BALLUFF

Balluff BVS HS-P Family
Industrial Handheld Barcode Readers

Operation Manual

english

World Headquarters Germany
Balluff GmbH
Schurwaldstraße 9
73765 Neuhausen a.d.F
Service-Hotline +49 7158 173-370
service@balluff.de

Subsidaries
USA
Balluff Inc.
8125 Holton Drive
Florence,
Kentucky 41042-0937
Phone (859) 727-2200,
1-800-543-8390
applications@balluff.com

Produced by DATALOGIC S.r.l.

An electronic version of this document is downloadable from the Balluff website (www.Balluff.com).
If you visit our website and would like to make comments or suggestions about this or other Balluff publications, please let us know via the "Contact" page.

Disclaimer
This document contains operating instructions and technical documentation for BVS HS hand held reader by Balluff GmbH. All specifications and instructions in this document, especially the Safety Notes section, must be strictly observed. This operator's manual must be carefully stored so that it is always available.
The information and illustrations in this operating manual were carefully checked to the best of our ability. Nevertheless, Balluff GmbH cannot assume any liability for the correctness and completeness of this information, since in spite of all due care errors and mistakes cannot be completely avoided. In particular this information and the illustrations do not constitute agreements as to condition according to § 434 of the German Civil Code or guarantees according to § 443 of the GCC.
The information in this manual is based on current knowledge and experience of Balluff GmbH.

No legally binding assurance of certain properties or suitability for a specific purpose can be derived from the information in this operating manual.

Trademarks
The product, goods, company and technology names are trademarks of the respective companies. In particular: Microsoft®, Windows®, Windows XP®, .NET FRAMEWORK ® and Windows 7® are registered trademarks of Microsoft Corporation ; QR Code (R) is a registered trademark of Denso Wave Incorporated. Balluff and Balluff Logo are registered trademarks of Balluff GmbH in many countries.It is the user's responsibility to observe any property rights and provisions.

Patents:
This product is covered by one or more of the following Patents:

Design patents: AU344427, AU344428, AU344429, EP001970237, EP002109371, TWD159476, TWD159477, TWD160254, TWD160255, USD682277, USD702238, ZL201230284676.X, ZL201330082835.2
Utility patents: EP0996284B1, EP0999514B1, EP1128315B1, EP1172756B1, EP1396811B1, EP1413971B1, EP1828957B1, EP1873886B1, JP4435343B2, US6478224, US6512218, US6513714, US6561427, US6808114, US6877664, US6997385, US7053954, US7234641, US7387246, US7721966, US7948214, US8245926, US8561906, US8743263, ZL200780030808.2

All patents belong to a third party.

1 Introduction

1.1 About this Manual

This Operation Manual (OPM) 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.

1.1.1 Overview

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

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

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

Chapter 4, References provides background information and detailed instructions for more complex programming items.

Chapter 5, Message Formatting gives details for programming options.

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

Appendix B, Sample Bar Codes offers sample barcodes for several common symbologies.

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

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

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

1 Introduction

1.1.2 Manual Conventions

The following conventions are used in this document:

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


NOTE

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


CAUTION

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

1.2 References

Current versions of this Operation Manual (OPM), Quick Reference Guide (QRG), and any other manuals, instruction sheets and utilities for this product can be downloaded from the website listed below.

1.3 Technical Support

1.3.1 Balluff Website Support

The Balluff website (www.balluff.com) is the complete source for technical support and information for Balluff products. The site offers product support, product manuals and contact information.

1.3.2 Telephone Technical Support

If you do not have internet or email access, you may contact Balluff technical support. Check the back cover of this document for the contact information.

1.4 About the Reader

The Balluff BVS HS-Px series is a family of feature-rich and rugged area image readers. It is offered in several different models to better fit the different needs of each customer.

The main model categories are:

- BVS HS-PC: Corded models.
- BVS HS-PW: Bluetooth models.

Within each category, further differentiating features are available, described by the part number suffix:

- DPM: models with laser, ink jet and dot peen reading capability
- HP: models with autofocus optic

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 done by reading the programming barcodes within this guide or you can ask Balluff to program it for you.

Advancements in the LED technology used in the imager-based readers significantly improve the illumination of the target field of view, resulting in higher scan efficiency. Whether used in Single Trigger or Continuous Mode, the ergonomic design of the reader will help to promote comfortable handling during extended periods of use.

See "Interface Selection" on page 14 for a listing and descriptions of available interface sets by model type.

1 Introduction

1.5 The Base Station BAM-MD-VS-001 Base Station/ Charger

The BAM-MD-VS-001 Base station, when paired with one or more BVS HS-PW readers, builds a Cordless Reading System for the collection, decoding and transmission of barcode data. It can be connected to a Host PC via RS-232, USB and is suited for single-cradle layouts. The BAM-MD-VS-001-002 models also provide a spare battery charger slot.

The label on the cradle contains LED indicators and a multi-function button. When the button is pressed for less than 5 seconds, the cradle will transmit a "broadcast" message." When the broadcast is sent, all properly configured readers (Radio RX Timeout set to keep the radio "awake") that are linked to that base and within radio range coverage will emit a beep and blink within 5 seconds. This functionality is useful to:

- verify which readers are linked to a certain base station
- detect a reader forgotten somewhere

When the button is pressed for longer than 5 seconds, all paired readers will be unpaired.

The LEDs signal the Base station-BT status, as shown in Table 1 on page 4.

LED Status

LED	STATUS
Aux	Yellow On = Base station is powered through an external power supply.
Host	Yellow On = Base station is powered by the Host.
Reader	Green On = the reader battery is completely charged. Red On = the reader battery is charging. Orange Blinking = reader battery fault - replace battery. Red / Green Alternatively Blinking = charging error - see "Error Codes" on page 320. Off = reader not in the cradle or not properly inserted.
Spare (BC91x0 models only)	Green On = the spare battery is completely charged. Orange Blinking = spare battery fault - replace spare battery. Red/Green Alternatively Blinking = charging error - see "Error Codes" on page 320. Off = no spare battery in the housing or battery not fully inserted.
Radio	Yellow Blinking = radio activity.
Ethernet (Ethernet models only)	Green Blinking = Ethernet activity.

See "Base Station Indications (Cordless Models ONLY)" on page 320 for more specific details on the LEDs.

1.6 Battery Safety

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

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

1 Introduction


WARNING

Do not discharge the battery using any device except for the reader. When the battery is used in devices other than the designated product, it may damage the battery or reduce its life expectancy. If the device causes an abnormal current to flow, it may cause the battery to become hot, explode or ignite and cause serious injury.
Lithium-ion battery packs may get hot, explode or ignite and cause serious injury if exposed to abusive conditions. Be sure to follow the safety warnings listed below:

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

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


CAUTION

Always charge the battery at 0° - 40°C temperature range.
Use only the authorized power supplies, battery pack, chargers, and docks supplied by your Balluff reseller. The use of any other power supplies can damage the device and void your warranty.
Do not disassemble or modify the battery. The battery contains safety and protection devices, which, if damaged, may cause the battery to generate heat, explode or ignite.
Do not place the battery in or near fire, on stoves or other high temperature locations.
Do not place the battery in direct sunlight, or use or store the battery inside cars in hot weather. Doing so may cause the battery to generate heat, explode or ignite. Using the battery in this manner may also result in a loss of performance and a shortened life expectancy.
Do not place the battery in microwave ovens, high-pressure containers or on induction cookware.
Immediately discontinue use of the battery if, while using, charging or storing the battery, the battery emits an unusual smell, feels hot, changes color or shape, or appears abnormal in any other way.
Do not replace the battery pack when the device is turned on.
Do not remove or damage the battery pack's label.
Do not use the battery pack if it is damaged in any part.
Battery pack usage by children should be supervised.

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

The typical manufacturer advertised useful life of LI batteries is one to three years, depending on usage and number of charges, etc., after which they should be removed from service, especially in mission critical applications. Do not continue to use a battery that is showing excessive loss of capacity, it should be properly recycled / disposed of and replaced. For most applications, batteries should be replaced after one year of service to maintain customer satisfaction and minimize safety concerns.

1 Introduction

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

1.7 Programming the Reader

1.7.1 Configuration Methods

Programming Barcodes

The reader is factory-configured with a standard set of default features. After reading the interface barcode, you can select other options and customize your reader through use of the instructions and programming barcode labels available in the corresponding features section for your interface. Customizable settings for many features are found in "Configuration Parameters" starting on page 21.

Some programming labels, like "Restore Custom Defaults" on page 18, 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 reading them. Scan an ENTER/EXIT barcode once to enter Programming Mode. Once the reader is in Programming Mode, scan a number of parameter settings before reading the ENTER/EXIT barcode a second time, which will then accept your changes, exit Programming Mode and return the reader to normal operation.

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

1 Introduction

2 Setup

2.1 Unpacking

Check carefully to ensure the reader and any accessories ordered are present and undamaged. If any damage occurred during shipment, contact Balluff Technical Support. Information is shown on page 12.

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

2.2 Setting Up the Reader

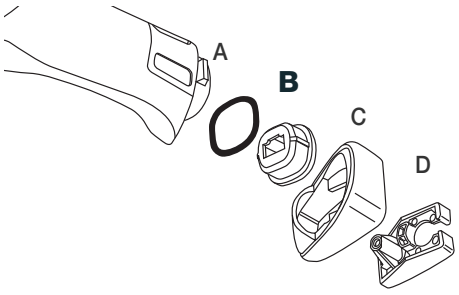
Follow the steps below to connect and get your reader up and communicating with its host.

1. Begin by Installing the Interface Cable (Corded) or Connecting the Base Station (Bluetooth)
2. Configure Interface Settings (see page 24).
3. Configure the Reader starting on page 26 (optional, depends on settings needed)

Connect the handheld reader by plugging directly into the host device as shown. The power can also be supplied through an external power supply via the Interface Cable supplied with a power jack.

2 Setup

2.2.1 Connecting the Cable (Corded versions)



A. Rubber gasket
B. Cable Holder
C. Cover
D. Connector Holder

1 Slip the cable through the Cover.

2 Push the Rubber Gasket onto the Cable Holder.

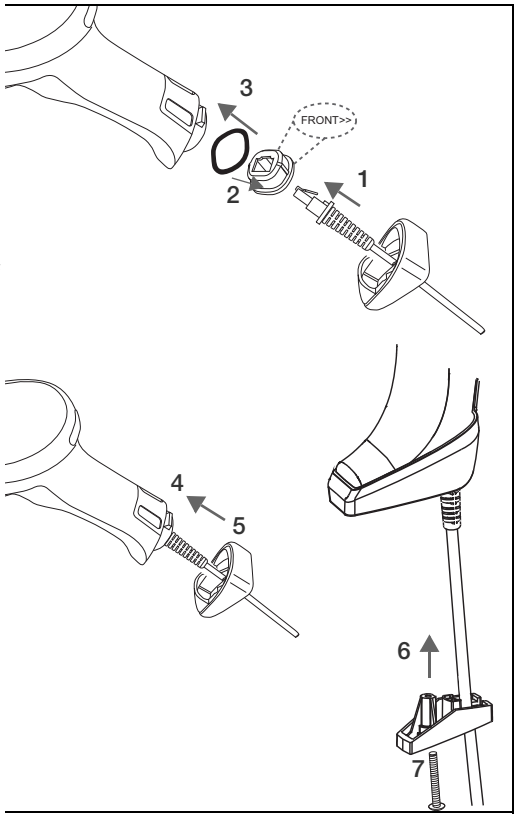
3 Push the Cable Holder and gasket into the handle. Ensure that the “Front” marking on the Cable Holder is facing out, with the arrow pointing towards the front of the reader.

4 Insert the end of the cable into the socket of the Cable Holder.

5 Push the Cover along the cable towards the reader, and hook it over the yellow “tooth” on the back of the handle.

6 Insert the cable through the Connector Holder, and push it up into the Cover.

7 Insert and tighten the screw to affix the cable assembly to the reader handle.



2 Setup

2.3 Configuring the Base Station

To set up your Base station cradle you must:

1 Physically install the cradle.

2 Make all system connections.

3 Configure the Base station cradle.

2.4 Mounting the Base station Cradle

The cradle package contains the following items:

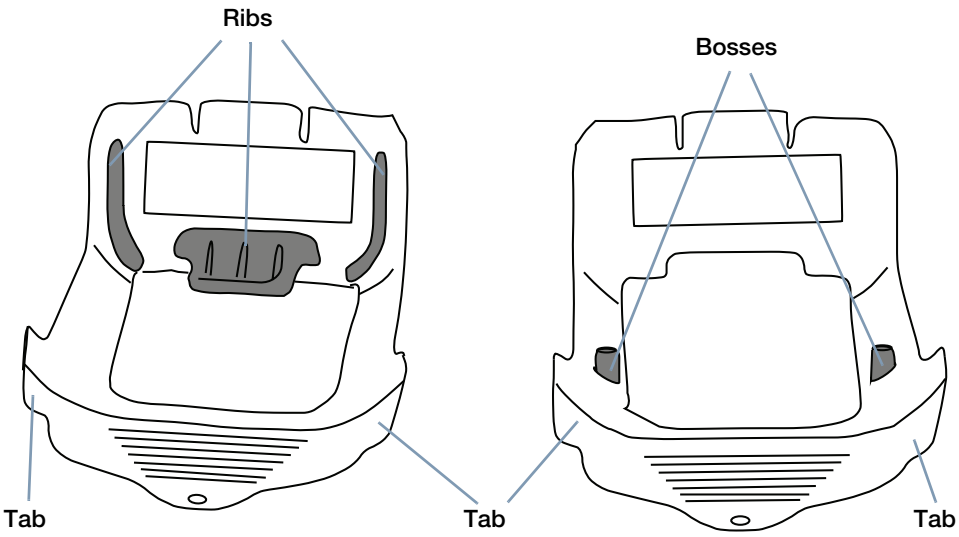
Base Station (with Desktop Mounting Bracket installed)	1 Metal Mounting plate
Base station Quick Reference Guide (this manual)	1 Wall Mounting Bracket

The cradle can be either mounted on a flat surface for desktop usage or affixed vertically to a wall.

2.4.1 Mounting Brackets

The cradle comes with two different mounting brackets. The appropriate bracket is used depending on whether the cradle will be mounted on a horizontal or vertical surface. When shipped, the cradle has the Desktop Mounting Bracket installed. For vertical installation, the Wall Mounting Bracket must be attached instead.

Figure 1: . Mounting Brackets



Desktop Mounting Bracket (Horizontal)

Desktop Mounting Bracket (Vertical)

- Desktop mount bracket has ribs to keep the reader in place when the cradle is horizontal.
- Wall mount bracket contains bosses to keep the reader in place when the cradle is vertical.

To change the Bracket:

1 Remove the screw holding the Bracket in place. Retain the screw for re-use.

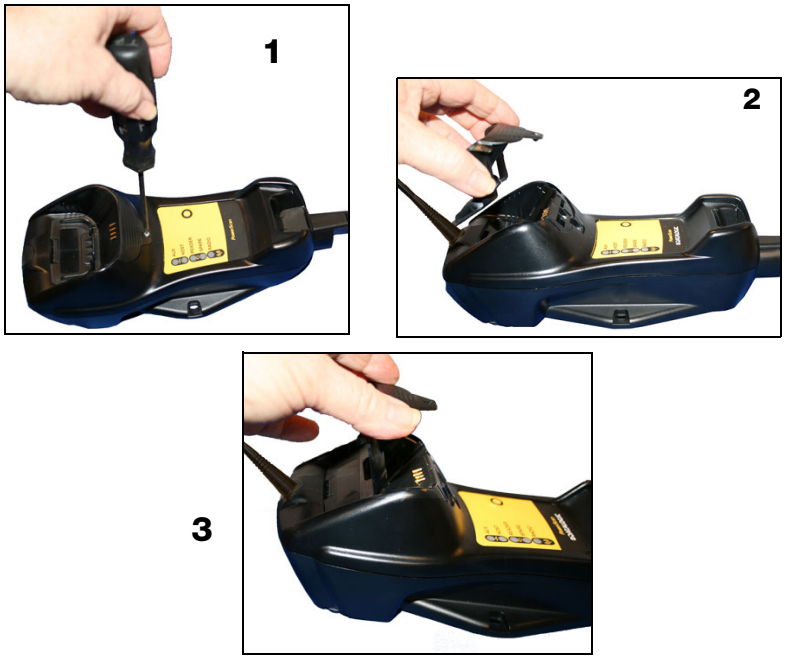
2 Carefully lift off the Bracket.

3 Install the other bracket by first slipping the end tab into place on the base station, then easing the tabs (shown in Figure 1 on page 19) into place on the sides.

4 Replace the screw to secure the Bracket to the Base Station.

2 Setup

Figure 2: Changing the Bracket



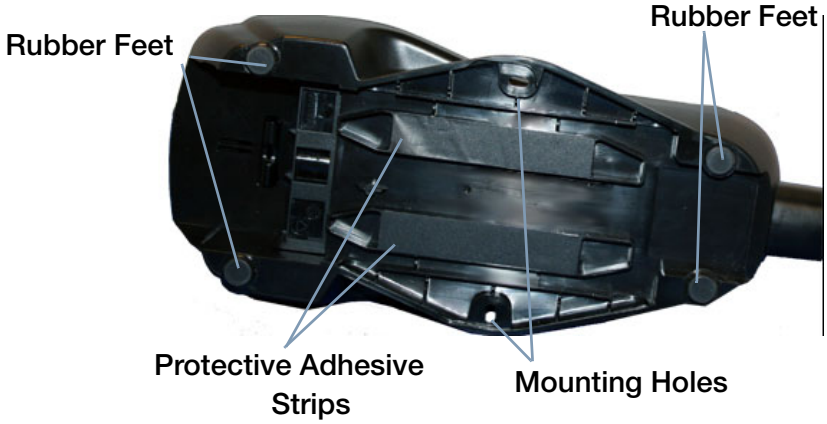
2.4.2 Permanent Mounting

For either desktop or wall mounting, the cradle can be fastened directly to a flat surface using screws (not included).

NOTE

When mounting on drywall, the base should be screwed to a wall stud or supporting beam for additional support.

Figure 3: . Base Station Bottom



2.4.3 Mounting for Portable Use

If portability of the cradle is required, the metal plate must be used. There are two ways this can be done: (1) by first mounting the metal plate on a flat surface so the cradle can be slid off and on, or (2) mounting the metal plate onto the back of the base station and then screwing both to the desired surface.

NOTE

For additional security on wall mounting, it is strongly recommended that the cradle be secured into place using two auxiliary screws through the mounting holes on the side.

2 Setup

Mounting the Metal Plate

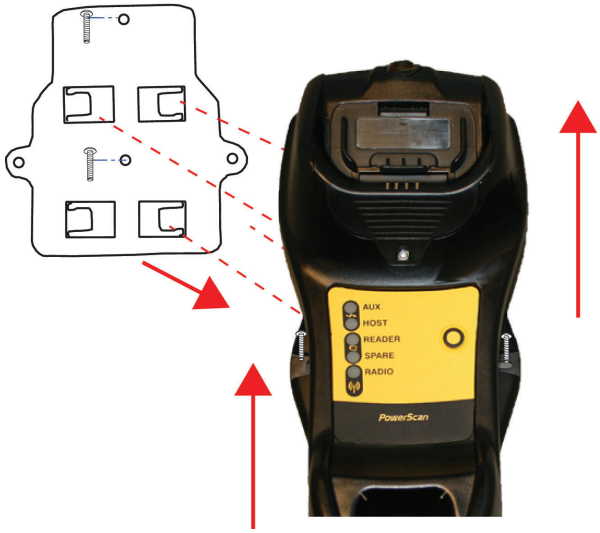
1 Affix the metal plate onto the desired mounting surface using the two center screw holes (see Figure 4 on page 21).

2 Remove the adhesive strips protecting the mounting tabs on the cradle, shown in Figure 3.

3 Slide the tabs on the back of the cradle onto the metal plate as shown in Figure 4:.

4 After aligning the tabs, push up to lock into place.

Figure 4: Mounting Plate on Wall

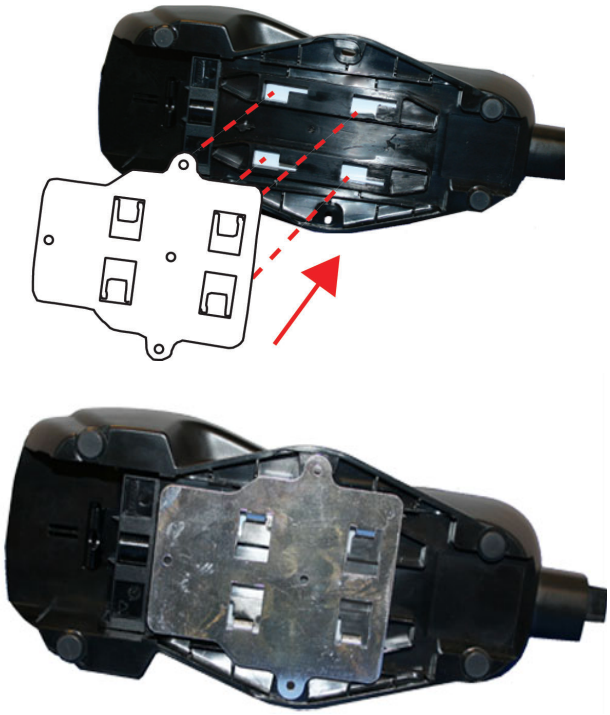


2 Setup

Attaching the Metal Plate to Base

Alternatively, the mount can be attached first to the base, then both can be mounted to a wall as described above.

Figure 5: Attaching Mounting Plate to Base



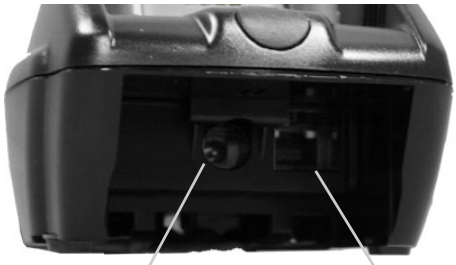
Base with Mount attached

2.4.4 System Connections

CAUTION

Connections should always be made with power off!

The Base station cradle provides a multi-interface connector and a power supply connector as shown:



Power Supply **Multi-Interface Connector**

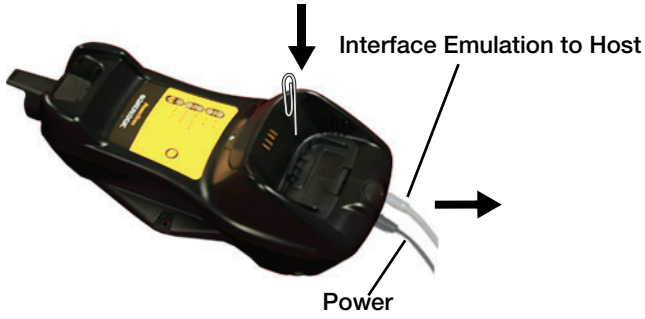
2 Setup

2.4.5 Connecting and Disconnecting the Interface Cable

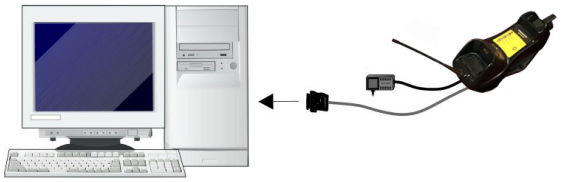
The Base station can be connected to a Host by means of a multi-interface cable, which must be simply plugged into the Host connector, visible on the front panel of the cradle.

To disconnect the cable, insert a paper clip or other similar object into the hole corresponding to the Host connector on the body of the cradle. Push down on the clip while unplugging the cable. Refer to the following figures:

Connecting/Disconnecting the Cable



RS-232



USB*

*The power supply is optional, the cradle can be powered by the USB port. In this case the full charging of an empty battery will take about 10 hours. For intense usage and/or when the system is shut down during the night, the use of an external power supply is recommended.

2 Setup

2.4.6 Base station Configuration

The Base station configuration can be performed in two ways: by sending configuration strings from the Host PC via the RS-232 or USB-COM interface or by reading configuration barcodes with the Balluff BVS HS-PB reader.

Serial Configuration

By connecting the Base station to a PC through an RS-232 or USB-COM interface cable it is possible to send configuration strings from the PC to Base station.

Configuration Barcodes

Link the cradle and the reader using the procedures described in the BVS HS-PB or BVS HS-PB Quick Reference. Once the pairing is complete, you can configure the Base station cradle by reading configuration barcodes in this manual.

To configure the Base station using the Balluff BVS HS-PB reader models (paired to the cradle with the Bind command), follow the procedure according to the interface selected.

2.5 Interface Selection

Upon completing the physical connection between the reader and its host, proceed to Table Available Interfaces on page 24 to select the interface type the reader is connected to (for example: RS-232, USB, etc.). Scan the appropriate barcode in that section to configure your system's correct interface type.

2.5.1 Setting the Interface

Scan the programming barcode from this section which selects the appropriate interface type matching the system the reader will be connected to. Next, proceed to the corresponding section in this manual (also listed in Table Available Interfaces on page 24) to configure any desired settings and features associated with that interface.

NOTE

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

Available Interfaces

RS-232		FEATURES
RS-232 standard interface	 Select RS232-STD	Set RS-232 Interface Features starting on page 33
 Select RS232-WN	RS-232 Wincor-Nixdorf	

2 Setup

USB		FEATURES
 Select USB COM-STD[a]	USB Com to simulate RS-232 standard interface	Set USB-OEM Interface Features starting on page 55
USB-OEM	 Select USB-OEM	
 Select USB Keyboard	USB Keyboard with standard key encoding	
USB Keyboard with alternate key encoding	 Select USB Alternate Keyboard	
 Select USB-KBD-APPLE	USB Keyboard for Apple computers	

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

KEYBOARD		FEATURES
USB Keyboard with alternate key encoding	 Select USB Alternate Keyboard	Set KEY-BOARD WEDGE Interface Features starting on page 45
 Select USB-KBD-APPLE	USB Keyboard for Apple computers	

2 Setup

2.6 Customizing Configuration Settings

2.6.1 Configure Interface Settings

If after reading the interface barcode from the previous table, your installation requires you to select options to further customize your reader, turn to the appropriate section for your interface type in "Configuration Parameters" starting on page 31.

2.6.2 Global Interface Features

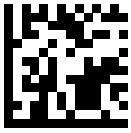
See "Global Interface Features" on page 32 for settings configurable by all interface types.

2.6.3 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. Go to Configuration Using Barcodes, starting on page 31 for a complete list of available options.

2.6.4 Software Version Transmission

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



Transmit Software Version

2.6.5 Self Test and Statistics

The internal status of the reader can be accessed in COM interfaces giving the following command string through a Terminal Emulator program: **$S,yX,s[CR]** (corded reader only).

2.6.6 Resetting the Product Configuration to Defaults

Restore Custom Defaults

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

NOTE

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

Restore Custom Default Configuration

Restore Factory Configuration

The "Restore Custom Default Configuration" command above is normally enough to restart the machine from a known status (set in the factory or by the customer via configuration file). The machine is set as it arrived to you from the factory or according to the custom configuration file you loaded afterward.

If you want to **permanently cancel** the setup defined by the configuration file use "Restore Factory Configuration" on page 299 of this manual.

The programming items listed in the following sections show the factory default settings for each of the menu commands. If no configuration file has been loaded, the above command restores the factory default.

2.6.7 Set Date and Time

1 Scan the Enter/Exit Programming barcode below to set date and time.

ENTER/EXIT PROGRAMMING MODE

2 Scan the Set Date barcode + six digits for Year, Month and Day (YYMMDD) from Appendix D: Keypad.

Set Date

3 Scan Set Time + six digits for Hours, Minutes and Seconds (HHMMSS) from Appendix D: Keypad.

Set Time

4 Scan the Enter/Exit Programming barcode to complete.

2 Setup

2.7 Linking the Reader

2.7.1 LinkWireless Devices to Base

For Wireless devices, before configuring the interface it is necessary to link the handheld with the base.

To link the handheld and the base, press the trigger to wake up the handheld and mount it into the base. If the reader was previously linked to another base, you must first press and hold the button on the base (>5 seconds), then scan the **Unlink** barcode before re-linking to the new base.

Unlink

2.7.2 Linking to a Bluetooth Adapter in Serial Port Profile (Slave) Mode

1. Install any drivers provided with the Bluetooth adapter.
2. Scan the **Enable RF Link to Server** label below to make the reader visible to the host computer.
3. Use the host computer's Bluetooth manager to "Discover new devices" and select "Balluff reader." If you receive an error message, it may be necessary to disable security on the device.
4. Use an RS-232 terminal program to see incoming data on the port designated by the computer's Bluetooth manager.

Enable RF Link to Server

2.7.3 Linking to a Bluetooth Adapter in Serial Port Profile (Master) Mode

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

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

   <FN3 char>LnkB<12 character Bluetooth address>
4. Scan the link label you created in step 3.

NOTE

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

2.7.4 Linking to a Bluetooth Adapter in HID mode

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

Link to PC in HID

2 Setup


NOTE

The BVS HS-PQ can be set up to require a PIN code when connecting. If you want to set up a PIN, or when adding new equipment to a system that uses a custom security PIN, please see "Bluetooth PIN Code" starting on page 226 for more information.

2.7.5 Power Off

Scan the barcode below to shut off power to the handheld until the next trigger pull. **This function only applies to the wireless models.**

PowerOff

2 Setup

3 Configuration Using Barcodes

This and following sections provide programming barcodes to configure your reader by changing the default settings. For details about additional methods of programming, see "Configuration Methods" on page 15.


NOTE

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

3.1 Configuration Parameters

Once the reader is set up, you can change the default parameters to meet your application needs. Refer to "Appendix C: Standard Defaults" starting on page 287 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.

3.1.1 Interface Configuration:

- "RS-232 Only Interface" on page 33
- "RS-232/USB-Com Interfaces" on page 37
- "Keyboard EMULATION Settings" on page 45

3.1.2 Parameters common to all interface applications:

- "Data Format" on page 57 gives options to control the messages sent to the Host system by selecting parameters to control the message strings sent to the handheld.
- "Reading Parameters" on page 69 control various operating modes and indicators status functioning such as programming for reading, beeper and LED indicators and other universal settings.
- "Motion Features" on page 203 provide the ability to configure motion settings for the handheld.

3.1.3 Wireless-Only Features

- Wireless Features, starting on page 207:
- BVS HS-PB ONLY Features, starting on page 225

3.1.4 Symbology-specific parameters:

- "1D Symbologies" on page 87 provides configuration of a personalized mix of 1D codes, code families and their options.
- "2D Symbologies" on page 175 provides configuration of a personalized mix of 2D codes, code families and their options.


NOTE

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

To program features:

1. Scan the ENTER/EXIT PROGRAMMING barcode, available at the top of each programming page, when applicable.
2. Scan the barcode to set the desired programming feature. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the reader reads only the barcode you intend to scan.
3. If additional input parameters are needed, go to Appendix D, 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 barcode to abort and not save the entry string. You can then start again at the beginning.

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

3 Configuration Using Barcodes

For more detailed descriptions, programming information and examples for setting selected configuration items, see References, starting on page 237.

Global Interface Features

The following interface features are configurable by all interface types.

Host Commands — Obey/Ignore

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

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

DEFAULT

Host Commands = Obey
(Do Not Ignore Host Commands)

Host Commands = Ignore

USB Suspend Mode

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

DEFAULT

USB Suspend Mode = Disable

USB Suspend Mode = Enable

3 Configuration Using Barcodes

3.2 RS-232 Only Interface

Use the programming barcodes in this section if modifications to the standard RS-232 interface settings are necessary to meet your system's requirements. Additional settings which apply to both the RS-232 and USB interfaces are available in the next section, "RS-232/USB-Com Interfaces" starting on page 37.

Reference Appendix C: Standard Defaults for a listing of standard factory settings.

3 Configuration Using Barcodes

Baud Rate See page 238 for information on this feature.

Baud Rate = 1200

Baud Rate = 2400

Baud Rate = 4800

Baud Rate = 9600

Baud Rate = 19,200

Baud Rate = 38,400

Baud Rate = 57,600

Baud Rate = 115,200

3 Configuration Using Barcodes

Data Bits

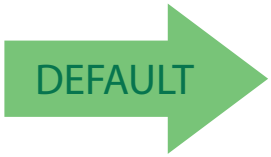
This parameter allows the reader to interface with devices requiring a 7-bit or 8-bit ASCII protocol for sending and receiving data.

7 Data Bits

8 Data Bits

Stop Bits

Set the number of stop bits to match host device requirements. See page 238 for more information on this feature.

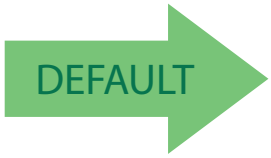


1 Stop Bit

2 Stop Bits

Parity

This feature specifies parity required for sending and receiving data. Select the parity type according to host device requirements. See page 238 for more information.



Parity = None

Parity = Even

Parity = Odd

3 Configuration Using Barcodes

Handshaking Control

See page 238 for more information about this feature.

DEFAULT

Handshaking Control = RTS

Handshaking Control = RTS/CTS

Handshaking Control = RTS/XON/XOFF

Handshaking Control = RTS On/CTS

Handshaking Control = RTS/CTS Scan Control

3 Configuration Using Barcodes

3.3 RS-232/USB-Com Interfaces

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

3 Configuration Using Barcodes

Intercharacter Delay

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

See page 239 for more information.

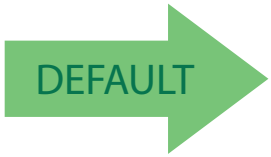
Intercharacter Delay = No Delay

Select Intercharacter Delay Setting

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

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

CANCEL



00 = No Intercharacter Delay

Beep On ASCII BEL

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

Beep On ASCII BEL = Disable

Beep On ASCII BEL = Enable

3 Configuration Using Barcodes

Beep On Not on File

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

Beep On Not On File = Disable

DEFAULT

Beep On Not On File = Enable

ACK NAK Options

This enables/disables the ability of the reader to support the RS-232 ACK/NAK protocol.
See page 240 for more information.

DEFAULT

ACK/NAK Protocol = Disable ACK/NAK

ACK/NAK Protocol =
Enable for label transmission

ACK/NAK Protocol =
Enable for host-command acknowledge

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

3 Configuration Using Barcodes

ACK Character

This setting specifies an ASCII character or hex value to be used as the ACK character. ASCII characters or any hex value from 0 to 0xFF can be selected. See page 240 for more information.

NOTE

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

Select ACK Character Setting

DEFAULT **0x06 'ACK' Character**

NAK Character

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

NOTE

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

See page 241 for more information.

Select NAK Character Setting

DEFAULT **0x15 'NAK' Character**

3 Configuration Using Barcodes

ACK NAK Timeout Value

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

See page 242 for more information on setting this feature.

Select ACK NAK Timeout Value Setting

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

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

CANCEL

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

ACK NAK Retry Count

This feature specifies the number of times the reader retries a label transmission due to a retry condition. The selectable range is from 1 to 254 retries. A selection of 0 disables the count, and a selection of 255 specifies unlimited retries. See page 243 for more information.

Select ACK NAK Retry Count Setting

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

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

CANCEL

DEFAULT **003 = 3 Retries**

3 Configuration Using Barcodes

ACK NAK Error Handling

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

DEFAULT

ACK NAK Error Handling =
Ignore Errors Detected

ACK NAK Error Handling =
Process Error as Valid ACK Character

ACK NAK Error Handling =
Process Error as Valid NAK Character

Indicate Transmission Failure

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

Indicate Transmission Failure =
Disable Indication

Indicate Transmission Failure =
Enable Indication

DEFAULT

3 Configuration Using Barcodes

Disable Character

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

NOTE

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

See page 244 for more information on setting this feature.

Select Disable Character Setting

DEFAULT **0x44 = Disable Character is 'D'**

Enable Character

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

NOTE

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

See page 245 in "References" for more information on setting this feature.

Select Enable Character Setting

DEFAULT **0x45 = Enable Character is 'E'**

3 Configuration Using Barcodes

3 Configuration Using Barcodes

3.4 Keyboard EMULATION Settings

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

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

3 Configuration Using Barcodes

Country Mode This feature specifies the country/language supported by the keyboard. Several languages are supported:

DEFAULT

Country Mode = U.S.

Country Mode = Belgium

Country Mode = Britain

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Croatia

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Czech Republic

Country Mode = Denmark

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = France

3 Configuration Using Barcodes

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = French Canadian

Country Mode = Germany

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Hungary

Country Mode = Italy

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Japanese 106-key

Country Mode = Lithuanian

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Norway

3 Configuration Using Barcodes

Country Mode = Poland

Supports only the interfaces listed in the Country Mode feature description.

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Portugal

Country Mode = Romania

Supports only the interfaces listed in the Country Mode feature description.

Supports only the interfaces listed in the Country Mode feature description.

Country Mode = Slovakia

Country Mode = Spain

Country Mode = Sweden

Country Mode = Switzerland

Supports only the interfaces listed in the Country Mode feature description.

3 Configuration Using Barcodes

Send Control Characters

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

Options are as follows:

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

Control Character 01 : Characters from 00 to 0x1F are sent as control character Ctrl+Shift, 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 (see "Microsoft Windows Codepage 1252" on page 311).

DEFAULT

Wedge Send Control Characters = 00

Wedge Send Control Characters = 01

Wedge Send Control Characters = 02

3 Configuration Using Barcodes

Wedge Quiet Interval

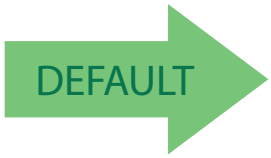
Specifies amount of time to look for keyboard activity before reader breaks keyboard connection in order to transmit data to host. The selectable range for this setting is 00 to 990 milliseconds (00-0x63 by 01) in increments of ten milliseconds. See page 246 in “References” for detailed information and examples for setting this feature.

Set Wedge Quiet Interval

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

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

CANCEL



0A = Quiet Interval is 100 milliseconds

Intercode Delay

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

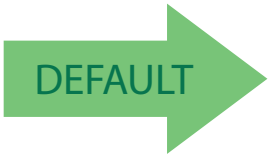
See page 248 in “References” for detailed information and examples for setting this feature.

Set Intercode Delay

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

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

CANCEL



00 = No Wedge Intercode Delay

3 Configuration Using Barcodes

Caps Lock State

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

DEFAULT

Caps Lock State = Caps Lock OFF

Caps Lock State = Caps Lock ON

Caps Lock State = AUTO Caps Lock Enable

Numlock

This option specifies the setting of the NUMLOCK key in the Keyboard Wedge interface.

DEFAULT

Numlock = NUMLOCK key unchanged

Numlock = Numlock key toggled

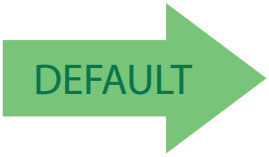
3 Configuration Using Barcodes

USB Keyboard Speed

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

NOTE

This feature applies ONLY to the USB Keyboard interface.



USB Keyboard Speed = 1ms

USB Keyboard Speed = 2ms

USB Keyboard Speed = 3ms

USB Keyboard Speed = 4ms

USB Keyboard Speed = 5ms

USB Keyboard Speed = 6ms

USB Keyboard Speed = 7ms

USB Keyboard Speed = 8ms

3 Configuration Using Barcodes

USB Keyboard Speed = 9ms

USB Keyboard Speed = 10ms

USB Keyboard Numeric Keypad

This option Controls whether numeric characters will be sent using standard keys or the numeric keypad.

DEFAULT

Standard Keys

Numeric Keypad

3 Configuration Using Barcodes

3 Configuration Using Barcodes

3.5 USB-OEM Interface

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

Reference Appendix C: Standard Defaults for a listing of standard factory settings.

3 Configuration Using Barcodes

3.5.1 USB-OEM Device Usage

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

Options are:
- Table Top reader
- Handheld reader

USB-OEM Device Usage = Table Top Reader

USB-OEM Device Usage = Handheld Reader

Interface Options

This feature provides for an interface-specific control mechanism.

Obey Reader Configuration Host Commands

Ignore Reader Configuration Host Commands

3 Configuration Using Barcodes

3.6 Data Format

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

3 Configuration Using Barcodes

3.6.1 Global Prefix/ Suffix (Header/ Terminator)

This option sets up to 20 characters each from the set of ASCII characters or any hex value from 00 to FF. The characters may be added as a prefix (in a position before the barcode data, also called a header) and/or as a suffix (in a position following the barcode data, also called a terminator). See page 252 for more detailed instructions on setting this feature.

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

Set Global Prefix

Set Global Suffix

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

CANCEL

DEFAULT

No Global Prefix
Global Suffix = 0x0D (CR)

3.6.2 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 readed barcode data. See Table .AIM IDs on page 59 for a listing of AIM IDs.

AIM label identifiers consist of three characters as follows:

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

DEFAULT

Global AIM ID = Disable

Global AIM ID = Enable

.AIM IDs

Tag Name	AIM ID code character	AIM ID code ASCII value
ABC CODABAR	X	58
ANKER PLESSEY	N	4E
AZTEC	z	7A
CHINA SENSIBLE CODE	X	58
CODABAR	F	46
CODE11	H	48
CODE128	C	43
CODE32	A	41
CODE39	A	41
CODE39 CIP	X	58
CODE39 DANISH PPT	X	58
CODE39 LAPOSTE	X	58
CODE39 PZN	X	58
CODE93	G	47
DATABAR 14	e	65
DATABAR 14 COMPOSITE	e	65

3 Configuration Using Barcodes

DATABAR EXPANDED	e	65
DATABAR EXPANDED COMPOSITE	e	65
DATABAR LIMITED	e	65
DATABAR LIMITED COMPOSITE	e	65
DATA MATRIX	d	64
EAN128	C	43
EAN128 COMPOSITE	C	43
EAN13	E	45
EAN13 P2	E	45
EAN13 P5	E	45
EAN13 COMPOSITE	E	45
EAN8	E	45
EAN8 P2	E	45
EAN8 P5	E	45
EAN8 COMPOSITE	E	45
FOLLET 2OF5	X	58
I2OF5	I	49
IATA INDUSTRIAL 2OF5	X	58
INDUSTRIAL 2OF5	X	58
ISBN	X	58
ISBT128 CONCAT	X	58
ISSN	X	58
MAXICODE	U	55
MICRO QR	Q	51
MICRO PDF	L	4C
MSI	M	4D
PDF417	L	4C
PLESSEY	P	50
POSTAL AUSTRALIAN	X	58
POSTAL IMB	X	58
POSTAL JAPANESE	X	58
POSTAL KIX	X	58
POSTAL PLANET	X	58
POSTAL PORTUGAL	X	58
POSTAL POSTNET BB	X	58
POSTAL ROYAL MAIL	X	58
POSTAL SWEDISH	X	58

3 Configuration Using Barcodes

POSTNET	X	58
QR CODE	Q	51
S25	S	53
TRIOPTIC	X	58
UPCA	E	45
UPCA P2	E	45
UPCA P5	E	45
UPCA COMPOSITE	E	45
UPCE	E	45
UPCE P2	E	45
UPCE P5	E	45
UPCE COMPOSITE	E	45

Set AIM ID Individually for GS1-128

This feature configures a Label ID individually for the GS1-128 symbology and the programming for this works the same way as Label ID. See Label ID: Set Individually Per Symbology, starting on page 257 for detailed instructions on setting this feature.

Set AIM ID Individually for GS1-128 = Disable

Set AIM ID Individually for GS1-128 = Enable

3.6.3 Label ID

A Label ID is a customizable code of up to three ASCII characters (convert to Hex using the ASCII Chart on the inside back cover of this manual), used to identify a barcode symbology type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs or individually per symbology (see "Individually Set Label ID" on page 62). If you wish to program the reader to always include an industry standard label identifier for ALL symbology types, see the previous feature "Global AIM ID" on page 59.

See Label ID, starting on page 254 of “References” for more information on setting this feature.

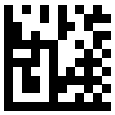
Label ID: Pre-Loaded Sets

The reader supports two pre-loaded sets of Label IDs. See Label ID: Pre-loaded Sets, starting on page 254 for details on the USA set and EU set.

CAUTION

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

Label ID Pre-loaded Set = USA Set



Label ID Pre-loaded Set = EU Set

Individually Set Label ID

This feature configures a Label ID individually for a single symbology. To set, first define whether you want it as a prefix or suffix by reading a label below. Then turn to Label ID Symbology Selection – 1D Symbologies, starting on page 63 to select the symbology you want to set, followed by up to 3 characters from the ASCII Chart at the back of this manual. See Label ID: Set Individually Per Symbology, starting on page 257 for detailed instructions on setting this feature.

3 Configuration Using Barcodes

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 – 1D Symbologies

This option selects the symbology for which a Label ID is to be configured. See "Label ID" on page 62 or page 254 in “References” for more detailed instructions.

NOTE

If less than the expected string of 3 characters are selected, scan the ENTER/EXIT barcode twice to accept the selection and exit Programming Mode.

Set ABC Codabar Label ID Character(s)

Set Code 32 Pharmacode Label ID Character(s)

Set Anker Plessey Label ID Character(s)

Set Code 93 Label ID Character(s)

Set Australian Postal Code Label ID Character(s)

Set Concatenated ISBT 128 Label ID Character(s)

Set Codabar Label ID Character(s)

Set Danish PPT Label ID Character(s)

3 Configuration Using Barcodes

Set Code 11 Label ID Character(s)

Set EAN 13 Label ID Character(s)

Set Code 128 Label ID Character(s)

Set EAN 13 Composite Label ID Character(s)

Set Code 39 Label ID Character(s)

Set EAN 13 P2 Label ID Character(s)

Set Code 39 CIP Label ID Character(s)

Set EAN 13 P5 Label ID Character(s)

Set EAN 8 Label ID Character(s)

Set GS1 DataBar Expanded Composite Label ID Character(s)

Set EAN 8 Composite Label ID Character(s)

Set GS1-128 Label ID Character(s)

Set EAN 8 P2 Label ID Character(s)

Set GS1-128 Composite Label ID Character(s)

Set EAN 8 P5 Label ID Character(s)

Set GSI DataBar Limited Label ID Character(s)

3 Configuration Using Barcodes

Set Follett 2 of 5 Label ID Character(s)

GSI DataBar Limited Composite Label ID Character(s)

Set GS1 DataBar 14 Label ID Character(s)

Set GTIN 2 Label ID Character(s)

Set GS1 DataBar 14 Composite Label ID Character(s)

Set GTIN 5 Label ID Character(s)

Set GS1 DataBar Expanded Label ID Character(s)

Set GTIN 8 Label ID Character(s)

Set IATA Industrial 2 of 5 Label ID Character(s)

Set LaPoste Code 39 Label ID Character(s)

Set IMB Postal Code Label ID Character(s)

Set MSI Label ID Character(s)

Set Industrial 2 of 5 Label ID Character(s)

Set Planet Postal Code Label ID Character(s)

Set Interleaved 2 of 5 Label ID Character(s)

Set Plessey Label ID Character(s)

3 Configuration Using Barcodes

Set ISBN Label ID Character(s)

Set Portugal Postal Code Label ID Character(s)

Set ISSN Label ID Character(s)

Set Postnet Label ID Character(s)

Set Japan Postal Code Label ID Character(s)

Set Kix Postal Code Label ID Character(s)

Set PZN Code Label ID Character(s)

Set Postnet BB Label ID Character(s)

Set Royal Postal Code Label ID Character(s)

Set UPC-A Composite Label ID Character(s)

Set Standard 2 of 5 Label ID Character(s)

Set UPC-A P2 Label ID Character(s)

Set Swedish Postal Code Label ID Character(s)

Set UPC-A P5 Label ID Character(s)

Set Trioptic Code Label ID Character(s)

Set UPC-E Label ID Character(s)

Set UPC-A Label ID Character(s)

Set UPC-E P5 Label ID Character(s)

3 Configuration Using Barcodes

Label ID Symbology Selection – 2D Symbologies

Set Aztec Label ID Character(s)

Set Maxicode Label ID Character(s)

Set China Sensible Label ID Character(s)

Set PDF 417 Label ID Character(s)

Set Codablock F Label ID Character(s)

Set Micro PDF 417 Label ID Character(s)

Set Data Matrix Label ID Character(s)

Set QR Code Label ID Character(s)

Set Micro QR Label ID Character(s)

3 Configuration Using Barcodes

Case Conversion

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

NOTE

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

DEFAULT

Case Conversion = Disable (no case conversion)

Case Conversion = Convert to upper case

Case Conversion = Convert to lower case

Character Conversion

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

NOTE

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

Configure Character Conversion

DEFAULT

0xFFFFFFFFFFFFFFFF
(No character conversion)

3 Configuration Using Barcodes

3.7 Reading Parameters

3 Configuration Using Barcodes

3.7.1 Double Read Timeout

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

Double Read Timeout = 0.1 Second

Double Read Timeout = 0.2 Second

Double Read Timeout = 0.3 Second

Double Read Timeout = 0.4 Second

Double Read Timeout = 0.5 Second

Double Read Timeout = 0.6 Second

DEFAULT

Double Read Timeout = 0.7 Second

3 Configuration Using Barcodes

Double Read Timeout = 0.8 Second

Double Read Timeout = 0.9 Second

Double Read Timeout = 1 Second

3 Configuration Using Barcodes

3.7.2 LED and Beeper Indicators

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

Power On Alert =
Disable (No Audible Indication)

Power On Alert = Power-up Beep

DEFAULT

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

DEFAULT

Indicate Good Read = After Decode

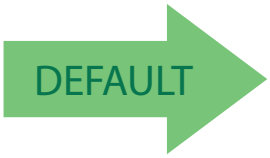
Indicate Good Read = After Transmit

Indicate Good Read =
After CTS goes inactive then active

3 Configuration Using Barcodes

Good Read Beep Type

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



Good Read Beep Type = Mono

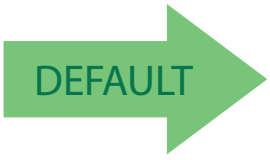
Good Read Beep Type = Bitonal

Good Read Beep Frequency

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

Good Read Beep Frequency = Low

Good Read Beep Frequency = Medium



Good Read Beep Frequency = High

3 Configuration Using Barcodes

Good Read Beep Length

Good Read Beep Length = 60 msec

Good Read Beep Length = 80 msec

DEFAULT

Good Read Beep Length = 100 msec

Good Read Beep Length = 120 msec

Good Read Beep Length = 140 msec

Good Read Beep Length = 160 msec

Good Read Beep Length = 180 msec

Good Read Beep Length = 200 msec

3 Configuration Using Barcodes

Good Read Beep Volume

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

Good Read Beep Volume = Beeper Off

Good Read Beep Volume = Low

Good Read Beep Volume = Medium

Good Read Beep Volume = High

3 Configuration Using Barcodes

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 page 260 in “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 barcode above, then the barcode at left followed by the digits from the Alphanumeric characters in Appendix D: Keypad representing your desired character(s). End by reading the ENTER/EXIT barcode again.

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

CANCEL

DEFAULT

003 = Good Read LED stays on for 300 ms.

NOTE

Indicators are dimmed during sleep.

3.7.3 Reading Features

Scan Mode Selects the reader's scan operating mode. See page 261 in "References" for descriptions.


Scan Mode = Trigger Single


Scan Mode = Trigger Hold Multiple


Scan Mode = Trigger Pulse Multiple


Scan Mode = Flashing

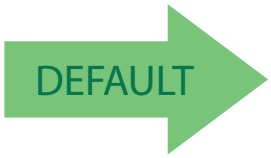

Scan Mode = Always On


Scan Mode = Stand Mode

3 Configuration Using Barcodes

Stand Mode Indication

This operation is useful for indicating when the reader is in Stand Mode. If enabled, the blue indicator will blink when Stand Mode reading is active.



Stand Mode Indication = Disable

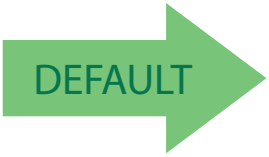
Stand Mode Indication = Enable

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.

NOTE

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



Pick Mode = Disable

Pick Mode = Enable

3 Configuration Using Barcodes

Stand Mode Sensitivity

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

Stand Mode Sensitivity = Low

Stand Mode Sensitivity = Medium

DEFAULT

Stand Mode Sensitivity = High

Stand Mode Illumination Off Time

Specifies the amount of time reader illumination stays off after pulling the trigger when in Stand Mode. The configurable range is 01 to 32 by 01 in increments of 500ms (500ms to 16 seconds). See page 262 in “References” for a description of this feature.

Select Stand Mode Time Setting

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

DEFAULT

04 = 2 Seconds

3 Configuration Using Barcodes

Reading 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 263 in “References” for further description of this feature.

Reading Active Time = 3 seconds

Reading Active Time = 5 seconds

DEFAULT

Reading Active Time = 8 seconds

Stand Illumination Control

Controls the illumination status while the reading mode is stand mode and the reader is attempting to detect objects.

DEFAULT

Stand Illumination Control = OFF

Stand Illumination Control = ON

Stand Illumination Control = Dim

3 Configuration Using Barcodes

Flash On Time

This feature specifies the ON time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See page 265 in “References” for detailed information on setting this feature.

Select Flash ON Time Setting

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

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

CANCEL

DEFAULT

10 = Flash is ON for 1 Second

Flash Off Time

This feature specifies the OFF time for the indicator LED while in Flash Mode. The selectable range is 100 to 9,900 milliseconds (0.1 to 9.9 seconds), in 100 millisecond increments. See page 266 in “References” for detailed information on setting this feature.

Select Flash OFF Time Setting

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

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

CANCEL

DEFAULT

06 = Flash is OFF for 600ms

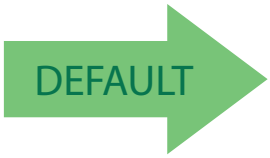
3 Configuration Using Barcodes

Aiming Pointer Enables/disables the aiming pointer for all symbologies.

Aiming Pointer = Disable

Aiming Pointer = Enable

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 264 in “References” for a description of this feature.



Set Aiming Duration Timer

Aiming Off After Decoding

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

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

CANCEL

3 Configuration Using Barcodes

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)

Partial Label Reading Control

Enable/Disable the option to ignore partial labels to be read within the boundary of the field of view.

Partial Label Reading Control = Disable

Partial Label Reading Control = Enable

3 Configuration Using Barcodes

Decode Negative Labels

Enable/Disable the ability to decode a negative label 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” barcode below to return the reader to its default for this feature.

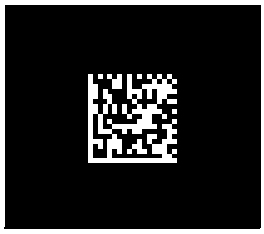
The reader can also be set to decode both positive and negative codes for certain 2D codes. See "2D Normal/Inverse Symbol Control" on page 177 for information on this feature.

NOTE

Unlike some programming features and options, Decode Negative Label selections require that you scan only one programming barcode label. DO NOT scan an ENTER/EXIT barcode prior to reading a Decode Negative Label barcode.

CAUTION

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



Decode Negative Label = Disable

Decode Negative Label = Enable

3.7.4 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 code in the area in front of it (the Volume). In this case, the reader stops processing the code 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 reader keeps on processing the image until all the labels present are decoded. The reader then sorts the data from all the barcodes (if configured to do so) before transmitting it.

3.7.5 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. See page 267 in "References" for detailed information on setting this feature.

Select Symbologies for Multiple Labels Ordering

To configure this feature, scan the ENTER/ EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by the digits From the alphanumeric characters In Appendix D: Keypad representing your desired Character(s). end by reading the enter/exit barcode again.

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

CANCEL

DEFAULT

000000000000 = Random order

3 Configuration Using Barcodes

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

3 Configuration Using Barcodes

3.8 1D Symbologies

The reader supports the following 1D symbologies (barcode types). See "2D Symbologies" starting on page 175 for 2D barcodes. Symbology-dependent options are included in each chapter.

Disable All Symbologies, page 88	GS1-128, page 123
Code EAN/UPC, page 89	Code ISBT 128, page 124
UPC-E, page 92	Interleaved 2 of 5 (I 2 of 5), page 127
GTIN Formatting, page 94	Interleaved 2 of 5 CIP HR, page 132
EAN 13 (Jan 13), page 95	Follett 2 of 5, page 133
ISSN, page 97	Standard 2 of 5, page 134
EAN 8 (Jan 8), page 98	Industrial 2 of 5, page 138
UPC/EAN Global Settings, page 100	Code IATA, page 142
Add-Ons, page 101	Codabar, page 143
Code 39, page 107	ABC Codabar, page 149
Trioptic Code, page 112	Code 11, page 152
Code 32 (Ital Pharmaceutical Code), page 113	GS1 DataBar™ Omnidirectional, page 156
Code 39 CIP (French Pharmaceutical), page 115	GS1 DataBar™ Expanded, page 157
Code 39 Danish PPT, page 116	GS1 DataBar™ Limited, page 161
Code 39 LaPoste, page 117	Code 93, page 162
Code 39 PZN, page 118	MSI, page 167
Code 128, page 119	Plessey, page 171

Default settings are indicated at each feature/option with a green arrow. Also reference Appendix C: Standard Defaults for a listing of the most widely used set of standard factory settings.

To set most features:

1 Scan the ENTER/EXIT PROGRAMMING barcode at the top of applicable programming pages.

2 Scan the correct barcode to set the desired programming feature or parameter. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the reader reads only the barcode you intend to scan.

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

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 barcode to abort and not save the entry string. You can then start again at the beginning.

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

3 Configuration Using Barcodes

Disable All Symbologies

Use this feature to disable all symbologies.

1 Scan the ENTER/EXIT PROGRAMMING Mode barcode.

2 Scan the Disable All Symbologies barcode.

3 Complete the programming sequence by reading the ENTER/EXIT PROGRAMMING barcode.

Disable All Symbologies

NOTE

This does not disable the reading of programming labels.

3 Configuration Using Barcodes

3.8.1 Code EAN/UPC

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

Coupon Control = Allow all coupon barcodes to be decoded

Coupon Control = Enable only UPCA coupon decoding

DEFAULT

Coupon Control = Enable only GS1 DataBar™ coupon decoding

3 Configuration Using Barcodes

3.8.2 UPC-A

The following options apply to the UPC-A symbology.

UPC-A Enable/ Disable

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

UPC-A = Disable

UPC-A = Enable

DEFAULT

UPC-A Check Character Transmission

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

UPC-A Check Character Transmission = Don't Send

UPC-A Check Character Transmission = Send

DEFAULT

3 Configuration Using Barcodes

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

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

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

3 Configuration Using Barcodes

3.8.3 UPC-E

The following options apply to the UPC-E symbology.

UPC-E Enable/ Disable

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

UPC-E = Disable

UPC-E = Enable

DEFAULT

UPC-E Check Character Transmission

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

UPC-E Check Character Transmission = Don't Send

UPC-E Check Character Transmission = Send

DEFAULT

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

3 Configuration Using Barcodes

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

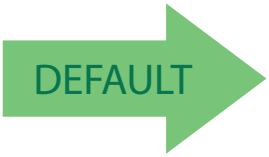
3 Configuration Using Barcodes

3.8.4 GTIN Formatting

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

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.



GTIN Formatting = Disable

GTIN Formatting = Enable

3 Configuration Using Barcodes

3.8.5 EAN 13 (Jan 13)

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

EAN 13 Enable/ Disable

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

EAN 13 = Disable

EAN 13 = Enable

DEFAULT

EAN 13 Check Character Transmission

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

EAN 13 Check Character Transmission = Don't Send

EAN 13 Check Character Transmission = Send

DEFAULT

3 Configuration Using Barcodes

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

3 Configuration Using Barcodes

3.8.6 ISSN

The following options apply to the ISSN symbology.

ISSN Enable/ Disable

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

DEFAULT

ISSN = Disable

ISSN = Enable

3 Configuration Using Barcodes

3.8.7 EAN 8 (Jan 8)

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

EAN 8 Enable/ Disable

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

EAN 8 = Disable

EAN 8 = Enable

DEFAULT

EAN 8 Check Character Transmission

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

EAN 8 Check Character Transmission = Don't Send

EAN 8 Check Character Transmission = Send

DEFAULT

Expand EAN 8 to EAN 13

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

DEFAULT

Expand EAN 8 to EAN 13 = Disable

Expand EAN 8 to EAN 13 = Enable

3 Configuration Using Barcodes

3.8.8 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

3 Configuration Using Barcodes

3.8.9 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.

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 barcode, 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 ADDONs.

DEFAULT

UPC/EAN Quiet Zones = Two Modules

UPC/EAN Quiet Zones = Three Modules

3 Configuration Using Barcodes

3.8.10 Add-Ons

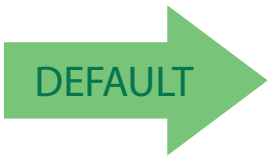
Contact Customer Support for advanced programming of optional and conditional add-ons.

Optional Add-ons

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

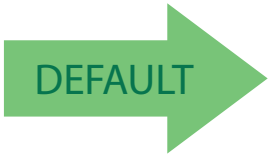
NOTE

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



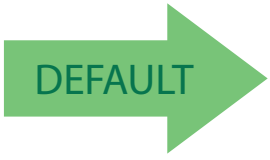
Optional Add-Ons = Disable P2

Optional Add-Ons = Enable P2



Optional Add-Ons = Disable P5

Optional Add-Ons = Enable P5



Optional Add-Ons = Disable GS1-128

Optional Add-Ons = Enable GS1-128

3 Configuration Using Barcodes

Optional Add-On Timer

This option sets the time the reader will look for an add-on when an add-on fragment has been seen and optional add-ons are enabled. (Also see "Optional GS1-128 Add-On Timer" on page 104.)

Optional Add-on Timer = 10ms

Optional Add-on Timer = 20ms

Optional Add-on Timer = 30ms

Optional Add-on Timer = 40ms

Optional Add-on Timer = 50ms

Optional Add-on Timer = 60ms

Optional Add-on Timer = 70ms

DEFAULT

Optional Add-on Timer = 100ms

3 Configuration Using Barcodes

Optional Add-on Timer = 120ms

Optional Add-on Timer = 140ms

Optional Add-on Timer = 160ms

Optional Add-on Timer = 180ms

Optional Add-on Timer = 200ms

Optional Add-on Timer = 220ms

Optional Add-on Timer = 240ms

Optional Add-on Timer = 260ms

3 Configuration Using Barcodes

Optional Add-on Timer = 280ms

Optional Add-on Timer = 300ms

Optional GS1-128 Add-On Timer

This option sets the timer expiration value to read the added part after reading the linear EAN/UPC part. For UPC/EAN add-ons other than those of that type, see "Optional Add-On Timer" on page 102.

DEFAULT

Optional GS1-128 Add-On Timer = Disable

Optional GS1-128 Add-On Timer = 10ms

Optional GS1-128 Add-On Timer = 20ms

Optional GS1-128 Add-On Timer = 30ms

Optional GS1-128 Add-On Timer = 40ms

3 Configuration Using Barcodes

Optional GS1-128 Add-On Timer = 50ms

Optional GS1-128 Add-On Timer = 60ms

Optional GS1-128 Add-On Timer = 70ms

Optional GS1-128 Add-On Timer = 100ms

Optional GS1-128 Add-On Timer = 120ms

Optional GS1-128 Add-On Timer = 140ms

Optional GS1-128 Add-On Timer = 160ms

3 Configuration Using Barcodes

Optional GS1-128 Add-On Timer = 180ms

Optional GS1-128 Add-On Timer = 200ms

Optional GS1-128 Add-On Timer = 220ms

Optional GS1-128 Add-On Timer = 240ms

Optional GS1-128 Add-On Timer = 260ms

Optional GS1-128 Add-On Timer = 280ms

Optional GS1-128 Add-On Timer = 300ms

3 Configuration Using Barcodes

3.8.11 Code 39

The following options apply to the Code 39 symbology.

Code 39 Enable/Disable

Code 39 = Disable

Code 39 = Enable

DEFAULT

Code 39 Check Character Calculation

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

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 = Enable Italian Post Check

Code 39 Check Character Calculation = Enable Daimler Chrysler Check

3 Configuration Using Barcodes

Code 39 Check Character Transmission

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

Code 39 Check Character Transmission = Don't Send

Code 39 Check Character Transmission = Send

DEFAULT

Code 39 Start/ Stop Character Transmission

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

DEFAULT

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

Code 39 Start/Stop Character Transmission = Transmit

Code 39 Full ASCII

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

DEFAULT

Code 39 Full ASCII = Disable

Code 39 Full ASCII = Enable

3 Configuration Using Barcodes

Code 39 Quiet Zones

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

Code 39 Quiet Zones =
Quiet Zones on two sides

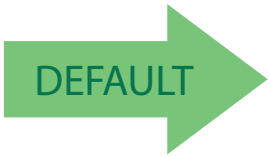
Code 39 Quiet Zones =
Small Quiet Zones on two sides

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.



Code 39 Length Control = Variable Length

Code 39 Length Control = Fixed Length

3 Configuration Using Barcodes

Code 39 Set Length 1

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

Table Code 39 Length 1 Setting Examples provides examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

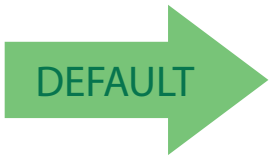
Code 39 Length 1 Setting Examples

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

Select Code 39 Set Length 1 Setting

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

CANCEL



02 = Length 1 is 2 Characters

3 Configuration Using Barcodes

Code 39 Set Length 2

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

Table Code 39 Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

Code 39 Length 2 Setting Examples

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

Select Code 39 Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

3 Configuration Using Barcodes

3.8.12 Trioptic Code

The following options apply to the Trioptic symbology.

Trioptic Code Enable/Disable

DEFAULT

Trioptic Code = Disable

Trioptic Code = Enable

3.8.13 Code 32 (Ital Pharmaceutical Code)

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

Code 32 Enable/Disable

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

DEFAULT

Code 32 = Disable

Code 32 = Enable

Code 32 Feature Setting Exceptions

NOTE

The following features are set for Code 32 by using these Code 39 settings:
"Code 39 Quiet Zones" on page 109
"Code 39 Length Control" on page 109
"Trioptic Code" on page 112

Code 32 Check Character Transmission

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

DEFAULT

Code 32 Check Character Transmission = Don't Send

Code 32 Check Character Transmission = Send

3 Configuration Using Barcodes

3.8.14 Code 32 Start/ Stop Character Transmission

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

DEFAULT

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

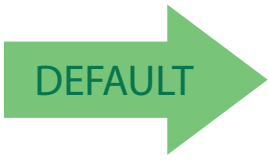
Code 32 Start/Stop Character Transmission = Transmit

3.8.15 Code 39 CIP (French Pharmaceutical)

The following options apply to the Code 39 CIP symbology.

Code 39 CIP Enable/Disable

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



Code 39 CIP = Disable

Code 39 CIP = Enable

3 Configuration Using Barcodes

3.8.16 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

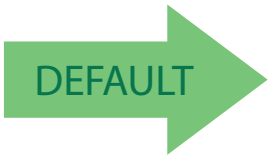
Code 39 Danish PPT = Enable

3.8.17 Code 39 LaPoste

The following options apply to the Code 39 LaPoste symbology.

Code 39 LaPoste Enable/ Disable

Enables/disables the ability of the reader to decode Code39 La Poste labels.



Code 39 LaPoste = Disable

Code 39 LaPoste = Enable

3 Configuration Using Barcodes

3.8.18 Code 39 PZN

The following options apply to the Code 39 PZN symbology.

Code 39 PZN Enable/Disable

Enables/disables the ability of the reader to decode Code39 PZN labels.

DEFAULT

Code 39 PZN = Disable

Code 39 PZN = Enable

3 Configuration Using Barcodes

3.8.19 Code 128

The following options apply to the Code 128 symbology.

Code 128 Enable/Disable

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

Code 128 = Disable

Code 128 = Enable

DEFAULT

Expand Code 128 to Code 39

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

DEFAULT

Code 128 to Code 39 = Don't Expand

Code 128 to Code 39 = Expand

Code 128 Check Character Transmission

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

DEFAULT

Code 128 Check Character Transmission = Don't Send

Code 128 Check Character Transmission = Send

3 Configuration Using Barcodes

Code 128 Function Character Transmission

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

DEFAULT

Code 128 Function Character Transmission = Don't Send

Code 128 Function Character Transmission = Send

Code 128 Sub-Code Exchange Transmission

Enables/disables the transmission of "Sub-Code Exchange" characters (NOT transmitted by standard decoding).

DEFAULT

Code 128 Sub-Code Exchange Transmission = Disable

Code 128 Sub-Code Exchange Transmission = Enable

Code 128 Quiet Zones

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

Code 128 Quiet Zones = Quiet Zones on two sides

Code 128 Quiet Zones = Small Quiet Zones on two sides

DEFAULT

3 Configuration Using Barcodes

Code 128 Length Control

This feature specifies either variable length decoding or fixed length decoding for the Code 128 symbology. See page 249 for more information.

DEFAULT

Code 128 Length Control = Variable Length

Code 128 Length Control = Fixed Length

Code 128 Set Length 1

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

Table Code 128 Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

Code 128 Length 1 Setting Examples

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

Select Code 128 Set Length 1 Setting

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

CANCEL

DEFAULT

01 = Length 1 is 1 Character

3 Configuration Using Barcodes

Code 128 Set Length 2

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

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

Table Code 128 Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

Code 128 Length 2 Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	00 (Ignore This Length)	07 Characters	15 Characters	80 Characters
2	**Scan ENTER/EXIT PROGRAMMING MODE**				
3	**Scan SELECT CODE 128 LENGTH 2 SETTING**				
4	**Scan Two Characters From Appendix D: Keypad**	'0' and '0'	'0' and '7'	'1' and '5'	'8' and 0'
5	**Scan ENTER/EXIT PROGRAMMING MODE**				

Select Code 128 Length 2 Setting

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

CANCEL

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

3 Configuration Using Barcodes

3.8.20 GS1-128

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

GS1-128 Enable

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

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

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

3.8.21 Code ISBT 128

The following options apply to the ISBT 128 symbology.

ISBT 128 Concatenation

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

DEFAULT

ISBN 128 Concatenation = Disable

ISBN 128 Concatenation = Enable

ISBT 128 Force Concatenation

When enabled, this feature forces concatenation for ISBT.

NOTE

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

DEFAULT

ISBT 128 Force Concatenation = Disable

ISBT 128 Force Concatenation = Enable

3 Configuration Using Barcodes

ISBT 128 Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

NOTE

This option is only valid when ISBT 128 Concatenation is enabled (see "ISBT 128 Concatenation" on page 124).

DEFAULT

ISBT 128 Concatenation Mode = Static

ISBT 128 Concatenation Mode = Dynamic

3 Configuration Using Barcodes

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

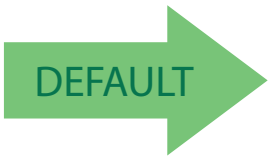
3 Configuration Using Barcodes

3.8.22 Interleaved 2 of 5 (I 2 of 5)

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

I 2 of 5 Enable/ Disable

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



I 2 of 5 = Disable

I 2 of 5 = Enable

3 Configuration Using Barcodes

I 2 of 5 Check Character Calculation

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

DEFAULT

I 2 of 5 Check Character Calculation = Disable

I 2 of 5 Check Character Calculation = Check Standard (Modulo 10)

I 2 of 5 Check Character Calculation = Check German Parcel

I 2 of 5 Check Character Calculation = Check DHL

I 2 of 5 Check Character Calculation = Check Daimler Chrysler

I 2 of 5 Check Character Calculation = Check Bosch

I 2 of 5 Check Character Calculation = Italian Post

3 Configuration Using Barcodes

I 2 of 5 Check Character Transmission

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

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

I 2 of 5 Check Character Transmission = Send

DEFAULT

I 2 of 5 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

3 Configuration Using Barcodes

I 2 of 5 Set Length 1

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

Table I 2 of 5 Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

I 2 of 5 Length 1 Setting Examples

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

Select I 2 of 5 Length 1 Setting

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

CANCEL

DEFAULT

06 = Length 1 is 6 Characters

3 Configuration Using Barcodes

I 2 of 5 Set Length 2

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

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

Table I 2 of 5 Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

I 2 of 5 Length 2 Setting Examples

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

Select I 2 of 5 Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

3.8.23 Interleaved 2 of 5 CIP HR

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

Interleaved 2 of 5 CIP HR Enable/Disable

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

DEFAULT

Interleaved 2 of 5 CIP HR = Disable

Interleaved 2 of 5 CIP HR = Enable

3 Configuration Using Barcodes

3.8.24 Follett 2 of 5

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

Follett 2 of 5 Enable/Disable

Enables/Disables ability of reader to decode Plessey labels.

DEFAULT

Follett 2 of 5 = Disable

Follett 2 of 5 = Enable

3 Configuration Using Barcodes

3.8.25 Standard 2 of 5

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

Standard 2 of 5 Enable/Disable

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

DEFAULT

Standard 2 of 5 = Disable

Standard 2 of 5 = Enable

Standard 2 of 5 Check Character Calculation

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

DEFAULT

Standard 2 of 5 Check Character Calculation = Disable

Standard 2 of 5 Check Character Calculation = Enable

Standard 2 of 5 Check Character Transmission

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

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

Standard 2 of 5 Check Character Transmission = Send

DEFAULT

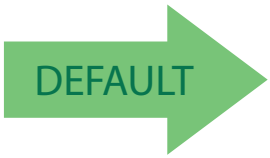
3 Configuration Using Barcodes

Standard 2 of 5 Length Control

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

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

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



Standard 2 of 5 Length Control = Variable Length

Standard 2 of 5 Length Control = Fixed Length

Standard 2 of 5 Set Length 1

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

Table Standard 2 of 5 Length 1 Setting Examples provides some examples for setting Length 1. See page 249 if you want detailed instructions on setting this feature.

Standard 2 of 5 Length 1 Setting Examples

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

3 Configuration Using Barcodes

Select Standard 2 of 5 Length 1 Setting

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

CANCEL

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

Standard 2 of 5 Set Length 2

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

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

Table Standard 2 of 5 Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

Standard 2 of 5 Length 2 Setting Examples

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

3 Configuration Using Barcodes

Select Standard 2 of 5 Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

3 Configuration Using Barcodes

3.8.26 Industrial 2 of 5

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

Industrial 2 of 5 Enable/Disable

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

DEFAULT

Industrial 2 of 5 = Disable

Industrial 2 of 5 = Enable

Industrial 2 of 5 Check Character Calculation

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

DEFAULT

Industrial 2 of 5 Check Character Calculation = Disable

Industrial 2 of 5 Check Character Calculation = Enable

Industrial 2 of 5 Check Character Transmission

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

Industrial 2 of 5 Check Character Transmission = Disable

Industrial 2 of 5 Check Character Transmission = Enable

DEFAULT

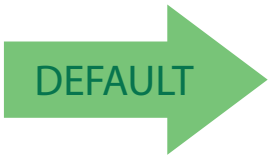
3 Configuration Using Barcodes

Industrial 2 of 5 Length Control

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

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

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



Industrial 2 of 5 Length Control = Variable Length

Industrial 2 of 5 = Fixed Length

3 Configuration Using Barcodes

Industrial 2 of 5 Set Length 1

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

Table Industrial 2 of 5 Length 1 Setting Examples provides some examples for setting Length 1. See page 249 if you want detailed instructions on setting this feature.

Industrial 2 of 5 Length 1 Setting Examples

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

Select Industrial 2 of 5 Set Length 1 Setting

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

CANCEL

DEFAULT

01 = Length 1 is 1 Character

3 Configuration Using Barcodes

Industrial 2 of 5 Set Length 2

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

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

Table Industrial 2 of 5 Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

Industrial 2 of 5 Length 2 Setting Examples

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

Select Industrial 2 of5 Length 2 Setting

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

CANCEL

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

3 Configuration Using Barcodes

3.8.27 Code IATA

The following options apply to the IATA symbology.

IATA Enable/ Disable

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

DEFAULT

IATA = Disable

IATA = Enable

IATA Check Character Transmission

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

IATA Check Character Transmission = Disable

IATA Check Character Transmission = Enable

DEFAULT

3 Configuration Using Barcodes

3.8.28 Codabar

The following options apply to the Codabar symbology.

Codabar Enable/Disable

When disabled, the reader will not read Codabar barcodes.

DEFAULT

Codabar = Disable

Codabar = Enable

Codabar Check Character Calculation

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

DEFAULT

Codabar Check Character Calculation = Don't Calculate

Codabar Check Character Calculation = Enable AIM standard check char.

Codabar Check Character Calculation = Enable Modulo 10 check char.

3 Configuration Using Barcodes

Codabar Check Character Transmission

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

Codabar Check Character Transmission = Don't Send

Codabar Check Character Transmission = Send

DEFAULT

Codabar Start/ Stop Character Transmission

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

Codabar Start/Stop Character Transmission = Don't Transmit

Codabar Start/Stop Character Transmission = Transmit

DEFAULT

3 Configuration Using Barcodes

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

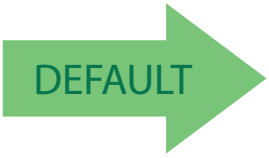
Codabar Start/Stop Character Match = Don't Require Match

Codabar Start/Stop Character Match = Require Match

3 Configuration Using Barcodes

Codabar Quiet Zones

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



Codabar Quiet Zones =
Quiet Zones on two sides

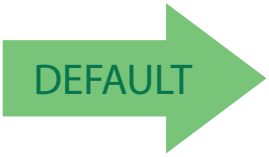
Codabar Quiet Zones =
Small Quiet Zones on two sides

Codabar Length Control

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

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

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



Codabar Length Control = Variable Length

Codabar Length Control = Fixed Length

Codabar Set Length 1

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

Table Codabar Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

Codabar Length 1 Setting Examples

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

Select Codabar Length 1 Setting

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

CANCEL

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

3 Configuration Using Barcodes

Codabar Set Length 2

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

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

Table Codabar Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

Codabar Length 2 Setting Examples

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

Select Codabar Length 2 Setting

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

CANCEL

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

3 Configuration Using Barcodes

3.8.29 ABC Codabar

The following options apply to the ABC Codabar symbology.

ABC Codabar Enable/Disable

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

DEFAULT

ABC Codabar = Disable

ABC Codabar = Enable

ABC Codabar Concatenation Mode

Specifies the concatenation mode between Static and Dynamic.

DEFAULT

ABC Codabar Concatenation Mode = Static

ABC Codabar Concatenation Mode = Dynamic

3 Configuration Using Barcodes

ABC Codabar Dynamic Concatenation Timeout

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

ABC Codabar Dynamic Concatenation Time-out = 50 msec

ABC Codabar Dynamic Concatenation Time-out = 100 msec

DEFAULT

ABC Codabar Dynamic Concatenation Time-out = 200 msec

ABC Codabar Dynamic Concatenation Time-out = 500 msec

ABC Codabar Dynamic Concatenation Time-out = 750 msec

ABC Codabar Dynamic Concatenation Time-out = 1 Second

3 Configuration Using Barcodes

ABC Codabar Force Concatenation

Forces labels starting or ending with D to be concatenated.

DEFAULT

ABC Codabar Force Concatenation = Disable

ABC Codabar Force Concatenation = Enable

3 Configuration Using Barcodes

3.8.30 Code 11

The following options apply to the Code 11 symbology.

Code 11 Enable/Disable

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

DEFAULT

Code 11 = Disable

Code 11 = Enable

Code 11 Check Character Calculation

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

Code 11 Check Character Calculation = Disable

Code 11 Check Character Calculation = Check C

Code 11 Check Character Calculation = Check K

Code 11 Check Character Calculation = Check C and K

DEFAULT

3 Configuration Using Barcodes

Code 11 Check Character Transmission

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

Code 11 Check Character Transmission = Don't Send

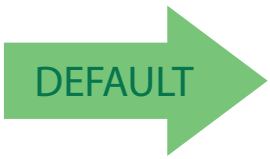
Code 11 Check Character Transmission = Send

Code 11 Length Control

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

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

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



Code 11 Length Control = Variable Length

Code 11 Length Control = Fixed Length

3 Configuration Using Barcodes

Code 11 Set Length 1

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

Table Code 11 Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

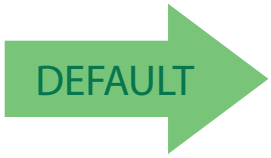
Code 11 Length 1 Setting Examples

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

Select Code 11 Set Length 1 Setting

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

CANCEL



04 = Length 1 is 4 Characters

Code 11 Set Length 2

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

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

Table Code 11 Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

Code 11 Length 2 Setting Examples

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

Select Code 11 Length 2 Setting

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

CANCEL

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

3 Configuration Using Barcodes

3.8.31 GS1 DataBar™ Omnidirectional

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

GS1 DataBar™ Omnidirectional Enable/Disable

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

DEFAULT

GS1 DataBar™ Omnidirectional = Disable

GS1 DataBar™ Omnidirectional = Enable

GS1 DataBar™ Omnidirectional GS1-128 Emulation

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

DEFAULT

GS1 DataBar™ Omnidirectional GS1-128 Emulation = Disable

GS1 DataBar™ Omnidirectional GS1-128 Emulation = Enable

GS1 DataBar™ Omnidirectional 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

3 Configuration Using Barcodes

3.8.32 GS1 DataBar™ Expanded

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

GS1 DataBar™ Expanded Enable/Disable

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

DEFAULT

GS1 DataBar™ Expanded = Disable

GS1 DataBar™ Expanded = Enable

GS1 DataBar™ Expanded GS1-128 Emulation

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

DEFAULT

GS1 DataBar™ Expanded GS1-128 Emulation = Disable

GS1 DataBar™ Expanded GS1-128 Emulation = Enable

3 Configuration Using Barcodes

GS1 DataBar™ Expanded 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

3 Configuration Using Barcodes

GS1 DataBar™ Expanded Set Length 1

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

Table GS1 DataBar™ Expanded Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

GS1 DataBar™ Expanded Length 1 Setting Examples

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

Select GS1 DataBar™ Expanded Set Length 1 Setting

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

CANCEL

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

3 Configuration Using Barcodes

GS1 DataBar™ Expanded Set Length 2

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

Table GS1 DataBar™ Expanded Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

GS1 DataBar™ Expanded Length 2 Setting Examples

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

Select GS1 DataBar™ Expanded Set Length 2 Setting

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

CANCEL

DEFAULT

74 = Length 2 is 74 Characters

3 Configuration Using Barcodes

3.8.33 GS1 DataBar™ Limited

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

GS1 DataBar™ Limited Enable/ Disable

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

DEFAULT

GS1 DataBar™ Limited = Disable

GS1 DataBar™ Limited = Enable

GS1 DataBar™ Limited GS1-128 Emulation

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

DEFAULT

GS1 DataBar™ Limited GS1-128 Emulation = Disable

GS1 DataBar™ Limited GS1-128 Emulation = Enable

GS1 DataBar™ Limited 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 not required)

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

3 Configuration Using Barcodes

3.8.34 Code 93

The following options apply to the Code 93 symbology.

Code 93 Enable/Disable

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

DEFAULT

Code 93 = Disable

Code 93 = Enable

Code 93 Check Character Calculation

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

Code 93 Check Character Calculation = Disable

Code 93 Check Character Calculation = Enable Check C

Code 93 Check Character Calculation = Enable Check K

Code 93 Check Character Calculation = Enable Check C and K

DEFAULT

3 Configuration Using Barcodes

Code 93 Check Character Transmission

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

Code 93 Check Character Transmission = Disable

Code 93 Check Character Transmission = Enable

DEFAULT

Code 93 Length Control

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

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

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

DEFAULT

Code 93 Length Control = Variable Length

Code 93 = Fixed Length

3 Configuration Using Barcodes

Code 93 Set Length 1

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

Table Code 93 Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

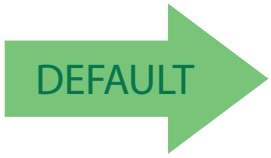
Code 93 Length 1 Setting Examples

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

Select Code 93 Set Length 1 Setting

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

CANCEL



01 = Length 1 is 1 Character

Code 93 Set Length 2

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

Table CODE 93 Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

CODE 93 Length 2 Setting Examples

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

Select Code 93 Length 2 Setting

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

CANCEL

DEFAULT

50 = Length 2 is 50 Characters

3 Configuration Using Barcodes

Code 93 Quiet Zones

Enables/disables quiet zones for Code 93.

Code 93 Quiet Zones =
Quiet Zones on two sides

Code 93 Quiet Zones =
Small Quiet Zones on two sides

DEFAULT

3 Configuration Using Barcodes

3.8.35 MSI

The following options apply to the MSI symbology.

MSI Enable/ Disable

Enables/Disables ability of reader to decode MSI labels.

DEFAULT

MSI = Disable

MSI = Enable

MSI Check Character Calculation

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

MSI Check Character Calculation = Disable

MSI Check Character Calculation = Enable Mod10

DEFAULT

MSI Check Character Calculation = Enable Mod11/10

MSI Check Character Calculation = Enable Mod10/10

3 Configuration Using Barcodes

MSI Check Character Transmission

Enables/disables transmission of an MSI check character.

MSI Check Character Transmission = Disable

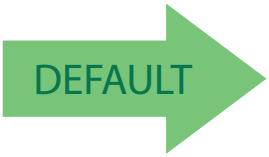
MSI Check Character Transmission = Enable

MSI Length Control

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

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

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



MSI Length Control = Variable Length

MSI = Fixed Length

MSI Set Length 1

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

Table MSI Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

MSI Length 1 Setting Examples

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

Select MSI Set Length 1 Setting

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

CANCEL

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

3 Configuration Using Barcodes

MSI Set Length 2

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

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

Table MSI Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

MSI Length 2 Setting Examples

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

Select MSI Length 2 Setting

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

CANCEL

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

3 Configuration Using Barcodes

3.8.36 Plessey

The following options apply to the Plessey symbology.

Plessey Enable/ Disable

Enables/Disables ability of reader to decode Plessey labels.

DEFAULT

Plessey = Disable

Plessey = Enable

Plessey Check Character Calculation

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

Plessey Check Character Calculation = Disable

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

DEFAULT

Plessey Check Character Calculation = Enable Anker check char. verification

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

3 Configuration Using Barcodes

Plessey Check Character Transmission

Enables/disables transmission of an MSI check character.

Plessey Check Character Transmission = Disable

Plessey Check Character Transmission = Enable

DEFAULT

Plessey Length Control

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

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

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

DEFAULT

Plessey Length Control = Variable Length

Plessey = Fixed Length

Plessey Set Length 1

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

Table Plessey Length 1 Setting Examples provides some examples for setting Length 1. See page 249 for detailed instructions on setting this feature.

Plessey Length 1 Setting Examples

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

Select Plessey Set Length 1 Setting

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

CANCEL

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

3 Configuration Using Barcodes

Plessey Set Length 2

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

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

Table Plessey Length 2 Setting Examples provides examples for setting Length 2. See page 250 for detailed instructions on setting this feature.

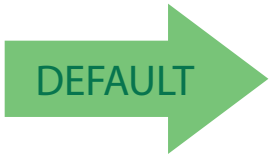
Plessey Length 2 Setting Examples

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

Select Plessey Length 2 Setting

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

CANCEL



50 = Length 2 is 50 Characters

3 Configuration Using Barcodes

3.9 2D Symbologies

2D Global Features	
2D Maximum Decoding Time on page 176	2D Normal/Inverse Symbol Control on page 177
2D Structured Append on page 177	

The reader supports the following 2D symbologies (barcode types). Symbology-dependent options for each symbology are included in this chapter. See "1D Symbologies" starting on page 87 for configuration of 1D barcodes.

Aztec Code on page 178	Micro PDF417 on page 191
China Sensible Code on page 180	QR Code on page 194
Data Matrix on page 182	Micro QR Code on page 196
Maxicode on page 186	UCC Composite on page 198
PDF417 on page 189	Postal Code Selection on page 200

3.9.1 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 C: Standard Defaults for a listing of the most widely used set of standard factory settings. That section also provides space to record any custom settings needed or implemented for your system.

To set most features:

1 Scan the ENTER/EXIT PROGRAMMING barcode at the top of applicable programming pages.

2 Scan the correct barcode to set the desired programming feature or parameter. You may need to cover unused barcodes on the page, and possibly the facing page, to ensure that the reader reads only the barcode you intend to scan.

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

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 barcode to abort and not save the entry string. You can then start again at the beginning.

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

3 Configuration Using Barcodes

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

3 Configuration Using Barcodes

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
- Aztec
- QR Code
- 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.

To decode all symbologies, including linear symbologies, refer to "Decode Negative Labels" on page 84.

Normal/Inverse Symbol Control = Normal

Normal/Inverse Symbol Control = Inverse

DEFAULT

Normal/Inverse Symbol Control = Both Normal and Inverse

3.9.2 Aztec Code

Aztec Code Enable / Disable

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

DEFAULT

Aztec Code = Disable

Aztec Code = Enable

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

3 Configuration Using Barcodes

Aztec Code Set Length 1

Specifies one of the barcode lengths for Aztec Code Length Control. 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 249 for detailed instructions on setting this feature.

Select Aztec Code Length 1 Setting

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

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

CANCEL

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

Aztec Code Set Length 2

This feature specifies one of the barcode lengths for Aztec Code Length Control. 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 250 for detailed instructions on setting this feature.

Select Aztec Code Length 2 Setting

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

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

CANCEL

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

3 Configuration Using Barcodes

3.9.3 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

3 Configuration Using Barcodes

China Sensible Code Set Length 1

Specifies one of the barcode lengths for China Sensible Code Length Control. 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 249 for detailed instructions on setting this feature.

Select China Sensible Code Length 1 Setting

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

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

CANCEL

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

China Sensible Code Set Length 2

This feature specifies one of the barcode lengths for China Sensible Code Length Control. 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 250 for detailed instructions on setting this feature.

Select China Sensible Code Length 2 Setting

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

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

CANCEL

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

3.9.4 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

3 Configuration Using Barcodes

Data Matrix DPM Decoding Safety

This feature defines the tolerance of DPM decoding software to operate with poor quality labels. Decoding Safety is used to configure a barcode symbology decoder to be very aggressive to very conservative depending on a particular customer's needs. Higher tolerance to poor quality labels increases the reading capability of the reader.

See page 249 for more information on this feature.

NOTE

This feature is valid for the PD9530-DPM model only.

DEFAULT

Data Matrix Decoding Safety = 1 (Aggressive)

Data Matrix Decoding Safety = 2

Data Matrix Decoding Safety = 3

Data Matrix Decoding Safety = 4

Data Matrix Decoding Safety = 5 (Conservative)

3 Configuration Using Barcodes

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 barcode lengths for Data Matrix Length Control. 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 249 for detailed instructions on setting this feature.

Select Data Matrix Length 1 Setting

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

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

CANCEL

DEFAULT

0001 = Length 1 is 1 Character

3 Configuration Using Barcodes

Data Matrix Set Length 2

This feature specifies one of the barcode lengths for Data Matrix Length Control. 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 250 for detailed instructions on setting this feature.

Select Data Matrix Length 2 Setting

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

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

CANCEL

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

3 Configuration Using Barcodes

3.9.5 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

3 Configuration Using Barcodes

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 barcode lengths for Maxicode Length Control. 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 249 for detailed instructions on setting this feature.

Select Maxicode Length 1 Setting

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

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

CANCEL

DEFAULT

0001 = Length 1 is 1 Character

3 Configuration Using Barcodes

Maxicode Set Length 2

This feature specifies one of the barcode lengths for Maxicode Length Control. 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).

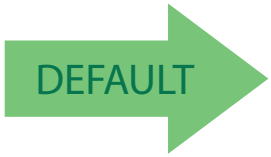
See page 250 for detailed instructions on setting this feature.

Select Maxicode Length 2 Setting

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

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

CANCEL



Length 2 is 0145 Characters

3.9.6 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 barcode lengths for PDF417 Length Control. Length 1 is the minimum label length if in Variable Length Mode, or the first fixed length if in Fixed Length Mode. Length includes the barcode's data characters only. Characters can be set from 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 249 for detailed instructions on setting this feature.

Select PDF417 Length 1 Setting

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

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

CANCEL

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

PDF417 Set Length 2

This feature specifies one of the barcode lengths for PDF417 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. Length includes the barcode's check, data, and full-ASCII shift characters. The length does not include start/stop characters. 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 250 for detailed instructions on setting this feature.

Select PDF417 Length 2 Setting

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

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

CANCEL

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

3.9.7 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

3 Configuration Using Barcodes

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

See page 249 for detailed instructions on setting this feature.

Select Micro PDF417 Length 1 Setting

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

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

CANCEL

DEFAULT

0001 = Length 1 is 1 Character

3 Configuration Using Barcodes

Micro PDF417 Set Length 2

This feature specifies one of the barcode lengths for Micro PDF417 Length Control. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length includes the barcode'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.

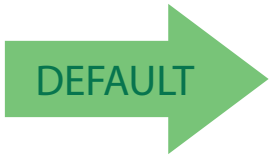
See page 250 for detailed instructions on setting this feature.

Select Micro PDF417 Length 2 Setting

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

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

CANCEL



Length 2 is 0366 Characters

3 Configuration Using Barcodes

3.9.8 QR Code

QR Code Enable / Disable

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

QR Code = Disable

QR Code = Enable

DEFAULT

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

3 Configuration Using Barcodes

QR Code Set Length 1

Specifies one of the barcode lengths for QR Code Length Control. 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 249 for detailed instructions on setting this feature.

Select QR Code Length 1 Setting

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

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

CANCEL

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

QR Code Set Length 2

This feature specifies one of the barcode lengths for QR Code Length Control. 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 250 for detailed instructions on setting this feature.

Select QR Code Length 2 Setting

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

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

CANCEL

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

3.9.9 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 barcode lengths for Micro QR Code Length Control. 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 249 for detailed instructions on setting this feature.

Select Micro QR Code Length 1 Setting

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

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

CANCEL

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

Micro QR Code Set Length 2

This feature specifies one of the barcode lengths for Micro QR Code Length Control. 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 250 for detailed instructions on setting this feature.

Select QR Code Length 2 Setting

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

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

CANCEL

DEFAULT **Length 2 is 0035 Characters**

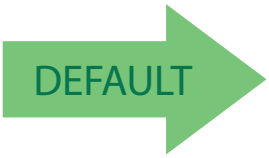
3.9.10 UCC Composite

UCC Composite Enable / Disable

Enables/disables the ability of the reader to decode the stacked part of a UCC Composite label.

NOTE

This feature is not effective when Global AIM IDs are enabled (see "Global AIM ID" on page 59).



UCC Composite = Disable

UCC Composite = Enable

3 Configuration Using Barcodes

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.

DEFAULT

UCC Optional Composite Timer = Timer Disabled

UCC Optional Composite Timer = 100msec

UCC Optional Composite Timer = 200msec

UCC Optional Composite Timer = 300msec

UCC Optional Composite Timer = 400msec

UCC Optional Composite Timer = 500msec

3 Configuration Using Barcodes

3.9.11 Postal Code Selection

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

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

3 Configuration Using Barcodes

Postal Code Selection = Enable Japan Post

Postal Code Selection = Enable IMB

Postal Code Selection = Enable Sweden Post

Postal Code Selection = Enable Portugal Post

3.9.12 Postnet BB Control

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

DEFAULT

Postnet BB Control = Disable

Postnet BB Control = Enable

3 Configuration Using Barcodes

3 Configuration Using Barcodes

3.10 Motion Features

Use this chapter to configure motion settings for the handheld.
Reference Appendix C: Standard Defaults for a listing of standard factory settings.

3.10.1 Motion Aiming Control

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

Motion Aiming Control = Disable

Motion Aiming Control = Enable

3 Configuration Using Barcodes

3.10.2 Motion Sensitivity

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

Motion Sensitivity = Low

Motion Sensitivity = Medium

DEFAULT

Motion Sensitivity = High

3.10.3 Motionless Timeout

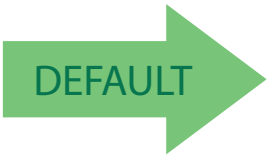
Specifies the waiting time in 100 millisecond ticks to assume that the reader is in a motionless condition. The selectable range is 500 msec to 25.5 Seconds. When no motion event is detected for a period of time longer than this timeout, the software assumes the reader is in a motionless condition. This option relates to such features as Aimer On and Stand Mode Object Sense reading with respect to motion. See "Motionless Timeout" on page 269 in References.

Select Motionless Timeout Setting

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

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

CANCEL



020 = Motionless Timeout = 2 seconds

3 Configuration Using Barcodes

3 Configuration Using Barcodes

3.11 Wireless Features

This section provides options and programming related to the reader's wireless communication features. Reference Appendix C: Standard Defaultsfor a listing of standard factory settings.

BVS HS-PB Only Features
BLUETOOTH SECURITY FEATURES starting on page 225 •Bluetooth Security Mode on page 226 •Bluetooth PIN Code on page 226 •Select PIN Code Length on page 226 •Set PIN Code on page 227
OTHER BLUETOOTH FEATURES starting on page 228 •Reconnect Attempt Interval on page 228 •Bluetooth HID Variable PIN Code on page 229 •Bluetooth HID Alt Mode on page 230 •Bluetooth HID Send Unknown ASCII Char on page 230 •Bluetooth Max Client on page 231 •Bluetooth Friendly Name on page 232 •Bluetooth Reconnect Attempt Mode on page 232 •Power Class on page 233 •HID Country Mode on page 233

3 Configuration Using Barcodes

3.11.1 Wireless Beeper Features

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

Good Transmission Beep

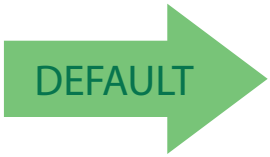
Enables/disables the Good Transmission Beep indication. When enabled, a beep occurs when a Label is correctly transmitted to the base.

Good Transmission Beep = Disable

Good Transmission Beep = Enable

Beep Frequency

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



Beep Frequency = Low

Beep Frequency = Medium

Beep Frequency = High

3 Configuration Using Barcodes

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

3 Configuration Using Barcodes

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.

NOTE

The defaults are different for the STAR and Bluetooth models.

Disconnect Beep = Disable

Disconnect Beep = Enable

DEFAULT

3 Configuration Using Barcodes

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

Docking Beep = Disable

Docking Beep = Enable

DEFAULT

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

For this mode to be effective, 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 = 3 Seconds

3 Configuration Using Barcodes

Leash Alarm = 4 Seconds

Leash Alarm = 5 Seconds

Leash Alarm = 10 Seconds

Leash Alarm = 25 Seconds

Leash Alarm = 30 Seconds

3.11.2 Configuration Updates

See page 270 in “References” for detailed information and examples of these features.

Automatic Configuration Update

When this feature is enabled, a reader and its linked Base Station can automatically ensure they stay in sync with regard to application hardware and/or configuration. See page 270 for more information on this feature.

Automatic Configuration Update = Disable

Automatic Configuration Update = Enable

DEFAULT

Copy Configuration to reader

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

NOTE

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

Copy Configuration to Reader

Copy Configuration to Base Station

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

Copy Configuration to Base Station

NOTE

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

3.11.3 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 reader is configured in Manual Batch Mode, use the following barcode to initiate sending of labels stored in batch memory.

NOTE

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

Send Batch

3 Configuration Using Barcodes

Erase Batch Memory

When the reader is configured in Manual Batch Mode, use the following barcode to erase any labels stored in batch memory.

NOTE

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

Erase Batch Memory

RF Batch Mode Transmit Delay

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

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

3 Configuration Using Barcodes

3.11.4 Direct Radio Autolink

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

DEFAULT

Direct Radio Link = Unlink Label Required

Direct Radio Link = Automatic Unlinking

3.11.5 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 270 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

DEFAULT

Source Radio Address Transmission = Do Not Include

Source Radio Address Transmission = Prefix

Source Radio Address Delimiter Character

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

NOTE

This feature only applies if "Source Radio Address Transmission" on page 218 is enabled.

Set Source Radio Address Delimiter Character

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

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

CANCEL

DEFAULT

00 = No Delimiter Character

3 Configuration Using Barcodes

3.11.6 Real Time Clock (RTC) Configuration

Current Date Sets the date of the internal Real Time Clock (RTC)

Set Current Date = YYMMDD

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

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

CANCEL

Current Time Sets the time of the internal Real Time Clock (RTC). HH = 24 hours format

Set Current Time = HHMMSS

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

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

CANCEL

3 Configuration Using Barcodes

Date Tx Format Sets the format of the date.

DEFAULT

YYYY-MM-DD (ISO 8601)

YYYYMMDD (No ISO)

MMDDYYYY

DDMMYYYY

Time Tx Format Sets the format of the time.

DEFAULT

hh:mm:ss (ISO 8601)

hhmmss (No ISO)

3 Configuration Using Barcodes

Date-Time Separator

Sets the character used to separate Date and Time from the next field in message.

DEFAULT

Disable Date-Time Separator

To configure this feature, scan the ENTER/EXIT PROGRAMMING MODE barcode above, then the barcode at left followed by 2 digits from the Alphanumeric characters in Appendix D: Keypad representing your desired character(s). End by reading the ENTER/EXIT barcode again.

Set Character Separator =

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

CANCEL

3 Configuration Using Barcodes

Date-Time Transmission Order

Allows the selection of the order of date and time transmission.

Disabled

DEFAULT

ISO 8601: Date'T'Time

DateTime

TimeDate

Date

Time

3 Configuration Using Barcodes

Power Off See “Power Off” on page 29 for information about this feature.

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

Powerdown Timeout = Disable

Powerdown Timeout = 10 minutes

Powerdown Timeout = 20 minutes

Powerdown Timeout = 30 minutes

Powerdown Timeout = 60 Minutes (1 Hour)

Powerdown Timeout = 120 Minutes (2 Hours)

3 Configuration Using Barcodes

3.12 BVS HS-PB ONLY Features

The features in this section are valid only for BVS HS-PB models with bluetooth. Also reference the Setup section for instructions on "Linking the Reader," starting on page 28.

3.12.1 Bluetooth Security Features

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

The Bluetooth PIN code can be enabled and configured by reading the barcodes in the following sections.

NOTE

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

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

1. Enable Bluetooth Security Mode by reading the “Enable” barcode below.
2. Select a PIN code length of either 4 or 16 characters by reading the appropriate barcode in "Select PIN Code Length" on page 226.
3. Scan the relevant barcode from "Set PIN Code" on page 227, then scan the desired alphanumeric characters from the keypad in Appendix D: Keypad to set the PIN code.

See page 271 in “References” for more detailed information and examples for this feature.

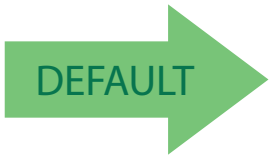
3 Configuration Using Barcodes

Bluetooth Security Mode

This feature enables/disables authentication and encryption of the Bluetooth link. Use the feature "Bluetooth PIN Code" on page 226 to specify the length and digits in the PIN code used to authenticate the Bluetooth Link.

NOTE

Changing the security mode setting will unlink the devices. If the Automatic Configuration Update is set to the default “Enabled” setting, the devices must only be relinked. Do not use this setting if AUTOMATIC CONFIGURATION UPDATE is set to "Disabled"! Please check this setting first before going on.



Bluetooth Security Mode = Disable

Bluetooth Security Mode = Enable

Bluetooth PIN Code

After enabling Security Mode (see "Bluetooth Security Mode" on page 226), specify whether you want to set a 4-digit or a 16-digit PIN Code. See page 271 for detailed information and examples for setting this feature.

Select PIN Code Length

Select 4-character Bluetooth PIN Code

Select 16-character Bluetooth PIN Code

3 Configuration Using Barcodes

Set PIN Code

Determine the desired characters for the PIN code, then convert to hexadecimal using the ASCII Chart on page 313 on the inside back cover of this manual. See page 271 for detailed information and examples for setting this feature.

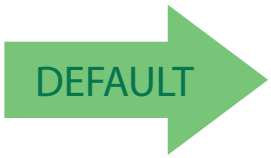
Set 4-character Bluetooth PIN Code

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

Set 16-character Bluetooth PIN Code

CANCEL

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



31323334 = Default PIN Code is 1234

3.12.2 Other Bluetooth Features

Reconnect Attempt Interval

This feature specifies the interval time between reconnection attempts.

1 minute

5 minutes

30 minutes

Indefinitely

3 Configuration Using Barcodes

Bluetooth HID Variable PIN Code

Specifies the selection available for Static or Variable Pin Code, when Bluetooth HID profile is configured.

Some Bluetooth drivers on the Host (such as WIDCOMM and BlueSoleil 8) require a Variable PIN Code. When attempting connection, the application presents a window that includes a PIN Code which is to be input using the BVS HS-PB. Scan the barcode "Variable PIN Code" below, then use the host computer's Bluetooth manager to "Discover new devices" and select "Balluff Reader." Use a text editor to see incoming data on the port designated by the computer's Bluetooth manager.

NOTE

If you receive an error message, it may be necessary to disable security on the device.

When you hear the beep and see the Green LED blinking indicating the reader is waiting for an alphanumeric entry, enter the required variable PIN Code by reading the corresponding barcodes in Appendix D: Keypad for alphanumeric entry. Finish by reading the Exit HID Variable PIN Code label.

Set Static Pin Code

DEFAULT

Set Variable Pin code

CANCEL

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

Exit HID Variable PIN Code

3 Configuration Using Barcodes

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.

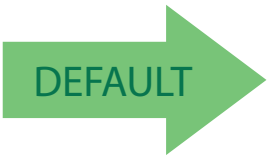
Read the configuration command label below for the HID Alt Mode feature.

HID Alt Mode = OFF

HID Alt Mode = ON

Bluetooth HID Send Unknown ASCII Char

Unknown characters are characters the host does not recognize. When Disable HID Send ASCII Unknown character is selected, all barcode data is sent except for unknown characters, and an error beep will sound. When *HID Send Unknown ASCII character* is enabled, an unknown character will be sent as a SPACE.



HID Send Unknown ASCII character = Disable

HID Send Unknown ASCII character = Enable

3 Configuration Using Barcodes

Bluetooth Max Client

Set the number of Readers that can connect to the Base in a Piconet network.

Bluetooth Max Client = 1

Bluetooth Max Client = 2

DEFAULT

Bluetooth Max Client = 3

Bluetooth Max Client = 4

Bluetooth Max Client = 5

Bluetooth Max Client = 6

Bluetooth Max Client = 7

3 Configuration Using Barcodes

Bluetooth Friendly Name

You can set a meaningful name for BVS HS-PB that will appear in the application during device discovery.

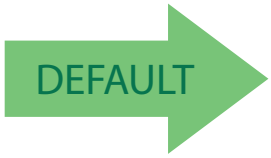
To set a new Bluetooth Friendly Name, scan the barcode below and follow the instructions.

Set Bluetooth Friendly Name

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

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

CANCEL



BVS HS-PB
[SERIAL_NUMBER_READER]

Bluetooth Reconnect Attempt Mode

Enable/Disable reconnection by trigger pull.

Bluetooth Reconnect Attempt Mode = Disable

Bluetooth Reconnect Attempt Mode = Enable

3 Configuration Using Barcodes

Power Class

DEFAULT

Power Class 1

Power Class 2

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.

Country Mode = Belgium

Country Mode = Britain

Country Mode = Croatia

Country Mode = Czech Republic

Country Mode = Denmark

3 Configuration Using Barcodes

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

3 Configuration Using Barcodes

Country Mode = Portugal

Country Mode = Romania

Country Mode = Spain

Country Mode = Sweden

Country Mode = Slovakia

Country Mode = Switzerland

3 Configuration Using Barcodes

4 References

This section contains explanations and examples of selected barcode features. See Configuration Using Barcodes, starting on page 31 for the actual barcode labels used to configure the reader.

4 References

4.1 RS-232 Parameters

4.1.1 RS-232 Only

Baud Rate

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

Stop Bits

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

Parity

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

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

Handshaking Control

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

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

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

4 References

4.1.2 RS-232/USB COM Parameters

Intercharacter Delay

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

To set the delay:

1 Determine the desired setting in milliseconds.

2 Divide the desired setting by 10 (setting is in 10ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

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

4 Go to page 38 and scan the barcode: SELECT INTERCHARACTER DELAY SETTING.

5 Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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.

This completes the procedure. See Table Intercharacter Delay Setting Examples for some examples of how to set this feature.

Intercharacter Delay Setting Examples

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

4 References

ACK NAK Options

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

Options are:

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

ACK Character

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

NOTE

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

1 Determine the desired character or value.

2 Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.

3 Go to page 40 and scan ENTER/EXIT PROGRAMMING MODE to enter Programming Mode.

4 Scan the barcode: SELECT ACK CHARACTER SETTING.

5 Scan the appropriate two alphanumeric characters from the keypad in Appendix D: Keypad, that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.

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

See Table ACK Character Setting Examples for some examples of how to set this feature.

ACK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Character/ Value**	ACK	$	@	>
2	**Hex equivalent from Fig. 10 ASCII Chart ASCII Chart**	0x06	0x24	0x40	0x3E
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ACK CHARACTER SETTING**				
5	**Scan Two Characters from Appendix D: Keypad**	‘0’ and ‘6’	‘2’ and ‘4’	‘4’ and ‘0’	‘3’ AND ‘E’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

4 References

NAK Character

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


NOTE

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

To set this feature:

1 Determine the desired character or value.

2 Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.

3 Go to page 40 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT NAK CHARACTER SETTING.

5 Scan the appropriate two alphanumeric characters from the keypad in Appendix D: Keypad, that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.

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

This completes the procedure. See Table NAK Character Setting Examples for some examples of how to set this feature.

NAK Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Character/ Value**	NAK	$	@	>
2	**Hex equivalent from fig. 10 ASCII Chart ASCII Chart**	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**				

4 References

ACK NAK Timeout Value

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

To set this value:

1 Determine the desired setting in milliseconds.

2 Divide the desired setting by 200 (setting is in 200ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3 Go to page 41 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT ACK NAK TIMEOUT VALUE SETTING.

5 Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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 ACK NAK Timeout Value Setting Examples for some examples of how to set this feature.

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**				

4 References

ACK NAK Retry Count

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

To set this feature:

1 Determine the desired setting.

2 Pad the number with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.

3 Go to page 41 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT ACK NAK RETRY COUNT SETTING.

5 Scan the appropriate three digits from the keypad in Appendix D: Keypad, that represent the number which was determined in the steps above. You will hear a two-beep indication after the last character.

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 ACK NAK Retry Count Setting Examples for some examples of how to set this feature.

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**				

4 References

Disable Character

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

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

NOTE

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

To set the value:

1. Determine the desired character or value. A setting of 0xFF indicates the Disable Character is not used (not available).
2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to page 43 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT DISABLE CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D: Keypad, that represent the desired character/value in step 1 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table Disable Character Setting Examples for some examples of how to set this feature.

Disable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/ value**	‘d’	‘}’	‘D’	Disable Command Not Used
2	**Hex equivalent from fig. 10 ASCII Chart ASCII Chart**	0x64	0x7D	0x44	0xFF
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT DISABLE CHARACTER VALUE SETTING**				
5	**Scan Two Characters From Appendix D: Keypad**	‘6’ and ‘4’	‘7’ and ‘D’	‘4’ and ‘4’	‘F’ AND ‘F’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

4 References

Enable Character

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

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

NOTE

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

To set this feature:

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

1. Determine the desired character or value.
2. Use the ASCII Chart on the inside back cover of this manual to find the hex equivalent for the desired character/value.
3. Go to page 43 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: SELECT ENABLE CHARACTER SETTING.
5. Scan the appropriate two alphanumeric characters from the keypad in Appendix D: Keypad, that represent the desired character/value in step 2 above. The second character will cause a two-beep indication.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table Enable Character Setting Examples for some examples of how to set this feature.

Enable Character Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired character/ value**	‘e’	‘}’	‘E’	Enable Command Not Used
2	**Hex equivalent from fig. 10 ASCII Chart ASCII Chart**	0x65	0x7D	0x45	0xFF
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT ENABLE CHARACTER VALUE SETTING**				
5	**Scan Two Characters From Appendix D: Keypad**	‘6’ and ‘5’	‘7’ and ‘D’	‘4’ and ‘5’	‘F’ AND ‘F’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

4 References

4.2 Keyboard Interface

4.2.1 Wedge Quiet Interval

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


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 50 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Prog. Mode.

4 Scan the barcode: SELECT WEDGE QUIET INTERVAL SETTING.

5 Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.


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.

This completes the procedure to set the Wedge Quiet Interval. See Table Wedge Quiet Interval Setting Examples for some examples of how to set this feature.

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**				

4.2.2 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 38 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT INTERCHARACTER DELAY SETTING.

5 Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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 Intercharacter Delay Setting Examples for some examples of how to set this feature.

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**				

4.2.3 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 50 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT INTERCODE DELAY SETTING.

5 Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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 Wedge Intercode Delay Examples for some examples of how to set this feature.

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**				

4 References

4.3 Symbologies

4.3.1 Datamatrix DPM Decoding Safety

Decoding Safety is used to configure a decoder to be very aggressive to very conservative, depending on a particular customer's needs.

- Level 1 results in a very aggressive decoder.
- Level 5 results in a very conservative decoder at the expense of not being able to read poorly printed or damaged labels.

There are many factors that determine when to change the decoding safety. These factors include spots, voids, non-uniform backgrounds, damaged labels, etc. that may be experienced in some barcode labels. If there are many hard to read or damaged labels that cannot be decoded using a conservative setting, decrease the decoding safety to be more aggressive. In case of rigorous reliability application requirements it is suggested to use higher decoding safety values (conservative).

4.3.2 Set Length

Length Control allows you to select either variable length decoding or fixed length decoding for the specified symbology.

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

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

Set Length 1

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

The number of characters that can be set varies, depending on the symbology. Reference the page for your selected symbology to see specific variables.

1 Determine the desired character length (varies depending on symbology). Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

2 Go to the Set Length page for your selected symbology and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

3 Scan the barcode to SELECT LENGTH 1 SETTING for your selected symbology.

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

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.

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

4 References

Set Length 2

This feature allows you to set one of the barcode lengths for the specified symbology. Length 2 is the maximum label length if in Variable Length Mode, or the second fixed length if in Fixed Length Mode. See the page for the specific symbology for parameters.

The length that can be set varies depending on the symbology. A setting of 0 specifies to ignore this length (only one fixed length).

Follow these instructions to set this feature:

1 Determine the desired character length (from 1 to 50 — or 0 to ignore this length). Pad the number with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

2 Go to the Set Length page for your selected symbology and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

3 Scan the barcode to SELECT LENGTH 2 SETTING for your selected symbology.

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

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.

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

This completes the procedure.

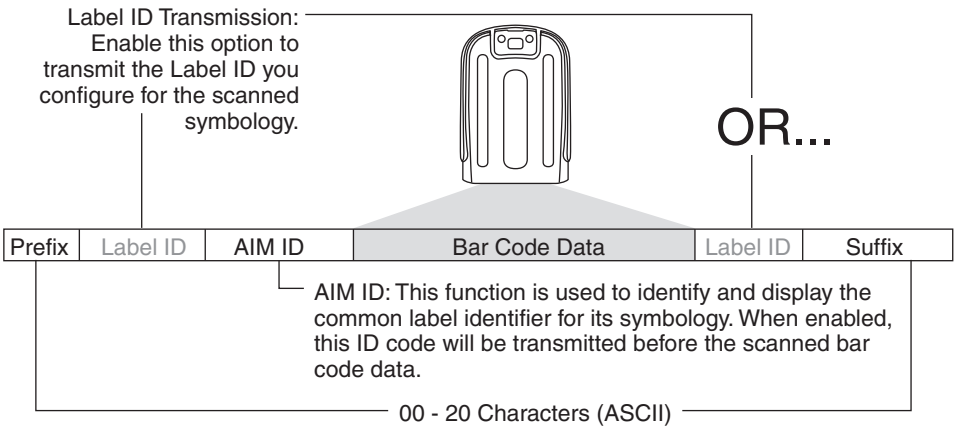
4 References

4.4 Data Editing

When a barcode is readed, additional information can be sent to the host computer along with the barcode data. This combination of barcode data and supplementary user-defined data is called a “message string.” The Data Editing features can be used to build specific user-defined data into a message string.

There are several types of selectable data characters that can be sent before and after readed data. You can specify if they should be sent with all symbologies, or only with specific symbologies. Figure 6: Breakdown of a Message String shows the available elements you can add to a message string:

Figure 6: Breakdown of a Message String



Please Keep In Mind...

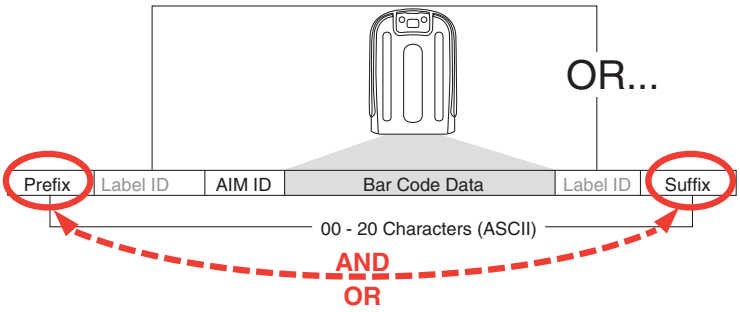
- Modifying a message string is not a mandatory requirement. Data editing is a sophisticated feature allowing highly customizable output for advanced users. Factory default settings for data editing is typically set to NONE.
- A prefix or suffix may be applied only to a specified symbology (reference 1D Symbologies, starting on page 87 or 2D Symbologies, starting on page 175) or across all symbologies (set via the Global features in this chapter).
- You can add any character from the ASCII Chart (from 00-FF) on the inside back cover of this manual as a prefix, suffix or Label ID.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.

4 References

4.4.1 Global Prefix/ Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the barcode data) and/ or as a suffix (in a position following the barcode data) as indicated in Figure 7: Prefix and Suffix Positions.

Figure 7: 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 readed barcode data. In this example, we'll add a dollar sign ('$') as a prefix.
2. Go to page 58 and scan the ENTER/EXIT PROGRAMMING MODE barcode, then scan the SET GLOBAL PREFIX barcode.
3. Reference the ASCII Chart on the inside back cover of this manual to find the hex value assigned to the desired character. The corresponding hex number for the '$' character is 24. To enter this selection code, scan the '2' and '4' barcodes from Appendix D: Keypad.

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.

4. If less than the expected string of 20 characters are selected, scan the ENTER/EXIT barcode to terminate the string.
5. Scan the ENTER/EXIT barcode once again to exit Programming Mode.
6. The resulting message string would appear as follows:
   Readed barcode data: **12345**
   Resulting message string output: **$12345**

4.4.2 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 readed barcode data. AIM label identifiers consist of three characters as follows:

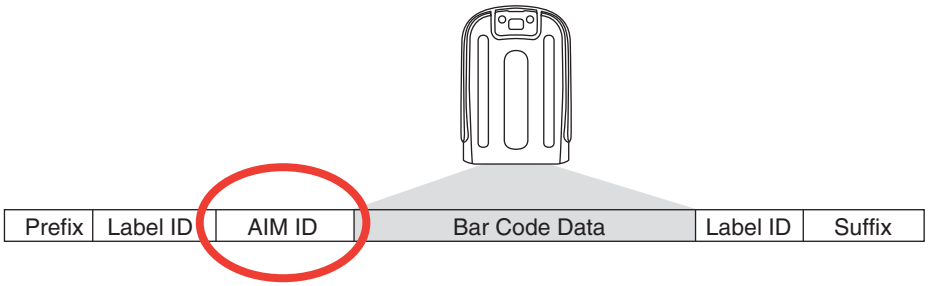
- A close brace character (ASCII ']'), followed by...
- A code character (see the table below), followed by...
- A modifier character (the modifier character is symbol dependent).

4 References

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 8: AIM ID



4 References

4.4.3 Label ID

A Label ID is a customizable code of up to three ASCII characters (each can be one of hex 0x01-0xFF), used to identify a barcode (symbology) type. It can be appended previous to or following the transmitted barcode data depending upon how this option is enabled. This feature provides options for configuring custom Label IDs as a pre-loaded set (see "Label ID: Pre-loaded Sets" below) or individually per symbology (see "Label ID: Set Individually Per Symbology" on page 257). If you wish to program the reader to always include an industry standard label identifier for ALL symbology types, see "Global AIM ID" on page 59.

Label ID: Pre-loaded Sets

The reader supports two pre-loaded sets of Label IDs. Label ID Pre-loaded Sets shows the USA and the EU sets.

CAUTION

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

Label ID Pre-loaded Sets

Symbology	USA Label ID set		EU Label ID set	
	Default Character	Default ASCII	Default Character	Default ASCII
ABC CODABAR	S	530000	S	530000
ANKER PLESSEY	o	6F0000	o	6F0000
AZTEC	Az	417A00	!	210000
CHINA SENSIBLE CODE	$S	245300	$S	245300
CODABAR	%	250000	R	520000
CODE11	CE	434500	b	620000
CODE128	#	230000	T	540000
CODE32	A	410000	X	580000
CODE39	*	2A0000	V	560000
CODE39 CIP	Y	590000	Y	590000
CODE39 DANISH PPT	$Y	245900	$Y	245900
CODE39 LAPOSTE	$a	246100	$a	246100
CODE39 PZN	$Z	245A00	$Z	245A00
CODE93	&	260000	U	550000
DATABAR 14	R4	523400	u	750000
DATABAR 14 COMPOSITE	R4	523400	c	523400
DATABAR EXPANDED	RX	525800	t	740000
DATABAR EXPANDED COMPOSITE	RX	525800	d	525800
DATABAR LIMITED	RL	524C00	v	760000
DATABAR LIMITED COMPOSITE	RL	524C00	i	524C00

4 References

Symbology	USA Label ID set		EU Label ID set	
	Default Character	Default ASCII	Default Character	Default ASCII
DATA MATRIX	Dm	446D00	w	770000
EAN128		000000	k	6B0000
EAN128 COMPOSITE		000000	$E	244500
EAN13	F	460000	B	420000
EAN13 P2	F	460000	L	4C0000
EAN13 P5	F	460000	M	4D0000
EAN13 COMPOSITE	F	460000	$F	244600
EAN8	FF	464600	A	410000
EAN8 P2	FF	464600	J	4A0000
EAN8 P5	FF	464600	K	4B0000
EAN8 COMPOSITE	FF	464600	$G	244700
FOLLET 2OF5	O	4F0000	O	4F0000
GTIN	G	470000	$A	244100
GTIN2	G2	473200	$B	244200
GTIN5	G5	473500	$C	244300
I2OF5	i	690000	N	4E0000
IATA INDUSTRIAL 2OF5	IA	494100	&	260000
INDUSTRIAL 2OF5	W	570000	W	570000
ISBN	I	490000	@	400000
ISBT128 CONCAT	f	660000	f	660000
ISSN	n	6E0000	n	6E0000
MAXICODE	MC	4D4300	x	780000
MICRO QR	$Q	245100	$Q	245100
MICRO PDF	mP	6D5000	8	380000
MSI	@	400000	Z	5A0000
PDF417	P	500000	r	720000
PLESSEY	a	610000	a	610000
POSTAL AUSTRALIAN	$K	244B00	$K	244B00
POSTAL IMB	$V	245600	$V	245600
POSTAL JAPANESE	$R	245200	$R	245200

4 References

Symbology	USA Label ID set		EU Label ID set	
	Default Character	Default ASCII	Default Character	Default ASCII
POSTAL KIX	$U	245500	$U	245500
POSTAL PLANET	$W	245700	$W	245700
POSTAL PORTUGAL	$P	245000	$P	245000
POSTAL POSTNET BB	$L	244C00	$L	244C00
POSTAL ROYAL MAIL	$M	244D00	$M	244D00
POSTAL SWEDISH	$X	245800	$X	245800
POSTNET	1	310000	1	310000
QR CODE	QR	515200	y	790000
S25	s	730000	P	500000
TRIOPTIC	$T	245400	$T	245400
UPCA	A	410000	C	430000
UPCA P2	A	410000	F	460000
UPCA P5	A	410000	G	470000
UPCA COMPOSITE	A	410000	$H	244800
UPCE	E	450000	D	440000
UPCE P2	E	450000	H	480000
UPCE P5	E	450000	I	490000
UPCE COMPOSITE	E	450000	$J	244A00

4 References

Label ID: Set Individually Per Symbology

To configure a Label ID individually for a single symbology:

1 Go to page 63 and scan the ENTER/EXIT barcode.

2 Select Label ID position as either BEFORE (Enable as Prefix) or AFTER (Enable as suffix) by reading the appropriate barcode in the section "Label ID Control" on page 63. Reference Figure 9: Label ID Position Options for Label ID positioning options if multiple identification features are enabled.

3 Scan a barcode to select the symbology for which you wish to configure a custom Label ID from the section "Label ID Symbology Selection – 1D Symbologies" on page 63.

4 Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology.

5 Turn to the ASCII Chart on the inside back cover of this manual and find the equivalent hex digits associated with your choice of Label ID. For example, if you wish to select an equal sign (=) as a Label ID, the chart indicates its associated hex characters as 3D. Turn to Appendix D: Keypad, starting on page 301 and scan the barcodes representing the hex characters determined. For the example given, the characters '3' and 'D' would be readed. More examples of Label ID settings are provided in Table Label ID Examples.

NOTE

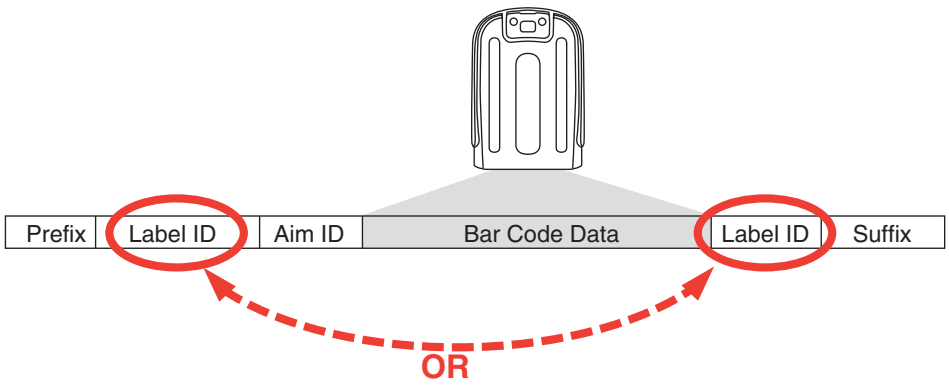
If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.

6 Scan the ENTER/EXIT barcode to exit Label ID entry.

7 Scan the ENTER/EXIT barcode once again to exit Programming Mode.

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

Figure 9: Label ID Position Options



4 References

Label ID Examples

STEP	ACTION	EXAMPLES			
1.	**Scan the ENTER/EXIT barcode**	(Reader enters Programming Mode)			
2.	**Determine placement of the Label ID characters BEFORE or AFTER with regard to readed data using Label ID Control, starting on page 63**	Enable as Prefix	Enable as Suffix	Enable as Prefix	Enable as Suffix
3.	**Scan the barcode selecting the symbology type you wish to designate label ID characters for using Label ID Symbology Selection – 1D Symbologies, starting on page 63.**	DataBar Omnidirec-tional	Code 39	Interleaved 2 of 5	Code 32
4.	**Custom Label ID example (desired characters):**	D B *	= C 3	+	P H
5.	**Find hex equivalents from the ASCII Chart(inside back cover), then scan in these digits/ characters using the barcodes in the section: Appendix D: Keypad, starting on page 301. If you make a mistake before the last character, scan the CANCEL barcode to abort and not save the entry string. You can then start again at the beginning.**	44 42 2A	3D 43 33	2B	50 48
6.	**Scan the ENTER/EXIT barcode**	(Reader exits Label ID entry)			
7.	**Scan the ENTER/EXIT barcode once again**	(Reader exits Programming Mode)			
Result:		DB*[bar code data]	[bar code data]=C3	+[bar code data]	[bar code data]PH

4.4.4 Character Conversion

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

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

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

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

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

To set Character Conversion:

1. Go to page 68 and scan the ENTER/EXIT barcode.
2. Scan the “Configure Character Conversion” barcode.
3. Determine the desired string. Sixteen positions must be determined as in the above example. Next, turn to the ASCII Chart on the inside back cover of this manual and find the equivalent hex digits needed to fulfill the string.
4. Turn to Appendix D: Keypad and scan the barcodes representing the hex characters determined in the previous step.
5. Scan the ENTER/EXIT barcode to exit Programming Mode.

NOTE

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

4 References

4.5 Reading Parameters

4.5.1 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 76 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT GOOD READ LED DURATION SETTING.

5 Scan the appropriate three digits from the keypad in Appendix D: Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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 Good Read LED Duration Setting Examples for some examples of how to set this feature.

Good Read LED Duration Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	Good Read LED stays on until next trigger pull (00)	20ms	150ms	2550ms (2.55 sec.)
2	**Divide by 10 (and pad with leading zeroes)**	000	002	015	255
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT 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**				

4 References

4.6 Reading Features

4.6.1 Scan Mode

This mode is associated with typical handheld reader operation. Selects the scan operating mode for the reader. The following selections are valid for all models:

Trigger Single: When the trigger is pulled, reading is activated until one of the following occurs:
- Reading Active Time has elapsed
- a label has been read
- the trigger is released

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

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

Flashing: The reader flashes on and off regardless of the trigger status. Flash rate is controlled by Flash On Time and Flash Off Time. When Flash is ON the imager reads continuously; when Flash is OFF reading is deactivated.

Always On: No trigger pull is required to read a barcode. reading is continually on. If the trigger is pulled, the reader acts as if it is in Trigger Single Mode. Double Read Timeout prevents undesired multiple reads of the same label while in this mode.

Stand Mode: No trigger pull is required to read a barcode. Reading is turned on automatically when an item is placed in the reader's field of view. Double Read Timeout prevents undesired multiple reads while in this mode.

4 References

4.6.2 Stand Mode Off Time

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

Follow these instructions to set this feature:

1. Determine the desired setting.
2. Pad the result with leading zeroes to yield two digits. For example: 2 = 02, 5 = 05, 20 = 20, etc.
3. Go to page 79 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
4. Scan the barcode: Set Stand Mode Illuminator Off Time.
5. Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the setting which was determined in the steps above. You will hear a two-beep indication after the last character.
6. Scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table Stand Mode Off Time for some examples of how to set this feature.

Stand Mode Off Time

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	500 ms	1 Second	5.5 Seconds	16 Seconds
2	**Pad leading zero**	01	02	11	32
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT STAND MODE OFF TIME**				
5	**Scan Two Characters From Appendix D: Keypad**	‘0’ and ‘1’	‘0’ and ‘2’	‘1’ and ‘1’	‘3’ and ‘2’
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

4.6.3 Reading Active Time

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

Follow these instructions to set this feature:

1 Determine the desired setting.

2 Pad the result with leading zeroes to yield three digits. For example: 0 = 000, 5 = 005, 20 = 020, etc.

3 Go to page 80 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT READING ACTIVE TIME SETTING.

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

NOTE

If you make a mistake before the last character, scan the CANCEL 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 Reading Active Time Setting Examples for some examples of how to set this feature.

Reading 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 READING 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**				

4.6.4 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 Go to page 82 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: 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 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 Aiming Duration Time Setting Examples for some examples of how to set this feature.

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**				

4.6.5 Flash On Time

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

Follow these instructions to set this feature.

1 Determine the desired setting in milliseconds.

2 Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3 Go to page 80 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT FLASH ON TIME SETTING.

5 Scan the appropriate two digits from the keypad in Appendix D: Keypad representing the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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 Flash On Time Setting Examples for examples of how to set this feature.

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**				

4 References

4.6.6 Flash Off Time

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

Follow these instructions to set this feature.

1 Determine the desired setting in milliseconds.

2 Divide the desired setting by 100 (setting is in 100ms increments). Pad the result with leading zeroes to yield two digits. For example: 0 = 00, 5 = 05, 20 = 20, etc.

3 Go to page 81 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT FLASH OFF TIME SETTING.

5 Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the duration which was determined in the steps above. You will hear a two-beep indication after the last character.

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 Flash Off Time Setting Examples for some examples of how to set this feature.

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**				

4.6.7 Multiple Labels Ordering by Code Symbology

This feature Specifies the transmission ordering by symbology type, when Multiple Labels per Frame is enabled.Up to six symbologies can be selected. Zeroes must be added to pad the string to 12 characters if not using all six symbologies.

The labels are ordered first as specified in the output mask. Labels present in the volume but not specified will be transmitted as unspecified symbologies in random order as allowed by the reading time sequence. For each label decoded in the volume the reader signals the standard beeper and LED indications.

To specify the symbology order:

1 Determine the symbologies and order you want to specify.

2 Use Table Symbology Hex Values on page 268 to find the hex values for up to six symbologies.

3 Go to page 85 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: “SELECT SYMBOLOGIES FOR MULTIPLE LABELS ORDERING”.

5 Scan the appropriate two alphanumeric characters from the keypad in Appendix D: Keypad, that represent the desired character/value in step 2 above.

6 Scan zeroes if needed to make a 12-character string.

7 When finished, scan the ENTER/EXIT PROGRAMMING MODE barcode to exit Programming Mode.

This completes the procedure. See Table Multiple Labels Ordering by Code Symbology Examples for some examples of how to set this feature.

Multiple Labels Ordering by Code Symbology Examples

STEP	ACTION	EXAMPLES			
1	**Desired symbology**	Code 39	Data Matrix	Code 128	Aztec
2	**Hex equivalent from ASCII Chart**	24	0E	0C	4E
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT SYMBOLOGIES FOR MULTIPLE LABELS ORDERING**				
5	**Scan Two Characters From Appendix D: Keypad**	‘2’ and ‘4’	‘0’ and ‘E’	‘0’ and ‘C’	‘4’ and ‘E’
	RESULT	**0x240E0C4E0000**			
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

Table Symbology Hex Values on page 268 shows the hex value associated with each symbology.

4 References

Symbology Hex Values

Hex Value	Symbology ID	Hex Value	Symbology ID
00	Don't care	2C	GTIN5
01	UPC-A	2D	GTIN8
02	UPC-E	2E	S2OF5
03	EAN8	2F	PDF417
04	EAN13	30	CODE11
05	UPC2	31	IATA
06	UPC5	32	MICRO_PDF
07	C128_ADDON	33	GS1 DataBar_LIM_ID
0A	EAN128	34	GS1 DataBar_LIM_COMP
0B	C128_PROGRAMMING_LABEL	35	GS1 DataBar_Omnidirectional_COMP
0C	CODE128	36	GS1 DataBar_EXP_COMP
0D	FNC3_C128_LABEL	37	GENERIC_DATA
0E	DATA MATRIX	38	CC_A
0F	MAXICODE	39	CC_B
10	QRCODE	3A	CC_C
11	Reserved	3B	LABELIMAGE
12	Reserved	3C	CAPTURE_IMAGE_LABEL
13	CODE49	3D	Reserved
14	UPC-E2	3E	M2OF5
15	UPC-E5	3F	D2OF5
16	Reserved	40	PLESSEY65
17	UPC-A2	42	ISSN
18	UPC-A5	43	ISBT
19	Reserved	44	Reserved
1A	EAN82	45	TIMER_EXPIRED_EVENT
1B	EAN85	46	FOLLETT_2OF5
1C	Reserved	47	Reserved
1D	EAN132	48	Reserved
1E	EAN135	49	CODE39_CIP

4 References

Hex Value	Symbology ID	Hex Value	Symbology ID
1F	EAN138	**4A**	ABC_CODABAR
20	ISBN_ID	**4B**	I2OF5_CIP
21	TWO_LABEL_PAIR	**4C**	C2OF5
22	I2OF5	**4D**	IND2OF5
23	CODABAR	**4E**	AZTEC
24	CODE39	**4F**	UPC-E_COMP
25	PHARMAC39	**50**	UPC-A_COMP
26	MSI_PLESSEY	**51**	EAN8_COMP
27	CODE93	**52**	EAN13_COMP
28	RSS_EXP_ID	**53**	EAN128_COMP
29	RSS_14_ID	**54**	DATA MATRIX_PROGRAMMING_LABEL
2A	GTIN	**55**	LABEL_ID_MAX
2B	GTIN2	**FF**	INVALID_LABEL_TYPE

4.7 Motion Features

4.7.1 Motionless Timeout

This setting specifies the amount of time that the reader takes to assume that it is in a motionless condition. The range for this setting is from 500 msec to 25.5 seconds, in 100 millisecond 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: 0.5 = 0005 = 00, 5 = 050, 20 = 200, etc.

3 Go to page 205 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.

4 Scan the barcode: SELECT MOTIONLESS TIMEOUT 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 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 Motionless Timeout Setting Examples for examples of how to set this feature.

4 References

Motionless Timeout Setting Examples

STEP	ACTION	EXAMPLES			
1	**Desired Setting**	500ms	1 sec.	10 sec	9,900ms (9.9 sec.)
2	**Divide by 100 (and pad with leading zeroes to yield two digits)**	005	010	100	250
3	**Scan ENTER/EXIT PROGRAMMING MODE**				
4	**Scan SELECT MOTIONLESS TIMEOUT SETTING**				
5	**Scan Two Characters From Appendix D: Keypad**	'0', '0' and '5'	'0', '1' and '0'	'1', '0', and '0'	'2', '5', and '0'
6	**Scan ENTER/EXIT PROGRAMMING MODE**				

4.8 Wireless Features

4.8.1 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 host commands, then the reader's configuration will automatically be updated if this feature is enabled.

4.8.2 RF Address Stamping

Source Radio Address Delimiter Character

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

NOTE

This feature only applies if "Source Radio Address Transmission" on page 218 is enabled.

Follow these instructions to select the delimiter character:

1. Determine the desired character, then find its hexadecimal equivalent on the ASCII Chart on the inside back cover. A setting of 00 specifies no delimiter character.
2. Go to page 218 and scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode.
3. Scan the barcode: SET SOURCE RADIO ADDRESS DELIMITER CHARACTER.
4. Scan the appropriate two digits from the keypad in Appendix D: Keypad, that represent the hexadecimal characters which were determined in the steps above. You will hear a two-beep indication after the last character.

NOTE

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

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

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**				

4.8.3 Bluetooth-Only Features

Bluetooth Pin Code

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

1 Scan the ENTER/EXIT PROGRAMMING MODE barcode to enter Programming Mode, then enable "Bluetooth Security Mode" on page 226.

2 Specify the desired pin code length (4 or 16) by reading the appropriate barcode in "Select PIN Code Length" on page 226.

3 Determine the desired characters. For example, D254 or STOR12345678135M.

4 Convert the characters to hexadecimal using the ASCII Chart on the inside back cover of this manual.

5 Go to page 226 and Scan the barcode: SET 4 CHAR PIN CODE or SET 16-CHAR PIN CODE.

6 Scan the appropriate alphanumeric characters from the keypad in Appendix D: Keypad, representing the hexadecimal entries determined in the steps above. You will hear a two-beep indication after the last character.


NOTE

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

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


NOTE

Changing the pin code setting will unlink the devices. If the Automatic Configuration Update is set to the default enabled setting, the devices must only be relinked. Do not use this setting if AUTOMATIC CONFIGURATION UPDATE is set to "Disabled"! Please check this setting first before going on.

4 References

Bluetooth Pin Code Setting Examples

STEP	ACTION	EXAMPLES	
1	**Desired Setting**	D254	STOR12345678135M
2	**Convert the characters to hexadecimal**	44 32 35 34	53 54 4F 52 31 32 33 34 35 36 37 38 31 33 35 4D
3	**Scan ENTER/EXIT PROGRAMMING MODE**		
4	**Scan SET Bluetooth PIN CODE**		
5	**Scan 8 or 32 Alphanumeric Characters From Appendix D: Keypad**	44323534	53544F523132333435363738313335 4D
6	**Scan ENTER/EXIT PROGRAMMING MODE**		

5 Appendix A: Technical Specifications

The tables that follow contain Physical and Performance Characteristics, User Environment and Regulatory information. Table Standard Cable Pinouts provides Standard Cable Pinouts.

Technical Specifications

Item	Description	
Physical Characteristics		
Dimensions	Height: 212 mm Length: 110 mm Width: 74 mm	
Weight (without cable)	BVS HS-PC models: 330 gr (without cable) BVS HS-PB models: 395 gr	
Electrical Characteristics		
BVS HS-PC models		
Voltage & Current	**BVS HS-PC-HDW-MA-02**	**BVS HS-PC-DPW-MA-01**
Input Voltage	5 VDC +/- 5%	5 VDC +/- 5%
Input Current		
Operating (typical):	335 mA	350 mA
Operating (max):	475 mA	480 mA
Idle/Standby (typical)	180 mA	120 mA
BVS HS-PB models		
Battery Type	Li-Ion battery pack	
Charge time for full charge from full discharge	4 hours with external power supply adapter[a]	
	Typical 10 hours with Host power (in this case no supply adapter is needed)[a]	
Operating autonomy (continuous reading)	30,000 reads (typical)	
Cradle consumption and DC input supply range	Volt 10-30 VDC; Power <8W[b]; Max 500 mA when in host/bus powered mode[b].	

a. Charge Times are much lower when battery is within daily typical operating condition.

b. Typical input current measured under factory default configuration.

5 Appendix A: Technical Specifications

Performance Characteristics	
Light Source	LED
Roll (Tilt) Tolerance	± 180°
Pitch Tolerance	± 40°
Skew (Yaw) Tolerance	± 40°
Print Contrast Minimum	15% minimum reflectance
Resolution	1D 2.5 mil 2D 4 mil

Depth of Field (Typical)[a]	
Symbology	**High Performance (HP)**
Code 39	2.5 mils: 2-6 cm 20 mils: 3-70 cm 40 mils: 3-110 cm
EAN 13	13 mils: 3-60 cm
PDF-417	10 mils: 2-30 cm
DataMatrix	4mil: 2-6 cm 10mil: 2-20 cm
Minimum Element Width	High Density: 1D Minimum Resolution = 2.5 mil PDF-417 Minimum Resolution = 4 mil Data Matrix Minimum Resolution = 5 mil

[a] 13 mils DOF based on EAN. All other 1D codes are Code 39. All labels grade A, 300 lux ambient light, 20°C, label inclination 10°

5 Appendix A: Technical Specifications

Decode Capability	
Item	**Description**
1D Barcodes	GS1 Databar linear codes, UPC/EAN (A,E,13,8), UPC/EAN with P2/P5 Addons, UPC/EAN Coupons, ISBN, Code128, EAN128, ISBT128, Code39, Code39 Full ASCII, Code39 CIP, Code 32, Codabar, Interleaved 2 of 5, IATA, Industrial 2 of 5, Standard 2 of 5, Code11, MSI, Plessey, Code 93, Follet 2/5
Stacked codes	EAN/JAN Composites; GS1 Databar Composites, GS1 Databar Expanded Stacked; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; MacroPDF; Micro PDF417; PDF417; UPC A/E Composites, French CIP13, Grid Matrix (Chinese) code
2D / Stacked Codes	DataMatrix, MaxiCode and QR Codes(QR, Micro QR and Multiple QR codes), Aztec, China Sensible Codes
Postal codes	Australian Post, China Post, Japanese Post, KIX Post, Korea Post, Planet Code, Postnet, Royal Mail Code (RM45CC), IMB
Interfaces Supported[a]	RS-232, USB (USB-KBD, USB-COM).

a. See "Interface Selection" on page 24 for a listing of available interface sets by model type.

Item	Description
User Environment	
Operating Temperature	-20° - +50° C
Storage Temperature	-40° to 70° C
Humidity	0 to 95% non-condensing
Drop Specifications	Reader withstands >50 times 2 m drops to concrete
Ambient Light Immunity	100,000 Lux
Prtection class according IEC 60529	IP 65
ESD Level	20 KV
Beeper/Speaker	>= 80 dB @ 10 cm

5 Appendix A: Technical Specifications

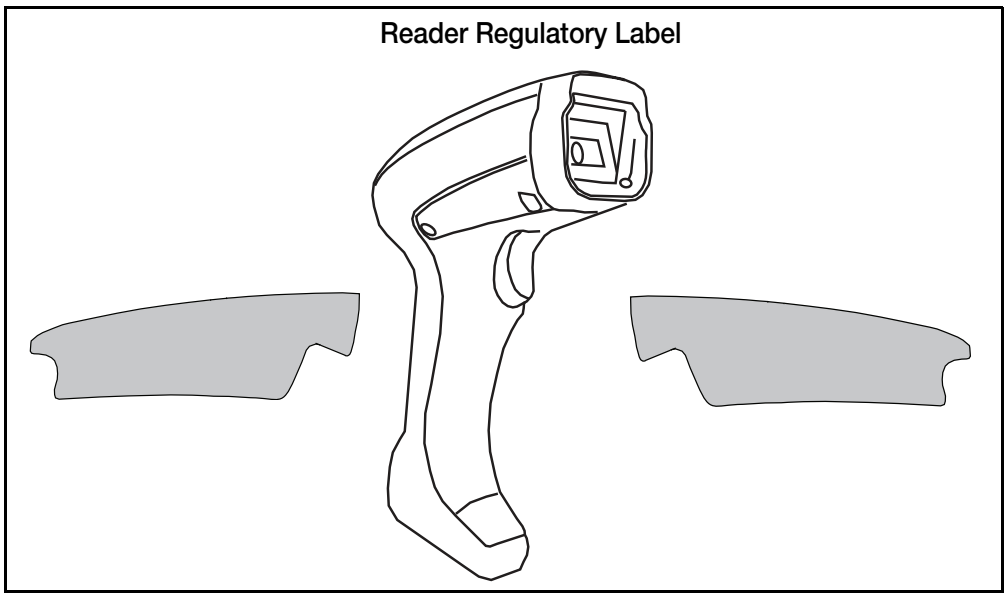
Item	Description	
Regulatory		
	BVS HS-PC models	**BVS HS-PB models**
Electrical Safety	UL 60950, CSA C22.2 No. 60950, IEC 60950	UL 60950, CSA C22.2 No. 60950, IEC 60950
For Regulatory Approvals	For Regulatory approvals please refer to the chapter regulatory addendum of the specific BVS HS-PC or BVS HS-PB quick guides.	
Laser Safety	IEC Class 2 Radiation 1 mW Avg., Emitted wavelength 650 nm, 12ms pulse, Beam Divergence 8.4 deg x 8.1 deg ("plus" pattern)	
Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.		
	IEC 62471 Exempt Group classification	IEC 62471 Exempt Group classification

Radio Features (only BVS HS-PB models)	
Frequency working center	2400 to 2483.5 MHz
Range (in open air)	up to 100 m
Max number of devices per base station	7

5 Appendix A: Technical Specifications

5.1 Imager Labeling

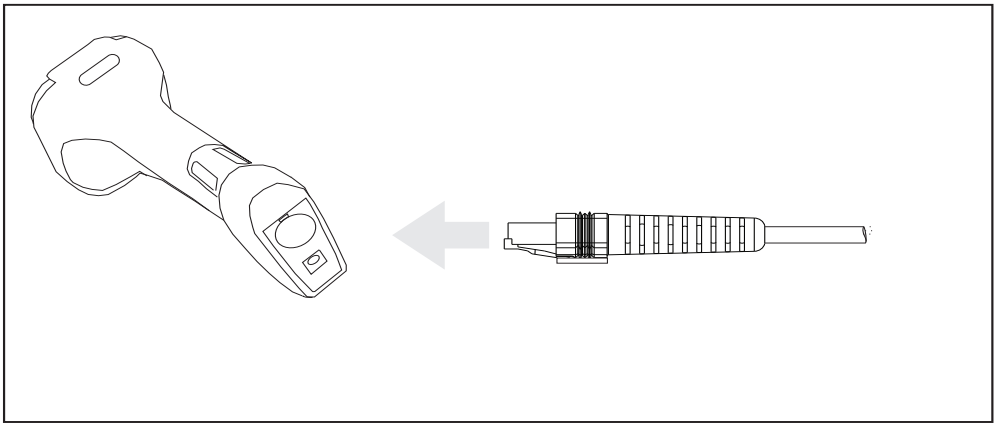
Sample labels are shown for illustrative purposes only. Please view the labels on your product for actual details, as they may vary from those depicted.



5.2 Standard Cable Pinouts

The data below provides standard pinout information for the interface cable.

Figure 10: . Standard Cable Pinouts: Handheld



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

5 Appendix A: Technical Specifications

Standard Cable Pinouts

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)		

5 Appendix A: Technical Specifications

5.3 LED and Beeper Indications

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

LED and Beeper Indications

INDICATION	DESCRIPTION	LED	BEEPER
Power-up Beep	The reader is in the process of powering-up.		Reader beeps four times at highest frequency and volume upon power-up.
Good Read Beep	A label has been successfully readed by the reader.	LED behavior for this indication is configurable via the feature "Good Read: When to Indicate"	The reader will beep once at current frequency, volume, tonal setting and duration upon a successful label scan.
Green Spot[a] flashes momentarily	Upon successful read of a label, the software turns the green spot on for the time specified by the configured value.	N/A	N/A
Image Capture	When ready to capture image	Blue light flashes 2 times when updating	N/A

a. Except when in sleep mode or when a Good Read LED Duration other than 00 is selected

Programming Mode Indications

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

INDICATION	DESCRIPTION	LED	BEEPER
Label Programming Mode Entry	A valid programming label has been readed.	LED blinks continuously	Reader sounds four low frequency beeps.
Label Programming Mode Rejection of Label	A label has been rejected.	N/A	Reader sounds three times at lowest frequency & current volume.
Label Programming Mode Acceptance of Partial Label	In cases where multiple labels must be readed to program one feature, this indication acknowledges each portion as it is successfully readed.	N/A	Reader sounds one short beep at highest frequency & current volume.
Label Programming Mode Acceptance of Programming	Configuration option(s) have been successfully programmed via labels and the reader has exited Programming Mode.	N/A	Reader sounds one high frequency beep and 4 low frequency beeps followed by reset beeps.
Label Programming Mode Cancel Item Entry	Cancel label has been readed.	N/A	Reader sounds two times at low frequency and current volume.

5 Appendix A: Technical Specifications

5.4 Error Codes

Upon startup, if the reader sounds a long tone, this means the reader has not passed its automatic Selftest and has entered FRU (Field Replaceable Unit) isolation mode. If the reader is reset, the sequence will be repeated. Press and release the trigger to hear the FRU indication code.

The following table describes the LED flashes/beep codes associated with an error found.

NUMBER OF LED FLASHES/BEEPS	Error	CORRECTIVE ACTION
1	Configuration	Contact Helpdesk for assistance
2	Interface PCB	
6	Digital PCB	
11	Imager	

5.4.1 Base Station Indications (Cordless Models ONLY)

Base Station Button Indicators

BUTTON PUSH EVENT	CORDLESS	RED INDICATOR(**)	GREEN INDICATOR(**)
Push at power-up	force device connection	Off	Slow blink Fast blink
< 5 sec	Paging	Off	Fast blink
5 to 10 sec	Unlink (Only Bluetooth)	Off	Slow blink

6 Appendix B: Sample Barcodes

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

6.1 1D Barcodes

UPC-A

EAN-13

978033029095

Code 39

Code 128

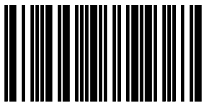
Code 128

Interleaved 2 of 5

Code 32

6 Appendix B: Sample Barcodes

Codabar



13579

Code 93

Code 11

123456789

6 Appendix B: Sample Barcodes

6.2 GS1 DataBar™ (RSS)

NOTE

GS1 DataBar™ variants must be enabled to read the barcodes below (see "GS1 DataBar™ Omnidirectional" on page 156).

GS1 DataBar™ Expanded Stacked

1029384756019283746501928374602947845036652 3

GS1 DataBar™ Expanded

1234890hjio9900mnb

GS1 DataBar™ Limited

08672345650916

6 Appendix B: Sample Barcodes

6.3 GS1 DataBar™-14

GS1 DataBar™ Omnidirectional Truncated

55432198673467

GS1 DataBar™ Omnidirectional

Stacked

90876523412674

GS1 DataBar™ Omnidirectional Stacked

78123465709811

6 Appendix B: Sample Barcodes

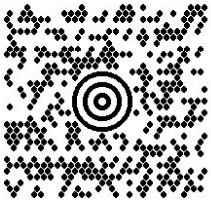
6.4 2D Barcodes

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

6 Appendix B: Sample Barcodes

7 Appendix C: Standard Defaults

The most common configuration settings are listed in the “Default” column of the table below. Page references are also provided for feature descriptions and programming barcodes for each parameter. A column has also been provided for recording of your preferred default settings for these same configurable features.

Standard Defaults

Parameter	Default	Your Setting	Page Number
GLOBAL INTERFACE FEATURES			
Host Commands — Obey/Ignore	Obey		32
USB Suspend Mode	Disable		32
RS-232 ONLY			
Baud Rate	115200		34
Data Bits	8 Data Bits		35
Stop Bits	1 Stop Bit		35
Parity	None		35
Handshaking Control	RTS		36
RS-232/USB-Com			
Intercharacter Delay	No Delay		38
Beep On ASCII BELBeep On ASCII BEL	Disable		38
Beep On Not on File	Enable		39
ACK NAK Options	Disable		39
ACK Character	‘ACK’		40
NAK Character	‘NAK’		40
ACK NAK Timeout Value	200 ms		41
ACK NAK Retry Count	3 Retries		41
ACK NAK Error Handling	Ignore Errors Detected		42
Indicate Transmission Failure	Enable		42
Disable Character	‘D’		43
Enable Character	‘E’		43
KEYBOARD WEDGE			
Country Mode	U.S. Keyboard		46
Send Control Characters	00		49

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Wedge Quiet Interval	100 ms		50
Intercode Delay	No Delay		50
Caps Lock State	Caps Lock OFF		51
Numlock	NumLock Key Unchanged		51
USB Keyboard Speed	1 ms		52
USB Keyboard Numeric Keypad	Standard Keys		53
USB-OEM			
USB-OEM Device Usage	Handheld		56
Interface Options	Ignore Reader Configuration Host Commands		56
Data Format			
Global Prefix/Suffix (Header/Terminator)	No Global Prefix Global Suffix = 0x0D (CR)		58
Global AIM ID	Disable		59
Set AIM ID Individually for GS1-128	Enable		61
Label ID: Pre-Loaded Sets	EU Set		62
Individually Set Label ID	Disable		62
Case Conversion	Disable		68
Character Conversion	No Char Conversion		68
READING PARAMETERS			
Double Read Timeout	0.6 Second		69
Power On Alert	Power-up Beep		72
Good Read: When to Indicate	After Decode		72
Good Read Beep Type	Mono		73
Good Read Beep Frequency	High		73
Good Read Beep Length	80 ms		74
Good Read Beep Volume	High		75
Good Read LED Duration	300 ms		76
Reading Features			
Scan Mode	Trigger Single		77

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Stand Mode Indication	Disable		78
Pick Mode	Disable		78
Stand Mode Sensitivity	Medium		79
Stand Mode Illumination Off Time	2 Seconds		79
Reading Active Time	5 Seconds		80
Stand Illumination Control	OFF		80
Flash On Time	10 = Flash is ON for 1 Second		81
Flash Off Time	06 = Flash is OFF for 600ms		81
Aiming Pointer	Enable		82
Aiming Duration Timer	Aiming Off After Decoding		82
Green Spot Duration	300 ms		83
Partial Label Reading Control	Enable		83
Decode Negative Labels	Disable		84
Multiple Label Reading			
Multiple Labels per Frame	Disable		85
Multiple Labels Ordering by Code Symbology	Random Order		85
Multiple Labels Ordering by Code Length	Disable		86
CODE SELECTION - 1D SYMBOLOGIES			
Code EAN/UPC			
Coupon Control	Enable only UPCA coupon decoding		89
UPC-A			
UPC-A Enable/Disable	Enable		90
UPC-A Check Character Transmission	Send		90
Expand UPC-A to EAN-13	Don't Expand		91
UPC-A Number System Character Transmission	Transmit		91
UPC-A 2D Component	2D Component Not Required		91

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
UPC-E			
UPC-E Enable/Disable	Enable		92
UPC-E Check Character Transmission	Send		92
UPC-E 2D Component	2D Component Not Required		92
Expand UPC-E to EAN-13	Don't Expand		93
Expand UPC-E to UPC-A	Don't Expand		93
UPC-E Number System Character Transmission	Transmit		93
GTIN			
GTIN Formatting	Disable		94
EAN 13 (Jan 13)			
EAN 13 Enable/Disable	Enable		95
EAN 13 Check Character Transmission	Send		95
EAN-13 Flag 1 Character	Transmit		96
EAN-13 ISBN Conversion	Disable		96
EAN-13 2D Component	2D Component Not Required		96
ISSN			
ISSN Enable/Disable	Disable		97
EAN 8			
EAN 8 Enable/Disable	Enable		98
EAN 8 Check Character Transmission	Send		98
Expand EAN 8 to EAN 13	Disable		98
EAN 8 2D Component	2D Component Not Required		99
UPC/EAN Global Settings			
UPC/EAN Price Weight Check	Disable		100
UPC/EAN Quiet Zones	Two Modules		100

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Add-Ons			
Optional Add-ons	Disable P2, P5 and P8		101
Optional Add-On Timer	70 ms		102
Optional GS1-128 Add-On Timer	Disable		104
Code 39			
Code 39 Enable/Disable	Enable		107
Code 39 Check Character Calculation	Don't Calculate		107
Code 39 Check Character Transmission	Send		108
Code 39 Start/Stop Character Transmission	Don't Transmit		108
Code 39 Full ASCII	Disable		108
Code 39 Quiet Zones	Small Quiet Zones on two sides		109
Code 39 Length Control	Variable		109
Code 39 Set Length 1	2		110
Code 39 Set Length 2	50		111
Trioptic Code			
Trioptic Code Enable/Disable	Disable		112
Code 32 (Italian Pharmaceutical Code)			
Code 32 Enable/Disable	Disable		113
Code 32 Check Character Transmission	Don't Send		113
Code 32 Start/Stop Character Transmission	Don't Transmit		114
Code 39 CIP (French Pharmaceutical Code)			
Code 39 CIP Enable/Disable	Disable		115
Special Codes			
Code 39 Danish PPT Enable/Disable	Disable		116
Code 39 LaPoste Enable/Disable	Disable		117
Code 39 PZN Enable/Disable	Disable		118

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Code 128			
Code 128 Enable/Disable	Enable		119
Expand Code 128 to Code 39	Don't Expand		119
Code 128 Check Character Transmission	Don't Send		119
Code 128 Function Character Transmission	Don't Send		120
Code 128 Sub-Code Exchange Transmission	Disable		120
Code 128 Quiet Zones	Small Quiet Zones on two sides		120
Code 128 Length Control	Variable		121
Code 128 Set Length 1	1		121
Code 128 Set Length 2	80		122
GS1-128			
GS1-128 Enable	Transmit in Code 128 Data Format		123
GS1-128 2D Component	Disable		123
ISBT 128			
ISBT 128 Concatenation	Disable		124
ISBT 128 Force Concatenation	Disable		124
ISBT 128 Concatenation Mode	Static		125
ISBT 128 Dynamic Concatenation Timeout	200 msec		126
Interleaved 2 of 5			
I 2 of 5 Enable/Disable	Disable		127
I 2 of 5 Check Character Calculation	Disable		128
I 2 of 5 Check Character Transmission	Send		129
I 2 of 5 Length Control	Variable		129
I 2 of 5 Set Length 1	6		130
I 2 of 5 Set Length 2	50		131
Interleaved 2 of 5 CIP HR			
Interleaved 2 of 5 CIP HR Enable/Disable	Disable		132

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Follett 2 of 5			
Follett 2 of 5 Enable/Disable	Disable		133
Standard 2 of 5			
Standard 2 of 5 Enable/Disable	Disable		134
Standard 2 of 5 Check Character Calculation	Disable		134
Standard 2 of 5 Check Character Transmission	Send		134
Standard 2 of 5 Length Control	Variable		135
Standard 2 of 5 Set Length 1	8		135
Standard 2 of 5 Set Length 2	50		136
Industrial 2 of 5			
Industrial 2 of 5 Enable/Disable	Disable		138
Industrial 2 of 5 Check Character Calculation	Disable		138
Industrial 2 of 5 Check Character Transmission	Enable		138
Industrial 2 of 5 Length Control	Variable		139
Industrial 2 of 5 Set Length 1	1		140
Industrial 2 of 5 Set Length 2	50		141
Code IATA			
IATA Enable/Disable	Disable		142
IATA Check Character Transmission	Enable		142
Codabar			
Codabar Enable/Disable	Disable		143
Codabar Check Character Calculation	Don't Calculate		143
Codabar Check Character Transmission	Send		144
Codabar Start/Stop Character Transmission	Transmit		144
Codabar Start/Stop Character Set	abcd/abcd		145
Codabar Start/Stop Character Match	Don't Require Match		145
Codabar Quiet Zones	Quiet Zones on two sides		146
Codabar Length Control	Variable		146

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Codabar Set Length 1	3		147
Codabar Set Length 2	50		148
ABC Codabar	Disable		149
ABC Codabar			
ABC Codabar Enable/Disable	Disable		149
ABC Codabar Concatenation Mode	Static		149
ABC Codabar Dynamic Concatenation Timeout	200 msec		150
ABC Codabar Force Concatenation	Disable		151
Code 11			
Code 11 Enable/Disable	Disable		152
Code 11 Check Character Calculation	Check C and K		152
Code 11 Check Character Transmission	Send		153
Code 11 Length Control	Variable		153
Code 11 Set Length 1	4		154
Code 11 Set Length 2	50		155
GS1 DataBar™ Omnidirectional			
GS1 DataBar™ Omnidirectional Enable/Disable	Disable		156
GS1 DataBar™ Omnidirectional GS1-128 Emulation	Disable		156
GS1 DataBar™ Omnidirectional 2D Component	2D component not required		156
GS1 DataBar™ Expanded			
GS1 DataBar™ Expanded Enable/Disable	Disable		157
GS1 DataBar™ Expanded GS1-128 Emulation	Disable		157
GS1 DataBar™ Expanded 2D Component	2D component not required		158
GS1 DataBar™ Expanded Length Control	Variable		158
GS1 DataBar™ Expanded Set Length 1	1		159
GS1 DataBar™ Expanded Set Length 2	74		160

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
GS1 DataBar™ Limited			
GS1 DataBar™ Limited Enable/Disable	Disable		161
GS1 DataBar™ Limited GS1-128 Emulation	Disable		161
GS1 DataBar™ Limited 2D Component	2D component not required		161
Code 93			
Code 93 Enable/Disable	Disable		162
Code 93 Check Character Calculation	Enable Check C and K		162
Code 93 Check Character Transmission	Enable		163
Code 93 Length Control	Variable		163
Code 93 Set Length 1	1		164
Code 93 Set Length 2	50		165
Code 93 Quiet Zones	Small Quiet Zones on two sides		166
MSI			
MSI Enable/Disable	Disable		167
MSI Check Character Calculation	Enable Mod10		167
MSI Check Character Transmission	Enable		168
MSI Length Control	Variable		169
MSI Set Length 1	1		169
MSI Set Length 2	50		170
Plessey			
Plessey Enable/Disable	Disable		171
Plessey Check Character Calculation	Enable Plessey std. check char. verification		171
Plessey Check Character Transmission	Enable		172
Plessey Length Control	Variable		172
Plessey Set Length 1	1		173
Plessey Set Length 2	50		174

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
CODE SELECTION - 2D SYMBOLOGIES			
2D Maximum Decoding Time	350msec		176
2D Structured Append	Disable		177
2D Normal/Inverse Symbol Control	Both		177
Aztec Code Enable / Disable	Disable		178
Aztec Code Length Control	Enable		178
Aztec Code Length Control	Variable		178
Aztec Code Set Length 1	1		179
China Sensible Code Enable / Disable	Disable		180
China Sensible Code Length Control	Variable		180
China Sensible Code Set Length 1	1		181
China Sensible Code Set Length 2	7,827		181
Data Matrix Enable / Disable	Enable		182
Data Matrix Square/Rectangular Style	Both Square and Rectangular style		182
Data Matrix DPM Decoding Safety	1		183
Data Matrix Length Control	Variable		184
Data Matrix Set Length 1	1		184
Data Matrix Set Length 2	3,116		185
Maxicode Enable / Disable	Disable		186
Maxicode Primary Message Transmission	Disable		186
Maxicode Length Control	Variable		187
Maxicode Set Length 1	1		187
Maxicode Set Length 2	0145		188
PDF417 Enable / Disable	Enable		189
PDF417 Length Control	Variable		189
PDF417 Set Length 1	1		190
PDF417 Set Length 2	2,710		190
Micro PDF417 Enable / Disable	Disable		191
Micro PDF417 Code 128 GS1-128 Emulation	Micro PDF AIM ID and label type		191
Micro PDF417 Length Control	Variable		192

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Micro PDF417 Set Length 1	1		192
Micro PDF417 Set Length 2	0366		193
QR Code Enable / Disable	Enable		194
QR Code Length Control	Variable		194
QR Code Set Length 1	1		195
QR Code Set Length 2	7,089		195
Micro QR Code Enable/Disable	Disable		196
Micro QR Code Length Control	Variable		196
Micro QR Code Set Length 1	0001		197
Micro QR Code Set Length 2	0035		197
UCC Composite Enable / Disable	Disable		198
UCC Optional Composite Timer	Timer Disabled		199
Postal Code Selection	Disable all Postal codes		200
Postnet BB Control	Disable		201
Motion Features			
Motion Aiming Control	Enable		203
Motion Sensitivity	Medium		204
Motionless Timeout	2 seconds		205
Wireless Features			
Good Transmission Beep	Enable		209
Beep Frequency	Low		209
Beep Duration	80 msec		210
Beep Volume	High		211
Disconnect Beep	Enable		211
Docking Beep	Enable		212
Leash Alarm	Disable		212
Automatic Configuration Update	Enable		214
Copy Configuration to reader	N/A		214
Copy Configuration to Base Station	N/A		214
Batch Mode	Disable		215
Send Batch	N/A		215

7 Appendix C: Standard Defaults

Parameter	Default	Your Setting	Page Number
Erase Batch Memory	N/A		216
RF Batch Mode Transmit Delay	No Delay		216
Direct Radio Autolink	Unlink Label Required		217
Source Radio Address Transmission	Do not include		218
Source Radio Address Delimiter Character	No Delimiter Character		218
Current Date	YYMMDD		220
Current Time	HHMMSS		220
Date Tx Format	YYYY-MM-DD (ISO 8601)		221
Time Tx Format	hh:mm:ss (ISO 8601)		221
Date-Time Separator	Disable		222
Date-Time Transmission Order	Disable		223
Powerdown Timeout	30 minutes		224
Features for BVS HS-PB Models Only			
Bluetooth Security Mode	Disable		226
Bluetooth PIN Code	N/A		226
Select PIN Code Length	4-Character		226
Set PIN Code	1234		227
Reconnect Attempt Interval	1 minute		228
Bluetooth HID Variable PIN Code	Static		229
Bluetooth HID Alt Mode	Off		230
Bluetooth HID Send Unknown ASCII Char	Disable		230
Bluetooth Max Client	2		231
Bluetooth Friendly Name	[SERIAL_ NUMBER_READER]		232
Bluetooth Reconnect Attempt Mode	Enable		232
Power Class	Power Class 1		233
HID Country Mode	US		233

7 Appendix C: Standard Defaults

Restore Factory Configuration

If you want to restore the Factory Configuration for your imager, scan either the Restore USA Factory Configuration barcode or the Restore EU Factory Configuration barcode below. Both labels restore the reader configuration to the factory settings, including the interface type.

CAUTION

reading either of the “Restore Factory Configuration” commands below will result in the loss of any custom configuration settings for your device. Go to "Restore Custom Defaults" on page 27 if you want to restore your custom configuration settings.

The USA label restores Label IDs to those historically used in the USA. The EU label restores Label IDs to those historically used in Europe. The Label ID sets for USA and EU are shown in Label ID: Pre-loaded Sets, starting on page 254 of this manual.

Restore USA Factory Configuration

Restore EU Factory Configuration

7 Appendix C: Standard Defaults

8 Appendix D: Keypad

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

0

1

2

3

4

5

6

7

8

9

8 Appendix D: Keypad

A

B

C

D

E

F

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

CANCEL

9 Appendix E: Scancode Tables

9.1 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 310).

9.1.1 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.

9 Appendix E: Scancode Tables

9.2 Interface Type PC AT PS/2, USB-Keyboard or USB-Keyboard for APPLE

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	Hom e	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al↑	Cl ↓	Cl ↑	Cr ↓
Ax	Cr ↑		‘	*f*	„	…	†	‡	ˆ	‰	Š	‹	Ś	‹	Œ	
Bx	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
Cx	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
Dx	Ð		Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
Ex	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
Fx	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

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

9 Appendix E: Scancode Tables

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

9 Appendix E: Scancode Tables

9.3 Interface Type PC AT PS/2 Alt Mode or USB-Keyboard Alt Mode — 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

9 Appendix E: Scancode Tables

9.4 Interface Type PC AT PS/2 Alt Mode or USB-Keyboard Alt Mode (continued)

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

9 Appendix E: Scancode Tables

9.5 Digital Interface Scancode Set When Control Character is 00 or 01

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

Scancode Set When Control Character is 02

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x					Cl ↓	Cl ↑			BS	Tab	à	S+ Tab	Enter Keyp d	Enter	Ins	
1x			←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Spac e	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
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

9 Appendix E: Scancode Tables

9.6 IBM31xx 102-key Scancode Set When Control Character is 00 or 01

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

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 Keyp d	Enter	Ins	Pg Up
1x	Pg Dwn	Hom e	←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Spac e	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
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

9 Appendix E: Scancode Tables

9.7 IBM XT Scancode Set When Control Character is 00 or 01

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	NULL C+@	SOH C(S)+ A	STX C(S)+ B	ETX C(S)+ C	EOT C+D	ENQ C(S)+ E	ACK C(S)+ F	BEL C(S)+ G	BS C(S)+ H	HT TAB	LF C(S)+ J	VT C(S)+ K	FF C(S)+ L	CR Enter	SO C(S)+ N	SI C(S)+ O
1x	DLE C(S)+ P	DC1 C(S)+ Q	DC2 C(S)+ R	DC3 C(S)+ S	DC4 C(S)+ T	NAK C(S)+ U	SYN C(S)+ V	ETB C(S)+ W	CAN C(S)+ X	EM C(S)+ Y	SUB C(S)+ Z	ESC Esc	FS C(S)+ \	GS C+]	RS C(S)+ ^	US C(S)+ _
2x	Spac e	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
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	Hom e	End	Pg Up	Pg Dwn	↑	↓	←	→	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓
Ax	Cr ↑															

Scancode Set when Control Character 02

	X0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x	Ar↓	Ar↑	Al↓	Al ↑	Cl ↓	Cl ↑	Cr ↓	Cr ↑	BS	Tab	→	S+ Tab	Enter Keypd	Enter	Ins	Pg Up
1x	Pg Dwn	Hom e	←	↓	↑	F6	F1	F2	F3	F4	F5	ESC	F7	F8	F9	F10
2x	Spac e	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
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

9 Appendix E: Scancode Tables

9.8 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

9 Appendix E: Scancode Tables

10 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

www.balluff.com

World Headquarters
Germany
Balluff GmbH
Schurwaldstraße 9
73765 Neuhausen a.d.F.
Deutschland
Tel. +49 7158 173-0
Fax +49 7158 5010
balluff@balluff.de
www.balluff.com

Subsidaries
USA
Balluff Inc.
8125 Holton Drive
Florence,
Kentucky 41042-0937
Phone (859) 727-2200,
1-800-543-8390
applications@balluff.com

No. 920061-726 EN · 01.129906 · F20; Subject to modification. Replaces B15.