 32 35 34	31 33 35 39	53 54 4F 52
3	Scan ENTER/EXIT PROGRAMMING MODE				
4	Scan SELECT LABEL GONE TIMEOUT SETTING				
5	Scan the Eight Alpha-Numeric Characters From Appendix D Keypad	31323334	44323534	31333539	53544F52
6	Scan ENTER/EXIT PROGRAMMING MODE				

NOTES

Chapter 7
Message Formatting

Message Formatting

Message Formatting is only available for the Gryphon™ Mobile model.

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 Gryphon I, 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.
- 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.
- Plain text is directly printed on the display. If writing beyond the end of line, the display does not wrap automatically. Extra characters are ignored. Control characters are not interpreted (i.e. LF, FF, etc.).

Cursor Control

ESC [n A	Up **n** rows, no scroll
ESC [n B	Down **n** rows, no scroll
ESC [n C	Right **n** columns
ESC [n D	Left **n** columns
ESC [G	CR
ESC [r ; c H	Move to row **r** , column **c** (ESC[1;1H is the upper left character position of the display)
ESC D	Down 1 row, with scroll
ESC E	CR and cursor down 1 row with scroll
ESC M	Up 1 row and scroll

NOTES:

- Since CR is used as the message terminator, you must use ESC [G or ESC E to print a CR.
- The cursor row position **is not** affected by the currently selected font. The display always has 4 rows, so when writing with the large font, actually two rows are written to: the current one and the one below it. You will need **two** ESC E commands to step from one row to the next when using the large font.
- The cursor column position **is** affected by the currently selected font. Therefore, column 6 is 36 pixels from the left border only if you last selected the 6x8 font; otherwise it could be 48 or 72 pixels from the left border.

Font Selection

ESC [0 m	Normal mode
ESC [7 m	Reverse mode
ESC # 4	Large font: subsequent characters are written on the current row and the row below it using the 12x16 font which allows for two rows of eight characters on the display.
ESC # 5	Normal font: subsequent characters are written using the 6x8 font, which allows for four rows of sixteen characters on the display.
ESC # 7	Medium font: subsequent characters are written using the 8x8 font, which allows for 4 rows of 12 characters on the display.

Clearing Display

ESC [0 K	From cursor position to end of line inclusive
ESC [1 K	From beginning of line to cursor position (not inclusive)
ESC [2 K	Entire line
ESC [0 J	From cursor position to end of display inclusive
ESC [1 J	From beginning of display to cursor position (not inclusive)
ESC [2 J	Entire display; moves cursor to upper left corner on display

LED and Beeper Control

ESC [0 q	Emit short High tone + short delay
ESC [1 q	Emit short Low tone + short delay
ESC [2 q	Emit long Low tone + short delay
ESC [3 q	Emit good read tone
ESC [4 q	Emit bad tx tone
ESC [5 q	Wait 100 ms
ESC [6 q	Turn on the green LED
ESC [7 q	Turn off the green LED
ESC [8 q	Turn on the green spot
ESC [9 q	Turn off the green spot
ESC [0 r	Beep for Find me function (new)
ESC [1 r	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:

ESC [6 q ESC [3 q ESC [7 q	Turns on the green LED, emits a good read tone, and turns off the green LED.
ESC [6 q ESC [5 q ESC [7 q	Turns on the green LED for 100 ms and then turns off the green LED.

Messages from Scanner Command Keys

The Gryphon™ I series scanners with display have 3 command keys that can each be associated with a character to send to the host.

By pressing the keys on the scanner, the associated character with its relative message formatting is sent to the Host. For example, keys can be used to select items from a menu sent to the scanner display by the application program.

The messages are handled by the system as if they were barcodes, that's why KeyID can have so many fields appended to it. If in your application there is some chance of reading a 1-char barcode identical to KeyID, the way you can distinguish between the two is to enable the Code ID: The KeyID is the only 1-character long EAN 8 code.

The default characters associated with each key (KeyID) are shown in the following table:

(left) Key	'<'
(center) Key	'='
(right) Key	'>'

Appendix A
Technical Specifications

Table 48 contains Physical and Performance Characteristics, User Environment and Regulatory information. Table 49 provides Standard Cable Pinouts.

Table 48. Technical Specifications

Item	Description	
Physical Characteristics		
Color	White/Gray Gray/Gray	
Dimensions	Height 7.1″/181 mm Length 3.9″/100 mm Width 2.8″/71 mm	
Weight (without cable)	GD 41x0/GD4300 : Approximately 6.0 ounces/169 g GM4100/GBT4100: Approximately 8.7 ounces/246 g BC40x0: Approximately 8.7 ounces/246 g BC40x0-CF: Approximately 10.1 ounces/290 g	
Electrical Characteristics		
Voltage & Current	**GD4130 model:** 5V±5% Input range. 1.9W max. 360 mA (max) at 5V 2.5 mA RS-232 sleep mode/ USB suspend **GD4110 model:** 4.5÷14V Input range. Power 1.8W max. 340 mA (max) at 5V. 2.5 mA (RS-232 sleep mode / USB suspend) **BC40x0 base:** 4.75-14V; Input range. Power 8W max [a]; Imax 500mA when in host/bus powered mode[a].	**GD4330 model:** Input current at 5V±5% = 260 mA (max) 2.5 mA (USB suspend) Standby (typical) <= 30mA **GD4310 model:** Input Power = 1.2W max in the 4.5÷14V range 2.5 mA (USB suspend) Standby (typical) <= 30mA **BC40x0-CF base:** 10-14V; Input range. Power 8W max[a] ; Imax 800mA .
Battery Type	Li-Ion battery pack	
Charge time for full charge from full discharge	4 hours with external power supply adapter[b]	
	Max 22h hours with Host power (In this case no supply adapter is needed)[b]	

Item	Description	
Operating autonomy (continuous reading)	GM4100: 50,000 reads (typical) GBT4100: 30,000 reads (typical)	
Performance Characteristics	**GD41x0 model:**	**GD43x0 model:**
Light Source	Dual LEDs	650nm Class 2 Laser
Roll (Tilt) Tolerance	± 35° from normal	
Pitch Tolerance	GD 41x0/GM4100/GBT4100: ± 65° GD4300: ± 50°	
Skew (Yaw) Tolerance	± 65°	
Field of View	10" (25.4cm) wide at 12.5" (31.8cm) from the reader	Scan Angle: 47° (normal) or 35° (narrow)
Depth of Field (Typical) [c] (	3 mil – 2.9" to 4.7" (7.5cm to 12cm) 13 mil [c] – 1.2" to 23.6" (3cm to 60cm) 20 mil – 1.2" to 31.5" (3cm to 80cm)	5 mil - 1.4" to 6.22" (3,6cm to 15,8cm) 13 mil[c] – 0.87" to 18.7" (2,2cm to 47,5cm) 20 mil – up to 27.1" (to 69cm)
Minimum Element Width	3 mil	4 mil
Print Contrast Minimum	15% minimum reflectance	
Decode Capability	UPC/EAN/JAN, P2 /P5, ISBN/ISSN; Code 39, Code39 FullASCII; Italian Pharmacode 39, Code39 CIP; Code 128, GS1-128; C128 ISBT; Code 128 addons;I 2 of 5; Standard 2 of 5; I 2 of 5 CIP HR; Industrial 2 of 5; IATA; Datalogic 2 of 5; Follet 2 of 5; Code 11; Plessey, Anker Plessey; Codabar, ABC Codabar ; Code 93; MSI; GS1 DataBar™ Omnidirectional, GS1 DataBar™ Limited, GS1 DataBar™ Expanded; Code 4, Code 5; Codablock F, Codablock F EAN;	
Interfaces Supported[d]	RS-232 Std, RS-232 Wincor-Nixdorf, RS-232 OPOS, IBM 46xx (ports 5B and 9B), 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, PC-XT, IBM 3153, IBM Terminals 31xx, 32xx,34xx, 37xx make only and make break keyboard, Digital Terminals VT2x, VT3xx, VT4xx, and Apple) and Wand Emulation.	
User Environment		
Operating Temperature	GD 41x0: 32° to 131° F (0° to 55° C) GM4100/GBT4100/GD4300: 32° to 122° F (0° to 50° C)	
Charging Temperature	32° to 104° F (0° to 40° C)	
Storage Temperature	-4° to 158° F (-20° to 70° C)	
Humidity	Operating: 5% to 90% relative humidity, non-condensing	
Drop Specifications	18 drops from 1.8 meters (5.9 feet) to concrete	
Ambient Light Immunity	Up to 100,000 Lux	
Contaminants Spray/Rain/ Dust/Particulates	IP52	
ESD Level	16 KV	

Item	Description
Regulatory	
Electrical Safety	See the Quick Refernce Guide for each specific product for details.
EMI/RFI	
Laser Safety	
LED class safety	

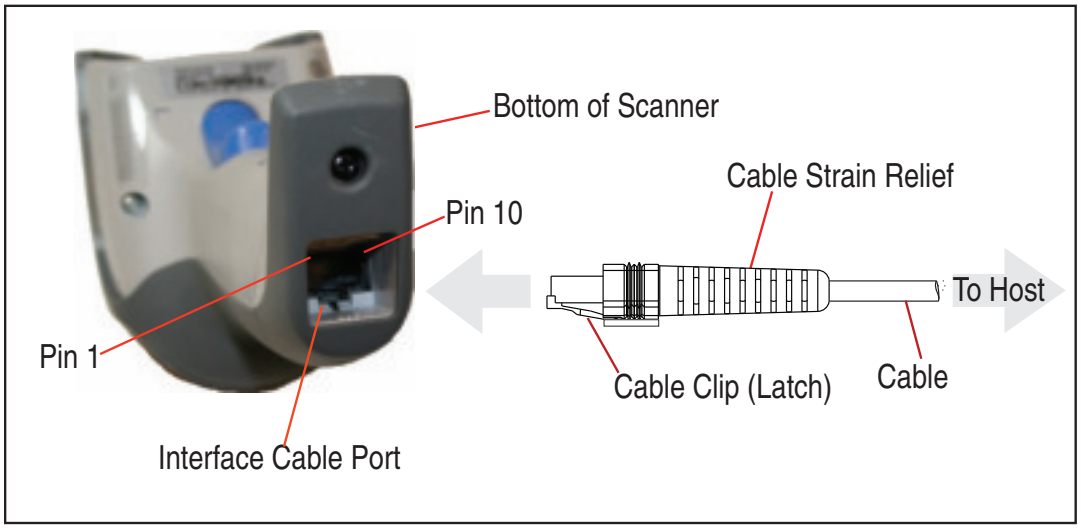
a. Typical input current measured under factory default configuration.
b. Charge Times are much lower when battery is within daily typical operating condition.
c. 13 mils DOF based on EAN. All others are Code 39. All labels grade A, typical environmental light, 20°C, label inclination 10°
d. See "Interface Selection"on page 28 for a listing of available interface sets by model type.

Radio Features	Model		
	433MHz model	**910 Mhz**	**BT**
Working Center Frequency	433.920 MHz	910.000 MHz	2400 to 2483.5 MHz
Range (in open air)	30 m	15 m	30 m
Max. number of devices per base station	16	16	1

Standard Cable Pinouts

Figure 20 and Table 49 provide standard pinout information for the Base Station's interface cable.

Figure 20. Standard Cable Pinouts



The signal descriptions in Table 49 apply to the connector on the reader and are for reference only.

Table 49. Standard Cable Pinouts — Reader Side

Pin	RS-232	OEM	USB	Keyboard Wedge
1	RTS (out)			
2			D+	CLKIN (KBD side)
3			D-	DATAIN (KBD side)
4	GND	GND	GND	GND
5	RX			
6	TX			
7	VCC	VCC	VCC	VCC
8		IBM_B		CLKOUT (PC side)
9		IBM_A		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 barcode labels.

Table 50. LED and Beeper Indications

INDICATION	DESCRIPTION	LED	BEEPER
Power-up Beep	The reader is in the process of powering-up.		Reader beeps four times at highest frequency and volume upon power-up.
Good Read Beep	A label has been successfully scanned by the reader.	LED behavior for this indication is configurable via the feature "Good Read: When to Indicate"	The reader will beep once at current frequency, volume, mono/bitonal 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 IBM or USB interface is enabled.	N/A	Reader 'chirps' six times at the highest frequency and current volume.
Reader Active Mode	The reader is active and ready to scan.	The LED is lit steadily[a]	N/A
Reader Disabled	The reader has been disabled by the host.	The LED blinks continuously	N/A
Green Spot is on continuously	While in Stand Mode or Trigger Stand Mode the green spot shall be on while in stand watch state.	N/A	N/A
Green Spot[a] flashes momentarily	Upon successful read of a label, the software shall turn the green spot on for the time specified by the configured value.	N/A	N/A

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

Table 51. Programming Mode Indications

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

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 4 low frequency beeps followed by reset beeps.
Label Programming Mode Cancel Item Entry	Cancel label has been scanned.	N/A	Reader sounds two times at low frequency and current volume.

Error Codes

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

NUMBER OF LED FLASHES/BEEPS	ERROR	CORRECTIVE ACTION
1	Configuration	Contact Helpdesk for assistance
2	Interface PCB	
4	Reader Module	
5	Laser Pointer (if so equipped)	
6	Digital PCB	
14	CPLD/Code Mismatch	

Base Station Indications

INDICATION	LEDS
Power-up Complete	Yellow LED on
Reader Disabled by the HOST or the communication with HOST is not established	Yellow LED blinking ~1Hz
Data/labels are transmitted to the HOST	Yellow LEDs turned off for 100mSec
Programming Mode	Yellow LED blinks quickly
Base and handheld are exchanging data	Red LED blinks quickly
Battery charging in progress	Red LED on
Battery charging complete	Green LED on
Battery charger error	Green LED and Red LEDs blink alternatively ~1Hz
No handheld is placed on the cradle	Red and Green LEDs off

NOTES

Appendix B
Standard Defaults

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

Table 52. Standard Defaults

Parameter	Default	Your Setting	Page Number
GLOBAL INTERFACE FEATURES			
Host Commands — Obey/Ignore			39
USB Suspend Mode			39
RS-232 ONLY			
Baud Rate	9600		42
Data Bits	8 Data Bits		43
Stop Bits	1 Stop Bit		43
Parity	None		44
Handshaking Control	Disable		45
RS-232/USB-COM			
Intercharacter Delay	No Delay		47
Beep On ASCII BEL	Disable		47
Beep On Not on File	Enable		48
ACK Character	'ACK'		50
NAK Character	'NAK'		50
ACK NAK Timeout Value	600 ms		51
ACK NAK Retry Count	3 Retries		51

Parameter	Default	Your Setting	Page Number
ACK NAK Error Handling	Ignore Errors Detected		52
Indicate Transmission Failure	Enable		52
Disable Character	'D'		53
Enable Character	'E'		53
KEYBOARD WEDGE			
Country Mode	U.S. Keyboard		56
Caps Lock State	Caps Lock OFF		58
Numlock	Numlock Key Unchanged		59
Send Control Characters	Disable		60
Wedge Quiet Interval	100 ms		61
Intercharacter Delay	No Delay		62
Intercode Delay	100 ms		63
USB Keyboard Speed	1 ms		64
USB-OEM			
USB-OEM Device Usage	Handheld Scanner		68
Interface Options	Ignore Host Configuration Commands		68
IBM 46xx			
46xx Number of Host Resets	6		70
Transmit Labels in Code 39 Format	IBM Standard Format		72
Interface Options	Ignore Scanner Configuration Host Commands		72
WAND EMULATION			
Wand Signal Speed	660 ms		74
Wand Polarity	Quiet Zones & Spaces High, Bars Low		74
Wand Idle State	High		75
Transmit Noise	Disable		75
Label Symbology Conversion	No conversion		76
DATA FORMAT			
Global Prefix/Suffix	No Global Prefix Global Suffix = 0x0D (CR)		78

Parameter	Default	Your Setting	Page Number
Global AIM ID	Disable		79
GS1-128 AIM ID	Enable		80
Label ID: Pre-loaded Sets	USA Set		81
Label ID Control	Disable		82
Set Global Mid Label ID Characters	No Mid Label ID Character		89
Case Conversion	Disable		90
Character Conversion	No Char Conversion		90
READING PARAMETERS			
Double Read Timeout	0.4 Second		91
Label Gone Timeout	160 ms		93
Sleep Mode Timeout	Disable		94
Power On Alert	4 Beeps		96
Good Read: When to Indicate	After Decode		96
Good Read Beep Type	Mono		97
Good Read Beep Frequency	Medium		97
Good Read Beep Length	80 ms		98
Good Read Beep Volume	High		99
Good Read LED Duration	LED on until next trigger pull		100
Scan Mode	Trigger Single		101
Stand Mode Triggered Timeout	0.5 second		102
Stand Detection	Switch to Stand mode		103
Stand Mode Sensitivity	Medium		104
Scanning Active Time	5 Seconds		104
Flash On Time	1 Second		105
Flash Off Time	600 ms		105
Green Spot Duration	300 ms		106
CODE SELECTION			
Coupon Control	Enable UPCA coupon decoding		109
UPC-A			
UPC-A Enable/Disable	Enable		110

Parameter	Default	Your Setting	Page Number
UPC-A Check Character Transmission	Enable		110
Expand UPC-A to EAN-13	Don't Expand		111
UPC-A Number System Character Transmission	Transmit		111
UPC-A Minimum Reads	1		112
UPC-E			
UPC-E Enable/Disable	Enable		113
UPC-E Check Character Transmission	Send		113
Expand UPC-E to EAN-13	Don't Expand		114
Expand UPC-E to UPC-A	Don't Expand		114
UPC-E Number System Character Transmission	Transmit		115
UPC-E Minimum Reads	2		115
GTIN			
GTIN Formatting	Disable		116
EAN 13 (Jan 13)			
EAN 13 Enable/Disable	Enable		117
EAN 13 Check Character Transmission	Send		117
EAN-13 Flag 1 Character	Transmit		118
EAN-13 ISBN Conversion	Disable		118
EAN 13 Minimum Reads	1		119
ISSN			
ISSN Enable/Disable	Disable		120
EAN 8			
EAN 8 Enable/Disable	Enable		121
EAN 8 Check Character Transmission	Send		121
Expand EAN 8 to EAN 13	Disable		122
EAN 8 Minimum Reads	1		122
UPC/EAN Global Settings			
UPC/EAN Decoding Level	3		123
UPC/EAN Correlation	Disable		124
UPC/EAN Price Weight Check	Disable		124
In-Store Minimum Reads	2		125

Parameter	Default	Your Setting	Page Number
Add-Ons			
Optional Add-ons	Disable P2, P5 and P8		126
Optional Add-On Timer	70 ms		127
Optional GS1-128 Add-On Timer	Disable		130
P2 Add-Ons Minimum Reads	2		133
P5 Add-Ons Minimum Reads	1		134
GS1-128 Add-Ons Minimum Reads	1		135
Code 39			
Code 39 Enable/Disable	Enable		136
Code 39 Check Character Calculation	Calculate		136
Code 39 Check Character Transmission	Send		137
Code 39 Start/Stop Character Transmission	Don't Transmit		138
Code 39 Full ASCII	Disable		138
Code 39 Quiet Zones	Auto		139
Code 39 Minimum Reads	2		140
Code 39 Decoding Level	3		141
Code 39 Length Control	Variable		142
Code 39 Set Length 1	2		143
Code 39 Set Length 2	50		144
Code 39 Interdigit Ratio	4		145
Code 39 Character Correlation	Disable		147
Code 39 Stitching	Enable		147
Code 32 (Italian Pharmaceutical Code)			
Code 32 Enable/Disable	Disable		148
Code 32 Feature Setting Exceptions	N/A		148
Code 32 Check Char Transmission	Don't Send		149
Code 32 Start/Stop Character Transmission	Don't Transmit		149
Code 39 CIP (French Pharmaceutical Code)			
Code 39 CIP Enable/Disable	Disable		148
Code 128			
Code 128 Enable/Disable	Enable		151

Parameter	Default	Your Setting	Page Number
Expand Code 128 to Code 39	Don't Expand		151
Code 128 Check Character Transmission	Send		152
Code 128 Function Character Transmission	Don't Send		152
Code 128 Sub-Code Change Transmission	Disable		153
Code 128 Quiet Zones	Auto		154
Code 128 Minimum Reads	1		155
Code 128 Decoding Level	3		156
Code 128 Length Control	Variable		157
Code 128 Set Length 1	1		158
Code 128 Set Length 2	80		159
Code 128 Character Correlation	Disable		160
Code 128 Stitching	Enable		160
GS1-128			
GS1-128 Enable	Transmit in Code 128 Data Format		161
ISBT 128			
ISBT 128 Concatenation	Disable		162
ISBT 128 Force Concatenation	Disable		162
ISBT 128 Concatenation Mode	Static		163
ISBT 128 Dynamic Concatenation Timeout	200 msec		164
ISBT 128 Advanced Concatenation Options	Disable		164
Codablock F			
Codablock F Enable/Disable	Disable		165
Codablock F EAN Enable/Disable	Disable		165
Codablock F AIM Check	Enable check C		166
Codablock F Length Control	Variable		166
Codablock F Set Length 1	3 characters		167
Codablock F Set Length 2	100 characters		168
Interleaved 2 of 5			
I 2 of 5 Enable/Disable	Enable		169
I 2 of 5 Check Character Calculation	Disable		169
I 2 of 5 Check Character Transmission	Send		170

Parameter	Default	Your Setting	Page Number
I 2 of 5 Minimum Reads	2		192
2 of 5 Decoding Level	3		192
I 2 of 5 Length Control	Variable		173
I 2 of 5 Set Length 1	12		174
I 2 of 5 Set Length 2	100		175
I 2 of 5 Character Correlation	Disable		176
I 2 of 5 Stitching	Disable		176
Follett 2 of 5			
Follett 2 of 5 Enable/Disable	Disable		177
Interleaved 2 of 5 CIP HR			
Interleaved 2 of 5 CIP HR Enable/Disable	Disable		177
Standard 2 of 5			
Standard 2 of 5 Enable/Disable	Disable		178
Standard 2 of 5 Check Character Calculation	Disable		178
Standard 2 of 5 Check Character Transmission	Send		179
Standard 2 of 5 Minimum Reads	2		179
Standard 2 of 5 Decoding Level	3		180
Standard 2 of 5 Length Control	Variable		180
Standard 2 of 5 Set Length 1	8		181
Standard 2 of 5 Set Length 2	50		182
Standard 2 of 5 Character Correlation	Disable		183
Standard 2 of 5 Stitching	Disable		183
Industrial 2 of 5			
Industrial 2 of 5 Enable/Disable	Disable		184
Industrial 2 of 5 Check Character Calculation	Disable		184
Industrial 2 of 5 Check Character Transmission	Enable		185
Industrial 2 of 5 Length Control	Variable		185
Industrial 2 of 5 Set Length 1	1		186
Industrial 2 of 5 Set Length 2	50		187
Industrial 2 of 5 Minimum Reads	1		188
Industrial 2 of 5 Stitching	Disable		188

Parameter	Default	Your Setting	Page Number
Industrial 2 of 5 Character Correlation	Disable		189
Code IATA			
IATA Enable/Disable	Disable		190
IATA Check Character Transmission	Enable		190
Datalogic 2 of 5			
Datalogic 2 of 5 Enable/Disable	Disable		191
Datalogic 2 of 5 Check Character Calculation	Disable		191
Datalogic 2 of 5 Minimum Reads	2		192
Datalogic 2 of 5 Decoding Level	3		192
Datalogic 2 of 5 Length Control	Variable		193
Datalogic 2 of 5 Set Length 1	6 characters		194
Datalogic 2 of 5 Set Length 2	50		195
Datalogic 2 of 5 Character Correlation	Disable		196
Datalogic 2 of 5 Stitching	Disable		196
Codabar			
Codabar Enable/Disable	Disable		197
Codabar Check Character Calculation	Don't Calculate		197
Codabar Check Character Transmission	Send		198
Codabar Start/Stop Character Transmission	Don't Transmit		198
Codabar Start/Stop Character Set	abcd/abcd		199
Codabar Start/Stop Character Match	Don't Require Match		199
Codabar Quiet Zones	Auto		200
Codabar Minimum Reads	2		201
Codabar Decoding Level	3		202
Codabar Length Control	Variable		202
Codabar Set Length 1	3		204
Codabar Set Length 2	50		205
Codabar Interdigit Ratio	4		206
Codabar Character Correlation	Disable		208
Codabar Stitching	Disable		208

Parameter	Default	Your Setting	Page Number
ABC Codabar			
ABC Codabar Enable/Disable	Disable		209
ABC Codabar Concatenation Mode	Static		209
ABC Codabar Dynamic Concatenation Timeout	200 msec		210
ABC Codabar Force Concatenation	Disable		211
Code 11			
Code 11 Enable/Disable	Disable		212
Code 11 Check Character Calculation	Check C and K		212
Code 11 Check Character Transmission	Send		213
Code 11 Minimum Reads	2		213
Code 11 Length Control	Variable		214
Code 11 Set Length 1	4		215
Code 11 Set Length 2	50		216
Code 11 Interdigit Ratio	4		217
Code 11 Decoding Level	3		219
Code 11 Character Correlation	Disable		220
Code 11 Stitching	Disable		220
GS1 DataBar™ Omnidirectional			
GS1 DataBar™ Omnidirectional Enable/Disable	Disable		221
GS1 DataBar™ Omnidirectional GS1-128 Emulation	Disable		221
GS1 DataBar™ Omnidirectional Minimum Reads	1		222
GS1 DataBar™ Expanded			
GS1 DataBar™ Expanded Enable/Disable	Disable		223
GS1 DataBar™ Expanded GS1-128 Emulation	Disable		223
GS1 DataBar™ Expanded Minimum Reads	1		224
GS1 DataBar™ Expanded Length Control	Variable		224
GS1 DataBar™ Expanded Set Length 1	1		225
GS1 DataBar™ Expanded Set Length 2	74		226
GS1 DataBar™ Limited			
GS1 DataBar™ Limited Enable/Disable	Disable		227
GS1 DataBar™ Limited GS1-128 Emulation	Disable		227

Parameter	Default	Your Setting	Page Number
GS1 DataBar™ Limited Minimum Reads	1		228
Code 93			
Code 93 Enable/Disable	Disable		229
Code 93 Check Character Calculation	Enable Check C and K		229
Code 93 Check Character Transmission	Enable		230
Code 93 Length Control	Variable		230
Code 93 Set Length 1	1		231
Code 93 Set Length 2	50		232
Code 93 Minimum Reads	1		233
Code 93 Decoding Level	3		234
Code 93 Quiet Zones	Auto		235
Code 93 Stitching	Enable		236
Code 93 Character Correlation	Enable		236
MSI			
MSI Enable/Disable	Disable		237
MSI Check Character Calculation	Enable Mod10		237
MSI Check Character Transmission	Enable		238
MSI Length Control	Variable		239
MSI Set Length 1	1		239
MSI Set Length 2	50		240
MSI Minimum Reads	4		241
MSI Decoding Level	3		242
MSI Stitching	Disable		243
MSI Character Correlation	Disable		243
Plessey			
Plessey Enable/Disable	Disable		244
Plessey Check Character Calculation	Enable Plessey std. check char. verification		245
Plessey Check Character Transmission	Enable		245
Plessey Length Control	Variable		246
Plessey Set Length 1	1		247

Parameter	Default	Your Setting	Page Number
Plessey Set Length 2	50		248
Plessey Minimum Reads	4		249
Plessey Decoding Level	3		250
Plessey Stitching	Disable		251
Plessey Character Correlation	Disable		251
Code 4			
Code 4 Enable/Disable	Disable		252
Code 4 Check Character Transmission	Send		252
Code 4 Hex to Decimal Conversion	Enable		253
Code 5			
Code 5 Enable/Disable	Disable		253
Code 5 Check Character Transmission	Send		254
Code 5 Hex to Decimal Conversion	Enable		254
Code 4 and 5 Common Configuration Items			
Code 4 and 5 Decoding Level	3		255
Code 4 and Code 5 Minimum Reads	1		256
WIRELESS FEATURES			
Good Transmission Beep	Enable		258
Beep Frequency	Low		258
Beep Duration	80 msec		259
Beep Volume	High		260
Disconnect Beep	Enable		260
Base Station Beep	Enable		261
Leash Alarm	Disable		261
Automatic Configuration Update	Enable		263
Automatic Flash Update	Disable		264
Powerdown Timeout	60 minutes (1 hour)		265
Batch Mode	Disable		267
RF Batch Mode Transmit Delay	No Delay		268
Source Radio Address Transmission	Do not include		269

Parameter	Default	Your Setting	Page Number
Source Radio Address Delimiter Character	Enable		269
Features for Star Models Only			
STAR Radio Protocol Timeout	2 seconds		270
STAR Radio Transmit Mode	ACK from cradle		270
Display (STAR model only)			
- Contrast			272
- Font Size	Small		272
- Backlight	Off		273
- Display Mode	Local Echo mode		273
- Display Timeout	Disable		274
Keypad Select	3C3D3E		276
Features for BT Models Only			
BT Security Mode	Disable		277
BT Pin Code	31323334 = Default Pin Code is 1234		278
BT Poll Rate	20 ms		279
LASER FEATURES			
Laser Scan Angle	47 degrees		282
Laser Idle Mode	Disable		282
Bi-Directional Read Decoding	Enable		283
Always On Scan Mode Timeout	5 Hours		284

Appendix C
Sample Barcodes

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

UPC-A

EAN-13

Code 39

Code 128

Interleaved 2 of 5

Sample Barcodes — continued

Code 32

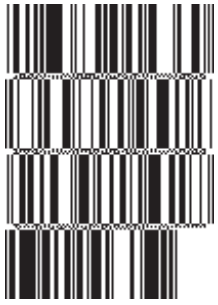
Codabar

Code 93

Code 11

GS1 DataBar™ (RSS)

GS1 DataBar™ variants must be enabled to read the barcodes below (see GS1 DataBar™ Omnidirectional on page 221**).**



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

0	
	1
2	
	3
4	
	5

6	
	7
8	
	9

A	
	B
C	
	D
E	
	F

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 -356.)

Single Press and Release Keys

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

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

Interface Type PC AT PS/2, USB-Keyboard or USB-Keyboard for APPLE

Table 53. Scancode Set When Control Character is 00 or 01

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

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

Interface Type PC AT PS/2, USB-Keyboard or USB-Keyboard for APPLE — cont.

Table 54. Scancode Set When Control Character is 02

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

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

Table 55. Scancode Set When Control Character is 00 or 01

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

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

Table 56. Scancode Set When Control Character is 02

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

Table 57. Scancode Set When Control Character is 00 or 01

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

Table 58. Scancode Set When Control Character is 02

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

IBM31xx 102-key

Table 59. Scancode Set When Control Character is 00 or 01

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

Table 60. Scancode Set When Control Character is 02

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

IBM XT

Table 61. Scancode Set When Control Character is 00 or 01

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

Table 62. Scancode Set when Control Character 02

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

Microsoft Windows Codepage 1252

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

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

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ASCII Chart

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

Australia
Datalogic Scanning Pty Ltd
Telephone: [61] (2) 9870 3200
australia.scanning@datalogic.com

France and Benelux
Datalogic Scanning SAS
Telephone: [33].01.64.86.71.00
france.scanning@datalogic.com

Germany
Datalogic Scanning GmbH
Telephone: 49 (0) 61 51/93 58-0
germany.scanning@datalogic.com

India
Datalogic Scanning India
Telephone: 91- 22 - 64504739
india.scanning@datalogic.com

Italy
Datalogic Scanning SpA
Telephone: [39] (0) 39/62903.1
italy.scanning@datalogic.com

Japan
Datalogic Scanning KK
Telephone: 81 (0)3 3491 6761
japan.scanning@datalogic.com

Latin America
Datalogic Scanning, Inc
Telephone: (305) 591-3222
latinamerica.scanning@datalogic.com

Singapore
Datalogic Scanning Singapore PTE LTD
Telephone: (65) 6435-1311
singapore.scanning@datalogic.com

Iberia
Datalogic Scanning SAS Sucursal en España
Telephone: 34 91 746 28 60
spain.scanning@datalogic.com

United Kingdom
Datalogic Scanning LTD
Telephone: 44 (0) 1582 464900
uk.scanning@datalogic.com

www.scanning.datalogic.com

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

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