DATALOGIC

Gryphon™ 2D Family
Gryphon I GD/GBT/GM4500

General Purpose Handheld
Area Imager Bar Code Reader

Product Reference Guide

Datalogic S.r.l.
Via S. Vitalino, 13
40012 Calderara di Reno (BO)
Italy
Tel. +39 051 3147011
Fax +39 051 3147205

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Patents

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

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Chapter 1
Introduction

About this Manual

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

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

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

Overview

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

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

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

Chapter 4, References provides details concerning programmable features.

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

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

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

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

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

Manual Conventions

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

NOTE

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

CAUTION

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

Technical Support

Datalogic Website Support

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

Reseller Technical Support

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

Telephone Technical Support

If you do not have Internet or email access, check the back cover of your manual for more contact information.

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

About the Scanner

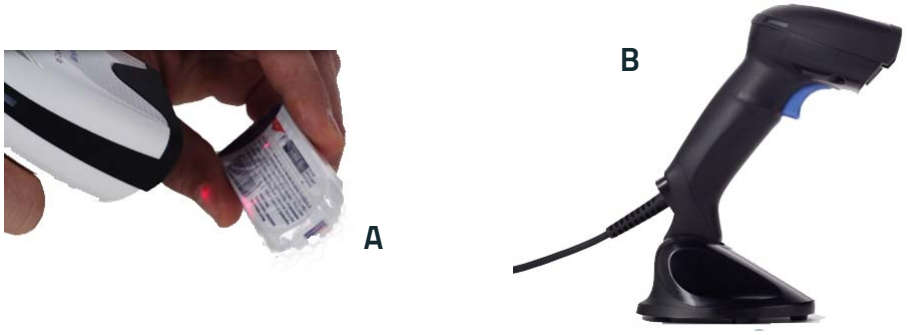
With rich feature sets and extensive model options, the Gryphon™ product series from Datalogic represents the premium level of data collection equipment for general purpose applications. The Gryphon I GD4500 reader has enhanced Megapixel optics with improved motion tolerance, allowing codes placed on fast-moving objects to be easily and quickly captured, creating the ideal reader for tasks requiring high throughput like those found in retail, light industrial environments and healthcare.

Using the GD4500 Reader

To read a symbol or capture an image, simply aim the reader and pull the trigger. The Gryphon™ I GD4500 is a powerful omni-directional reader, so the orientation of the symbol is not important. Datalogic's exclusive patented 'Green Spot' for good-read feedback helps to improve productivity in noisy environments or in situations where silence is required. When positioning the product into the stand, the magnetic coupling will make the scanner automatically detect a bar code inside the field of view, and switch the reading system from trigger mode to autosense mode.

The Gryphon™ I GD4500 reliably decodes all standard 1D (linear) and 2D bar codes, including GS1 DataBar™ linear codes, Postal Codes (China Post), Stacked Codes (such as GS1 DataBar Expanded Stacked, GS1 DataBar Stacked, GS1 DataBar, Stacked Omnidirectional). The data stream - acquired from decoding a symbol - is rapidly sent to the host. The reader is immediately available to read another symbol.

Figure 1. Correct positioning of scanner



Battery Safety

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

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 on the following page.

WARNING

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.

WARNING

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.

CAUTION

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

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

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

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

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

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

Programming the Reader

Configuration Methods

Programming Bar Codes

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

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

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 bar codes to be scanned.

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

Chapter 2
Setup

Unpacking

Check carefully to ensure the scanner and any cables or accessories ordered are present and undamaged. If any damage occurred during shipment, contact Technical Support on page 2.

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

Setting Up the Scanner

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

1. Connect the Interface Cable to the scanner or to the Base Station as shown in Figure 2. To disconnect the cable, insert a paper clip or similar object into the opening shown.
2. Connect the other end to the Host (see the next section, Connect Host Interface on page 8 and Figure 3).
3. Modify "Customizing Configuration Settings" on page 34 (only if modifications are needed from factory settings).

NOTE

According to Regulation for shipping Li-Ion based battery packs, the products and their spare battery packs parts are shipped with a very low residual charge (low state of charge).

Hence the needs:

that a new product must be fully recharged before starting to use it and

that battery packs of the stocked products GBT/GM45 and spare battery pack parts must be periodically recharged : for instance by using a WLC4090 cradle powered up with a 12V Datalogic AC/DC adapter (cod. 8-0935) for at least 30 minutes each 3 months.

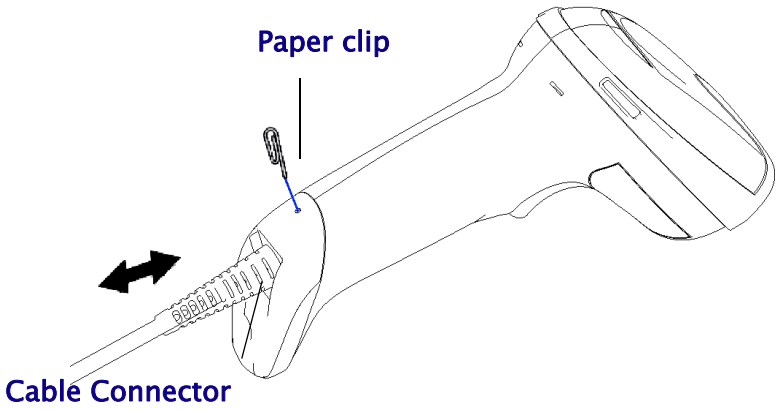
Connect Host Interface

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

The scanner can communicate using the interfaces illustrated below.

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

Figure 2. Cable Connection/Disconnection at the Scanner



RS-232 Serial Connection

Turn off power to the terminal/PC and connect the scanner to the terminal/PC serial port via the RS-232 cable as shown in Figure 3. If the terminal will not support POT (Power Off the Terminal) to supply scanner power, use the approved power supply (AC Adapter). Plug the AC Adapter barrel connector into the socket on the RS-232 cable connector and the AC Adapter plug into a standard power outlet.

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

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

Keyboard Wedge Connection

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

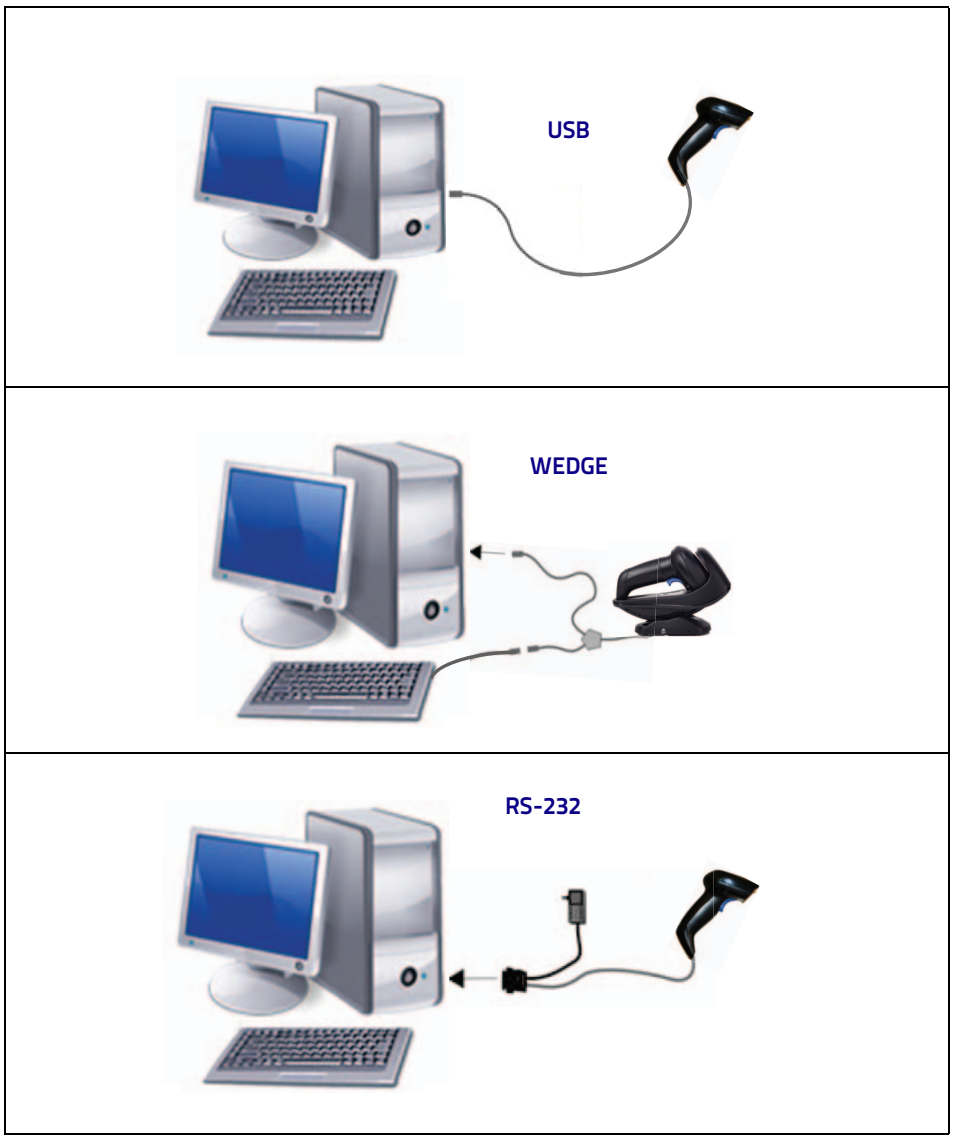
Keyboard Wedge (KBW) : When connected using this interface, the host interprets scanned data as keystrokes and supports several international keyboards (for the Windows® environment). See "Country Mode" on page 58 for a full listing.

USB Connection

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

USB : Select to communicate either by USB OEM, USB COM STD, or USB Keyboard interface types by scanning the appropriate interface type bar codes available in this manual. The default interface is USB-KBD, or RS-232-STD.

Figure 3. Connection to the Host

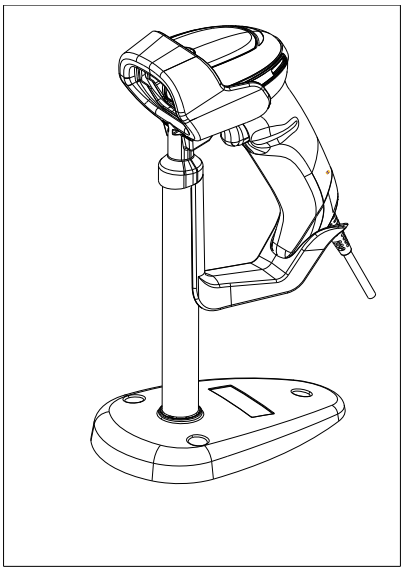


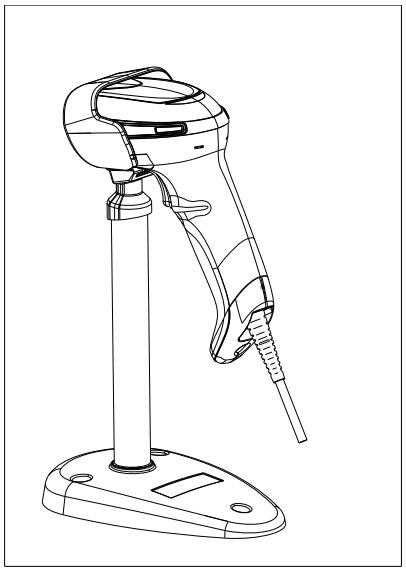
NOTE Specific cables are required for connection to different hosts. The connections illustrated in Figure 3 are examples only. Actual connectors may vary from those illustrated, but the steps to connect the scanner remain the same.

Stand Installation

Hands-Free Stand/Holder

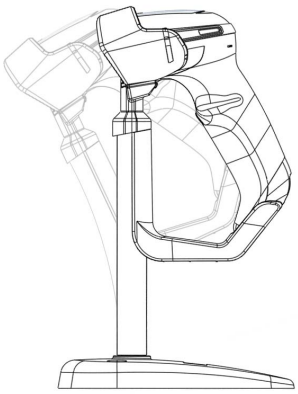
An accessory is available which holds the reader (except those with integrated stand) at a convenient angle, allowing hands free scanning of items.

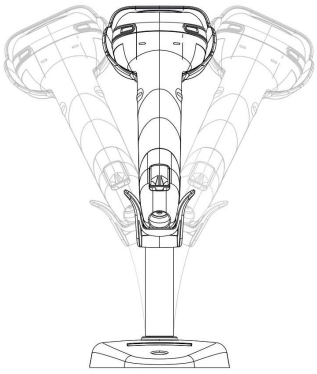




It can also be used as a holder. The holder “cup” can be positioned in any of the angles shown in the figure below. The Desk model automatically recognizes the insertion and changes its Scan Mode to allow the user to operate in hands-free mode.

Figure 4. Adjusting the Stand Arm





Setting Up the Reader

Follow the steps below to connect and get your reader up and communicating with its host.

1. Configure the Base Station starting on page 16.
2. Link to the Base Station on page 26.
3. Select the Interface Type on page 29.

NOTE

According to recent modification of Regulation for shipping Li-Ion based battery packs, the products and their spare battery packs parts are shipped with a very low residual charge (low state of charge).

Hence the needs

*** that a new product must be fully recharged before starting to use it.**

and

*** that battery packs of the stocked products GBT/GM45 and spare battery pack parts must be periodically recharged: for instance by using a WLC4090 cradle powered up with a 12V Datalogic AC/DC adapter (cod.8-0935) for at least 30 minutes each 3 months.**

Positioning the Base Station

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

Base Station Positions and related clips to be used

Figure 5 - Horizontal Position

This position is preferred, unless a different specific positioning is required, for its outmost ease of insertion as well as the minimum effort and attention required to customer when docking the scanner.

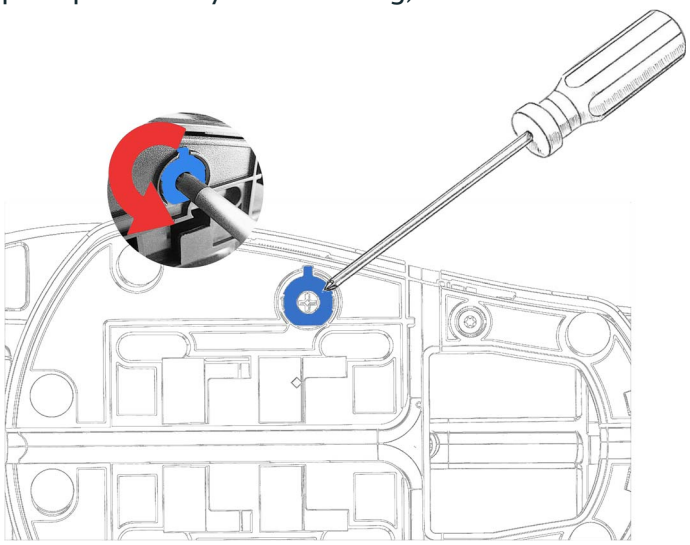
Figure 6 - Presentation Position

This position is preferred if the scanner is to be used in stand mode and not needed to be often removed from base station.

Figure 7 - Vertical Position

This position is preferred when lack of room on the desktop recommends the scanner to be left vertical during recharging.

1. Insert the appropriate parts for the desired base station position.
2. Release the screw situated on the bottom of the cradle's base (the screw will be kept in position by the blue ring).

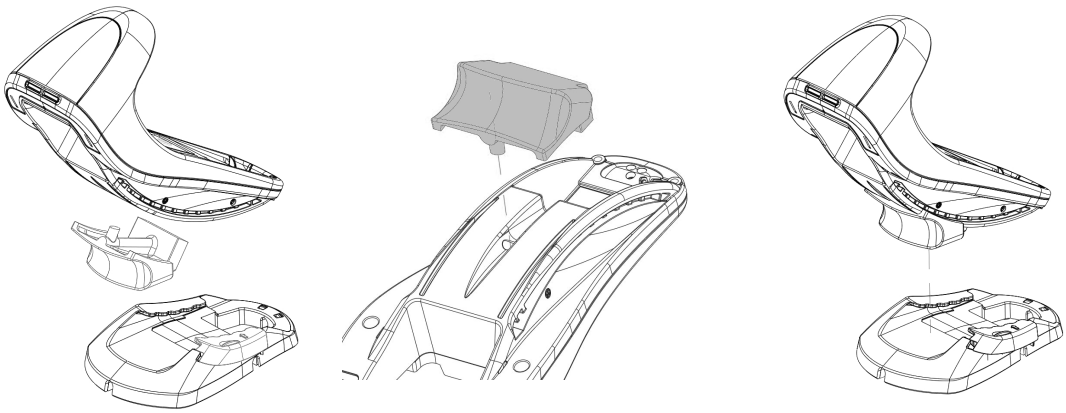


3. Using your thumbs, push open the plastic tabs on the bottom of the base to free the wing holders.

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

NOTE

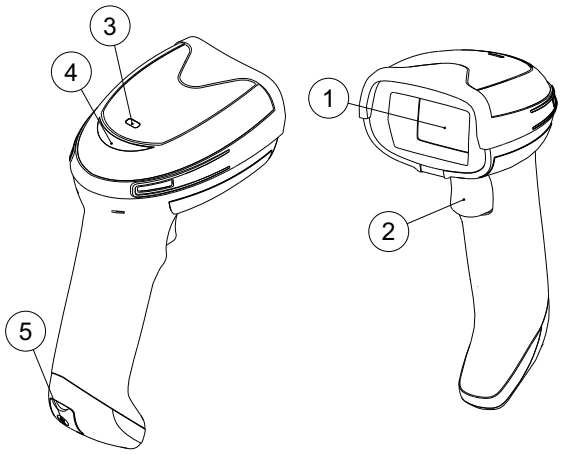
To improve the robustness (against accidental falls) of the cradle in Presentation Position, it is suggested to add the Shock Absorber addendum as illustrated below.



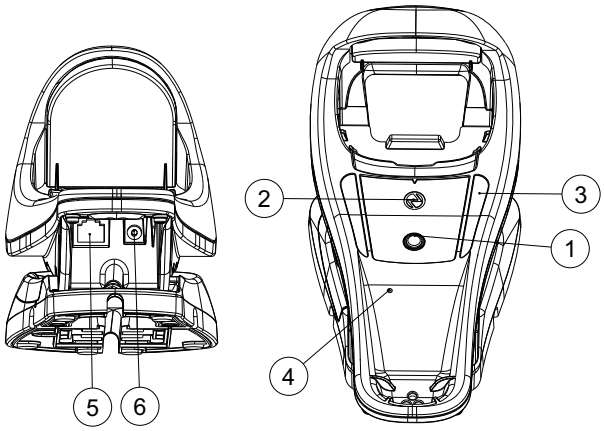
Reader, Cradle and LEDs Description

LEDs on the gun provide information about the battery charging status as well as data transmission.

Figure 8- Gryphon Base LEDs



1	Scan Window	4	Good Read LED
2	Trigger	5	USB Port
3	Battery & Recharge LED		



1	Service Button	4	Cable Release Hole
2	Power LED	5	Communicatioin Port
3	Recharge LED	6	Aux Power Port

Connecting the Base Station

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

NOTE

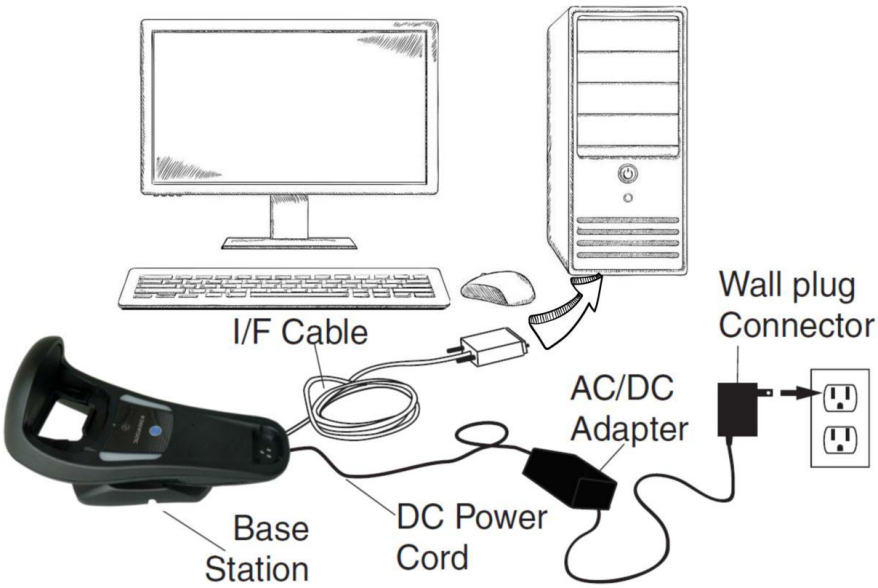
The Gryphon GBT/GM4500 can also be Powered by the Terminal. When powered by the Terminal, the battery charger is automatically set as Slow charge.

For some specific interfaces or hosts or lengths of cable, the use of an external power supply is recommended for full recharging capability (see "Technical Specifications" on page 39 for more details).

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. Then connect to an AC Adapter, and plug the AC power cord into the (wall) outlet.

Figure 9 - 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 base station positioning: horizontal, stand or wall mount. 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 the figure below.

Figure 10 - Options for routing the DC cord

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 in the figure 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 into an approved AC wall socket with the cable facing downwards (as shown in Figure 5) to prevent undue strain on the socket.

Disconnecting the Cable

To detach the cable, insert a paper clip or similar object into the hole on the base, as shown.

Figure 12 - Disconnecting the Cable

System and Network Layouts

Stand Alone Layouts

Figure 13 - Single Reader Layout

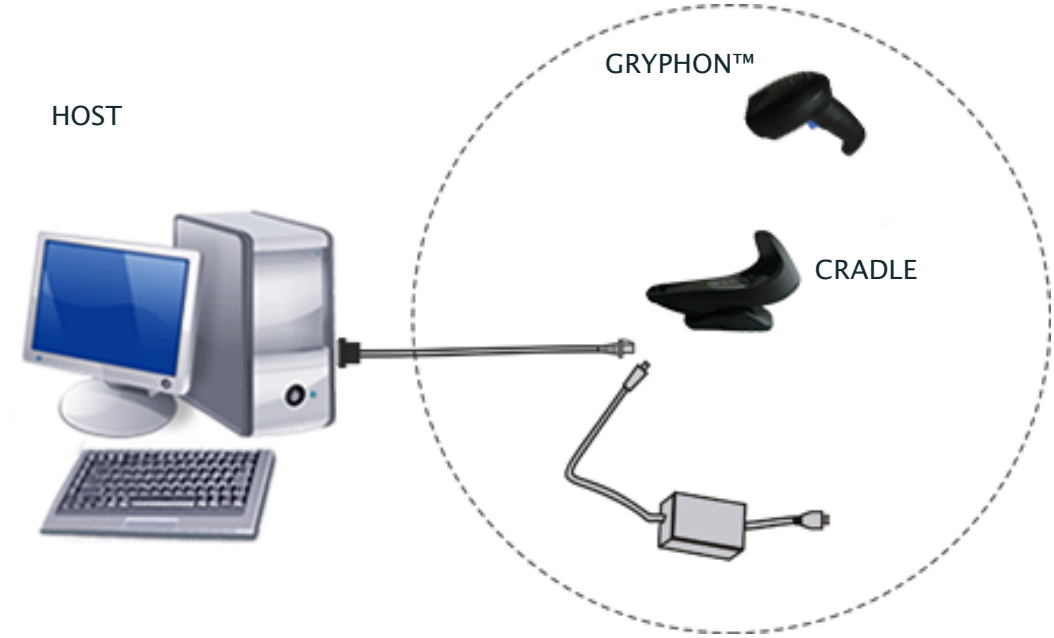
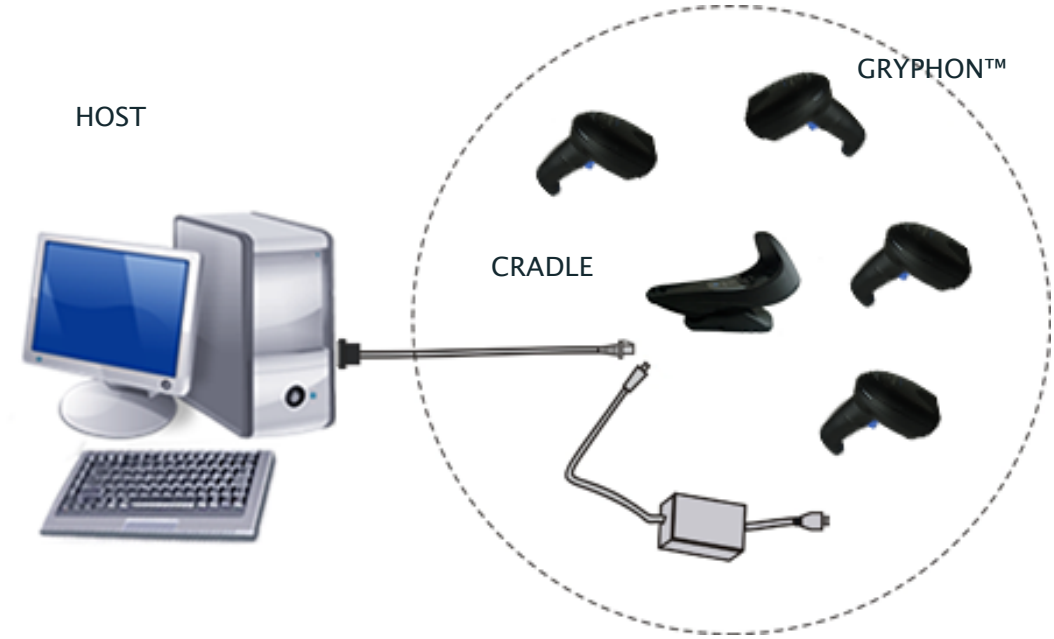
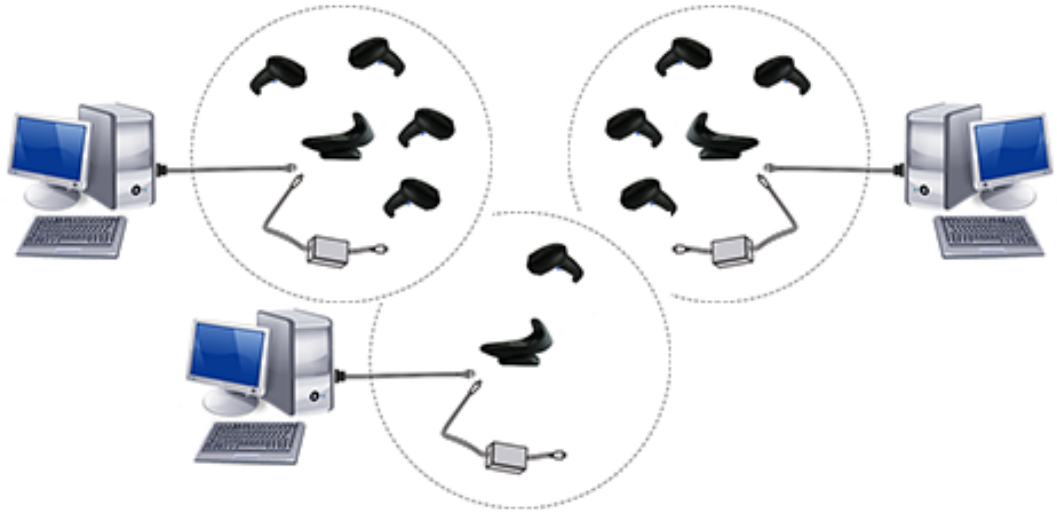


Figure 14 - Multiple Reader Layout



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.

Using the GBT/GM4500 Scanner

Scanner LEDs

Specific LEDs on the Gryphon Scanner provide information about: good reading result (3GL), battery status and charging status (with micro USB only). The Battery Status information can be easily retrieved by double-tapping with your fingers on top of the head of the scanner. The following table explains the main colors' combinations provided by the Battery Status LED.

Table 1 - Battery LED

STATUS	COLOR	
Charge in Progress through micro USB	Blinking color (1s ON - 1s OFF)	Green (charge = 50% - 99%) Red (charge less than 1%) Amber (charge = 1% - 49%) **NOTE**: Scanner is unusable until 1% is reached
Charge Complete through micro USB	Solid Green (charge = 100%)	It goes **OFF** when Scanner's unplugged
Battery Status (when not in charge)	Solid color (3s time-out)	Green (charge = 50% - 100%) Amber (charge = 2% - 50%) Red blinking (charge less than 2%)

Using the WLC4090 Radio Base

Radio Base LEDs

LEDs on the Gryphon Base provide information about the Base as well as battery charging status, as shown in the figure below.

Figure 16 - Gryphon Base LEDs

Table 2 - Radio Base LEDs

LED		STATUS
1	Power on / Data	Green On = Base is powered Green Blinking = Base receives data and commands from the Host or the Reader.
2	Charging	Green ON = the battery is completely charged Green fading = battery level 50 to 99% Amber fading = battery level 0 to 49%

The button can be used to force device connection via the Datalogic Aladdin Software tool and for paging the scanner when it is activated. Refer to the Gryphon I GBT/GM4500 Product Reference Guide (PRG) for a more detailed explanation.

Replacing the Battery Pack

NOTE

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

Use the following procedure to change the reader's battery:

1. With a narrow metallic object (i.e. a coin) or a screwdriver, unscrew the battery cover screw.

2. Extract the battery pack from its slot.

3. Insert the new battery in the same position.

4. Replace the battery holder cap, plug in the connector and return the contacts circuit to its previous location.

NOTE

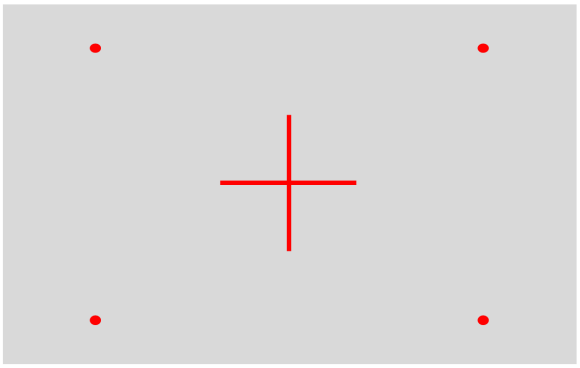
When inserting the new battery into the handle, take care to position the battery and the connector as described above.

5. Insert the cover in the handle and screw it into place.

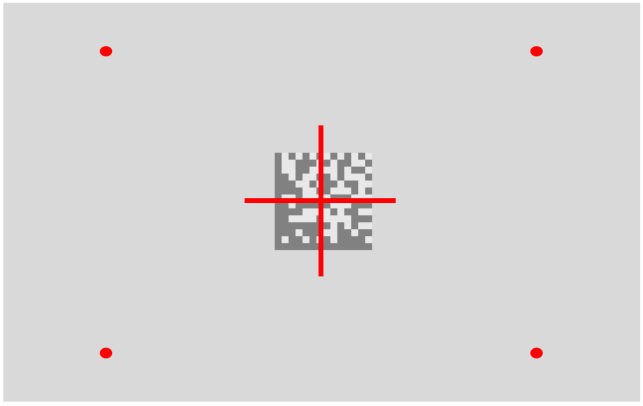
Using the Gryphon™ I GD/GBT/GM4500

The Gryphon™ I GD4500 normally functions by capturing and decoding codes. The aiming system is activated on trigger pull and indicates the center of the field of view which should be positioned over the bar code:

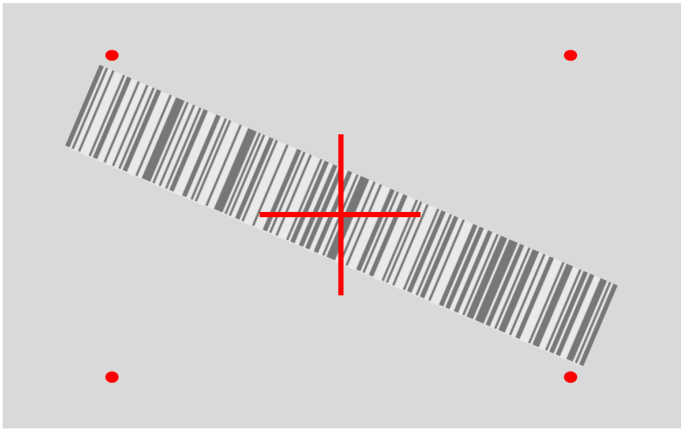
Aiming System



Relative Size and Location of Aiming System Pattern



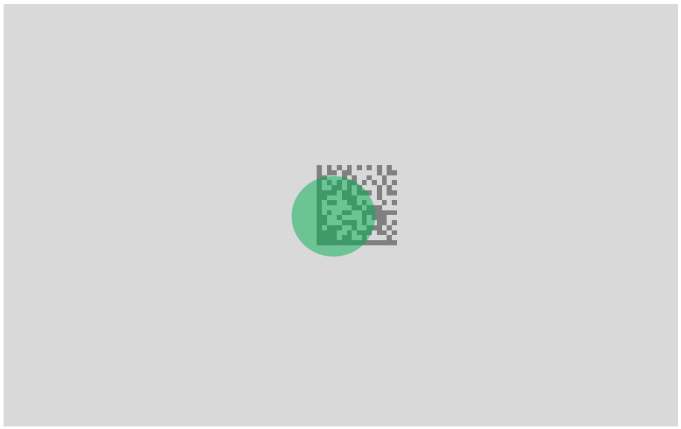
2D Matrix Symbol



Linear Bar

A red beam illuminates the label. The field of view indicated by the aiming system will be smaller when the reader is closer to the bar code and larger when it is farther from the code. Symbologies with smaller bars or elements (mil size) should be read closer to the unit. Symbologies with larger bars or elements (mil size) should be read farther from the unit. If the aiming system is centered and the entire bar code is within the aiming field, you will get a good read. Successful reading is signaled by an audible tone plus a good-read green spot LED indicator.

Relative Size and Location of Green Spot

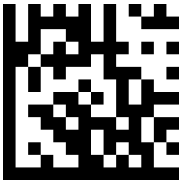


Linking the Reader

Link Datalogic Devices to Base

Before configuring the interface it is necessary to link the handheld with the base.

To link the handheld and the base simply put it into the base. If the reader was previously linked to another base, you must first scan the Unlink bar code before re-linking to the new base.

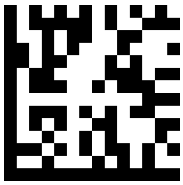


Unlink

Link Scanner as Serial Device to a Bluetooth Host

Use this procedure to let the scanner communicate with a Bluetooth host using the Bluetooth Serial Port Profile (SPP).

1. If using a Bluetooth adapter on the host device, install any driver provided with the adapter.
2. Scan the Link to Host in SPP mode label below to make the scanner visible to the host device.
3. Use the Bluetooth manager of the host device to “Discover new devices” and select "GBT4500...". If you receive an error message, it may be necessary to change the security settings on either the host device or the scanner.
4. Use an RS-232 terminal program to see incoming data on the port designated by the Bluetooth manager of the host device.



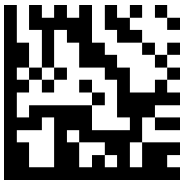
Link to Host in SPP mode

Link Scanner as HID device to a Bluetooth host

Use this procedure to send data to a Bluetooth host using the Bluetooth HID profile.

1. If using a Bluetooth adapter on the host device, install any driver provided with the adapter.
2. Scan the Link to Host in HID mode label below to make the scanner visible to the host device.
3. Use the Bluetooth manager of the host device to "Discover new devices" and select "GBT4500 ...". If you receive an error message, it may be necessary to change the security settings on either the host device or the scanner.
4. On the host device, open the program that is meant to receive the incoming data.

The data transmitted by the scanner will appear in the program as if it was typed using the keyboard of the host device.



Link to Host in HID mode

NOTE

The Gryphon I GBT4500 can be set up to authenticate the remote system when connecting, by entering a Bluetooth passkey or a PIN code. If you want to set the security level and authentication options suitable for your application, or when adding new equipment to a system that requires authentication or uses a custom security PIN, please see "Bluetooth Security Level" on page 298.

Bluetooth Passkey or PIN Code Entry Request

During the pairing process, based on Host and Reader security settings, you may need to enter a Bluetooth passkey or PIN code.

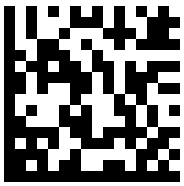
When requested by the Host, simply enter the displayed code by scanning the corresponding bar codes for alphanumeric entry listed in Appendix D . Complete by scanning the **End** label. To restart the entering of the passkey, read the **Restart** label.

Passkey END

Passkey Restart

Power Off

Scan the bar code below to shut off power to the handheld until the next trigger pull.



PowerOff

Interface Selection

Upon completing the physical connection between the scanner and its host, proceed directly to "Configuring the Interface" on page 29 for information and programming for the interface type the scanner is connected to (for example: RS-232, Keyboard Wedge, USB, etc.) and scan the appropriate bar code in that section to select your system's correct interface type.

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

- USB (Keyboard, COM, OEM)
- USB Composite (Keyboard + COM)
- USB HID POS
- USB Toshiba TEC
- RS-232 STD
- RS-232 WN
- RS232 OPOS
- Keyboard Wedge
- IBM46XX port 9b (a specific cable's required)
- Datalogic Magellan Scanners' specific interface

Configuring the Interface

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

NOTE

Unlike some other programming features and options, interface selections require that you scan only one programming bar code label. DO NOT scan an ENTER/EXIT bar code prior to scanning an interface selection bar code. Some interfaces require the scanner to start in the disabled state when powered up. If additional scanner configuration is desired while in this state, pull the trigger and hold for 5 seconds. The scanner will change to a state that allows programming with bar codes.

Table 3. Available Interfaces

RS-232		FEATURES
RS-232 standard interface **Not supported on USB only models*	 Select RS232-STD	
 Select RS232-WN	RS-232 Wincor-Nixdorf	
RS-232 for use with OPOS/UPOS/JavaPOS	 Select RS-232 OPOS	
 Select USB-COM-STD	USB COM to simulate RS-232 standard interface **USB COM driver need to be installed for this interface to work. Please download it from www.datalogic.com*	

USB-COMPOSITE		FEATURES
USB-Composite (combines USB-KBD emulation and USB-COM) **USB COM driver need to be installed for this interface to work. Please download it from www.datalogic.com*	 Select USB-Composite	
OTHER INTERFACES		
 Select IBM46xx Port 9b	IBM46xx Port 9b	
USB HID POS	 Select USB HID POS	
 Select USB Toshiba TEC	USB Toshiba TEC	
Datalogic Magellan Scanners' specific interface, USB AUX	 Select Datalogic Magellan Scanners' specific interface, USB AUX	
 Magellan RS232 AUX port	Datalogic Magellan RS232 AUX port	

USB-OEM	FEATURES
USB-OEM (can be used for OPOS/UPOS/JavaPOS) Select USB-OEM[a]	Set USB-OEM Interface Features starting on page 89

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

KEYBOARD		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 57
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	
USB Keyboard with standard key encoding	Select USB Keyboard	
Select USB Alternate Keyboard	USB Keyboard with alternate key encoding	

Customizing Configuration Settings

Using the Programming Bar Codes

This manual contains feature descriptions and bar codes which allow you to reconfigure your scanner. Some programming bar code labels, like "Resetting the Product Configuration to Defaults" on page 35, require only the scan of that single label to enact the change. Most of the programming labels in this manual, however, require the scanner to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT bar code once to enter Programming Mode. Once the scanner is in Programming Mode, you can scan a number of parameter settings before scanning the ENTER/EXIT bar code a second time, which will then accept your changes, exit Programming Mode and return the scanner to normal operation.

NOTE

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

Datalogic Aladdin™ Utility

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

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

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

Interface Settings

The scanner is typically factory-configured with a set of default features standard to the interface type you ordered. See "Interface Selection" on page 29. Global Interface Features, starting on page 39 provides settings configurable by all interface types. If your installation requires you to further customize your scanner, you can select other options through use of the instructions and programming bar codes available in the appropriate section for your interface.

- **RS-232 INTERFACE on page 41**
- **RS-232/USB-COM INTERFACES on page 47**
- **RS232 OPOS on page 29**
- **USB Composite (COM + Keyboard) on page 29**
- **KEYBOARD INTERFACE on page 57**
- **USB-OEM INTERFACE on page 89**

Configuring Other Features

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

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

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

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

Software Version Transmission

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

Transmit Software Version

Resetting the Product Configuration to Defaults

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

NOTE

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

Restore Custom Default Configuration

NOTES

Chapter 3
Configuration Using Bar Codes

This and following sections provide programming bar codes to configure your scanner by changing the default settings. For details about additional methods of programming, see "Customizing Configuration Settings" on page 34.

NOTE

You must first enable your scanner to read bar codes in order to use this section. If you have not done this, go to Setup, starting on page 7 and complete the appropriate procedure.

Configuration Parameters

Once the scanner is set up, you can change the default parameters to meet your application needs. Refer to "Resetting the Product Configuration to Defaults" on page 35 for initial configuration in order to set the default values and select the interface for your application.

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

Interface Configuration:

- "RS-232 Interface" on page 41
- "RS-232/USB-COM Interfaces" on page 47
- "Keyboard Interface" on page 57
- "USB-OEM Interface" on page 89

Parameters common to all interface applications:

- "Global Prefix/Suffix" on page 94
- "Data Format" on page 93 offers advanced configuration options for customization of scanned data output.
- "Reading Parameters" on page 105 control various operating modes and indicators status functioning.

Symbology-specific parameters:

"1D Symbologies" on page 137 defines options for all symbologies and provides the programming bar codes necessary for configuring these features.

NOTE

You must first enable your scanner to read bar codes in order to use this section. If you have not done this, go to Setup, starting on page 7 and complete the appropriate procedure.

To program features:

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

NOTE

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

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

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

For more detailed descriptions, programming information and examples for setting selected configuration items, see References, starting on page 317.

Global Interface Features

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

HOST COMMANDS — OBEY/IGNORE on page 39
USB SUSPEND MODE on page 39

Host Commands — Obey/Ignore

This option specifies whether the scanner will obey or ignore host commands. When set to ignore, the scanner 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 the USB interface to enter suspend mode.

USB Suspend Mode = Disable

USB Suspend Mode = Enable

DEFAULT

NOTES

RS-232 Interface

Use the programming bar codes in this chapter if modifications to the standard RS-232 interface settings are necessary to meet your system's requirements. Additional settings which apply to both the RS-232 and USB interfaces are available in Chapter 5, RS-232/USB-COM Interfaces.

BAUD RATE on page 41	**PARITY** on page 44
DATA BITS on page 43	**HANDSHAKING CONTROL** on page 45

RS-232 Standard Factory Settings

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

Baud Rate

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

Baud Rate = 1200

Baud Rate = 2400

Baud Rate = 4800

Baud Rate = 9600

DEFAULT

Baud Rate (continued)

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

NOTE

Handheld and Cradle models support the 8-bit ASCII protocol. The 7-bit ASCII protocol support is subject to specific firmware release. If the setting is not supported, the scanner will emit three short beeps upon scanning the label.

Stop Bits

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

DEFAULT

1 Stop Bit

2 Stop Bits

Parity

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

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

DEFAULT

Parity = None

Parity = Even

Parity = Odd

Handshaking Control

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

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

DEFAULT

Handshaking Control = RTS

Handshaking Control = RTS/CTS

Handshaking Control = RTS/XON/XOFF

Handshaking Control = RTS On/CTS

Handshaking Control = RTS/CTS Scan Control

Handshaking Control = RTS Off

RS-232/USB-COM Interfaces

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

STANDARD FACTORY SETTINGS on page 47
INTERCHARACTER DELAY on page 48
BEEP ON ASCII BEL on page 49
BEEP ON NOT ON FILE on page 49
ACK NAK OPTIONS on page 50
ACK CHARACTER on page 51
NAK CHARACTER on page 51
ACK NAK TIMEOUT VALUE on page 52
ACK NAK RETRY COUNT on page 53
ACK NAK ERROR HANDLING on page 54
INDICATE TRANSMISSION FAILURE on page 55
DISABLE CHARACTER on page 55
ENABLE CHARACTER on page 56

Standard Factory Settings

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

Intercharacter Delay

This parameter specifies the intercharacter delay between the end of one character and the beginning of the next. The delay can be set within a range of zero (0) to 990 milliseconds in 10ms increments. A setting of zero specifies no delay. See "Label ID: Pre-loaded Sets" on page 332 for more detailed programming instructions.

Intercharacter Delay = No Delay

Select Intercharacter Delay Setting

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

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

CANCEL

DEFAULT **00 = No Intercharacter Delay**

Beep On ASCII BEL

When this parameter is enabled, the scanner issues a beep when a <BEL> character is detected on the 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 scanner 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 scanner to support the RS-232 ACK/NAK protocol. When configured, the scanner and/or host sends an "ACK" when it receives data properly, and sends "NAK" when the data is in error.

Options are:

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

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 "ACK Character" on page 320 for more detailed programming instructions.

NOTE **Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 43 has been set as 7 Data Bits.**

Select ACK Character Setting

DEFAULT **0x06 'ACK' Character**

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

CANCEL

NAK Character

This setting specifies an ASCII character or hex value to be used as the NAK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See "NAK Character" on page 321 for more detailed programming instructions.

NOTE **Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 43 has been set as 7 Data Bits.**

Select NAK Character Setting

DEFAULT **0x15 'NAK' Character**

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

CANCEL

ACK NAK Timeout Value

This option specifies the amount of time the scanner waits for an ACK character from the host following label transmission. The selectable timeout range is 200 milliseconds to 15,000ms (15 seconds) in 200ms increments. A selection of 0 disables the timeout. See "ACK NAK Timeout Value" on page 322 for more detailed programming instructions.

Select ACK NAK Timeout Value Setting

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

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

CANCEL

DEFAULT **01 ACK NAK Timeout value is 200ms**

ACK NAK Retry Count

This feature specifies the number of times the scanner retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries. See "ACK NAK Retry Count" on page 323 for more detailed programming instructions.

Select ACK NAK Retry Count Setting

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

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

CANCEL

DEFAULT **003 = 3 Retries**

ACK NAK Error Handling

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

Options are:

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

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 scanner's ability to sound an error beep to indicate a transmission failure while in ACK/NAK mode.

Indicate Transmission Failure = Disable Indication

Indicate Transmission Failure = Enable Indication

DEFAULT

Disable Character

Specifies the value of the RS-232 host command used to disable the scanner. ASCII characters or any hex value from 0 to 0xFF can be selected. See "Disable Character" on page 324 for more detailed programming instructions.

NOTE

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

Select Disable Character Setting

DEFAULT

0x44 = Disable Character is 'D'

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

CANCEL

Enable Character

Specifies the value of the RS–232 host command used to enable the scanner. ASCII characters or any hex value from 0 to 0xFF can be selected. See "Enable Character" on page 325 for more detailed programming instructions.

NOTE

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

Select Enable Character Setting

DEFAULT

0x45 = Enable Character is 'E'

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

CANCEL

Keyboard Interface

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

COUNTRY MODE on page 58
CAPS LOCK STATE on page 81
NUMLOCK on page 81
KEYBOARD NUMERIC KEYPAD on page 82
KEYBOARD SEND CONTROL CHARACTERS on page 83
WEDGE QUIET INTERVAL on page 84
INTERCODE DELAY on page 86
USB KEYBOARD SPEED on page 87

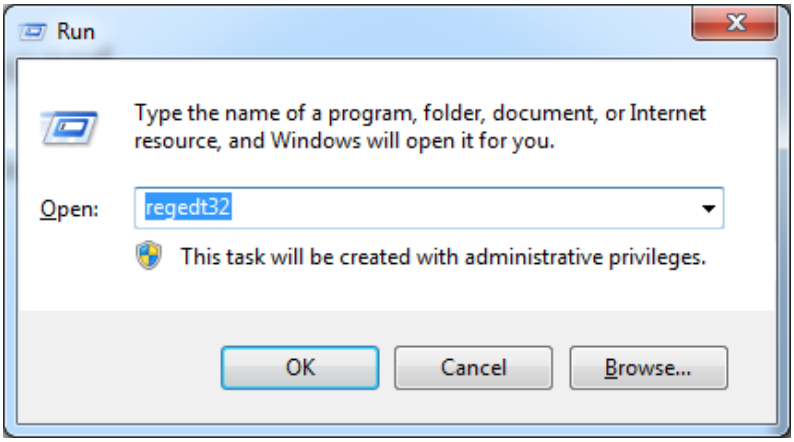
Country Mode

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

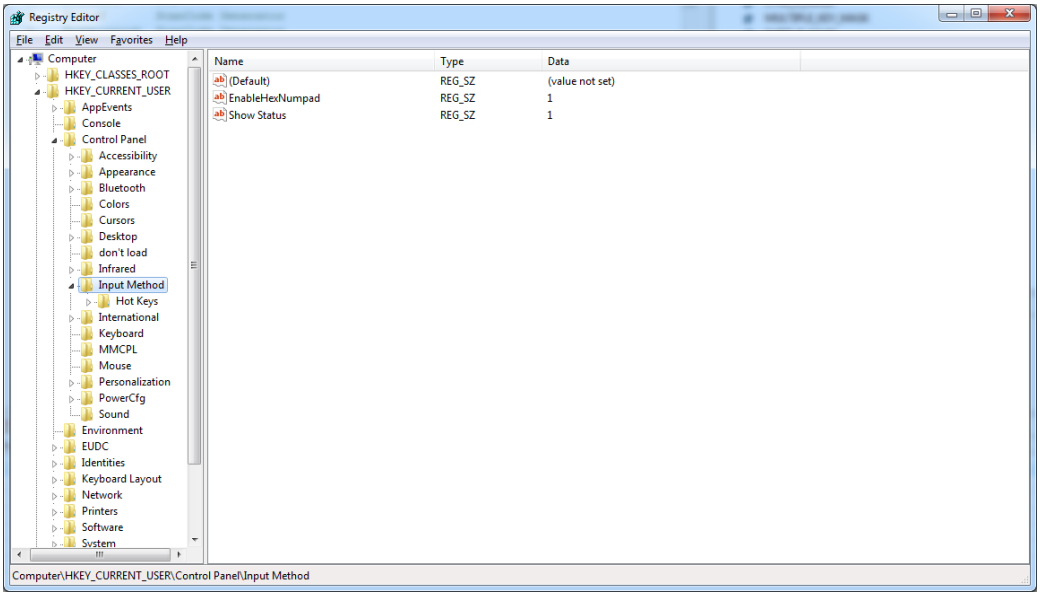
The Country Mode setting is ignored if the interface uses alternate key encoding.

Setup on PC to use ALT Universal

1. Open Registry Edit



2. Set EnableHexNumpad to 1 as follows:



3. Reset the PC.

Setting Country Mode

DEFAULT

United States

French International (Belgian French)

United Kingdom

Danish

French (France)

German

Italian

Setting Country Mode (continued)

Norwegian

Portuguese Portugal

Spanish

Swedish

Swiss French

Japanese ASCII

Hungarian

Setting Country Mode (continued)

Czech

SlovaK

Romanian

Croatian

Polish_214

Canadian French Win7

Lithuanian

Setting Country Mode (continued)

Vietnamese

Russian

Arabic 101

Chinese ASCII

Thai-Kedmanee

Albanian

Arabic 102

Setting Country Mode (continued)

Arabic 102 AZERTY

Azeri Cyrillic

Azeri Latin

Belarusian

Bosnian Cyrillic

Bosnian Latin

Bulgarian Cyrillic

Setting Country Mode (continued)

Bulgarian Latin

Canadian French (Legacy)

Canadian Multilingual

Chinese (Simplified)

Chinese (Traditional)

Czech Programmers

Czech QWERTY

Setting Country Mode (continued)

Dutch Netherland

Estonian

Faeroese

Finnish

French (Canada) 2000/XP

French (Canada) 95/98

Galician

Setting Country Mode (continued)

Greek

Greek Latin

Greek Polytonic

Greek220

Greek220 Latin

Greek319

Greek319 Latin

Setting Country Mode (continued)

Hebrew Israel

Hungarian_101KEY

Icelandic

Irish

Italian_142

Japanese (Shift-JIS)

Kazakh

Setting Country Mode (continued)

Korean (Hangul)

Korean ASCII

Kyrgyz Cyrillic

Latin America

Latvian

Latvian QWERTY

Lithuanian_IBM

Setting Country Mode (continued)

Macedonian -FYROM

Maltese_47KEY

Mongolian-Cyrillic

Polish Programmer

Portuguese Brazil

Portuguese Brazilian ABNT

Portuguese Brazilian ABNT2

Setting Country Mode (continued)

Romanian Legacy

Romanian Programmer

Romanian Standard

Russian Typewriter

Serbian Cyrillic

Serbian Latin

Slovak QWERTY

Setting Country Mode (continued)

Slovenian

Spanish Variation

Swiss German

Tatar

Turkish F

Turkish Q

Ukrainian

Setting Country Mode (continued)

US Dvorak

US Dvorak Left Hand

US Dvorak Right Hand

US English (Mac)

US English (North American)

US International

Uzbek Cyrillic

Setting Encoding Type

DEFAULT

Don't use encoding

UTF_8

Windows 874

Windows 932

Windows 936

Windows 949

Windows 950

Setting Encoding Type (continued)

Windows 1250

Windows 1251

Windows 1252

Windows 1253

Windows 1254

Windows 1255

Windows 1256

Setting Encoding Type (continued)

Windows 1257

Windows 1258

Windows 20866

0x31 = Windows 54936

ISO 8859-1

ISO 8859-2

Setting Encoding Type (continued)

ISO 8859-3

ISO 8859-4

ISO 8859-5

ISO 8859-6

ISO 8859-7

ISO 8859-8

ISO 8859-9

Setting Encoding Type (continued)

ISO 8859-10

ISO 8859-11

ISO 8859-13

ISO 8859-14

ISO 8859-15

ISO 8859-16

MS-DOS 437

Setting Encoding Type (continued)

MS-DOS 737

MS-DOS 775

MS-DOS 850

MS-DOS 852

MS-DOS 855

MS-DOS 857

MS-DOS 860

Setting Encoding Type (continued)

MS-DOS 861

MS-DOS 862

MS-DOS 863

MS-DOS 865

MS-DOS 866

MS-DOS 869

Mac CP10000

Setting ALT output type

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

.

ALT Codepage: (use on non Unicode application: Notepad)

ALT Unicode: (use on Unicode application: Word)

DEFAULT

ALT Universal: (Use for all)

Caps Lock State

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

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

Keyboard Numeric Keypad

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

DEFAULT

Keyboard Numeric Keypad = Standard Keys

Keyboard Numeric Keypad = Numeric Keypad

Keyboard Send Control Characters

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

Options are as follows:

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

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

Send Special Function Key : Send characters between 00H and 1FH according to the special function key mapping table (see "Interface Type PC AT PS/2 Alt Mode or USB-Keyboard Alt Mode" on page 382). This is used to send keys that are not in the normal ASCII set. A unique set is provided for each available scancode set.

DEFAULT

Keyboard Send Control Characters = Send Ctrl+Key

Keyboard Send Control Characters = Send Ctrl+Shift+Key

Keyboard Send Control Characters = Send Special Function Key :

Wedge Quiet Interval

This option specifies the amount of time to look for keyboard activity before the scanner breaks the keyboard connection in order to transmit data to host. The selectable range for this feature is from 0 to 990ms in 10ms increments. See "Wedge Quiet Interval" on page 326 for more detailed programming instructions.

NOTE

This feature applies ONLY to the Keyboard Wedge interface.

Select Wedge Quiet Interval Setting

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

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

CANCEL

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. See "Intercharacter Delay" on page 327 for more detailed programming instructions.

Intercharacter Delay = No Delay

Select Intercharacter Delay Setting

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

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

CANCEL

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 "Intercode Delay" on page 328 for more detailed programming instructions.

Set Intercode Delay

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

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

CANCEL

DEFAULT

00 = No Wedge Intercode Delay

USB Keyboard Speed

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

NOTE **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 = 5ms

USB Keyboard Speed = 7ms

USB Keyboard Speed = 10ms

NOTES

USB-OEM Interface

INTRODUCTION on page 89
STANDARD FACTORY SETTINGS on page 89
USB-OEM DEVICE USAGE on page 90
USB-OEM INTERFACE OPTIONS on page 90

Introduction

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

Standard Factory Settings

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

USB-OEM Device Usage

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

Options are:

- Tabletop Scanner
- Handheld Scanner

NOTE

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

USB-OEM Device Usage = Tabletop Scanner

USB-OEM Device Usage = Handheld Scanner

DEFAULT

USB-OEM Interface Options

This setting provides for an interface specific control mechanism.

Options are:

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

DEFAULT

USB-OEM Interface Options = Obey

USB-OEM Interface Options = Ignore

IBM 46XX Interface

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

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

INTERFACE OPTIONS on page 92

Interface Options

This feature provides for an interface-specific control mechanism.

Obey Scanner Configuration Host Commands

DEFAULT

Ignore Scanner Configuration Host Commands

Data Format

GLOBAL PREFIX/SUFFIX on page 94
GLOBAL AIM ID on page 95
GS1-128 AIM ID on page 95
LABEL ID starting on page 96 •Label ID: Pre-loaded Sets on page 96 •Label ID: Set Individually Per Symbology on page 97 •Label ID Control on page 97 •Label ID Symbology Selection on page 98
CASE CONVERSION on page 103
CHARACTER CONVERSION on page 104

The features in this chapter can be used to build specific user-defined data into a message string. See "References" starting on page 317 for more detailed instructions on setting these features.

Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the bar code data) and/or as a suffix (in a position following the bar code data). See "Global Prefix/Suffix" on page 330 for more detailed programming instructions.

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

Set Global Prefix

Set Global Suffix

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

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

CANCEL

DEFAULT

No Global Prefix
Global Suffix = 0x0D(CR)

Global AIM ID

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

NOTE

AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. See "Global AIM ID" on page 331 for more detailed programming instructions.

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.

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 bar code (symbology) type. It can be appended previous to or following the transmitted bar code data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" on page 96) or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 97). If you wish to program the scanner to always include an industry standard label identifier for ALL symbology types, see the previous feature "Global AIM ID" on page 95.

Label ID: Pre-loaded Sets

The scanner supports two pre-loaded sets of Label IDs, the USA set and the EU set. See "Label ID: Pre-loaded Sets" on page 332 for more information concerning the pre-loaded sets that are provided.

CAUTION

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

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.

NOTE

This setting requires the scanning of bar codes from multiple sections. See "Label ID: Set Individually Per Symbology" **on page 334** **for more detailed programming instructions.**

Label ID Control

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

DEFAULT

Label ID Transmission = Disable

Label ID Transmission = Enable as Prefix

Label ID Transmission = Enable as Suffix

Label ID Symbology Selection

This option selects the symbology for which a Label ID is to be configured. See "Label ID: Set Individually Per Symbology" on page 334 for full instructions.

CANCEL

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

Set UPC-A Label ID Character(s)

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

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

Set UPC-E Label ID Character(s)

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

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

Label ID Symbology Selection (continued)

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 8 Label ID Character(s)

Set EAN 8/P2 Label ID Character(s)

Set EAN 8/P5 Label ID Character(s)

Label ID Symbology Selection (continued)

Set GS1 DataBar Omnidirectional Label ID Character(s)

Set GS1 DataBar Expanded Label ID Character(s)

Set GS1 DataBar Limited Label ID Character(s)

Set Code 39 Label ID Character(s)

Set Code 32 Label ID Character(s)

Set Code 39 CIP Label ID Character(s)

Label ID Symbology Selection (continued)

Set Code 128 Label ID Character(s)

Set GS1-128 Label ID Character(s)

Set Interleaved 2 of 5 Label ID Character(s)

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

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

Set Codabar Label ID Character(s)

Set ABC Codabar Label ID Character(s)

Label ID Symbology Selection (continued)

Set Code 11 Label ID Character(s)

Set Standard 2 of 5 Label ID Character(s)

Set Industrial 2 of 5 Label ID Character(s)

Set ISSN Label ID Character(s)

Set IATA Label ID Character(s)

Set Concatenated ISBT 128 Label ID Character(s)

Set MSI Label ID Character(s)

Set Matrix 2 of 5 Label ID Character(s)

Label ID Symbology Selection (continued)

Set Plessey Label ID Character(s)

Set Concatenated ISBT Label ID Character(s)

Set Anker Plessey Label ID Characters

Case Conversion

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

NOTE

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

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. See "Character Conversion" on page 336 for more detailed programming instructions.

Configure Character Conversion

DEFAULT

0xFFFFFFFFFFFFFFFF
(No character conversion)

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

CANCEL

Reading Parameters

Double Read Timeout on page 106	**Good Read Speaker Volume / Vibration** on page 112
Reading Performance on page 108	**Good Read Beep Length** on page 114
LED and Speaker Indicators on page 109	**Good Read LED Duration** on page 116
Good Read: When to Indicate on page 110	**Scanning Features** on page 117
Good Read Beep Type on page 111	**Corded Only Features** on page 132
Good Read Beep Frequency on page 111	**Multiple Label Reading** on page 134

Double Read Timeout

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

Double Read Timeout = 0.1 Second

Double Read Timeout = 0.2 Second

Double Read Timeout = 0.3 Second

Double Read Timeout = 0.4 Second

Double Read Timeout (continued)

Double Read Timeout = 0.5 Second

Double Read Timeout = 0.6 Second

DEFAULT

Double Read Timeout = 0.7 Second

Double Read Timeout = 0.8 Second

Double Read Timeout = 0.9 Second

Double Read Timeout = 1 Second

Reading Performance

When the barcode scanner's Scan Mode is set to triggerless modes (e.g. Flashing, Always On, Stand Mode/Object Detection, etc.) the reading capabilities can be modified according to two main goals:

- Motion tolerance: increased performance for rapidly moving barcodes.
- Depth of field: increased performance for distant barcodes.

Depending on specific environmental conditions or user's circumstances or expected performances, one may decide to assign a higher priority to one or the other.

Depth of field

Motion tolerance

DEFAULT

LED and Speaker Indicators

Power On Alert

Disables or enables the indication (from the Speaker) that the scanner is receiving power.

Power On Alert = Disable (No Audible Indication)

Power On Alert = Power-up Beep

DEFAULT

Good Read: When to Indicate

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

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

NOTE

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 speaker's pitch/tone.)

Good Read Beep Frequency = Low

Good Read Beep Frequency = Medium

DEFAULT

Good Read Beep Frequency = High

Good Read Speaker Volume / Vibration

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

In addition to three selectable volume levels, the user can also activate a vibration feedback for good read.

Good Read Speaker Volume = Speaker Off

Good Read Speaker Volume = Low

Good Read Speaker Volume = Medium

Good Read Speaker Volume = High

DEFAULT

Vibration Feedback for Good Read

Enable Vibration

Enable Vibration = Disable

Silent Mode

If needed, audible indications can be disabled by scanning the labels below.

Please note that some important audible notifications are not muted in silent mode and other notifications are replaced by vibration or visual indications.

All changes in audible notifications are summarized here:

- Good Read beep is replaced with vibration
- Power on beep is replaced with vibration
- Connection / Disconnection / out of radio range beeps are replaced with blue LED and vibration
- Error beep, RF Error/timeout beeps, chirp beeps are replaced with red 3GL and vibration
- Battery beeps, programming labels, and RF paging beeps are not muted

Silent Mode Enable

Silent Mode OFF

Good Read Beep Length

Specifies the duration of a good read beep.

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 (continued)

Good Read Beep Length = 180 msec

Good Read Beep Length = 200 msec

Enable/Disable Good Read Indicator

Enable/Disable the good read indicator.

Good Read Indicator = Disable

Good Read Indicator = Enable

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 100 milliseconds to 25,500 milliseconds (0.1 to 25.5 seconds) in 100ms increments. A setting of 00 keeps the LED on until the next trigger pull.

See Chapter 4, References for detailed instructions and examples for setting this feature.

Good Read LED Duration Setting = Keep LED on until next trigger pull

Select Good Read LED Duration Setting

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

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

CANCEL

DEFAULT

003 = Good Read LED stays on for 300 ms.

NOTE

Indicators are dimmed during sleep.

Scanning Features

Scan Mode

See "Scan Mode" on page 338 for more detailed programming instructions.

Scan Mode = Trigger Single

DEFAULT

Scan Mode = Trigger Hold Multiple

Scan Mode = Trigger Pulse Multiple

Scan Mode = Flashing

Scan Mode = Always On

Scan Mode = Object Detection

Scan Mode = Trigger Object Sense

Flash On Time

This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See "Flash On Time" on page 342 for more detailed programming instructions.

Select Flash ON Time Setting

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

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

CANCEL

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 "Flash Off Time" on page 343 for more detailed programming instructions.

Select Flash OFF Time Setting

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

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

CANCEL

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

Object Detection Indication

Enables/disables the LED flash when the reader is in Object Detection.

DEFAULT

Object Detection Flash = Disable

Object Detection Flash = Enable

Stand Operation

Specifies the behavior of the reader when stationary in a stand. There are two conditions which cause the reader to switch to Stand Mode/Object Detection:

1. The reader is configured to switch to Stand Mode/Object Detection when stationary.
2. The reader is placed into the cradle of the base station.

Below are further options concerning Stand Operation.

Ignore Autorecognition. Disables mode switching when the reader is placed in a stand.

Switch to Stand Mode/Object Detection. Automatically switches the reader to Stand Mode/Object Detection when the reader is placed in the stand.

Switch to Flashing. Automatically switches the reader to Flash Mode when the reader is placed in the stand.

Switch to Always On. Automatically switches the reader to Always On mode when the reader is placed in the stand.

Do not change mode

Stand Mode / Object Detection

DEFAULT

Change to Always On

Change to Flashing

Stand Mode/Object Detection Sensitivity

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

Stand Mode/Object Detection Sensitivity = Low

Stand Mode/Object Detection Sensitivity = Medium

DEFAULT

Stand Mode/Object Detection Sensitivity = High

Stand Mode/Object Detection Illumination Off Time

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

Select Stand Mode Time Setting

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

DEFAULT

04 = 2 Seconds

Illumination Intensity and Frequency

With the following settings the illumination intensity can be reduced if needed. Not all hardware versions support this function. Please contact Datalogic Technical Support for more information.

DEFAULT

Full Intensity

Reduced Intensity

Illuminator Refresh Frequency

Illuminator refresh frequency can be increased if needed. In some conditions this can contribute to eye relaxation.

DEFAULT

Normal Refresh Frequency

Increased Refresh Frequency

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

Scanning Active Time = 3 seconds

Scanning Active Time = 5 seconds

DEFAULT

Scanning Active Time = 8 seconds

Motion Still Timeout

Motion Still Timeout specifies the waiting time after which no motions is detected. When no motion is detected for period of time longer than the set Motion Still Timeout period, the scanner assumes it is in a motionless condition. The selectable setting are from 500 to 25,500 milliseconds in 100 millisecond increments. The default is 2 seconds. This option relates to such features and the Aimer On timing and Stand Mode / Object Detection scanning with respect to motion.

Select Motion Still Timeout Setting

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

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

CANCEL

DEFAULT **14 = Motion Still Timeout for 2 seconds**

Pick Mode

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

The Pick Mode can be enabled only in Trigger Single Scan Mode.

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

DEFAULT

Pick Mode = Disable

Pick Mode = Enable

Aiming Pointer

Enables/disables the aiming pointer for all symbologies.

Aiming Pointer = Disable

Aiming Pointer = Enable

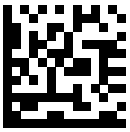
DEFAULT

Use Green Spot as Aiming Pointer

Aiming Duration Timer

Specifies the frame of time the aiming pointer remains on after decoding a label, when in trigger single mode.The range for this setting is from 1 to 255 seconds in 1–second increments. See page 341 in “References” for a description of this feature.

DEFAULT



Set Aiming Duration Timer

Aiming Off After Decoding

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

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

CANCEL

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)

Mobile Phone Mode

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

Mobile Phone Mode = Disable

Mobile Phone Mode = Enable

DEFAULT

Mobile Phone Mode = Enhanced

Mobile Phone Saturation Rate

This specifies the minimum number of saturated pixels (every 1000 pixels) in the image in order to activate the Mobile Phone mode.

DEFAULT

Mobile Phone Saturation Rate = 00

Mobile Phone Saturation Rate = 01

Mobile Phone Saturation Rate = 02

Decode Negative Image

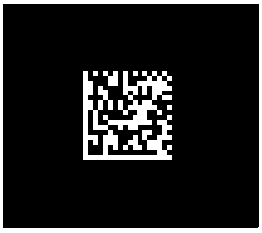
Enable/Disable the ability to decode a negative image for all symbologies. When this feature is enabled, you will be unable to read normally-printed labels or programming labels in this manual. Scan the “Disable” bar code below to return the scanner to its default for this feature. To set decoding for only 2D codes, go to "2D Normal/Inverse Symbol Control" on page 247. For additional options, see the Aladdin configuration application.

NOTE

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

CAUTION

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



Decode Negative Image = Disable

DEFAULT

Decode Negative Image = Enable

Image Capture

For information and a list of options for Image Capture, use the Datalogic Aladdin configuration application, available for free download from the Datalogic Scanning website.

CORDED ONLY FEATURES

Corded Stand Mode

Sets the Stand Mode Operation for Corded models

NOTE **This feature is available starting with firmware release 610001013.**

DEFAULT

Corded Stand Mode = Disable

Corded Stand Mode = Generic Stand

Corded Stand Mode = for All-in-one and Base

Corded Stand Mode = Precise Stand

Dock Detection Beep

If enabled, when the Handheld reader is placed in a dock (cradle or corded stand), it will beep.

Dock Detection Beep = Disable

Dock Detection Beep = Enable

Corded Stand Beep

Enables/Disables the beep that indicates when Corded Stand position is detected.

NOTE **This feature is available starting on firmware release 610001013.**

DEFAULT

Corded Stand Beep = Disable

Corded Stand Beep = Enable

MULTIPLE LABEL READING

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

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

Multiple Labels per Frame

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

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

DEFAULT

Multiple Labels per Frame = Disable

Multiple Labels per Frame = Enable

Multiple Labels Ordering by Code Symbology

This feature allows you to specify the order multiple labels are transmitted by symbology type, when Multiple Labels per Frame is enabled.

Select Symbologies for Multiple Labels Ordering

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

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

CANCEL

DEFAULT

000000000000 = Random order

Multiple Labels Ordering by Code Length

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

DEFAULT

Multiple Labels Ordering = Disable

Transmit Increasing Length Order

Transmit Decreasing Length Order

NOTES

1D Symbologies

Introduction

The scanner supports the following 1D symbologies (bar code types). Symbology-dependent options for each symbology are included in this chapter. See "2D Symbologies" starting on page 245 for configuration of 2D bar codes.

UPC-A on page 139	**INTERLEAVED 2 OF 5 (I 2 OF 5)** on page 182
UPC-E on page 142	**INTERLEAVED 2 OF 5 CIP HR** on page 187
EAN 13 on page 146	**DATALOGIC 2 OF 5** on page 192
EAN 13 on page 146 (JAN 13)	**CODABAR** on page 200
EAN 8 on page 149 (JAN 8)	**ABC CODABAR** on page 207
ADD-ONS on page 152	**CODE 11** on page 209
GS1 DATABAR™ OMNIDIRECTIONAL on page 157	**STANDARD 2 OF 5** on page 213
GS1 DATABAR™ EXPANDED on page 159	**INDUSTRIAL 2 OF 5** on page 217
GS1 DATABAR™ LIMITED on page 163	**IATA** on page 221
CODE 39 on page 165	**ISBT 128** on page 222
CODE 32 (ITALIAN PHARMACEUTICAL) on page 174	**MSI** on page 225
CODE 39 CIP (FRENCH PHARMACEUTICAL) on page 175	**CODE 93** on page 234
CODE 128 on page 176	**FOLLETT 2 OF 5** on page 239
GS1-128 on page 181	**BC412** on page 239

Standard Factory Settings for Symbologies

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

Disable All Symbologies

Scan this label to disable all symbologies.

Disable all symbologies

Coupon Control

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

Options are:

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

To set this feature:

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

Coupon Control = Allow all

Coupon Control = Enable only UPC/EAN

DEFAULT

Coupon Control = Enable only GS1 DataBar

UPC-A

The following options apply to the UPC–A symbology.

UPC-A Enable/Disable

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

UPC-A = Disable

UPC-A = Enable

DEFAULT

UPC-A Check Character Transmission

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

UPC-A Check Character Transmission = Don't Send

UPC-A Check Character Transmission = Send

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 2D Component

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

DEFAULT

UPC-A 2D Component =
Disable (2D component not required)

UPC-A 2D Component =
Enabled (2D component must be decoded)

UPC-E

The following options apply to the UPC-E symbology.

UPC-E Enable/Disable

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

UPC-E = Disable

UPC-E = Enable

DEFAULT

UPC-E Check Character Transmission

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

UPC-E Check Character Transmission = Don't Send

UPC-E Check Character Transmission = Send

DEFAULT

UPC-E 2D Component

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

DEFAULT

UPC-E 2D Component =
Disable (2D component not required)

UPC-E 2D Component =
2D component must be decoded

Expand UPC-E to EAN-13

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

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

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.

NOTE

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

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

EAN 13 Enable/Disable

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

EAN 13 = Disable

EAN 13 = Enable

DEFAULT

EAN 13 Check Character Transmission

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

EAN 13 Check Character Transmission = Don't Send

EAN 13 Check Character Transmission = Send

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 2D Component

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

DEFAULT

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

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

ISSN Enable/Disable

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

DEFAULT

ISSN = Disable

ISSN = Enable

EAN 8

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

EAN 8 Enable/Disable

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

EAN 8 = Disable

EAN 8 = Enable

DEFAULT

EAN 8 Check Character Transmission

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

EAN 8 Check Character Transmission = Don't Send

EAN 8 Check Character Transmission = Send

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 2D Component

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

DEFAULT

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

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

UPC/EAN Global Settings

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

UPC/EAN Price Weight Check

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

Options are

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

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

UPC/EAN Quiet Zones

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

DEFAULT

UPC/EAN Quiet Zones = Two Modules

UPC/EAN Quiet Zones = Three Modules

Add-Ons

The following features apply to optional add-ons.

NOTE

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

Optional Add-ons

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

- P2
- P5

NOTE

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

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

DEFAULT

Optional Add-Ons = Disable P2

Optional Add-Ons = Enable P2

DEFAULT

Optional Add-Ons = Disable P5

Optional Add-Ons = Enable P5

Optional Add-On Timer

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

Optional Add-on Timer = 10ms

Optional Add-on Timer = 20ms

Optional Add-on Timer = 30ms

Optional Add-on Timer = 50ms

Optional Add-on Timer = 70ms

DEFAULT

Optional Add-on Timer = 100ms

Optional Add-on Timer = 160ms

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 154.

DEFAULT

Optional GS1-128 Add-On Timer = Disable

Optional GS1-128 Add-On Timer = 10 ms

Optional GS1-128 Add-On Timer = 20 ms

Optional GS1-128 Add-On Timer = 30 ms

Optional GS1-128 Add-On Timer = 40 ms

Optional GS1-128 Add-On Timer = 50 ms

Optional GS1-128 Add-On Timer = 60 ms

Optional GS1-128 Add-On Timer = 70 ms

Optional GS1-128 Add-On Timer = 100 ms

Optional GS1-128 Add-On Timer = 120 ms

Optional GS1-128 Add-On Timer = 140 ms

Optional GS1-128 Add-On Timer = 160 ms

Optional GS1-128 Add-On Timer = 180 ms

Optional GS1-128 Add-On Timer = 200 ms

Optional GS1-128 Add-On Timer = 220 ms

Optional GS1-128 Add-On Timer = 240 ms

Optional GS1-128 Add-On Timer = 260 ms

Optional GS1-128 Add-On Timer = 280 ms

Optional GS1-128 Add-On Timer = 300 ms

GS1 DataBar™ Omnidirectional

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

GS1 DataBar Omnidirectional Enable/Disable

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

DEFAULT

GS1 DataBar Omnidirectional = Disable

GS1 DataBar Omnidirectional = Enable

GS1 DataBar Omnidirectional GS1-128 Emulation

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

DEFAULT

GS1 DataBar Omnidirectional GS1-128 Emulation = Disable

GS1 DataBar Omnidirectional GS1-128 Emulation = Enable

GS1 DataBar™ Omnidirectional 2D Component

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

DEFAULT

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

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

GS1 DataBar™ Expanded

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

GS1 DataBar Expanded Enable/Disable

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

DEFAULT

GS1 DataBar Expanded = Disable

GS1 DataBar Expanded = Enable

GS1 DataBar Expanded GS1-128 Emulation

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

DEFAULT

GS1 DataBar Expanded GS1-128 Emulation = Disable

GS1 DataBar Expanded GS1-128 Emulation = Enable

GS1 DataBar Expaded 2D Component

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

DEFAULT

GS1 DataBar Expanded 2D Component = Disable

GS1 DataBar Expanded 2D Component = Enable

GS1 DataBar Expanded Length Control

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

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

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

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 bar code lengths for GS1 DataBar Expanded Length Control on page 161. Length 1 is the minimum label length if in Variable Length on page 161 Mode, or the first fixed length if in Fixed Length on page 161 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select GS1 DataBar Expanded Set Length 1 Setting

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

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

CANCEL

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

GS1 DataBar Expanded Set Length 2

This feature specifies one of the bar code lengths for GS1 DataBar Expanded Length Control on page 161. Length 2 is the maximum label length if in Variable Length on page 161 Mode, or the second fixed length if in Fixed Length on page 161 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 74 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select GS1 DataBar Expanded Set Length 2 Setting

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

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

CANCEL

DEFAULT **74 = Length 2 is 74 Characters**

GS1 DataBar™ Limited

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

GS1 DataBar Limited Enable/Disable

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

DEFAULT

GS1 DataBar Limited = Disable

GS1 DataBar Limited = Enable

GS1 DataBar Limited GS1-128 Emulation

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

DEFAULT

GS1 DataBar Limited GS1-128 Emulation = Disable

GS1 DataBar Limited GS1-128 Emulation = Enable

GS1 DataBar Limited 2D Component

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

DEFAULT

GS1 DataBar Limited 2D Component = Disable (2D component non required)

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

Code 39

The following options apply to the Code 39 symbology.

Code 39 Enable/Disable

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

Code 39 = Disable

Code 39 = Enable

DEFAULT

Code 39 Check Character Calculation

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

DEFAULT

Code 39 Check Character Calculation = Don't Calculate

Code 39 Check Character Calculation = Calculate Std Check

Code 39 Check Character Calculation = Calculate Mod 7 Check

Code 39 Check Character Calculation (continued)

Code 39 Check Character Calculation = Enable Italian Post Check

Code 39 Check Character Calculation = Enable Daimler Chrysler Check

Code 39 Check Character Transmission

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

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

Code 39 Quiet Zones = Small Quiet Zones on two sides

Code 39 Quiet Zones = Quiet Zones on two sides

Code 39 Quiet Zones = Small Quiet Zones on two sides

Code 39 Quiet Zones = Small Quiet Zones on two sides

Code 39 Quiet Zones = Small Quiet Zones on two sides

Code 39 Length Control

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

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

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

DEFAULT

Code 39 Length Control = Variable Length

Code 39 Length Control = Fixed Length

Code 39 Set Length 1

This feature specifies one of the bar code lengths for Code 39 Length Control on page 169. Length 1 is the minimum label length if in Variable Length on page 169 Mode, or the first fixed length if in Fixed Length on page 169 Mode. Length includes the bar code's check, data, and full–ASCII shift characters. The length does not include start/stop characters.

The length can be set from 0 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Code 39 Set Length 1 Setting

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

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

CANCEL

DEFAULT **02 = Length 1 is 2 Characters**

Code 39 Set Length 2

This feature specifies one of the bar code lengths for Code 39 Length Control on page 169. Length 2 is the maximum label length if in Variable Length on page 169 Mode, or the second fixed length if in Fixed Length on page 169 Mode. Length includes the bar code's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Code 39 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

TRIOPTIC CODE

The following options apply to the Trioptic symbology.

Trioptic Code Enable/Disable

DEFAULT

Trioptic Code = Disable

Trioptic Code = Enable

CODE 39 DANISH PPT

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

Code 39 Danish PPT Enable/Disable

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

DEFAULT

Code 39 Danish PPT = Disable

Code 39 Danish PPT = Enable

CODE 39 PZN

The following options apply to the Code 39 PZN symbology.

Code 39 PZN Enable/Disable

Enables/Disables the ability of the scanner to decode Code 39 PZN labels.

DEFAULT

Code 39 PZN = Disable

Code 39 PZN = Enable

CODE 39 LAPOSTE

The following options apply to the Code 39 LaPoste symbology.

Code 39 LaPoste Enable/Disable

Enables/Disables the ability of the scanner to decode Code 39 LaPoste labels.

DEFAULT

Code 39 LaPoste = Disable

Code 39 LaPoste = Enable

Code 32 (Italian Pharmaceutical)

The following options apply to the Code 32 symbology.

Code 32 Enable/Disable

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

DEFAULT

Code 32 = Disable

Code 32 = Enable

Code 32 Feature Setting Exceptions

NOTE

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

"Code 39 Quiet Zones" **on page 168**
"Code 39 Length Control" **on page 169**

Code 32 Check Character Transmission

Enable this option to transmit the check character along with Code 32 bar code 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/disable 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 scanner 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 scanner will not read Code 128 bar codes.

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. When enabled, the label identifier for a Code 128 label shall be set to Code 39 and all Code 39 formatting control shall be applied to the label.

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 bar code 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 Quiet Zones

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

Code 128 Quiet Zones = No Quiet Zones

Code 128 Quiet Zones = Quiet Zone on one side

Code 128 Quiet Zones = Quiet Zones on two sides

Code 128 Quiet Zones = Auto

DEFAULT

Code 128 Quiet Zones = Virtual Quiet Zones on two sides

Code 128 Length Control

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

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

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

DEFAULT

Code 128 Length Control = Variable Length

Code 128 Length Control = Fixed Length

Code 128 Set Length 1

This feature specifies one of the bar code lengths for Code 128 Length Control on page 179. Length 1 is the minimum label length if in Variable Length on page 179 Mode, or the first fixed length if in Fixed Length on page 179 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 80 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Code 128 Set Length 1 Setting

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

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

DEFAULT

01 = Length 1 is 1 Character

Code 128 Set Length 2

This feature specifies one of the bar code lengths for Code 128 Length Control on page 179. Length 2 is the maximum label length if in Variable Length on page 179 Mode, or the second fixed length if in Fixed Length on page 179 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 80 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Code 128 Length 2 Setting

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

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

CANCEL

DEFAULT **80 = Length 2 is 80 Characters**

GS1-128

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

GS1-128 Enable

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

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

GS1-128 = Transmit in Code 128 data format

GS1-128 = Transmit in GS1-128 data format

DEFAULT

GS1-128 = Do not transmit GS1-128 labels

GS1-128 2D Component

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

DEFAULT

GS1-128 2D Component = Disable

GS1-128 2D Component = Enable

Interleaved 2 of 5 (I 2 of 5)

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

CAUTION

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

I 2 of 5 Enable/Disable

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

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 Char Calc = Disable

I 2 of 5 Check Char Calc = Check Standard (Modulo 10)

I 2 of 5 Check Char Calc = Check German Parcel

I 2 of 5 Check Char Calc = Check DHL

I 2 of 5 Check Char Calc = Check Daimler Chrysler

I 2 of 5 Check Char Calc = Check Bosch

I 2 of 5 Check Character Calculation = Check Italian Post

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

I 2 of 5 Check Character Transmission

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

NOTE

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

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

I 2 of 5 Check Character Transmission = Send

DEFAULT

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 bar code lengths for I 2 of 5 Length Control on page 184. Length 1 is the minimum label length if in Variable Length on page 194 Mode, or the first fixed length if in Fixed Length on page 194 Mode. The length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters in increments of two. See "Set Length 1" on page 346 for more detailed programming instructions.

Select I 2 of 5 Length 1 Setting

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

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

CANCEL

DEFAULT **06 = Length 1 is 6 Characters**

I 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for I 2 of 5 Length Control on page 184. Length 2 is the maximum label length if in Variable Length on page 194 Mode, or the second fixed length if in Fixed Length on page 194 Mode. The length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select I 2 of 5 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

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 scanner to decode Interleaved 2 of 5 CIP HR labels.

DEFAULT

Interleaved 2 of 5 CIP HR = Disable

Interleaved 2 of 5 CIP HR = Enable

Matrix 2 of 5

Matrix 2 of 5 Enable/Disable

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

DEFAULT

Matrix 2 of 5 = Disable

Matrix 2 of 5 = Enable

Matrix 2 of 5 Check Character Calculation

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

Matrix 2 of 5 Check Character Calculation = Disable

Matrix 2 of 5 Check Character Calculation = Enable

DEFAULT

Matrix 2 of 5 Check Character Transmission

Enables/Disables transmission of Matrix 2 of 5 check character.

DEFAULT

Matrix 2 of 5 Check Character Transmission = Disable

Matrix 2 of 5 Check Character Transmission = Enable

Matrix 2 of 5 Length Control

This feature specifies variable length decoding or fixed length decoding for the Matrix 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

Matrix 2 of 5 Length Control = Variable length

Matrix 2 of 5 Length Control = Fixed length

Matrix 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for Matrix 2 of 5 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only. Length can be set from 01 to 50 characters.

Table 4 provides some examples for setting Length 1. See page 346 for detailed instructions on setting this feature.

Table 4. Matrix 2 of 5 Length 1 Setting Example

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT Matrix 2 of 5 LENGTH 1SETTING**				
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**				

Matrix 2 of 5 Set Length 1 Setting

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

CANCEL

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

Matrix 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for Matrix 2 of 5 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's check, data, and full-ASCII shift characters. Length does not include start/stop characters. Length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 5 provides some examples for setting Length 2. See page 346 for detailed instructions on setting this feature.

Table 5. Matrix 2 of 5 Length 2 Setting Example

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 Matrix 2 of 5 LENGTH 1SETTING**				
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**				

Matrix 2 of 5 Set Length 2 Setting

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

CANCEL

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

Datalogic 2 of 5

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

Datalogic 2 of 5 Enable/Disable

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

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 Check Character Transmission

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

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

DEFAULT

Datalogic 2 of 5 Check Character Transmission = Send

Datalogic 2 of 5 Length Control

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

Variable Length: For variable length decoding, a minimum 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 bar code lengths for Datalogic 2 of 5 Length Control on page 194. Length 1 is the minimum label length if in Variable Length on page 184 Mode, or the first fixed length if in Fixed Length on page 184 Mode. The length includes the bar code's data characters only.

The length can be set from 2 to 50 characters in increments of two. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Datalogic 2 of 5 Length 1 Setting

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

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

CANCEL

DEFAULT

06 = Length 1 is 6 Characters

Datalogic 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for Datalogic 2 of 5 Length Control on page 194. Length 2 is the maximum label length if in Variable Length on page 184 Mode, or the second fixed length if in Fixed Length on page 184 Mode. The length includes the bar code's data characters only.

The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Datalogic 2 of 5 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

Compressed 2 of 5

Compressed 2 of 5 Enable/Disable

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

DEFAULT

Compressed 2 of 5 = Disable

Compressed 2 of 5 = Enable

Compressed 2 of 5 Check Character Calculation

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

DEFAULT

Compressed 2 of 5 Check Character Calculation = Disable

Compressed 2 of 5 Check Character Calculation = Enable

Compressed 2 of 5 Check Character Transmission

Enables/disables transmission of optional Compressed 2 of 5 check character.

DEFAULT

Compressed 2 of 5 Check Character Transmission = Disable

Compressed 2 of 5 Check Character Transmission = Enable

Compressed 2 of 5 Length Control

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

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

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

DEFAULT

Compressed 2 of 5 Length Control = Variable Length

Compressed 2 of 5 Length Control = Fixed Length

Compressed 2 of 5 Set Length 1

This feature specifies one of the bar code lengths for Compressed 2 of 5 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only. The length can be set from 01 to 50 characters.

Table 6 provides some examples for setting Length 1. See page 346 for detailed instructions on setting this feature.

Table 6. Compressed 2 of 5 Length 1 Setting Example

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT Compressed 2 of 5 LENGTH 1SETTING**				
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 Compressed 2 of 5 Length 1 Setting

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

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

CANCEL

Compressed 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for Compressed 2 of 5 Length Control on page 197. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's check, data, and full–ASCII shift characters. The length does not include start/stop characters.The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 7 provides some examples for setting Length 1. See page 346 for detailed instructions on setting this feature.

Table 7. Compressed 2 of 5 Length 1 Setting Example

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT Compressed 2 of 5 LENGTH 1SETTING**				
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 Compressed 2 of 5 Length 2 Setting

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

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

CANCEL

Codabar

The following options apply to the Codabar symbology.

Codabar Enable/Disable

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

DEFAULT

Codabar = Disable

Codabar = Enable

Codabar Check Character Calculation

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

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 Calculation = Enable NW-7

Codabar Check Character Transmission

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

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

Codabar Check Character Transmission = Don't Send

Codabar Check Character Transmission = Send

DEFAULT

Codabar Start/Stop Character Transmission

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

Codabar Start/Stop Character Transmission = Don't Transmit

DEFAULT

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

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

Codabar Quiet Zones = Quiet Zone on one side

DEFAULT

Codabar Quiet Zones = Quiet Zones on two sides

Codabar Quiet Zones = Auto

Codabar Quiet Zones = Virtual Quiet Zone on two sides

Codabar Quiet Zones = Small Quiet Zone on two sides

Codabar Length Control

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

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

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

DEFAULT

Codabar Length Control = Variable Length

Codabar Length Control = Fixed Length

Codabar Set Length 1

This feature specifies one of the bar code lengths for Codabar Length Control on page 205. Length 1 is the minimum label length if in Variable Length on page 205 Mode, or the first fixed length if in Fixed Length on page 205 Mode. Length includes the bar code's start, stop, check and data characters. The length must include at least one data character.

The length can be set from 3 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Codabar Length 1 Setting

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

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

CANCEL

DEFAULT **03 = Length 1 is 3 Characters**

Codabar Set Length 2

This feature specifies one of the bar code lengths for Codabar Length Control on page 205. Length 2 is the maximum label length if in Variable Length on page 205 Mode, or the second fixed length if in Fixed Length on page 205 Mode. The length includes the bar code's start, stop, check and data characters. The length must include at least one data character.

The length can be set from 3 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Codabar Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

ABC Codabar

The following options apply to the ABC Codabar symbology.

ABC Codabar Enable/Disable

Enables/Disables ability of scanner 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

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

Select ABC Codabar Dynamic Concatenation Timeout Setting

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

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

CANCEL

DEFAULT **Default Quiet Interval = 20 ms**

ABC Codabar Force Concatenation

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

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

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 scanner will not read Code 11 bar codes.

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 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 bar code lengths for Code 11 Length Control on page 210. Length 1 is the minimum label length if in Variable Length on page 210 Mode, or the first fixed length if in Fixed Length on page 210 Mode. Length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Code 11 Set Length 1 Setting

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

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

CANCEL

DEFAULT **04 = Length 1 is 4 Characters**

Code 11 Set Length 2

This feature specifies one of the bar code lengths for Code 11 Length Control on page 210. Length 2 is the maximum label length if in Variable Length on page 210 Mode, or the second fixed length if in Fixed Length on page 210 Mode. Length includes the bar code's check and data characters.

The length can be set from 2 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Code 11 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

Standard 2 of 5

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

Standard 2 of 5 Enable/Disable

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

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 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 bar code lengths for Standard 2 of 5 Length Control on page 214. Length 1 is the minimum label length if in Variable Length on page 214 Mode, or the first fixed length if in Fixed Length on page 214 Mode. Length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Standard 2 of 5 Length 1 Setting

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

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

CANCEL

DEFAULT **08 = Length 1 is 8 Characters**

Standard 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for Standard 2 of 5 Length Control on page 214. Length 2 is the maximum label length if in Variable Length on page 214 Mode, or the second fixed length if in Fixed Length on page 214 Mode. Length includes the bar code's check and data characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Standard 2 of 5 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

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 scanner 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

DEFAULT

Industrial 2 of 5 Check Character Transmission = Enable

Industrial 2 of 5 Length Control

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

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

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

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 bar code lengths for Industrial 2 of 5 Length Control on page 218. Length 1 is the minimum label length if in Variable Length on page 169 Mode, or the first fixed length if in Fixed Length on page 169 Mode. Length includes the bar code's data characters only.

The length can be set from 1 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Industrial 2 of 5 Set Length 1 Setting

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

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

CANCEL

DEFAULT **Default value is 6**

Industrial 2 of 5 Set Length 2

This feature specifies one of the bar code lengths for Industrial 2 of 5 Length Control on page 218. Length 2 is the maximum label length if in Variable Length on page 169 Mode, or the second fixed length if in Fixed Length on page 169 Mode. Length includes the bar code's check, data, and full–ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Industrial 2 of 5 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

IATA

The following options apply to the IATA symbology.

IATA Enable/Disable

Enables/Disables the ability of the scanner 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

DEFAULT

IATA Check Character Transmission = Enable

ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

Enables/disables ISBT128 concatenation of 2 labels.

DEFAULT

ISBT 128 Concatenation = Disable

ISBT 128 Concatenation = Enable

ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

NOTE

This option is only valid when ISBT 128 Concatenation on page 222 is enabled (see page <Links>11-222).

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 Force Concatenation

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

NOTE **This option is only valid when ISBT 128 Concatenation on page 222 is enabled. (see page <Links>11-222).**

DEFAULT

ISBT 128 Force Concatenation = Disable

ISBT 128 Force Concatenation = Enable

ISBT 128 Advanced Concatenation Options

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

MSI

The following options apply to the MSI symbology.

MSI Enable/Disable

Enables/Disables ability of scanner 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

DEFAULT

MSI Check Character Transmission = Enable

MSI Length Control

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

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

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

DEFAULT

MSI Length Control = Variable Length

MSI = Fixed Length

MSI Set Length 1

This feature specifies one of the bar code lengths for MSI Length Control on page 226. Length 1 is the minimum label length if in Variable Length on page 226 Mode, or the first fixed length if in Fixed Length on page 226 Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select MSI Set Length 1 Setting

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

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

CANCEL

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

MSI Set Length 2

This feature specifies one of the bar code lengths for MSI Length Control on page 226. Length 2 is the maximum label length if in Variable Length on page 226 Mode, or the second fixed length if in Fixed Length on page 226 Mode. Length includes the bar code's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select MSI Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

PLESSEY

The following options apply to the Plessey symbology.

Plessey Enable/Disable

Enables/Disables ability of scanner to decode Plessey labels.

DEFAULT

Plessey = Disable

Plessey = Enable

Plessey Check Character Calculation

Enables/Disables calculation and verification of Plessey check character.

Plessey Check Character Calculation = Disable

DEFAULT

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

Plessey Check Character Calculation =
Enable Anker check char. verification

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

Plessey Check Character Transmission

Enables/Disables transmission of a Plessey check character.

Plessey Check Character Transmission = Disable

DEFAULT

Plessey Check Character Transmission = Enable

Plessey Length Control

This feature specifies 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 Length Control = Fixed length

Plessey Set Length 1

This feature specifies one of the bar code 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 bar code's data characters only. Length can be set from 01 to 50 characters.

Table 8 provides some examples for setting Length 1. See page 346 for detailed instructions on setting this feature.

Table 8. Plessey Length 1 Setting Example

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	01 Character	07 Characters	15 Characters	50 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT Plessey LENGTH 1SETTING**				
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**				

Plessey Set Length 1 Setting

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

CANCEL

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

Plessey Set Length 2

This feature specifies one of the bar code 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 bar code's check, data, and full–ASCII shift characters. Length does not include start/stop characters. Length can be set from 1 to 50 characters. A setting of 0 specifies to ignore this length (only one fixed length).

Table 9 provides some examples for setting Length 2. See page 346 for detailed instructions on setting this feature.

Table 9. Plessey Length 2 Setting Example

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 1SETTING**				
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**				

Plessey Set Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

Code 93

The following options apply to the Code 93 symbology.

Code 93 Enable/Disable

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

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.

DEFAULT

Code 93 Check Character Transmission = Disable

Code 93 Check Character Transmission = Enable

Code 93 Length Control

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

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

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

DEFAULT

Code 93 Length Control = Variable Length

Code 93 = Fixed Length

Code 93 Set Length 1

This feature specifies one of the bar code lengths for Code 93 Length Control on page 235. Length 1 is the minimum label length if in Variable Length on page 235 Mode, or the first fixed length if in Fixed Length on page 235 Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select Code 93 Set Length 1 Setting

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

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

CANCEL

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

Code 93 Set Length 2

This feature specifies one of the bar code lengths for Code 93 Length Control on page 235. Length 2 is the maximum label length if in Variable Length on page 235 Mode, or the second fixed length if in Fixed Length on page 235 Mode. Length includes the bar code's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select Code 93 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

Code 93 Quiet Zones

Enables/disables fixed length stitching for Code 93.

NOTE **This feature is available only on the TD1130 model.**

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

Follett 2 of 5

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

Follett 2 of 5 Enable/Disable

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

DEFAULT

Follett 2 of 5 = Disable

Follett 2 of 5 = Enable

BC412

The following options apply to the BC412 symbology.

BC412 Enable/Disable

Enables/Disables ability of scanner to decode BC412 labels.

DEFAULT

BC412 = Disable

BC412 = Enable

BC412 Check Character Calculation

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

BC412 Check Character Calculation = Don't Calculate

BC412 Check Character Calculation = Calculate Check Character

DEFAULT

BC412 Check Character Transmission

Enables/disables transmission of an optional BC412 check character..

BC412 Check Character Transmission = Disable

BC412 Check Character Transmission = Enable

DEFAULT

BC412 Length Control

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

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

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

DEFAULT

BC412 Length Control = Variable Length

BC412 Length Control = Fixed Length

BC412 Set Length 1

This feature specifies one of the bar code lengths for BC412 Length Control on page 241. Length 1 is the minimum label length if in Variable Length on page 241 Mode, or the first fixed length if in Fixed Length on page 241 Mode. Length includes the bar code's data characters only.

The length can be set from 01 to 50 characters. See "Set Length 1" on page 346 for more detailed programming instructions.

Select BC412 Set Length 1 Setting

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

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

CANCEL

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

BC412 Set Length 2

This feature specifies one of the bar code lengths for BC412 Length Control on page 241. Length 2 is the maximum label length if in Variable Length on page 241 Mode, or the second fixed length if in Fixed Length on page 241 Mode. Length includes the bar code's check, data, and full-ASCII shift characters. The length does not include start/stop characters.

The length can be set from 1 to 50 characters. A setting of 00 specifies to ignore this length (only one fixed length). See "Set Length 2" on page 347 for more detailed programming instructions.

Select BC412 Length 2 Setting

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

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

CANCEL

DEFAULT **50 = Length 2 is 50 Characters**

NOTES

2D Symbologies

2D Global Features	
▪ **2D MAXIMUM DECODING TIME** on page 246	▪ **2D NORMAL/INVERSE SYMBOL CONTROL** on page 247
▪ **2D STRUCTURED APPEND** on page 247	

The reader supports the following 2D symbologies (bar code types). Symbology-dependent options for each symbology are included in this chapter. See "1D Symbologies" starting on page 137 for configuration of 1D bar codes.

2D Symbologies	
▪ **AZTEC CODE** on page 248	▪ **MICRO PDF417** on page 265
▪ **CHINA SENSIBLE CODE** on page 251	▪ **QR CODE** on page 268
▪ **DATA MATRIX** on page 254	▪ **MICRO QR CODE** on page 271
▪ **GS1 DOTCODE** on page 257	▪ **UCC COMPOSITE** on page 274
▪ **PDF417** on page 262	▪ **POSTAL CODE SELECTION** on page 275

2D Global Features

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

To set most features:

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

NOTE

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

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

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

2D Maximum Decoding Time

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

2D Maximum Decoding Time = 100 msec

2D Maximum Decoding Time = 200 msec

2D Maximum Decoding Time = 350 msec

DEFAULT

2D Maximum Decoding Time = 500 msec

2D Maximum Decoding Time = 1 Second

2D Maximum Decoding Time = 2 Seconds

2D Maximum Decoding Time = 2.55 Seconds

2D Structured Append

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

- Data Matrix
- QR Code
- Aztec
- PDF 417

DEFAULT

Structured Append = Disable

Structured Append = Enable

2D Normal/Inverse Symbol Control

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

DEFAULT

Normal/Inverse Symbol Control = Normal

Normal/Inverse Symbol Control = Inverse

Normal/Inverse Symbol Control = Both Normal and Inverse

Symbology Selection

Aztec Code

Aztec Code Enable / Disable

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

Aztec Code = Disable

Aztec Code = Enable

DEFAULT

Aztec Code Length Control

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

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

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

DEFAULT

Aztec Code Length Control = Variable Length

Aztec Code Length Control = Fixed Length

Aztec Code Set Length 1

Specifies one of the bar code lengths for Aztec Code Length Control on page 248. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,832 characters in increments of 0001 (pad with zeroes).

See page 346 for detailed instructions on setting this feature.

Select Aztec Code Length 1 Setting

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

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

CANCEL

DEFAULT

0001 = Length 1 is 1 Character

Aztec Code Set Length 2

This feature specifies one of the bar code lengths for Aztec Code Length Control on page 248. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,832 characters in increments of 0001 (pad with zeroes).

See page 347 for detailed instructions on setting this feature.

Select Aztec Code Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 3,832 Characters**

China Sensible Code

China Sensible Code Enable / Disable

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

DEFAULT

China Sensible Code = Disable

China Sensible Code = Enable

China Sensible Code Length Control

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

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

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

DEFAULT

China Sensible Code Length Control = Variable Length

China Sensible Code Length Control = Fixed Length

China Sensible Code Set Length 1

Specifies one of the bar code lengths for China Sensible Code Length Control on page 251. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,827 characters in increments of 0001 (pad with zeroes).

See page 346 for detailed instructions on setting this feature.

Select China Sensible Code Length 1 Setting

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

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

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

China Sensible Code Set Length 2

This feature specifies one of the bar code lengths for China Sensible Code Length Control on page 251. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,827 characters in increments of 0001 (pad with zeroes).

See page 347 for detailed instructions on setting this feature.

Select China Sensible Code Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 7,827 Characters**

Data Matrix

Data Matrix Enable / Disable

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

Data Matrix = Disable

Data Matrix = Enable

DEFAULT

Data Matrix Square/Rectangular Style

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

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

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

Data Matrix Dimensions Mask = Square Style

Data Matrix Dimensions Mask = Rectangular Style

DEFAULT

Data Matrix Dimensions Mask =
Both Square and Rectangular Style

Data Matrix Length Control

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

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

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

DEFAULT

Data Matrix Length Control = Variable Length

Data Matrix Length Control = Fixed Length

Data Matrix Set Length 1

Specifies one of the bar code lengths for Data Matrix Length Control on page 255. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,116 characters in increments of 0001 (pad with zeroes).

See page 346 for detailed instructions on setting this feature.

Select Data Matrix Length 1 Setting

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

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

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

Data Matrix Set Length 2

This feature specifies one of the bar code lengths for Data Matrix Length Control on page 255. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 3,116 characters in increments of 0001 (pad with zeroes).

See page 347 for detailed instructions on setting this feature.

Select Data Matrix Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 3,116 Characters**

GS1 DotCode

The following options apply for the DotCode barcode decoding.

DotCode Enable

This options enables/disables the ability of the scanner to decode DotCode barcodes.

DotCode = Enable

DEFAULT

DotCode = Disable

DotCode High Resolution Enable

This options improves the decoding performance for very small module size barcodes, e.g. tobacco products..

DEFAULT

DotCode High Resolution= Enable

DotCode High Resolution = Disable

DotCode Position-based Decoding

This option can improve the decoding performance when the next barcode to be decoded is approximately shown in the same position as the previous one.

DotCode Position-based Decoding = Enable

DEFAULT

DotCode Position-based Decoding = Disable

Additional Options

To improve performances the following additional settings are available using Aladdin configuration utility, downloadable from www.datalogic.com.

- Dot Size
- Fixed Length or Variable Length
- Min and Max barcode size

Maxicode

Maxicode Enable / Disable

Enables/disables ability of reader to decode Maxicode labels.

DEFAULT

Maxicode = Disable

Maxicode = Enable

Maxicode Primary Message Transmission

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

DEFAULT

Maxicode Primary Message Transmission = Disable

Maxicode Primary Message Transmission = Enable

Maxicode Length Control

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

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

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

DEFAULT

Maxicode Length Control = Variable Length

Maxicode Length Control = Fixed Length

Maxicode Set Length 1

Specifies one of the bar code lengths for Maxicode Length Control on page 260. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0145 characters in increments of 0001 (pad with zeroes).

See page 346 for detailed instructions on setting this feature.

Select Maxicode Length 1 Setting

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

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

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

Maxicode Set Length 2

This feature specifies one of the bar code lengths for Maxicode Length Control on page 260. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0145 characters in increments of 0001 (pad with zeroes).

See page 347 for detailed instructions on setting this feature.

Select Maxicode Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 0145 Characters**

PDF417

PDF417 Enable / Disable

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

PDF417 = Disable

PDF417 = Enable

DEFAULT

PDF417 Length Control

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

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

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

DEFAULT

PDF417 Length Control = Variable Length

PDF417 Length Control = Fixed Length

PDF417 Set Length 1

Specifies one of the bar code lengths for PDF417 Length Control on page 262. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only. Characters can be set from 0001 to 2,710 characters (pad with zeroes) in increments of 01. Any value greater than 2,710 will be considered to be 2,710.

See page 346 for detailed instructions on setting this feature.

Select PDF417 Length 1 Setting

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

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

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

PDF417 Set Length 2

This feature specifies one of the bar code lengths for PDF417 Length Control on page 262. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the bar code's check, data, and full–ASCII shift characters. The length does not include start/stop characters. Characters can be set from 01 to 2,710 characters (pad with zeroes) in increments of 01. Any value greater than 2,710 will be considered to be 2,710.

See page 347 for detailed instructions on setting this feature.

Select PDF417 Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 2,710 Characters**

Micro PDF417

Micro PDF417 Enable / Disable

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

DEFAULT

Micro PDF417 = Disable

Micro PDF417 = Enable

Micro PDF417 Code 128 GS1-128 Emulation

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

Emulation choices are:

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

DEFAULT

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

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

Micro PDF417 Length Control

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

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

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

DEFAULT

Micro PDF417 Length Control = Variable Length

Micro PDF417 Length Control = Fixed Length

Micro PDF417 Set Length 1

Specifies one of the bar code lengths for Micro PDF417 Length Control on page 266. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the bar code's data characters only. Characters can be set from 0001 to 0366 characters (pad with zeroes) in increments of 01. Any value greater than 0366 will be considered to be 0366.

See page 346 for detailed instructions on setting this feature.

Select Micro PDF417 Length 1 Setting

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

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

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

Micro PDF417 Set Length 2

This feature specifies one of the bar code lengths for Micro PDF417 Length Control on page 266. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length includes the bar code's data characters only. Characters can be set from 0001 to 0366 characters (pad with zeroes) in increments of 01. Any value greater than 0366 will be considered to be 0366.

See page 347 for detailed instructions on setting this feature.

Select Micro PDF417 Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 0366 Characters**

QR Code

QR Code Enable / Disable

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

QR Code = Disable

DEFAULT

QR Code = Enable

QR Code Length Control

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

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

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

DEFAULT

QR Code Length Control = Variable Length

QR Code Length Control = Fixed Length

QR Code Set Length 1

Specifies one of the bar code lengths for QR Code Length Control on page 268. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,089 characters in increments of 0001 (pad with zeroes).

See page 346 for detailed instructions on setting this feature.

Select QR Code Length 1 Setting

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

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

CANCEL

DEFAULT

0001 = Length 1 is 1 Character

QR Code Set Length 2

This feature specifies one of the bar code lengths for QR Code Length Control on page 268. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 7,089 characters in increments of 0001 (pad with zeroes).

See page 347 for detailed instructions on setting this feature.

Select QR Code Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 7,089 Characters**

Micro QR Code

Micro QR Code Enable/Disable

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

DEFAULT

Micro QR Code = Disable

Micro QR Code = Enable

Micro QR Code Length Control

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

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

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

DEFAULT

Micro QR Code Length Control = Variable Length

Micro QR Code Length Control = Fixed Length

Micro QR Code Set Length 1

Specifies one of the bar code lengths for Micro QR Code Length Control on page 271. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0035 characters in increments of 0001 (pad with zeroes).

See page 346 for detailed instructions on setting this feature.

Select Micro QR Code Length 1 Setting

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

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

CANCEL

DEFAULT **0001 = Length 1 is 1 Character**

Micro QR Code Set Length 2

This feature specifies one of the bar code lengths for Micro QR Code Length Control on page 271. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Characters can be set from 0001 to 0035 characters in increments of 0001 (pad with zeroes).

See page 347 for detailed instructions on setting this feature.

Select Micro QR Code Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 0035 Characters**

UCC Composite

UCC Optional Composite Timer

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

UCC Optional Composite Timer = Timer Disabled

UCC Optional Composite Timer = 70msec

UCC Optional Composite Timer = 100msec

UCC Optional Composite Timer = 200msec

UCC Optional Composite Timer = 300msec

Postal Code Selection

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

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

DEFAULT

Postal Code Selection = Disable All Postal Codes

Postal Code Selection = Enable Postnet

Postal Code Selection = Enable Planet

Postal Code Selection = Enable Royal Mail

Postal Code Selection = Enable Kix

Postal Code Selection = Enable Australia Post

Postal Code Selection (continued)

Postal Code Selection = Enable Japan Post

Postal Code Selection = Enable IMB

Postal Code Selection = Enable Sweden Post

Postal Code Selection = Enable Portugal Post

Postnet BB Control

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

DEFAULT

Postnet BB Control = Disable

Postnet BB Control = Enable

OCR Decoding

The Gx45 barcode family is equipped with an Optical Character Recognition feature.

This section describes how to configure the Datalogic barcode scanner to enable OCR decoding.

The Gx45 models support the following OCR font types:

- OCR-A
- OCR-B
- MICR E13B
- US Currency Serial Number.

In most OCR applications a suitable usage of check digits and the addition of constraints on sub-strings types (e.g. digits-only or letter-only) reduces mis-decoding probabilities.

The user can choose between a set of predefined templates (already optimized for decoding) and customizable free templates.

For free templates, as OCR decoding is less reliable than traditional barcode decoding, the scanner provides tools to minimize misdecoded labels. As a result, particular care shall be dedicated to the setup of free custom templates to reduce incorrect output.

For more information on how to customize the user templates for your needs, please contact Datalogic Technical Support.

Use one of the following labels to enable one of the predefined templates for OCR decoding.

Enter/Exit Programming Mode

OCR predefined template: EU ID Card OCR Format

EU Identity Card OCR

OCR predefined template: IATA Passport

IATA Passport OCR

OCR predefined template: Italian Post payment form

Italian Post OCR Payment

OCR predefined template: Italian Bank payment form

Enable Italian Bank Freccia Bank Payment form

OCR predefined template: Swiss Driving License

Enable Swiss Driving License OCR

OCR Decoding Disable

Use the following label to turn off the OCR decoding feature:

Disable OCR function

DEFAULT

NOTES

Battery Profiles

Gryphon GBT/GM45 provides the user the ability to select different usage profiles to better configure the reader with respect to specific needs. By default, the Maximum Performances profile is selected and provides high snappiness and max reading capability. The user can then decide to exploit specific features when others are considered less important, for instance: fast battery recharge instead of battery health, maximum reading performances instead of battery autonomy, etc.

Here below different Battery Profiles are described with associated benefits and limitations:

	Maximum Performances (default) • Scanner autonomy for heavy workload (80.000 scans for more than 22h[a]) • Motionix™ enabled • Max radio communication performances	
	Maximum Battery Health • Battery capacity is preserved[b] • Reduced max charging current • Reduced battery capacity by ~20% • Increased recharge time: +20% on average (it depends on the specific scanner configuration)	
	Maximum Autonomy • Max scanner autonomy (approx. 83h[c]) • Motionix™ disabled • Vibro motor disabled • Reduced Radio Star™ responsiveness[d] • Increased Sniff-time period[e] (Bluetooth™)	
	Fast Charge • Reduced recharge time (approx. 20%) • Motionix™ disabled • Vibro motor disabled • Scan-While-Charging disabled (Trigger Single)	

a. 1 read per second, continuous reading with no idle status

b. after 300 full charge cycles at room temperature 25° C (77° F), more than 80% of the original capacity is still available

c. 10 reads in 10 seconds and 50 seconds idle

d. host commands from cradle will not be received, asynchronous data from cradle will not be received, out-of-range signaling will not work, configuration exchange will not be executed automatically (only after trigger pressure)

e. barcode reading shall be less snappy, execution of commands received from base shall be delayed until gun is ready

Battery Information

By using Datalogic Aladdin utility, additional battery data can be retrieved, i.e.:

- HH Serial Number
- Charge %
- Health %
- Full Charge Capacity
- Designed Capacity
- Nominal Capacity
- Remaining Capacity
- Discharging Counter
- Charging Status
- Charging (Cradle) Battery Voltage
- Battery Current
- Manufacturer Date
- Battery Serial Number
- Battery Model Number

If more than one scanner is connected to a cradle, battery data will be retrieved for each scanner.

Motion Features

MOTION AIMING CONTROL on page 283
MOTION SENSITIVITY on page 283
MOTIONLESS TIMEOUT on page 284

Use this chapter to configure motion settings for the handheld.

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

Motion Aiming Control

Configures the ability of the scanner to Enable/Disable the Aiming system when motion is detected.

Motion Aiming Control = Disable

DEFAULT

Motion Aiming Control = Enable

Motion Sensitivity

Defines discrete set of levels for scanner motion sensitivity when in handheld use.

Motion Sensitivity = Low

DEFAULT

Motion Sensitivity = Medium

Motion Sensitivity = High

Motionless Timeout

Specifies the waiting time in 100 millisecond ticks to assume that the reader is in a motionless condition. The selectable range is 500 msec to 25.5 Seconds. When no motion event is detected for a period of time longer than this timeout, the software assumes the reader is in a motionless condition. This normally results in returning the scanner to Stand Mode. This option relates to such features as Aimer On and Stand Mode/Object Detection scanning with respect to motion.

Select Motionless Timeout Setting

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

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

CANCEL

DEFAULT

020 = Motionless Timeout = 2 seconds

Wireless Features

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

WIRELESS BEEPER FEATURES starting on page 286
- Good Transmission Beep on page 286
- Beep Frequency on page 286
- Beep Duration on page 287
- Beep Volume on page 288
- Disconnect Beep on page 288
- Docking Beep on page 289
- Leash Alarm on page 289

CONFIGURATION UPDATES starting on page 291
- Automatic Configuration Update on page 344
- Copy Configuration to Scanner on page 291
- Copy Configuration to Base Station on page 291

BATCH FEATURES starting on page 292
- Batch Mode on page 292
- Send Batch on page 293
- Erase Batch Memory on page 293
- RF Batch Mode Transmit Delay on page 294

DIRECT RADIO AUTOLINK starting on page 295

RF ADDRESS STAMPING starting on page 296
- Source Radio Address Transmission on page 296
- Source Radio Address Delimiter Character on page 297

BLUETOOTH-ONLY FEATURES starting on page 298
- Bluetooth Security Level on page 298
- Bluetooth Radio Output Power on page 300
- Wi-Fi Channels Exclusion on page 300
- Bluetooth HID Features on page 306

POWERDOWN TIMEOUT starting on page 310

FEATURES FOR STAR MODELS ONLY starting on page 311
- STAR Radio Protocol Timeout on page 311
- STAR Radio Transmit Mode on page 312
- STAR System Speed on page 313
- STAR Frequency Agility on page 314

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.

Disconnect Beep = Disable

Disconnect Beep = Enable

DEFAULT

Docking Beep

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

Docking Beep = Disable

DEFAULT

Docking Beep = Enable

Leash Alarm

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

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

DEFAULT

Leash Alarm = Disabled

Leash Alarm = 1 Second

Leash Alarm = 2 Seconds

Leash Alarm (continued)

Leash Alarm = 3 Seconds

Leash Alarm = 4 Seconds

Leash Alarm = 5 Seconds

Leash Alarm = 10 Seconds

Leash Alarm = 25 Seconds

Leash Alarm = 30 Seconds

Configuration Updates

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 344 for more information on this feature.

Automatic Configuration Update = Disable

DEFAULT

Automatic Configuration Update = Enable

Copy Configuration to Scanner

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

NOTE

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

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

NOTE

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

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

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

NOTE

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

Send Batch

Erase Batch Memory

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

NOTE

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

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

Direct Radio Autolink

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

DEFAULT

Direct Radio Link = Unlink Label Required

Direct Radio Link = Automatic Unlinking

RF Address Stamping

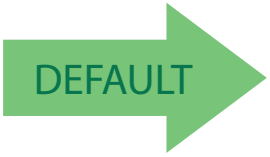
These features allow configuration of source radio data inclusion.

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 344 in “References” for detailed information and examples for setting this feature.

NOTE

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



Source Radio Address Transmission = Do Not Include

Source Radio Address Transmission = Prefix

Source Radio Address Delimiter Character

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

NOTE **This feature only applies if "Source Radio Address Transmission" on page 296 is enabled.**

Set Source Radio Address Delimiter Character

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

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

CANCEL

DEFAULT **00 = No Delimiter Character**

Bluetooth-Only Features

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

NOTE

Changing the configuration parameters described in this section may cause a temporary loss of the Bluetooth connection between the Reader and the remote device.

Bluetooth Security Level

NOTE

This parameter applies when pairing the Reader with a third party Bluetooth device. It has no effect when linking the Reader to a Base station.

Set this parameter according to the security requirements of the application scenario when the reader will be employed.

- Select **Level 1 – lowest** when the main application requirement is to avoid any user interaction (e.g. Passkey or PIN entry) during the pairing process. When using this setting, the resulting Bluetooth connection will be encrypted but not authenticated.
- Select **Level 2** when encryption is required, authentication is not required, and minimal user interaction is desired. In this case the Host may ask the user to enter a 6-digit Bluetooth Passkey during the pairing process.
- Select **Level 3 – highest** when a secure connection to the Host is desired, with both encryption and authentication. In this case the Host will ask the user to enter a 6-digit Bluetooth Passkey or a Bluetooth PIN during the pairing process.

If the Host prompts the user to enter a Bluetooth Passkey or PIN code during the pairing process, please refer to "Bluetooth Passkey or PIN Code Entry Request" on page 27 to perform this task.

NOTE

When device authentication takes place during the pairing process, by means of the passkey or PIN entry, the resulting Bluetooth link is protected from Man-In-The-Middle (MITM) malicious attacks.

NOTE

The actual behaviors of the Reader and of the Host system during the pairing process depend on the security settings of both devices involved, and on the input and output means available on each device to interface with the user.

This means that:

- **the user may be required to enter a BT Passkey during the pairing process even if the reader's BT Security Level is set to "Encryption required, authentication not required". This depends on the configuration of the Host system.**
- **when the reader's BT Security Level is set to "Encryption and authentication required", it may not be possible to connect to a Host system if the latter cannot support the Passkey Entry authentication procedure. In this case, try to set the reader's BT Security Level to "Encryption required, authentication not required" to establish the connection.**

NOTE

Changing the BT Security Level setting will unlink the Reader from the remote device.

BT Security level = Level 1 - lowest

DEFAULT

BT Security level = Level 2

BT Security level = Level 3 - highest

Bluetooth Radio Output Power

Set this parameter according to the desired radio range of the Reader:

- **Class 1**: max 100 meters
- **Class 2**: max 20 meters
- **Class 3**: max 5 meters

Reducing the maximum radio range can help extend the battery life of the Reader and reduce the interferences caused to nearby wireless devices that operate in the same 2.4 GHz frequency band.

Bluetooth Output Power = Class 1 (highest)

DEFAULT

Bluetooth Output Power = Class 2

Bluetooth Output Power = Class 3 (lowest)

Wi-Fi Channels Exclusion

In case the Reader operates in the same environment as 2.4 GHz Wi-Fi equipment, set this parameter to configure the strategy that the Reader should employ to minimize the interferences between Bluetooth and Wi-Fi wireless technologies.

- If the specific 802.11 standard or the frequency channels used by the Wi-Fi equipment are unknown, select **Automatic** to let the Reader use the Adaptive Frequency Hopping (AFH) feature of Bluetooth technology. With this setting, the Reader and the remote Bluetooth device may automatically detect the frequency channels affected by a significant level of interference, and avoid using these channels during Bluetooth data exchange.
- If the specific 802.11 standard and the frequency channels used by the Wi-Fi equipment are known, select the corresponding combination from the list of programming labels below or use the Datalogic Aladdin tool. With this setting, the Reader and the remote Bluetooth device avoid using the Bluetooth frequency channels that overlap with the already occupied

Wi-Fi channels.
For example, if the co-located 2.4 GHz Wi-Fi equipment operates according to the 802.11g standard on channels n. 6 and n. 11, read the **802.11b/g ch.6 and 11** programming label.

NOTE

The programming labels in the list below cover the most popular combinations of 802.11 standards and 2.4 GHz Wi-Fi channels. If the configuration command corresponding to your specific scenario is not listed, please contact Datalogic Technical Support for further configuration options.

WiFi Ch. Exclusion = Automatic

DEFAULT

WiFi Ch. Exclusion = 802.11b/g ch.1

WiFi Ch. Exclusion = 802.11b/g ch.2

WiFi Ch. Exclusion = 802.11b/g ch.3

WiFi Ch. Exclusion = 802.11b/g ch.4

WiFi Ch. Exclusion = 802.11b/g ch.5

WiFi Ch. Exclusion = 802.11b/g ch.6

WiFi Ch. Exclusion = 802.11b/g ch.7

WiFi Ch. Exclusion = 802.11b/g ch.8

WiFi Ch. Exclusion = 802.11b/g ch.9

WiFi Ch. Exclusion = 802.11b/g ch.10

WiFi Ch. Exclusion = 802.11b/g ch.11

WiFi Ch. Exclusion = 802.11b/g ch.12

WiFi Ch. Exclusion = 802.11b/g ch.13

WiFi Ch. Exclusion = 802.11b/g ch.14

WiFi Ch. Exclusion = 802.11b/g ch.1 and 6

WiFi Ch. Exclusion = 802.11b/g ch.1 and 11

WiFi Ch. Exclusion = 802.11b/g ch.6 and 11

WiFi Ch. Exclusion = 802.11b/g ch.1 and 6 and 11

WiFi Ch. Exclusion = 802.11b/g ch.2 and 7

WiFi Ch. Exclusion = 802.11b/g ch.2 and 12

WiFi Ch. Exclusion = 802.11b/g ch.7 and 12

WiFi Ch. Exclusion = 802.11b/g ch.2 and 7 and 12

WiFi Ch. Exclusion = 802.11b/g ch.3 and 8

WiFi Ch. Exclusion = 802.11b/g ch.3 and 13

WiFi Ch. Exclusion = 802.11b/g ch.8 and 13

WiFi Ch. Exclusion = 802.11b/g ch.3 and 8 and 13

WiFi Ch. Exclusion = 802.11b/g ch.4 and 9

WiFi Ch. Exclusion = 802.11b/g ch.4 and 14

WiFi Ch. Exclusion = 802.11b/g ch.9 and 14

WiFi Ch. Exclusion = 802.11b/g ch.4 and 9 and 14

WiFi Ch. Exclusion = 802.11b/g ch.5 and 10

WiFi Ch. Exclusion = 802.11n ch.3

WiFi Ch. Exclusion = 802.11n ch.11

Bluetooth HID Features

Before connecting the Reader to a Bluetooth HID host device, the keyboard emulation used for label transmission can be configured using the parameters described in this section, plus the following parameters:

- Setting Encoding Type on page 73
- Setting ALT output type on page 80
- Keyboard Numeric Keypad on page 82
- Keyboard Send Control Characters on page 83

Bluetooth HID Alt Mode

Enable/Disable the ability to correctly transmit a label to the host regardless of the Bluetooth HID Country Mode selected, when Bluetooth HID Profile is configured.

Read the configuration command label below for the HID Alt Mode feature.

HID Alt Mode = OFF

DEFAULT

HID Alt Mode = ON

HID Country Mode

When the Reader is connected with a Bluetooth Adapter in HID mode, you may want to set the country for which your PC is localized. In order to do that, read one of the configuration command labels below.

Country Mode = U.S.

DEFAULT

Country Mode = Belgium

Country Mode = Britain

Country Mode = Croatia

Country Mode = Czech Republic

Country Mode = Denmark

Country Mode = France

Country Mode = French Canadian

Country Mode = Germany

Country Mode = Hungary

Country Mode = Italy

Country Mode = Japanese 106-key

Country Mode = Lithuanian

Country Mode = Norway

Country Mode = Poland

Country Mode = Portugal

Country Mode = Romania

Country Mode = Spain

Country Mode = Sweden

Country Mode = Slovakia

Country Mode = Switzerland

Powerdown Timeout

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

Powerdown Timeout = Disable

Powerdown Timeout = 10 minutes

Powerdown Timeout = 20 minutes

Powerdown Timeout = 30 minutes

DEFAULT

Powerdown Timeout = 60 Minutes (1 Hour)

Powerdown Timeout = 120 Minutes (2 Hours)

Features for Star Models only

The features in this section are valid only for the Gryphon I GM450X Star model:

- STAR Radio Protocol Timeout on page 311
- STAR Radio Transmit Mode on page 312

STAR Radio Protocol Timeout

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

When setting this parameter, take into consideration the radio traffic (number of readers in the same area). The selectable range for this feature is from 02 to 25 seconds. See page 345 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

NOTE

ACK from host works only for RS-232 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 349 for details.

NOTE

The Base Station can receive a host message only if Host Commands Obey/Ignore (page 39) is set to Ignore.

STAR System Speed

By default, the Reader and the Base exchange data at high speed over the wireless communication channel. Reducing the speed from high to low, the radio range can be further extended. Moreover, when using low speed, the Reader can be configured to use the STAR Frequency Agility feature (see "STAR Frequency Agility" on page 314) also for the 433 MHz model (see Table 10 on page 315).

To change the STAR System Speed, follow this procedure:

1. link the Reader to the Base;
2. read either the “High speed” or “Low speed” programming label below to set the desired speed;
3. place the Reader into the Base.

The Reader and the Base will now be linked at the new programmed speed.

This feature can also be programmed using the Datalogic Aladdin tool:

1. set the STAR System Speed to “High speed” or “Low speed” through Aladdin;
2. place an unlinked Reader into the Base.

The Reader and the Base will link at the new programmed speed.

NOTE

Gryphon Star 433 MHz models do not support all combinations of STAR System Speed and STAR Frequency Agility (see "STAR Frequency Agility" on page 314) configuration parameters. Please refer to Table 10 on page 315 for the allowed combinations.

DEFAULT	STAR System Speed = High speed
STAR System Speed = Low speed	

STAR Frequency Agility

In exceptionally noisy environments or in case of a high concentration of radio devices, the STAR system performance may be improved by enabling the STAR Frequency Agility feature. This feature changes the way the radio frequencies are used in a STAR communication system.

As in the case of the STAR System Speed, use the following procedure:

1. link the Reader to the Base;
2. read one of the “Frequency Agility” programming label below;
3. place the Reader into the Base.

The Reader and the Base will be linked and the new frequency handling strategy will be operational.

NOTE

It is possible to configure the STAR system to use a fixed channel with different frequency from the default one. Please contact Datalogic Technical Support for information about this feature. Please refer to Table 10 on page 315 **for valid combinations of this feature with the STAR System Speed configuration parameter.**

NOTE

Gryphon Star 433 MHz models do not support all combinations of STAR Frequency Agility and STAR System Speed (see "STAR System Speed" on page 313**) configuration parameters. Please refer to** Table 10 on page 315 **for the allowed combinations.**

DEFAULT	STAR Frequency Agility = Disabled (use default fixed channel)
STAR Frequency Agility = Enabled	

Table 10. Supported combinations of STAR System Speed and STAR Frequency Agility configuration parameters

System Speed	Frequency Agility	Fixed channel different from default
433 MHz Model		
Low Speed	Yes	Yes
High Speed	No	No
910 MHz Model		
Low Speed	Yes	Yes
High Speed	Yes	Yes

NOTES

Chapter 4 References

This section contains explanations and examples of selected bar code features. See "Configuration Using Bar Codes" starting on page 37 for the actual bar code labels used to configure the scanner.

RS-232 PARAMETERS on page 318
- RS-232 Only on page 318
- RS-232/USB COM Parameters on page 319

KEYBOARD INTERFACE on page 326
- Wedge Quiet Interval on page 326
- Intercharacter Delay on page 327
- Intercode Delay on page 328

DATA FORMAT on page 329
- Data Editing on page 329
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SCANNING FEATURES on page 337
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RS-232 Parameters

RS-232 Only

Baud Rate

Baud rate is the number of bits of data transmitted per second. Set the scanner'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.

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.

Stop Bits

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

Parity

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

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

Handshaking Control

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

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

RS-232/USB COM Parameters

Intercharacter Delay

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

To set the delay:

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Go to page 48 and scan the bar code: SELECT INTERCHARACTER DELAY SETTING.
5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

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

Table 11. 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'	'1' and 5'	'6' and '0'	'8' and '5'
6	Scan ENTER/EXIT PROGRAMMING MODE				

ACK NAK Options

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

Options are:

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

ACK Character

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

NOTE **Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option** Data Bits on page 43 **has been set as 7 Data Bits.**

1. Determine the desired character or value.
2. Use the ASCII Chart on page 385 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan ENTER/EXIT PROGRAMMING MODE to enter Programming Mode.
4. Scan the bar code: SELECT ACK CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit.

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

Table 12. ACK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Character/Value**	ACK	$	@	>
2	**Hex equivalent from** ASCII Chart on page 385	0x06	0x24	0x40	0x3E
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ACK CHARACTER SETTING**				
5	**Scan Two Characters from** Appendix D, Keypad	'0' and '6'	'2' and '4'	'4' and '0'	'3' AND 'E'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

NAK Character

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

NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 43 **has been set as 7 Data Bits.**

To set this feature:

1. Determine the desired character or value.
2. Use the ASCII Chart on page 385 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT NAK CHARACTER SETTING.
5. Scan the appropriate two alpha-numeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

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

Table 13. NAK Character Setting Examples

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

ACK NAK Timeout Value

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

To set this value:

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

NOTE

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

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

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

Table 14. 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 scanner retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries.

To set this feature:

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

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

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

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

Table 15. 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 scanner. ASCII characters or any hex value from 0 to 0xFF can be selected.

NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 43 **has been set as 7 Data Bits.**

To set the value:

1. Determine the desired character or value. A setting of 0xFF indicates the Disable Character is not used (not available).
2. Use the ASCII Chart on page 385 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT DISABLE CHARACTER SETTING on page 55.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

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

Table 16. Disable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/value**	'd'	'}'	'D'	Disable Command Not Used
2	**Hex equivalent from** ASCII Chart on page 385	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 scanner. ASCII characters or any hex value from 0 to 0xFF can be selected.

NOTE

Setting to previously defined characters such as XON, XOFF, or host commands conflicts with normal operation of these characters. 8-bit data is not recognized when the option Data Bits on page 43 **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 page 385 on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT ENABLE CHARACTER SETTING on page 56.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D, Keypad, that represent the desired character/value determined above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE bar code to exit Programming Mode.

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

Table 17. Enable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/value**	'e'	'}'	'E'	Enable Command Not Used
2	**Hex equivalent from** ASCII Chart on page 385	0x65	0x7D	0x45	0xFF
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ENABLE CHARACTER 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 scanner 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.

NOTE

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 84 and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Prog. Mode.
4. Scan the bar code: SELECT WEDGE QUIET INTERVAL SETTING on page 84.
5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

NOTE

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

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

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

Table 18. 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.

NOTE

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 85 and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCHARACTER DELAY SETTING on page 85.
5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

NOTE

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

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

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

Table 19. 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 86 and scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT INTERCODE DELAY SETTING on page 86.
5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

NOTE

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

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

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

Table 20. Wedge Intercode Delay Examples

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

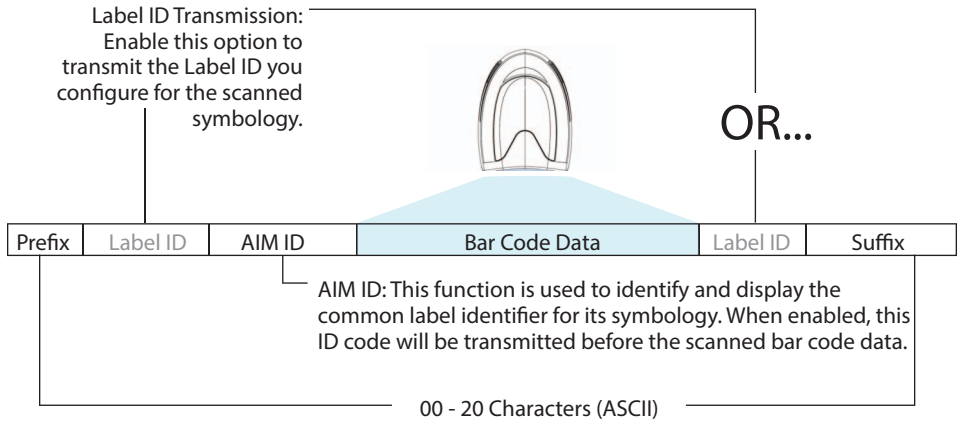
Data Format

Data Editing

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

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

Figure 17. Breakdown of a Message String



NOTE **Additional advanced editing is available. See the Advanced formatting features in the Datalogic Aladdin configuration software, or contact Technical Support (see page 2) for more information.**

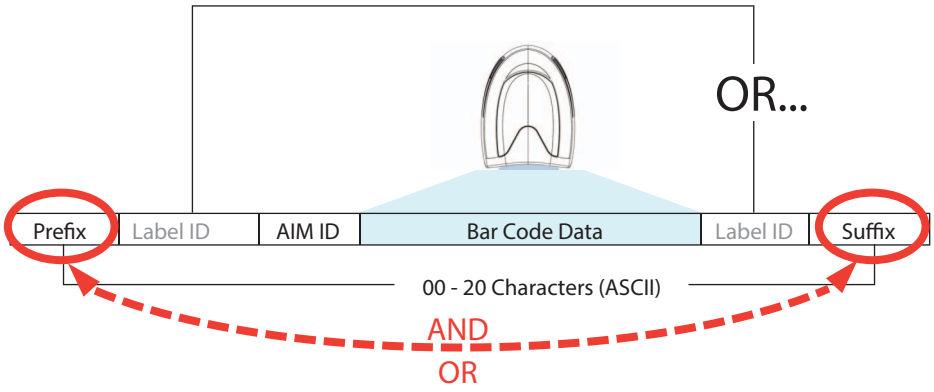
Please Keep In Mind...

- Modifying a message string is not a mandatory requirement. Data editing is a sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.
- A prefix or suffix may be applied only to a specified symbology (reference 1D Symbologies, starting on page 137) or across all symbologies (set via the Global features in Configuration Using Bar Codes, starting on page 37).
- You can add any character from the ASCII Chart on page 385 (from 00-FF) on the inside back cover of this manual as a prefix, suffix or Label ID.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

Global Prefix/Suffix

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

Figure 18. Prefix and Suffix Positions



Example: Setting a Prefix

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

1. Determine which ASCII character(s) are to be added to scanned bar code data. In this example, we'll add a dollar sign ('$') as a prefix.
2. Scan the ENTER/EXIT PROGRAMMING MODE bar code, then scan the SET GLOBAL PREFIX bar code.
3. Reference the ASCII Chart on page 385 on the inside back cover of this manual to find the hex value assigned to the desired character. The corresponding hex number for the '$' character is 24. To enter this selection code, scan the '2' and '4' bar codes from Appendix D, Keypad.

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

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

Global AIM ID

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

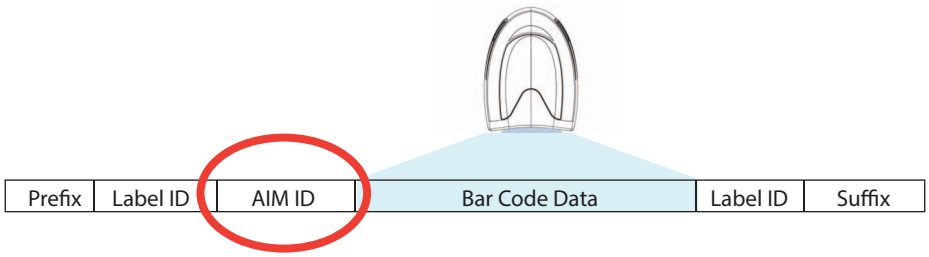
AIM label identifiers (as opposed to custom characters you select yourself as with label identifiers) can be included with scanned bar code data. AIM label identifiers consist of three characters as follows:

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

SYMBOLOGY	CHAR	SYMBOLOGY	CHAR
UPC/EAN	E[a]	Code 128/GS1-128	C
Code 39 and Code 32	A	DataBar Omnidirectional, DataBar Expanded	e
Codabar	F	Standard 2 of 5	S
Interleaved 2 of 5	I	ISBN	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 19. AIM ID



Label ID

A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01–0xFF), used to identify a bar code (symbology) type. It can be appended previous to or following the transmitted bar code data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 97). If you wish to program the scanner to always include an industry standard label identifier for ALL symbology types, see "Global AIM ID" on page 95.

Label ID: Pre-loaded Sets

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

Table 21. Label ID Pre-loaded Sets

Symbology	USA Label ID set		EU Label ID set	
	ASCII character	Hex value	ASCII character	Hexadecimal value
ABC Codabar	S	530000	S	530000
CODABAR	%	250000	R	520000
Code 39 CIP	Y	590000	Y	590000
Code 93	&	260000	U	550000
CODE11	CE	434500	b	620000
CODE128	#	230000	T	540000
CODE32	A	410000	X	580000
CODE39	*	2A0000	V	560000
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
EAN8	FF	464600	A	410000
EAN8 P2	FF	464600	J	4A0000
EAN8 P5	FF	464600	K	4B0000
FOLLETT 2OF5	O	4F0000	O	4F0000
GS1 DATABAR EXPANDED	RX	525800	t	740000
GS1 DATABAR LIMITED	RL	524C00	v	760000
GS1 DATABAR OMNIDIRECTIONAL	R4	523400	u	750000
GS1-128		000000	k	6B0000

Symbology	USA Label ID set		EU Label ID set	
I2OF5	i	690000	N	4E0000
IATA	IA	494100	&	260000
Industrial 2 of 5	W	570000	W	570000
Interleaved 2 of 5	e	650000	e	650000
ISBN	I	490000	@	400000
ISBT128	f	660000	f	660000
ISSN	n	6E0000	n	6E0000
MSI	@	400000	Z	5A0000
S25	s	730000	P	500000
UPCA	A	410000	C	430000
UPCA P2	A	410000	F	460000
UPCA P5	A	410000	G	470000
UPCE	E	450000	D	440000
UPCE P2	E	450000	H	480000
UPCE P5	E	450000	I	490000
OCR-A	o	6F0000	$o	246F00
OCR-B	o	6F0000	$p	247000
MICR	o	6F0000	$m	246D00

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

1. Scan the ENTER/EXIT bar code.
2. Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by scanning the appropriate bar code in the section "Label ID Control" on page 97. Reference Figure 20 for Label ID positioning options if multiple identification features are enabled.
3. Scan a bar code to select the symbology for which you wish to configure a custom Label ID from the section Label ID Symbology Selection, starting on page 98.
4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.
5. Turn to the ASCII Chart on page 385 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 377 and scan the bar codes representing the hex characters determined. For the example given, the characters '3' and 'D' would be scanned. More examples of Label ID settings are provided in Table 22.

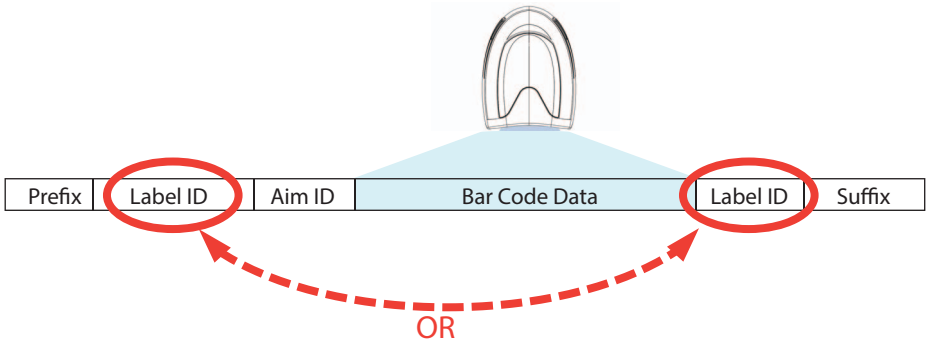
NOTE

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

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

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

Figure 20. Label ID Position Options



Label ID: Set Individually Per Symbology — continued

Table 22. Label ID Examples

STEP	ACTION	EXAMPLES			
1.	**Scan the ENTER/EXIT bar code**	(Scanner enters Programming Mode)			
2.	**Determine placement of the Label ID characters BEFORE or AFTER with regard to scanned data using** "Label ID Control" **on page 97**	Enable as Prefix	Enable as Suffix	Enable as Prefix	Enable as Suffix
3.	**Scan the bar code selecting the symbology type you wish to designate label ID characters for using** Label ID Symbology Selection, starting on page 98.	GS1 DataBar Omnidirectional	Code 39	Interleaved 2 of 5	Code 32
4.	**Custom Label ID example (desired characters):**	D B *	= C 3	+	P H
5.	**Find hex equivalents from the ASCII table (inside back cover), then scan in these digits/characters using the bar codes in the section:** Keypad, starting on page 377. **f you make a mistake before the last character, scan the CANCEL bar code to abort and not save the entry string. You can then start again at the beginning.**	44 42 2A	3D 43 33	2B	50 48
6.	**Scan the ENTER/EXIT bar code**	(Scanner exits Label ID entry)			
7.	**Scan the ENTER/EXIT bar code once again**	(Scanner exits Programming Mode)			
Result:		DB*[bar code data]	[bar code data]=C3	+[bar code data]	[bar code data]PH

Character Conversion

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

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

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

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

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

To set Character Conversion:

1. Scan the ENTER/EXIT bar code.
2. Scan the bar code for "Character Conversion" on page 104
3. Determine the desired string. Sixteen positions must be determined as in the above example. Next, turn to the ASCII Chart on page 385 on the inside back cover of this manual and find the equivalent hex digits needed to fulfill the string.
4. Turn to Appendix D, Keypad and scan the bar codes representing the hex characters determined in the previous step.
5. Scan the ENTER/EXIT bar code to exit Programming Mode.

NOTE

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

Scanning Features

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 bar code to enter Programming Mode.
4. Scan the bar code: SELECT GOOD READ LED DURATION SETTING.
5. Scan the appropriate three digits from the keypad in Appendix D, Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

NOTE

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

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

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

Table 23 - Good Read LED Duration Setting Example

STEP	ACTION	EXAMPLES			
1	Desired Setting	Good Read LED stays on until next trigger pull (00)	20ms	150ms	2550ms (2.55 sec.)
2	Divide by 10 (and pad with leading zeroes)	000	002	015	255
3	Scan ENTER/EXIT PROGRAMMING MODE				
4	Scan SELECT GOOD READ LED DURATION SETTING				
5	Scan Three Characters From Appendix D, Keypad	'0', '0' and '0'	'0', '0' and '2'	'0', '1' and '5'	'2', '5' and '5'
6	Scan ENTER/EXIT PROGRAMMING MODE				

RGB Good Read Color

Set the Good Read LED color.

RGB Good Read Color = RED

RGB Good Read Color = GREEN

DEFAULT

RGB Good Read Color = BLUE

Scan Mode

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

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

- Stand Mode/Object Detection has elapsed
- a label has been read
- the trigger is released

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

Trigger Hold Multiple : When the trigger is pulled, scanning starts and the product scans until the trigger is released or Stand Mode/Object Detection has elapsed. Reading a label does not disable scanning. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Trigger Pulse Multiple: When the trigger is pulled, continuous scanning is activated until Stand Mode/Object Detection has elapsed or the trigger has been released and pulled again. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Flashing: The reader flashes[1] on and off regardless of the trigger status. Flash rate is controlled by Flash On Time and Flash Off Time. When Flash is ON the reader reads continuously. When Flash is OFF scanning is deactivated.

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

Stand Mode/Object Detection: No trigger pull is required to read a bar code. Scanning turns on automatically when an item is placed in reader's field of view. While in a stand watch state, the reader illumination LED goes from dim to maximum bright.

[1]Controlled by Flash On Time.

Scanning Active Time

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

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT SCANNING ACTIVE TIME SETTING on page 125.
5. Scan the appropriate three digits from the keypad in Appendix D, Keypad that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

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

Table 24. Scanning Active Time Setting Examples

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

Aiming Duration Time

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

Follow these instructions to set this feature:

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

NOTE

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

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

This completes the procedure. See Table 25 for some examples of how to set this feature.

Table 25. Aiming Duration Time Setting Examples

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

Flash On Time

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

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT FLASH ON TIME SETTING on page 118
5. Scan the appropriate two digits from the keypad in Appendix D, Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

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

Table 26. Flash On Time Setting Examples

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

Flash Off Time

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

Follow these instructions to set this feature.

1. Determine the desired setting in milliseconds.
2. Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.
3. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
4. Scan the bar code: SELECT FLASH OFF TIME SETTING on page 119.
5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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

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

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

Table 27. 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**				

RF Features

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 296 is enabled.

NOTE

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. Scan the ENTER/EXIT PROGRAMMING MODE bar code to enter Programming Mode.
3. Scan the bar code: SET SOURCE RADIO ADDRESS DELIMITER CHARACTER.
4. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the hexadecimal characters which were determined in the steps above. You will hear a two-beep indication after the last character.

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

NOTE

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

Table 28. Source Radio Address Delimiter Character Setting Examples

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

STAR Radio Protocol Timeout

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

When setting this parameter, take into consideration the radio traffic (number of readers in the same area). The selectable range for this feature is from 02 to 25 seconds.

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the number with leading zeroes to yield two digits. For example: 2 = 02, 5 = 05, 25 = 25, etc
3. Scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT RADIO PROTOCOL TIMEOUT.
5. Scan the appropriate two digits from the keypad in Appendix D, Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

NOTE

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

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

This completes the procedure. See Table 29 for some examples of how to set this feature.

Table 29. STAR Radio Protocol Timeout Examples

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

Symbologies

Set Length

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

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

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

Set Length 1

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

Reference the 1D Symbologies on page 137 section to view the selectable range (number of characters) for the symbology being set.

Follow these instructions to set this feature:

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

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

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

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

Table 30. Length 1 Setting Examples

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

Set Length 2

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

Reference the 1D Symbologies on page 137 section to view the selectable range (number of characters) for the symbology being set. A setting of 00 specifies to ignore this length (only one fixed length).

Follow these instructions to set this feature:

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

NOTE

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

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

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

Table 31. Length 2 Setting Examples

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

NOTES

Chapter 5
Message Formatting

Message Formatting

Message Formatting is only available for the Gryphon™ Wireless model.

NOTE

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.
- The maximum character length for messages is 48.
- Messages end with “CR” 0x0D ASCII character. The CR character cannot be contained in the middle.
- Messages cannot start with '$' or # because these are reserved for Service mode command
- Base station can receive host message only if Host Commands Obey/Ignore is set to Ignore.
- Message could be sent to the HH in response to a Label when “Transmit mode” require Ack from Host (see transmit mode parameter) or at any time. When messages are sent not in response to a label must start with DC2 0x12 ASCII character and could be sent in any transmit mode setting.
- Message could be sent to all HH linked to base by using a Multicast message:
  “00 00 00 00 2A AA”
- In order to receive a message, handhelds must not be in sleep state.

The format of the ACK from Host message (used for transmission mode 02) is:
[Scanner_Addr] [Scanner_Addr_delimiter] MESSAGE <CR>
The format of a generic message From Host to HH is:

[Scanner_Addr] [Scanner_Addr_delimiter] DC2 MESSAGE <CR>
where DC2 is ASCII 0x12 (^R) character.

[Items in square brackets are optional.]

- If you want to control the Scanner's beeper from the host, you will also probably want to disable the good transmission beep that is emitted when the code is received from the cradle. (See "Wireless Beeper Features" on page 286).

The message field can store plain text and escape sequences.

- Escape sequences are interpreted as commands.

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.

Escape sequences different from those listed will be ignored.

Appendix A
Technical Specifications

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

Table 32. Technical Specifications

Electrical Features	
Power Supply	GD4520: 5 VDC GD4590: 4.5 - 14.0 VDCGBT/GM4500: 5V to 14V +/-5% in the Communication Port 5V to 14V +/-5% in the Aux Power Port **NOTE**: Aux Power Port is recommended when long cables are connected to Communication Port
Consumption (Typical)	GD45X0: Operating: <400 mA @ 5V <200 mA @ 12V Standby/Idle: <90 mA @ 5V <50 mA @ 12V GBT/GM4500: Gun Only: 330 mA @ 3,7V (operative) Cradle Only: 80 mA @ 5V (operative) Cradle with Gun in Charge (scan while charging): 475 mA (PC host USB) 1150 mA (5V on Aux Power Port) 520 mA (12V on Aux Power Port) Gun Charging via micro USB: 480 mA (PC host port, no scan) 900 mA (wall adapter, no scan) 1160 mA (wall adapter, scan while charging)
Battery Capacity	Li-Ion 3.6V, 3250 mAh (11.7W/h)

Electrical Features	
Recharge Time (Typical)	Values valid for a fully depleted battery USB Only: 11h (no Scan) 15h (Scan while Charging) Using Aux Power Port: 3h (no Scan) 3.5h (Scan while Charging) Using micro USB (wall adapter): 2h (no Scan, with Wall Adapter) 4.6h (no Scan, with PC Host)
Max. Scan Rate	50 frames/sec
Reading Indicators	Top and rear illumination, Good Read Spot, Beep, Vibrator

Optical Features	
Optical Format	1/4"
Active Imager Size	3896 um (H) x 2453 um (V)
Active Pixels	1280 H x 800 V
Illumination System	LED source Warm White Emission (wavelength = 350 - 770 nm) Hyper Red Emission (wavelength = 660 nm, DGM model only) IEC 62471 Exempt Risk Group
Aiming System	RED laser source IEC 60825-1 Class 2 Radiation 1 mW Avg., Emitted wavelength 650 nm, 10ms pulse
Ambient Light	Up to 100,000 lux
Tilt Tolerance	0° - 360°
Pitch Tolerance	± 65°

Optical Features (continued)	
Skew Tolerance	± 65
Field of View	36° H x 23° V
PCS (Datalogic Test Chart)	minimum 15%

DOF - Depth of Field (Typical)[a]		
Symbology	**SR**	**HD**
Code 39	5 mil: 7.0 - 38.0 cm (2.7" - 14.9") 10 mil: 2.2 - 58.0 cm (0.8" - 22.8") 20 mil: FOV lim. - 110 cm (up to 43.3")	3 mil: 5.0 - 15.0 cm (2.0" - 5.9") 5 mil: 0.5 - 25.0 cm (0.2" - 9.8") 10 mil: 0.5 - 45.0 cm (0.2" - 17.7")
EAN13	7.5 mil: 9.0 - 30.0 cm (3.5" - 11.8") 13 mil: 1.0 - 71.0 cm (0.4" - 27.9")	7.5 mil: 2.0 - 23.5 cm (0.8" - 9.2") 13 mil: 1.0 - 40.0 cm (0.4" - 15.7")
PDF417	6.6 mil: 6.5 - 24.0 cm (2.6" - 9.4") 10 mil: 2.5 - 41.0 cm (1.0" - 16.1") 15 mil: 2.3 - 65.0 cm (0.9" - 25.6")	4 mil: 3.0 - 12.0 cm (1.2" - 4.7") 6.6 mil: 0.5 - 23.5 cm (0.2" - 9.2") 10 mil: 0.5 - 31.0 cm (0.2" - 12.2")
Datamatrix	10 mil: 5.5- 27.0 cm (2.2" - 10.6") 15 mil: 2.8 - 41.0 cm (1.1" - 16.1")	5 mil: 5.5 - 9.0 cm (2.2" - 3.5") 10 mil: 0.2 - 27.0 cm (0.1" - 10.6")
Max Resolution	1D Min = 4 mils PDF417 Min = 5 mils Datamatrix Min = 7.5 mils	1D Min = 3 mils PDF417 Min = 3 mils Datamatrix Min = 4 mils

a. 13 mils DOF based on EAN. All other 1D codes are Code 39. All labels grade A, typical environmental light, 20°C, label inclination 10°

Environmental Features	
Operating Temperature	0 °C to + 50 °C (+32° F to +122 °F)
Storage Temperature	-40 °C to + 70 °C (-40 ° F to +158 °F)
Humidity	95% non condensing
Drop Resistance	IEC 68-2-32 Tested 1.8 m (6 ft)
ESD Protection	16 KV
Protection Class	IP52
Dimensions	GD4500: 16.6 x 6.8 x 10.9 cm / 6.5 x 2.7 x 4.3 in In Stand: 21 x 7.5 x 10.9 cm / 8.2 x 2.9 x 4.2 in GBT/GM4500: 16.6 x 6.8 x 10.9 cm / 6.5 x 2.7 x 4.3 in
Weight (without cable)	GD4500 approx. 161 g (5.7 oz.) GD4500 with integrated stand approx. 374 g (13.2 oz.) GBT/GM4500: Approx. 235 g (8.29 oz.) GBT4500 or GM4500 and battery pack included Battery Pack is approx. 65 g (2.29 oz.)
Cable Length	Refer to www.datalogic.com

Decode Capability
1D Bar Codes UPC/EAN/JAN (A, E, 13, 8); UPC/EAN/JAN (including P2 /P5); UPC/EAN/JAN (including; ISBN / Bookland & ISSN); UPC/EAN Coupons; Code 39 (including full ASCII); Code 39 Trioptic; Code39 CIP (French Pharmaceutical); LOGMARS (Code 39 w/ standard check digit enabled); Danish PPT; Code 32 (Italian Pharmacode 39); Code 128; Code 128 ISBT; Interleaved 2 of 5; Standard 2 of 5; Interleaved 2 of 5 CIP (HR); Industrial 2 of 5; Discrete 2 of 5; Matrix 2 of 5; IATA 2of5 Air cargo code; Code 11; Codabar; Codabar (NW7); ABC Codabar; EAN 128; Code 93 ; MSI; PZN; Plessey; Anker Plessey; GS1 DataBar Omnidirectional; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.
2D / Stacked Codes The Gryphon I GD4500 scanner is capable of decoding the following symbologies using multiple frames (i.e. Multi-Frame Decoding): Datamatrix; Inverse Datamatrix; Datamatrix is configurable for the following parameters:; Normal or Inverted; Square or Rectangular Style; Data length (1 - 3600 characters); Maxicode; QR Codes (QR, Micro QR and Multiple QR Codes); Aztec; Postal Codes - (Australian Post; Japanese Post; KIX Post; Planet Code; Postnet; Royal Mail Code (RM45CC); Intelligent Mail Barcode (IMB); Sweden Post; Portugal Post); LaPoste A/R 39; PDF-417; MacroPDF; Micro PDF417; GS1 Composites (1 - 12); French CIP13[a]; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; GS1 DataBar Expanded Stacked; GS1 Databar Composites; GS1 DotCode; Chinese Sensible Code; Inverted 2D codes[b]. [a]It is acceptable to handle this with ULE [b]The SW can apply the Normal/Reverse Decoding Control to the following symbologies: Datamatrix, QR, Micro QR, Aztec and Chinese Sensible Code.

Regulatory
See Regulatory Addendum

Radio Features			
Wireless Technology	Star™ 910 MHz	Star™ 433 MHz	Bluetooth
Range (in open air)	50 m	50 m	100 m
Max number of devices per base station	16		7

LED and Beeper Indications

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

Table 33. LED and Speaker Indications

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

User Indications for GD4500

Indication	3GL & Good Read LEDs	Buzzer
Power-up	OFF	Rising Beeps' Sequence
USB Enumeration Phase	250 ms[a] ON ↔ 250 ms OFF	OFF
USB Suspend	Depends on Power Cable and specific configurations	OFF
Idle	OFF	OFF
While Reading	OFF	OFF
Decode Done	Solid ON Programmable duration (1 s default)	Single Beep
Reader Disabled (POS) Communication with host not established	100 ms ON ↔ 900 ms OFF	OFF
Firmware Upgrade	250 ms ON ↔ 250 ms OFF	OFF
Host Download	250 ms ON ↔ 250 ms OFF	OFF
Enter Service Mode	No Effect	Beeps' Sequence
Label Programming	No Effect	Beep

a. 'ms" stands for milliseconds, equivalent to 1/1000th of a second

User Indications GBT/GM4500 (Gun Only)

Status	3GL & Good Read LEDs	Battery LED	Buzzer
Power-Up	OFF	OFF	Rising Beeps' Sequence
USB Enumeration Phase	250 ms[a] ON ↔ 250 ms OFF	OFF	OFF
USB Suspend	Depends on Power Cable and specific configurations	OFF	OFF
Idle	OFF	OFF	OFF
While Reading	OFF	OFF	OFF
Decode Done	Solid ON with programmable duration (1 s default)	OFF	Single Beep
Reader Disabled (POS) Communication with host not established	100 ms ON ↔ 900 ms OFF	OFF	OFF
Firmware Upgrade	250 ms ON ↔ 250 ms OFF	OFF	OFF
Host Download	250 ms ON ↔ 250 ms OFF	OFF	OFF
Paging Answer	5 cycles: 100 ms ON ↔ 900 ms OFF	OFF	5 Beeps (when LED ON)
Enter Service Mode	No Effect	OFF	Beeps' Sequence
Label Programming	No Effect	OFF	Beep
ACK Received on Transmission	OFF	OFF	Single Programmable Beep (OFF by default)
ACK NOT Received on Transmission	OFF	OFF	Wrong Beep
Cradle in USB Suspend	Depends on Power Cable and specific configurations	OFF	OFF
Configuration Alignment	250 ms ON ↔ 250 ms OFF	OFF	OFF

[a] "ms" stands for milliseconds, equivalent to 1/1000th of a second

Status	3GL & Good Read LEDs	Battery LED	Buzzer
Charge in Progress through microUSB [a]	OFF	Blinking: 1 s ON ↔ 1 s OFF Green (charge = 50% - 99%) Amber (charge = 1% - 49%) Red (charge less than 1%) Scanner is unusable until 1% is reached	OFF
Charge Complete through microUSB	OFF	Solid Green It goes OFF when unplugged	OFF
Charge Fault	OFF	OFF	OFF
Charge in Progress through CRADLE	OFF	OFF	OFF
Charge Complete through CRADLE	OFF	OFF	OFF
Battery Status indications when not charging, using double tap	OFF	Solid with programmable duration (3 s default) and then OFF Green (charge = 50% - 100%) Amber (charge = 2% - 50%) Red forced loop (charge less than 2%)	OFF

a. In case of heavily depleted battery (e.g. if the scanner has not been used for a long time), the reader being charged will not be operational for a certain amount of time, which can vary from just a few minutes to 30-40 minutes depending on battery discharge level and power supplied to the cradle (i.e. longer time if the cradle is connected to USB only without external power supply).

User Indications GBT/GM4500 (Cradle Only)

Status	Transmission LEDs	Charging LEDs
Power-Up	Solid ON	OFF
USB Enumeration	250 ms[a] ON ↔ 250 ms OFF	OFF
USB Suspend	Depends on Power Cable and specific configurations	OFF
Idle	Solid ON	OFF
While Reading	Solid ON	OFF
Label Transmitted to HOST	OFF for 100 ms and then Solid ON	OFF
Reader Disabled (POS) Communication with host not established	100 ms ON ↔ 900 ms OFF	OFF
Firmware Upgrade	250 ms ON ↔ 250 ms OFF	OFF
Host Download	250 ms ON ↔ 250 ms OFF	OFF
Configuration Alignment	250 ms ON ↔ 250 ms OFF	OFF
Enter Service Mode	No Effect (remains Solid ON)	OFF
Short button press (1-5 s) Paging request	Blink Green 500 ms ON ↔ 500 ms OFF (for 5 s while pressing button)	OFF
Long button press (6-10 s) Flush Piconet request	Blink Green 1 s ON - 1 s OFF (for 5 s while pressing button)	OFF
Charge in Progress	No effect	Fading: 1 s ON ↔ 1 s OFF Green (charge = 50% - 99%) Amber (charge = 0% - 49%)
Charge Complete	No effect	Solid Green It goes OFF when unplugged
Charge Fault	No effect	OFF
Electrical Fault	OFF	OFF

[a] "ms" stands for milliseconds, equivalent to 1/1000th of a second

Programming Mode

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

INDICATION	DESCRIPTION	LED	SPEAKER
Label Programming Mode Entry	A valid programming label has been scanned.	LED blinks continuously	Scanner sounds four low frequency beeps.
Label Programming Mode Rejection of Label	A label has been rejected.	N/A	Scanner 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	Scanner 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 scanner has exited Programming Mode.	N/A	Scanner 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	Scanner sounds two times at low frequency and current volume.

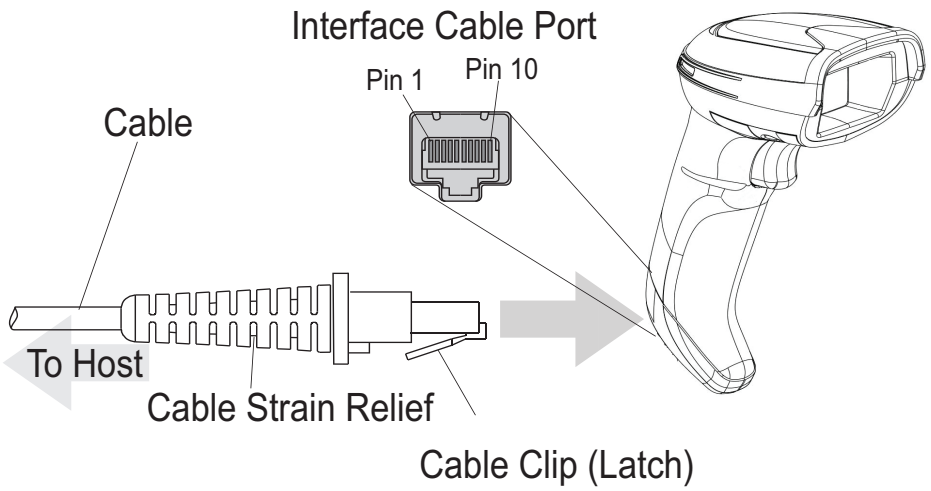
Troubleshooting

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

Standard Cable Pinouts

Figure 21 and Table 34 provide standard pinout information for the scanner's cable.

Figure 21. Standard Cable Pinouts



The signal descriptions in Table 34 apply to the connector on the scanner and are for reference only.

Table 34. Standard Cable Pinouts — Scanner Side

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

Appendix B
Standard Defaults

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

Table 35. Standard Defaults

Parameter	Default	Your Setting	Page Number
GLOBAL INTERFACE FEATURES			
Host Commands — Obey/Ignore	Obey		39
USB Suspend Mode	Enable		39
RS-232 ONLY			
Baud Rate	9600		41
Data Bits	8 Data Bits		43
Stop Bits	1 Stop Bit		43
Parity	None		44
Handshaking Control	RTS		45
RS-232/USB-COM			
Intercharacter Delay	No Delay		48
Beep On ASCII BEL	Disable		49
Beep On Not on File	Enable		49
ACK NAK Options	Disable		50
ACK Character	‘ACK’		51
NAK Character	‘NAK’		51
ACK NAK Timeout Value	200 ms		52
ACK NAK Retry Count	3 Retries		53
ACK NAK Error Handling	Ignore Errors Detected		54
Indicate Transmission Failure	Enable		55

Parameter	Default	Your Setting	Page Number
Disable Character	'D'		55
Enable Character	'E'		56
KEYBOARD WEDGE			
Country Mode	U.S. Keyboard		58
Keyboard Send Control Characters	00		83
Wedge Quiet Interval	100 ms		84
Intercode Delay	No Delay		86
Caps Lock State	Caps Lock OFF		81
Numlock	NumLock Key Unchanged		81
USB Keyboard Speed	1 ms		87
Keyboard Numeric Keypad	Standard Keys		82
USB-OEM			
USB–OEM Device Usage	Handheld		90
USB–OEM Interface Options	Ignore Scanner Configuration Host Commands		90
DATA FORMAT			
Global Prefix/Suffix	No Global Prefix Global Suffix = 0x0D (CR)		94
Global AIM ID	Disable		95
GS1–128 AIM ID	Enable		95
Label ID: Pre-loaded Sets	EU Set		96
Label ID: Pre-loaded Sets	Disable		96
Case Conversion	Disable		103
Character Conversion	No Char Conversion		104
READING PARAMETERS			
Double Read Timeout	0.6 Second		106
Power On Alert	Power-up Beep		109
Good Read: When to Indicate	After Decode		110
Good Read Beep Type	Mono		111
Good Read Beep Frequency	High		111

Parameter	Default	Your Setting	Page Number
Good Read Beep Length	80 ms		114
Good Read Speaker Volume / Vibration	High		112
Enable/Disable Good Read Indicator	300 ms		115
SCANNING FEATURES			
Scan Mode	Trigger Single		117
Stand Mode/Object Detection Sensitivity	Medium		122
Stand Mode Indication	5 Seconds		125
Flash On Time	OFF		118
Flash On Time	10 = Flash is ON for 1 Second		118
Flash Off Time	06 = Flash is OFF for 600ms		119
CODE SELECTION - 1D SYMBOLOGIES			
Code EAN/UPC			
Coupon Control	Enable only UPCA coupon decoding		138
UPC-A			
UPC-A Enable/Disable	Enable		139
UPC-A Check Character Transmission	Send		139
Expand UPC-A to EAN-13	Don't Expand		140
UPC-A Number System Character Transmission	Transmit		140
UPC-E			
UPC-E Enable/Disable	Enable		142
UPC-E Check Character Transmission	Send		142
Expand UPC-E to EAN-13	Don't Expand		144
Expand UPC-E to UPC-A	Don't Expand		144
UPC-E Number System Character Transmission	Transmit		144
GTIN			
EAN 13	Disable		146

Parameter	Default	Your Setting	Page Number
EAN 13 (Jan 13)			
EAN 13 Enable/Disable	Enable		146
EAN 13 Check Character Transmission	Send		146
EAN-13 Flag 1 Character	Transmit		147
EAN-13 ISBN Conversion	Disable		147
ISSN	Disable		148
EAN 8			
EAN 8 Enable/Disable	Enable		149
EAN 8 Check Character Transmission	Send		149
Expand EAN 8 to EAN 13	Disable		150
UPC/EAN Global Settings			
UPC/EAN Price Weight Check	Disable		151
Add-Ons			
Optional Add-ons	Disable P2, P5 and P8		153
Optional Add-On Timer	70 ms		154
Code 39			
Code 39 Enable/Disable	Enable		165
Code 39 Check Character Calculation	Disable		165
Code 39 Check Character Transmission	Send		166
Code 39 Start/Stop Character Transmission	Don't Transmit		167
Code 39 Full ASCII	Disable		167
Code 39 Quiet Zones	Small Quiet Zones on two sides		168
Code 39 Length Control	Variable		169
Code 39 Set Length 1	2		170
Code 39 Set Length 2	50		171
Code 32 (Italian Pharmaceutical Code)			
Code 32 Enable/Disable	Disable		174
Code 32 Check Character Transmission	Don't Send		174
Code 32 Start/Stop Character Transmission	Don't Transmit		175

Parameter	Default	Your Setting	Page Number
Code 39 CIP (French Pharmaceutical Code)			
Code 39 CIP Enable/Disable	Disable		175
Special Codes			
Code 128			
Code 128 Enable/Disable	Enable		176
Expand Code 128 to Code 39	Don't Expand		176
Code 128 Check Character Transmission	Don't Send		177
Code 128 Function Character Transmission	Don't Send		177
Code 128 Quiet Zones	Small Quiet Zones on two sides		178
Code 128 Length Control	Variable		179
Code 128 Set Length 1	1		179
Code 128 Set Length 2	80		180
GS1-128			
GS1–128 Enable	Transmit in Code 128 Data Format		181
ISBT 128			
ISBT 128 Concatenation	Disable		222
ISBT 128 Force Concatenation	Disable		224
ISBT 128 Concatenation Mode	Static		222
ISBT 128 Dynamic Concatenation Timeout	200 msec		223
Interleaved 2 of 5			
I 2 of 5 Enable/Disable	Disable		182
I 2 of 5 Check Character Calculation	Disable		183
I 2 of 5 Check Character Transmission	Send		184
I 2 of 5 Length Control	Variable		184
I 2 of 5 Set Length 1	6		185
I 2 of 5 Set Length 2	50		186
Interleaved 2 of 5 CIP HR			
Interleaved 2 of 5 CIP HR Enable/Disable	Disable		187

Parameter	Default	Your Setting	Page Number
Follett 2 of 5			
Follett 2 of 5 Enable/Disable	Disable		239
Standard 2 of 5			
Standard 2 of 5 Enable/Disable	Disable		213
Standard 2 of 5 Check Character Calculation	Disable		213
Standard 2 of 5 Check Character Transmission	Send		214
Standard 2 of 5 Length Control	Variable		214
Standard 2 of 5 Length Control	8		214
Standard 2 of 5 Set Length 2	50		216
Industrial 2 of 5			
Industrial 2 of 5 Enable/Disable	Disable		217
Industrial 2 of 5 Check Character Calculation	Disable		217
Industrial 2 of 5 Check Character Transmission	Enable		218
Industrial 2 of 5 Length Control	Variable		218
Industrial 2 of 5 Set Length 1	1		219
Industrial 2 of 5 Set Length 2	50		220
Code IATA			
IATA Enable/Disable	Disable		221
IATA Check Character Transmission	Enable		221

Parameter	Default	Your Setting	Page Number
Codabar			
Codabar Enable/Disable	Disable		200
Codabar Check Character Calculation	Don't Calculate		200
Codabar Check Character Transmission	Send		201
Codabar Start/Stop Character Transmission	Transmit		202
Codabar Start/Stop Character Set	abcd/abcd		203
Codabar Start/Stop Character Match	Don't Require Match		203
Codabar Quiet Zones	Small Quiet Zones on two sides		204
Codabar Length Control	Variable		205
Codabar Set Length 1	3		205
Codabar Set Length 2	50		206
ABC Codabar			
ABC Codabar Enable/Disable	Disable		207
ABC Codabar Concatenation Mode	Static		207
ABC Codabar Dynamic Concatenation Timeout	200 msec		208
ABC Codabar Force Concatenation	Disable		208
Code 11			
Code 11 Enable/Disable	Disable		209
Code 11 Check Character Calculation	Check C and K		209
Code 11 Check Character Transmission	Send		210
Code 11 Length Control	Variable		210
Code 11 Set Length 1	4		211
Code 11 Set Length 2	50		212
GS1 DataBar Omnidirectional			
GS1 DataBar Omnidirectional Enable/Disable	Disable		157
GS1 DataBar Omnidirectional GS1-128 Emulation	Disable		158

Parameter	Default	Your Setting	Page Number
GS1 DataBar™ Expanded			
GS1 DataBar Expanded Enable/Disable	Disable		159
GS1 DataBar Expanded GS1-128 Emulation	Disable		159
	2D component not required		159
GS1 DataBar Expanded Length Control	Variable		161
GS1 DataBar Expanded Set Length 1	1		161
GS1 DataBar Expanded Set Length 2	74		162
GS1 DataBar™ Limited			
GS1 DataBar Limited Enable/Disable	Disable		163
GS1 DataBar Limited GS1-128 Emulation	Disable		163
Code 93			
Code 93 Enable/Disable	Disable		234
Code 93 Check Character Calculation	Enable Check C and K		234
Code 93 Check Character Transmission	Disable		235
Code 93 Length Control	Variable		235
Code 93 Set Length 1	1		236
Code 93 Set Length 2	50		237
Code 93 Quiet Zones	Small Quiet Zones on two sides		238
MSI			
MSI Enable/Disable	Disable		225
MSI Check Character Calculation	Enable Mod10		225
MSI Check Character Transmission	Enable		226
MSI Length Control	Variable		226
MSI Set Length 1	1		227
MSI Set Length 2	50		228
MOTION FEATURES			
Motion Aiming Control	Enable		283
Motion Sensitivity	Medium		283
Motionless Timeout	2 seconds		284

Default Exceptions

Table 36. Default Exceptions by Interface Type

Parameter	Default Exception
Interfaces: USB-OEM	
Global Suffix	No Global Suffix
Double Read Timeout	500 msec
Interfaces: All Keyboard Wedge, USB Keyboard	
No unique settings	
Interface: RS232-WN	
Expand UPC-A to EAN-13	Enable
UPC-E Check Character Transmission	Disable
Parity	Odd Parity
Handshaking Control	RTS/CTS
Transmission Label ID Code	Prefix
GS1-128 AIM ID	Disable
UPCE Label ID Character(s)	C
EAN 8 Label ID Character(s)	B
EAN 13 Label ID Character(s)	A
Code ISBN Label ID Character(s)	A
Code 39 Label ID Character(s)	M
Interleaved 2of5 Label ID Character(s)	I
Code Standard 2/5 Label ID Character(s)	H
Codabar Label ID Character(s)	N
Code 128 Label ID Character(s)	K
GS1-128 Label ID Character(s)	P
Datalogic 2 of 5 Label ID Character(s)	H
ISBT 128 Label ID Character(s)	K
UPCE P2 Label ID Character(s)	C
UPCE/P5 Label ID Character(s)	C
UPCE/GS1-128 Label ID Character(s)	C

Parameter	Default Exception
EAN8/P2 Label ID Character(s)	B
EAN8/P5 Label ID Character(s)	B
EAN8/GS1-128 Label ID Character(s)	B
EAN13/P2 Label ID Character(s)	A
EAN13/P5 Label ID Character(s)	A
EAN13/GS1-128 Label ID Character(s)	A
GS1 DataBar 14 (Omnidirectional) Label ID Character(s)	E
GS1 DataBar Expanded Label ID Character(s)	E
GS1 DataBar Limited Label ID Character(s)	E
Character Conversion	CR to `
Interface: RS232-OPOS	
Baud Rate	115200 Baud
Transmission Label ID Code	Prefix
GS1-128 AIM ID	Disable
UPCA Label ID Character(s)	C
UPCE Label ID Character(s)	D
EAN 8 Label ID Character(s)	A
EAN 13 Label ID Character(s)	B
Code ISBN Label ID Character(s)	@
Code 39 Label ID Character(s)	V
Code 32 Label ID Character(s)	X
Interleaved 2of5 Label ID Character(s)	N
Code Standard 2/5 Label ID Character(s)	P
Codabar Label ID Character(s)	R
Code 11 Label ID Character(s)	b
Code 128 Label ID Character(s)	T
GS1-128 Label ID Character(s)	k
UPCA/P2 Label ID Character(s)	F
UPCA/P5 Label ID Character(s)	G

Parameter	Default Exception
UPCA/GS1-128 Label ID Character(s)	Q
UPCE P2 Label ID Character(s)	H
UPCE/P5 Label ID Character(s)	I
EAN8/P2 Label ID Character(s)	J
EAN8/P5 Label ID Character(s)	K
EAN8/GS1-128 Label ID Character(s)	*
EAN13/P2 Label ID Character(s)	L
EAN13/P5 Label ID Character(s)	M
EAN13/GS1-128 Label ID Character(s)	#
GS1 DataBar 14 (Omnidirectional) Label ID Character(s)	u
GS1 DataBar Expanded Label ID Character(s)	t
GS1 DataBar Limited Label ID Character(s)	v

NOTES

Appendix C
Sample Bar Codes

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

1D Bar Codes

UPC-A

EAN-13

Code 39

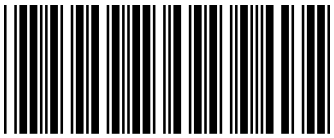
Code 128

Code 128

Interleaved 2 of 5

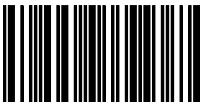
Sample Bar Codes (continued)

Code 32



345678902

Codabar



13579

Code 93

ABCDEF

Code 11

12345

GS1 DataBar™ (RSS)

NOTE

GS1 DataBar™ variants must be enabled to read the bar codes below (see "GS1 DataBar™ Omnidirectional" on page 157).

GS1 DataBar™ Expanded Stacked

1029384756019283746501928374602947845036652 3

GS1 DataBar™ Expanded

1234890hjio9900mnb

GS1 DataBar™ Limited

08672345650916

GS1 DataBar™-14

GS1 DataBar™ Omnidirectional Truncated

55432198673467

GS1 DataBar™ Omnidirectional Stacked

90876523412674

GS1 DataBar™ Omnidirectional Stacked

78123465709811

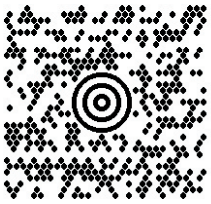
2D Bar Codes

Aztec

Datamatrix

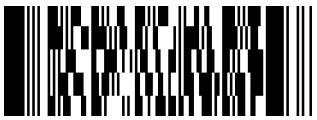
China Sensible Code

MaxiCode



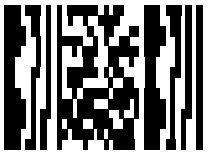
Test Message

PDF 417



ABCabc

Micro PDF 417



BV17453

QR Code

35900G9

Micro QR Code

123456

UCC Composite

(17) 050923 (10) ABC123

(01) 0 4012345 67890 1 1

Appendix D
Keypad

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

0

1

2

3

4

5

6

7

8

9

A

B

C

D

E

F

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 384).

Single Press and Release Keys

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

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

Interface Type PC AT PS/2 or USB-Keyboard

Table 37. 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	Đ		Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
Ex	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
Fx	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

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

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

Table 38. 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	Đ		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 39. Scancode Set When Control Character is 00 or 01

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

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

Table 40. 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

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

ASCII Chart

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

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www.datalogic.com

Datalogic S.r.l.
Via S. Vitalino, 13 | Lippo di Calderara di Reno
40012 BO| Italy | Telephone: (+39) 051-3147011
Fax: (+39) 051-3147205

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