DATALOGIC

# Magellan™ 1100i

## On-Counter Presentation Omnidirectional Bar Code Reader

# Product Reference Guide

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



Should future revisions of this manual be published, you can acquire printed versions by contacting your Datalogic representative. Electronic versions may either be downloadable from the Datalogic website (www.scanning.datalogic.com) or provided on appropriate media. If you visit our website and would like to make comments or suggestions about this or other Datalogic publications, please let us know via the "Contact Datalogic" page.

**Disclaimer**

Datalogic has taken reasonable measures to provide information in this manual that is complete and accurate, however, Datalogic reserves the right to change any specification at any time without prior notice.



This product may be covered by one or more of the following patents: 4603262 • 4639606 • 4652750 • 4672215 • 4699447 • 4709369 • 4749879 • 4786798 • 4792666 • 4794240 • 4798943 • 4799164 • 4820911 • 4845349 • 4861972 • 4861973 • 4866257 • 4868836 • 4879456 • 4939355 • 4939356 • 4943127 • 4963719 • 4971176 • 4971177 • 4991692 • 5001406 • 5015831 • 5019697 • 5019698 • 5086879 • 5115120 • 5144118 • 5146463 • 5179270 • 5198649 • 5200597 • 5202784 • 5208449 • 5210397 • 5212371 • 5212372 • 5214270 • 5229590 • 5231293 • 5232185 • 5233169 • 5235168 • 5237161 • 5237162 • 5239165 • 5247161 • 5256864 • 5258604 • 5258699 • 5260554 • 5274219 • 5296689 • 5298728 • 5311000 • 5327451 • 5329103 • 5330370 • 5347113 • 5347121 • 5371361 • 5382783 • 5386105 • 5389917 • 5410108 • 5420410 • 5422472 • 5426507 • 5438187 • 5440110 • 5440111 • 5446271 • 5446749 • 5448050 • 5463211 • 5475206 • 5475207 • 5479011 • 5481098 • 5491328 • 5493108 • 5504350 • 5508505 • 5512740 • 5541397 • 5552593 • 5557095 • 5563402 • 5565668 • 5576531 • 5581707 • 5594231 • 5594441 • 5598070 • 5602376 • 5608201 • 5608399 • 5612529 • 5629510 • 5635699 • 5641958 • 5646391 • 5661435 • 5664231 • 5666045 • 5671374 • 5675138 • 5682028 • 5686716 • 5696370 • 5703347 • 5705802 • 5714750 • 5717194 • 5723852 • 5750976 • 5767502 • 5770847 • 5786581 • 5786585 • 5787103 • 5789732 • 5796222 • 5804809 • 5814803 • 5814804 • 5821721 • 5822343 • 5825009 • 5834708 • 5834750 • 5837983 • 5837988 • 5852286 • 5864129 • 5869827 • 5874722 • 5883370 • 5905249 • 5907147 • 5923023 • 5925868 • 5929421 • 5945670 • 5959284 • 5962838 • 5979769 • 6000619 • 6006991 • 6012639 • 6016135 • 6024284 • 6041374 • 6042012 • 6045044 • 6047889 • 6047894 • 6056198 • 6065676 • 6069696 • 6073849 • 6073851 • 6094288 • 6112993 • 6129279 • 6129282 • 6134039 • 6142376 • 6152368 • 6152372 • 6155488 • 6166375 • 6169614 • 6173894 • 6176429 • 6188500 • 6189784 • 6213397 • 6223986 • 6230975 • 6230976 • 6244510 • 6259545 • 6260763 • 6266175 • 6273336 • 6276605 • 6279829 • 6290134 • 6290135 • 6293467 • 6303927 • 6311895 • 6318634 • 6328216 • 6332576 • 6332577 • 6343741 • 6454168 • 6478224 • 6568598 • 6578765 • 6705527 • 6857567 • 6974084 • 6991169 • 7051940 • 7170414 • 7172123 • 7201322 • 7204422 • 7215493 • 7224540 • 7234641 • 7243850 • 7374092 • 7407096 • 7490770 • 7495564 • 7506816 • 7527198 • 7527207 • 7537166 • 7562817 • 601 26 118.6 • AU703547 • D312631 • D313590 • D320011 • D320012 • D323492 • D330707 • D330708 • D349109 • D350127 • D350735 • D351149 • D351150 • D352936 • D352937 • D352938 • D352939 • D358588 • D361565 • D372234 • D374630 • D374869 • D375493 • D376357 • D377345 • D377346 • D377347 • D377348 • D388075 • D446524 • EP0256296 • EP0260155 • EP0260156 • EP0295936 • EP0325469 • EP0349770 • EP0368254 • EP0442215 • EP0498366 • EP0531645 • EP0663643 • EP0698251 • EP01330772 • GB2252333 • GB2284086 • GB2301691 • GB2304954 • GB2307093 • GB2308267 • GB2308678 • GB2319103 • GB2333163 • GB2343079 • GB2344486 • GB2345568 • GB2354340 • ISR107546 • ISR118507 • ISR118508 • JP1962823 • JP1971216 • JP2513442 • JP2732459 • JP2829331 • JP2953593 • JP2964278 • MEX185552 • MEX187245 • RE37166 • RE40071 • Other Patents Pending

# Table of Contents

# NOTES

# Chapter 1

# Getting Started

The Magellan™ 1100i Omni-Directional Imaging Scanner offers hands-free scanning for small, easily handled items and handheld scanning for bulkier items. Its aggressive imaging performance and intuitive operation reduces user training and speeds checkout for better customer service.

## About This Manual

This manual presents advanced user information which includes connection, programming, product and cable specifications, and other useful references. For additional information, such as installation, maintenance, troubleshooting and warranty information, see the Quick Reference Guide (QRG). Copies of other publications for this product are downloadable free of charge from the website listed on the back cover of this manual.

On leaving the factory, units are programmed for the most common terminal and communications settings. If you need to change these settings, custom programming can be accomplished by scanning the barcodes in this guide.

Bold text and a yellow-highlighted background indicates the most common default setting for a feature/option.

## Manual Conventions

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

**NOTE**

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

**CAUTION**

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

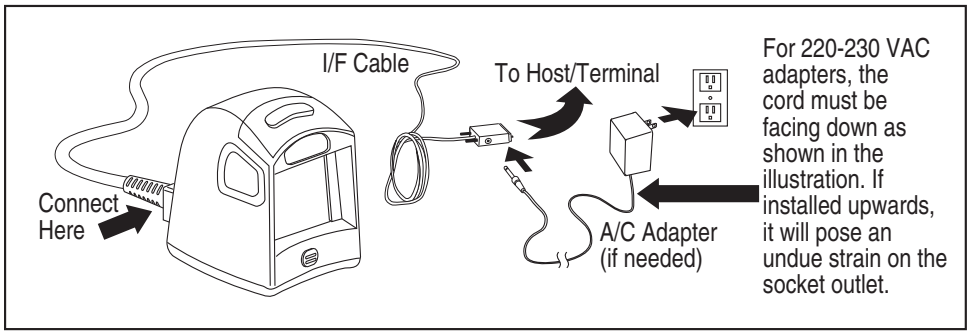
# Connecting the Scanner

The scanner kit you ordered to match your interface should provide a compatible cable for your installation. Use the appropriate instructions below to connect the scanner to the terminal, PC or other host device.

Upon completing the connection via the appropriate interface instructions below, proceed to the Interface Related Features section of this manual and scan the barcode to select the correct interface type.

**RS-232 Serial Connection —** Turn off power to the terminal/PC and connect the scanner to the terminal/PC serial port via the RS-232 cable as shown in Figure 1. If the terminal will not support POT (Power Off the Terminal) to supply scanner power, use the approved power supply (AC Adapter). Plug the AC Adapter barrel connector into the socket on the RS-232 cable connector and the AC Adapter plug into a standard power outlet.

**Figure 1. RS-232 Serial or USB Connection using A/C Adapter**

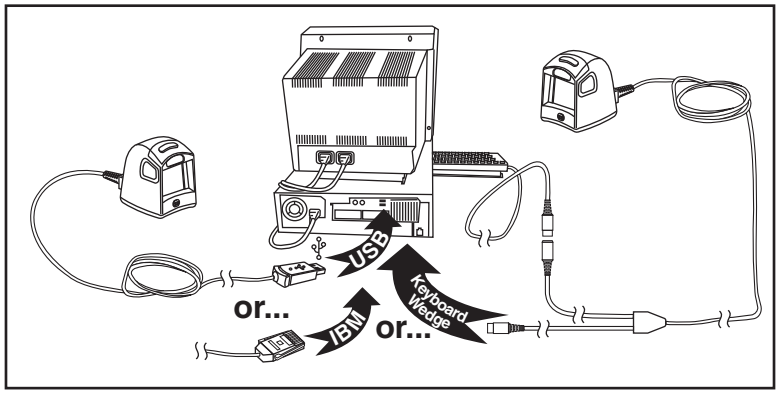



**USB Connection —** Connect the scanner to a USB port on the terminal/PC using the correct USB cable for the interface type you ordered. Reference Figure 1 and Figure 2.

**NOTE**

**USB installations may require a power connection via an approved A/C Adapter as shown in Figure 1. For example, this would be the case if the scanner is connected along with a number of other devices to a non-powered USB hub.**

**Figure 2. Other Connection Types**



**IBM Connection —** Connect the scanner to the IBM port on the terminal/PC using the correct IBM cable. Reference Figure 2.

**Keyboard Wedge Connection —** Before connection, turn off power to the terminal/PC. The Keyboard Wedge cable has a 'Y' connection from the scanner. Connect the female to the male end from the keyboard and the remaining end at the keyboard port at the terminal/PC. Reference Figure 2.

# Programming

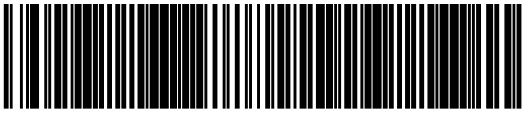
The scanner is typically factory-configured with a set of default features standard to the interface type you ordered. After scanning the interface barcode from the Interface Related Features section, you can select other options and customize your scanner through use of the instructions and programming barcodes available in that section and also the Data Editing and Symbologies chapters of this manual.

## Using the Programming Barcodes

This manual contains feature descriptions and barcodes which allow you to reconfigure your scanner. Some programming barcode labels, like the label below for resetting defaults, require only the scan of that single label to enact the change. Most of the programming labels in this manual, however, require the scanner to be placed in Programming Mode prior to scanning them. Scan a START/END barcode once to enterProgramming Mode. Once the scanner is in Programming Mode, you can scan a number of parameter settings before scanning the START/END barcode a second time, which will then accept your changes, exit Programming Mode and return the scanner to normal operation.

# Resetting the Standard Product Defaults

If you are unsure of what programming options are in your scanner, or you've changed some options and want the factory settings restored, scan the *Standard Product Default Settings* barcode below. This will copy the factory configuration for the currently active interface to the current configuration.



Standard Product Default Settings

The programming section lists the factory default settings for each of the menu commands for the standard RS-232 interface in **BOLD** text on the following pages. Exceptions to default settings for the other interfaces can be found in Appendix D, Default Settings.

# LED and Beeper Indicators

The scanner's beeper sounds and its green LED illuminates to indicate various functions or errors on the scanner. The tables below list these indications. One exception to the behaviors listed in the tables is that the scanner'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.

## Green LED Indications

| LED INDICATION | INDICATION | COMMENT |
|---|---|---|
| Power-on indication | Bright green flash | Indicates the scanner has finished all its power up tests and is now ready for operation. |
| Good Read Indication | Bright green flash | Indicates a barcode has been read and decoded. |
| Scanner Ready | Constant dim green | The scanner is ready for operation. |
| Sleep Mode | Constant green flash (100mS on, 1900mS off) | The scanner is in Sleep Mode. To wake the scanner up, move an object in front of its window or press the button atop the unit. |
| Host Disable | Constant green flash at 1 Hz (100mS on, 900mS off) | The scanner is disabled due to receiving a disble command from the POS terminal. |
| Diagnostics | Varies (see Error Codes on page 1-5 for more information) | The LED can provide diagnostic feedback if the scanner discovers a problem during SelfTest. |
| Prog. Mode | See Host Disable above. | The scanner is in Programming Mode. |

## BEEPER FUNCTIONS

| BEEPER INDICATION | INDICATION | COMMENT |
|---|---|---|
| Power On Beep | Single beep | The Power-On LED indication is a configurable feature which can be enabled or disabled. When enabled, this beep Indicates the scanner has finished all its power up tests and is now ready for operation. |
| Good Read Indication | Single beep | The good read beep indication is configurable. Options include: Enable/disable, frequency, duration and volume. See the Product Reference Guide (PRG) for more information. |
| Diagnostics | Varies (see Error Codes on page 1-5 for more information) | The Beeper can provide diagnostic feedback if the scanner discovers a problem during SelfTest. |
| Programming Mode Indications | Varies depending upon the feature(s) being configured. | The Beeper will sound as programming barcode labels are scanned, indicating progress during scanner configuration. |

# Error Codes

Upon startup, if the scanner flashes its indicator LED or sounds an unexpected series of beep tones (other than normal power-up indications), this means the scanner has not passed its automatic Selftest and has entered FRU[1] isolation mode. If the scanner is reset or the trigger is pulled, the sequence will be repeated. The following table describes the LED flashes/beep codes associated with an error found.

| NUMBER OF LED FLASHES/ BEEPS | ERROR | CORRECTIVE ACTION |
|---|---|---|
| 1 | Configuration | Contact Helpdesk for assistance |
| 2 | Interface PCB | |
| 6 | Main PCB | |
| 10 | Button Error | |
| 12 | Imager Module | |
| 13 | Software ID Failure | |
| 14 | CPLD/Code Mismatch | |

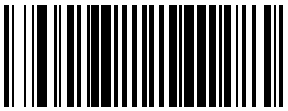
1. Field Replaceable Unit (FRU)

# NOTES

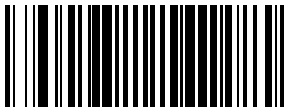
# Chapter 2
# General Features

## Double Read Timeout for Linear Labels

This Double Read Timeout feature sets a time limit that determines how much time must pass before reading the same linear label again (e.g. two identical items in succession).

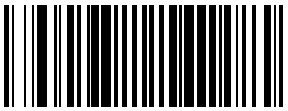
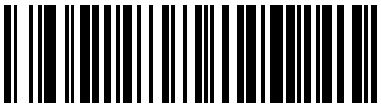
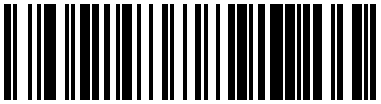
| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| 0.1 Second |  |
|  | 0.2 Second |
| 0.3 Second |  |
|  | **0.4 Second DEFAULT** |
| 0.5 Second |  |
|  | 0.6 Second |

# Double Read Timeout for Linear Labels — cont.

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| 0.7 Second |  |
|  | 0.8 Second |
| 0.9 Second |  |
|  | 1 Second |

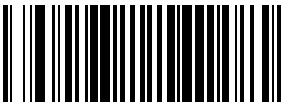
# Double Read Timeout for 2D Labels

This Double Read Timeout feature specifies the minimum allowable time between consecutive good reads of the same PDF 417, Micro PDF 417 Data Matrix, QR Code, Maxicode, Aztec or Composite label.

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| 1.5 Seconds |  |
|  | 1.65 Seconds |
| **1.8 Seconds DEFAULT** |  |
|  | 1.95 Seconds |
| 2 Seconds |  |
|  | 2.55 Seconds |

## Label Gone Timeout

This feature sets the time after the last label segment is seen before the scanner prepares for a new label.

START / END 

PROGRAMMING BARCODES

Sets the label gone timeout duration using hex values from 000 to 255 in increments of ten milliseconds (10ms or 0.01 seconds). To configure this feature, scan the "START/END" barcode above to place the unit in Programming Mode, then the "Set Linear Label Gone Timeout," followed by the three digits (zero padded) from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing the desired time value. Exit programming mode by scanning the "START/END" barcode again.

**DEFAULT SETTING FOR THIS FEATURE: 320 milliseconds (032)**

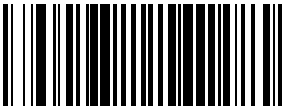
Set Linear Label Gone Timeout

## Productivity Index Reporting (PIR)

When PIR is enabled, label quality data is appended to decoded data before being presented to the POS. The PIR feature allows the scanner to provide information to an external computer, indicating how easy the label was to read.

**NOTE**

**This value-added feature is a factory-programmed option. Contact your dealer for information about upgrading your system to include this advanced capability.**



START / END

PROGRAMMING BARCODES

**Disable**
**DEFAULT**

Enable

# Sleep Mode

This feature specifies the amount of time with no barcode reads before the scanner enters sleep mode.

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| Disable Sleep Mode | |
| 15 Seconds | |
| 30 Seconds | |
| 1 Minute | |
| 2 Minutes | |
| 3 Minutes | |
| 4 Minutes | |
| 5 Minutes | |

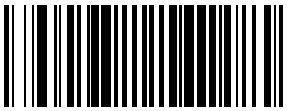
# Sleep Mode — cont.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | 6 Minutes |
| 7 Minutes | |
| | 8 Minutes |
| 9 Minutes | |
| | **10 Minutes DEFAULT** |
| 12 Minutes | |
| | 15 Minutes |
| 30 Minutes | |
| | 1 Hour |

# LED and Beeper Indicators

## Power On Alert

Disables or enables the indication (a single beep) that the scanner has finished all its power up tests and is now ready for operation.

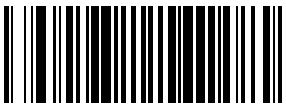
| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| Disable |  |
|  | **Enable DEFAULT** |

## ERI Active State High

This setting specifies the active-state polarity of the External Read Indicator signal to High; the inactive state is the opposite polarity.

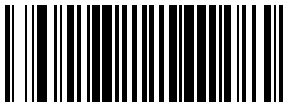
**NOTE**

**Contact Technical Support for assistance in changing the ERI Active State to Low if needed. Configuration of this feature is available only through use of a special cable.**

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | ERI Active State = High |

## ERI Timeout

Specifies the amount of time the External Read Indicator (ERI) signal is held active for a good read.

START / END 

PROGRAMMING BARCODES

Sets the ERI timeout duration using hex values from 000 to 255 in increments of ten milliseconds (10ms or 0.01 seconds). To configure this feature, scan the “START/END” barcode above to place the unit in Programming Mode, then the “Set ERI Timeout,” followed by the two digits (zero padded) from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing the desired time value. Exit programming mode by scanning the “START/END” barcode again.

**DEFAULT SETTING FOR THIS FEATURE: 20 milliseconds (02)**

Set ERI Timeout

## Good Read: When to Indicate

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

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

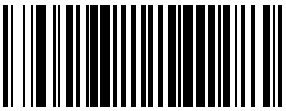
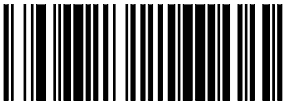
**NOTE**

**This option (Indicate after CTS goes inactive, then active), which uses CTS, is only valid for RS-232 interfaces.**

| | |
|---|---|
| | START / END |
| PROGRAMMING BARCODES | |
| **After Decode DEFAULT** | |
| | After Transmit |
| After CTS goes inactive, then active | |

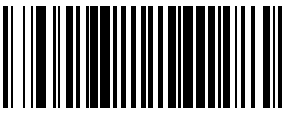
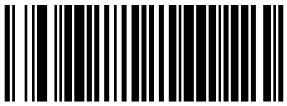
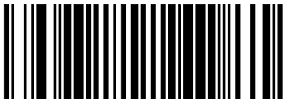
## Good Read Beep Control

This feature enables/disables the scanner's ability to beep upon a successful decode of a barcode.

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| Disable |  |
|  | **Enable**<br>**DEFAULT** |

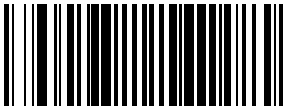
## Good Read Beep Frequency

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.)

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| Low |  |
|  | **Medium**<br>**DEFAULT** |
| **High** |  |

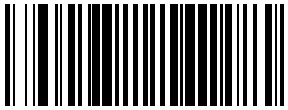
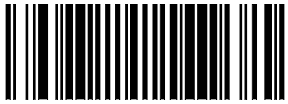
## Good Read Beep Length

Specifies the duration of a good read beep.

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| 60msec |  |
|  | **80msec DEFAULT** |
| 100msec |  |
|  | 120msec |
| 140msec |  |
|  | 160msec |
| 180msec |  |
|  | 200msec |

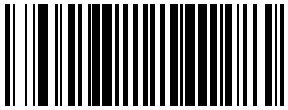
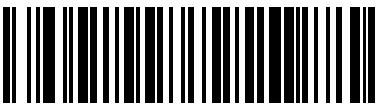
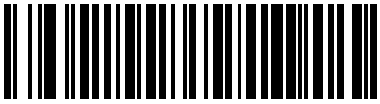
## Good Read Beep Volume

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

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| Low |  |
|  | Medium |
| **High DEFAULT** |  |

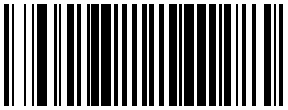
## Green Spot

This feature enables / disables the green spot activation when good read is activated.

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| **Disable DEFAULT** |  |
|  | Enable |

## Aiming Pointer Settings

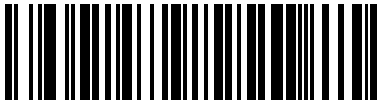
Enabes/disables Aiming Pointer for all symbologies.



START / END

PROGRAMMING BARCODES

**Disable**
**DEFAULT**



Enable

# Scanning Features

### Targeted Scanning Mode

Upon pressing the button, the scanner will project an aiming pattern to assist in centering over the barcode. Scanning then takes place as soon as the button is released.

**NOTE**

**When add-ons are enabled and a barcode is being read while in Targeted Mode, position the pointer at or near the end of the base label to ensure the scanner will read both the base and add-on label.**

**Targeted Scanning Mode will read barcodes in any orientation.**

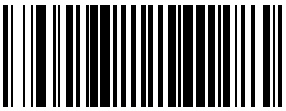
**The scanner will return to full pattern Omni-directional Mode after** Target Mode Active Time **has elapsed.**

Configuration options for Targeted Scanning Mode are:

- Target Mode Active Time
- Target Mode Linger Time

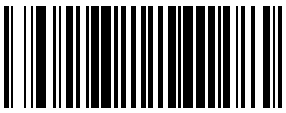
## Target Mode Active Time

Specifies the time duration the scanner attempts to decode labels while in the targeted mode of operation.

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| Extra Short Duration |  |
|  | Short Duration |
| **Medium Duration DEFAULT** |  |
|  | Long Duration |

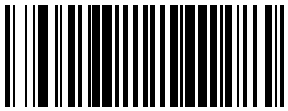
## Target Mode Linger Time

Specifies the time duration the scanner remains in the targeted mode of operation after reading a barcode before reverting to Omni-directional Mode.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | Short Duration |
| **Medium Duration DEFAULT** |  |
|  | Long Duration |

## Wake Up Intensity

This feature indicates the percentage of ambient light change which will trigger the scanner to wake up from Sleep Mode. Lower settings provide greater sensitivity. The seelectable range for this setting is 5% to 15%.

| | |
|---|---|
|  | START / END |
| PROGRAMMING BARCODES | |
| 5% |  |
|  | 6% |
| 7% |  |
|  | 8% |
| 9% |  |
|  | **10%<br>DEFAULT** |
| 11% |  |
|  | 12% |

## Wake Up Intensity — cont.

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| 13% | |
| 14% | |
| 15% | |

## Image Capture

NOTE

**This function is ONLY available for scanners having a button.**

**Image capture requires that the scanner use the Standard RS-232 or USB COM interface ONLY.**

**The scanner reverts to default reading mode after image capture and transfer.**

### How to Capture an Image

To initiate an Image Capture, scan the IMAGE CAPTURE label below, and press the button. A targeting "pointer" will be illuminated while the button is pressed.

Upon release of the button, the image is captured and transmitted to the host. If the button is not pushed within 30 seconds, the scanner will return to barcode reading (scanning) mode.

By default, images are captured as 752 x 480 JPEG format with a minimum compression ratio, and are displayed via the host application software.

IMAGE CAPTURE

## Image Compression

Specifies the starting image compression factor for JPEG images. A higher number specifies a higher quality image with less compression than a relative lower number for the same image.

A value of 100 means minimal compression. A value of 1 means maximum compression at a loss of quality. Follow these steps to program this feature:

1. Scan the START barcode.
2. Scan the Set Image Compression barcode.
3. Turn to Alpha-Numeric Pad and scan the two digits (zero-padded) representing the desired compression. The configurable range is 01-0x64 by increments of 01.
4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

**Set Image Compression**
**DEFAULT SETTING IS**
**100 (minimal compression — higher quality)**

## Image Size

Specifies the size of the image capture. Choices are:

- WVGA
- VGA

START / END

PROGRAMMING BARCODES

**Image Size = WVGA**
**DEFAULT**

Image Size = VGA

## Image Brightness

This feature sets the image brightness value. Follow these instructions to configure this feature:

1. Scan the START barcode.
2. Scan the Set Image Brightness barcode.
3. Turn to Alpha-Numeric Pad and scan the two digits (zero-padded) representing the desired brightness in decimal notation. The configurable range is 01-0x0A by increments of 01.
4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

**Set Image Brightness**
DEFAULT SETTING FOR THIS FEATURE: 09

## Image Contrast

This feature sets the image contrast value. Follow these instructions to configure this feature:

1. Scan the START barcode.
2. Scan the Set Image Contrast barcode.
3. Turn to Alpha-Numeric Pad and scan the two digits (zero-padded) representing the desired contrast in decimal notation. The configurable range is 01-0x0A by increments of 01.
4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

**Set Image Contrast**
DEFAULT SETTING FOR THIS FEATURE: 09

# Cell Phone Mode

Cell Phone Mode enables the scanner to read barcodes on a cell phone display.

## Cell Phone Mode Enable

Enables/disables Cell Phone Mode.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Cell Phone Mode = Disable**<br>**DEFAULT** |
| Cell Phone Mode = Enable | |

## Cell Phone Detection Sensitivity

These settings control various pixel characteristics in order to optimize cell phone detection. Follow these instructions to configure this feature:

1. Determine which sensitivity level is desired (high, medium or low).
2. Scan the START barcode to place the scanner in Programming Mode.
3. Scan the three barcodes for the detection sensitivity desired.

**NOTE**

**Unlike typical feature settings, Cell Phone Detection Sensitivity requires the scanning of THREE barcodes to set the level. For example, to set a high detection sensitivity level, scan barcodes HIGH #1, HIGH #2 and HIGH #3.**

4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

**Cell Phone Detection Sensitivity = HIGH**
**[This is the DEFAULT setting]**

HIGH #1

HIGH #2

HIGH #3

## Cell Phone Detection Sensitivity — continued

START / END

PROGRAMMING BARCODES

**Cell Phone Detection Sensitivity = MEDIUM**

**MEDIUM #1**

**MEDIUM #2**

**MEDIUM #3**

**Cell Phone Detection Sensitivity = LOW**

LOW #1

LOW #2

LOW #3

## Cell Phone in Target Mode

This feature sets the reader's Cell Phone Mode when it is in Target Mode:

**This feature is only available when Cell Phone Mode is enabled.**

**NOTE**

**No Cell Phone Mode —** Will not read cell phone labels when in Target Mode.

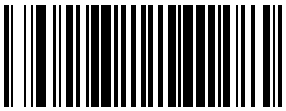
**Auto Detection Cell Phone Mode —** Automatically detects cell phone labels and shifts to Cell Phone Mode when in Target Mode.

**Always Enter Cell Phone Mode —** The reader will always enter Cell Phone Mode whenever it is in Target Mode.

Follow these instructions to configure this feature:

1. Determine which mode is desired from the selections above.
2. Scan the START barcode to place the scanner in Programming Mode.
3. Scan the two barcodes which configure the desired mode.
4. Scan the END barcode.

START / END

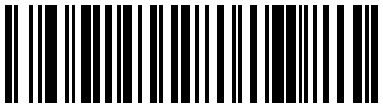


PROGRAMMING BARCODES

**Cell Phone in Target Mode = No Cell Phone Mode**
**[This is the DEFAULT setting]**

**No Cell Phone Mode** #1

**No Cell Phone Mode** #2



## Cell Phone in Target Mode — continued

START / END

PROGRAMMING BARCODES

**Cell Phone in Target Mode = Auto Detection Cell Phone Mode**

**Auto Detection Cell Phone Mode #1**

**Auto Detection Cell Phone Mode #2**

**Cell Phone in Target Mode = Always Enter Cell Phone Mode**

Always Enter Cell Phone Mode #1

Always Enter Cell Phone Mode #2

# Chapter 3

# Interface Related Features

At the time of this writing, the reader supports the interfaces listed in Table 3-1. Select the desired interface type from the table, then reference the page number given for the customizable features section associated with each interface. See Table 3-2 for a description of each Keyboard Wedge interface type (A through Y as listed).

**Table 3-1. Interfaces Supported**

| | | | | | |
|---|---|---|---|---|---|
| RS-232 | | Page | Keyboard Wedge | | 3-54 |
| | RS-232 Standard | 3-37 | | Keyboard Wedge A[a] | 3-54 |
| | RS-232 Wincor-Nixdorf | 3-37 | | Keyboard Wedge B[a] | 3-54 |
| IBM | | | | Keyboard Wedge C[a] | 3-54 |
| | IBM 4683 Port 5B | 3-52 | | Keyboard Wedge D[a] | 3-54 |
| | IBM 4683 Port 9B | 3-52 | | Keyboard Wedge E[a] | 3-54 |
| | IBM 4683 Port 17 | 3-52 | | Keyboard Wedge F[a] | 3-54 |
| USB | | | | Keyboard Wedge G[a] | 3-54 |
| | USB-OEM | 3-52 | | Keyboard Wedge H[a] | |
| | USB Keyboard | 3-52 | | Keyboard Wedge I[a] | 3-54 |
| | USB COM Interface | 3-60 | | Keyboard Wedge J[a] | 3-54 |

a. Consult Table 3-2 for more information regarding keyboard interface types.

**NOTE**

**The correct interface cable is included for the reader interface type you ordered.**

**Table 3-2. Keyboard Wedge Interface Reference**

| I/F Type | PCs Supported |
|---|---|
| A | PC/XT w/Alternate Key Encoding |
| B | AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/Alternate Key Encoding |
| C | PS/2 25 and 30 w/Alternate Key Encoding |
| D | PC/XT w/Standard Key Encoding |
| E | AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90 & 95 w/Standard Key Encoding |
| F | PS/2 25 and 30 w/Standard Key Encoding |
| G | IBM 3xxx w/122 keyboard |
| H | IBM 3xxx w/102 keyboard |
| I | PS/55 5530T w/104 keyboard |
| J | NEC 9801 |

**NOTE**

**Reference** Appendix E, Keyboard Function Key Mappings **for more information about keyboards.**

# Interface Selection

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | RS-232 Standard |
| RS-232 Wincor-Nixdorf | |
| | IBM 4683 Port 5B |
| IBM 4683 Port 9B | |
| | IBM 4683 Port 17 |
| USB-OEM | |
| | USB Keyboard |
| USB COM Interface | |

# Interface Selection — cont.

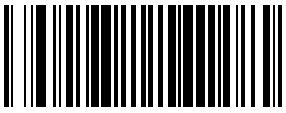
| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| Keyboard Wedge A | |
| | Keyboard Wedge B |
| Keyboard Wedge C | |
| | Keyboard Wedge D |
| Keyboard Wedge E | |
| | Keyboard Wedge F |
| Keyboard Wedge G | |
| | Keyboard Wedge H |
| Keyboard Wedge I | |
| | Keyboard Wedge J |

# Interface Features

## Obey/Ignore Host Commands

When set to ignore host commands, the scanner will ignore all host commands except for the minimum set necessary to keep the interface active and transmit labels For normal operation of the interface, select Obey Host Commands.

START / END



PROGRAMMING BARCODES

**Obey Host Commands**
**DEFAULT**

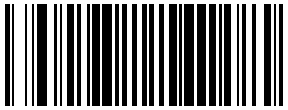
Ignore Host Commands

# Interface Features — cont.

### Host Transmission Buffers

Specifies the number of host transmission(s) that may be buffered. By buffering data from a barcode, the scanner can continue to read a new barcode while the old one is being transmitted to the host. Selecting BUFFERS = 1 means that the first barcode must be transmitted before a new one can be read. A selection of BUFFERS = 2 means that a new barcode can be read while data from the first barcode is transmitted.

When a DISABLE SCANNER command is received from the host, the scanner will continue to transmit all data that is buffered.

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | Host Transmission Buffers = 1 |
| **Host Transmission Buffers = 2 DEFAULT** |  |

## RS-232 Interface Features

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | 1200 Baud |
| 2400 Baud | |
| | 4800 Baud |
| **9600 Baud DEFAULT** | |
| | 19200 Baud |
| 38400 Baud | |
| | 57600 Baud |
| 115200 Baud | |

# RS-232 Interface Features — cont.

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| | 7 Data Bits |
| **8 Data Bits DEFAULT** | |
| | |
| | **1 Stop Bit DEFAULT** |
| 2 Stop Bits | |
| | |
| | **Parity = None DEFAULT** |
| Parity = Even | |
| | Parity = Odd |

# RS-232 Interface Features — cont.

### Hardware Flow Control

**Disable Hardware Control—** The scanner transmits to the host regardless of any activity on the CTS line.

**Enable CTS Flow Control—** The CTS signal controls transmission of data to the host.

**Enable CTS Scan Control—** The CTS line must be active for the scanner to read and transmit data. While the CTS line is inactive, the scanner remains in a host-disabled state; following a successful label transmission, the CTS signal must transition to inactive and then to active to enable scanning for the next label.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Hardware Control DEFAULT** |
| Enable CTS Flow Control | |
| | Enable CTS Scan Control |

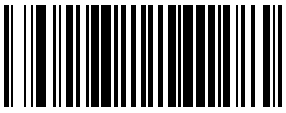
# RS-232 Interface Features — cont.

## Intercharacter Delay

This delay is inserted after each data character transmitted. If the transmission speed is too high, the system may not be able to receive all characters. You may need to adjust the delay to make the system work properly.

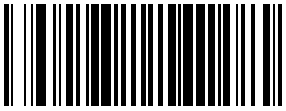
| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Inter-Char Delay = No Delay DEFAULT** |
| Interchar Delay = 10 msec | |
| | Interchar Delay = 20 msec |
| Interchar Delay = 30 msec | |
| | Interchar Delay = 40 msec |
| Interchar Delay = 50 msec | |
| | Interchar Delay = 60 msec |
| Interchar Delay = 70 msec | |

## Intercharacter Delay — cont.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | Interchar Delay = 80 msec |
| Interchar Delay = 90 msec |  |

### Software Flow Control

Disables/Enables software control using XON/XOFF characters.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Disable Software Flow Control DEFAULT** |
| Enable Software Flow Control |  |

# RS-232 Interface Features — cont.

### Host Echo

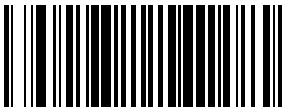
When enabled, this feature passes all data through the scanner to the host as it comes in. This feature is used for applications where "daisy chaining" of RS-232 devices onto the same cable is necessary. If, for example, one of the devices in the chain is a terminal where someone is entering data while another person is simultaneously scanning a barcode requiring transmission to the host, the scanner will wait for the RS-232 channel to be quiet for a specified period of time (set via *RS-232 Host Echo Quiet Interval*). The scanner can be set to observe this delay before sending its data in order to avoid RS-232 transmission conflicts.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Host Echo**<br>**DEFAULT** |
| Enable Host Echo | |

# RS-232 Interface Features — cont.

### Host Echo Quiet Interval

This setting specifies the time interval of RS-232 channel inactivity which must transpire before the scanner will break the host echo loop to transmit the barcode data that has just been scanned to the host.

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | Host Echo Quiet Interval = 0msec |
| **Host Echo Quiet Interval = 10msec DEFAULT** |  |
|  | Host Echo Quiet Interval = 20msec |
| Host Echo Quiet Interval = 30msec |  |
|  | Host Echo Quiet Interval = 40msec |
| Host Echo Quiet Interval = 50msec |  |
|  | Host Echo Quiet Interval = 60msec |
| Host Echo Quiet Interval = 70msec |  |

## Host Echo Quiet Interval — cont.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Host Echo Quiet Interval = 80msec |
| Host Echo Quiet Interval = 90msec | |
| | Host Echo Quiet Interval = 100msec |

### Signal Voltage: Normal/TTL

Specifies whether the RS-232 interface provides TTL levels on the output pins TxD and RTS.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Signal Voltage: Normal RS-232 DEFAULT** |
| Signal Voltage: TTL | |

### RS-232 Invert

Enables/disables inversion of RS-232 TXD and RXD signals.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Disable RS-232 Invert DEFAULT** |
| Enable RS-232 Invert |

### Beep on ASCII BEL

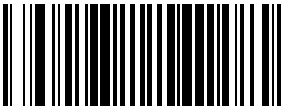
Enables/disables ability of scanner to beep (sound a good read tone) on receiving an ASCII BEL (07 hex).

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Enable Beep on ASCII BEL DEFAULT** |
| Disable Beep on ASCII BEL |

## Beep on Not on File

Select for the host to beep (or not) when a not-on-file (host command) condition is detected by the host.

START / END



PROGRAMMING BARCODES

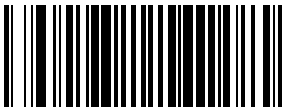
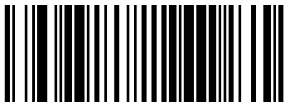
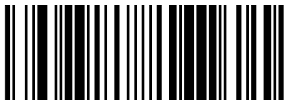
Disable Beep on Not On File

**Enable Beep on Not On File**
**DEFAULT**

### ACK NAK Options

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

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

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Disable ACK NAK DEFAULT** |
| Enable ACK NAK for Transmission |  |
|  | Enable ACK NAK for host command acknowledge |
| Enable ACK NAK for transmission and host command |  |

# RS-232 Interface Features — cont. — cont.

## ACK Character

START / END

PROGRAMMING BARCODES

Sets the ACK character from the set of ASCII characters or any decimal value from 000 to 255. Pad entries of less than three digits with zeros, as in “005”. To configure this feature, scan the “START/END” barcode above to place the unit in Programming Mode, then the “Set ACK Character,” followed by the digits from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing your desired character. Exit programming mode by again scanning the “START/END” barcode above.

**DEFAULT SETTING FOR THIS FEATURE: 006**

Set ACK Character

## NAK Character

START / END

PROGRAMMING BARCODES

Sets the NAK character from the set of ASCII characters or any decimal value from 000 to 255. Pad entries of less than three digits with zeros, as in “005”. To configure this feature, scan the “START/END” barcode above to place the unit in Programming Mode, then the “Set NAK Character,” followed by the digits from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing your desired character. Exit programming mode by again scanning the “START/END” barcode above.

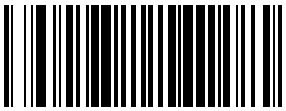
**DEFAULT SETTING FOR THIS FEATURE: 021**

Set NAK Character

# RS-232 Interface Features — cont.

### Retry on ACK NAK Timeout

Enables/disables retry after the configurable ACK NAK Timeout Value (set in the following feature) has expired.

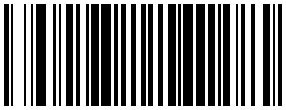
START / END 

PROGRAMMING BARCODES

Disable Retry on ACK NAK Timeout

**Enable Retry on ACK NAK Timeout**
**DEFAULT**

### ACK NAK Timeout Value

START / END 

PROGRAMMING BARCODES

This item specifies the time the scanner will wait for an ACK character from the host following a label transmission.
000 = Infinite timeout
001 - 075 = Timeout in 200-millisecond increments
To configure this feature, scan the “START/END” barcode above to place the unit in Programming Mode, then the “Set ACK NAK Timeout Value,” followed by the three digits (zero padded) from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing your desired value. Exit programming mode by again scanning the “START/END” barcode above.

**DEFAULT SETTING FOR THIS FEATURE: 001 (200 msec)**

Set ACK NAK Timeout Value

# RS-232 Interface Features — cont.

## ACK NAK Retry Count

START / END

PROGRAMMING BARCODES

This feature sets the number of times for the scanner to retry a label transmission under a retry condition.
000 = No retry
001 - 254 = Retry for the specified number of times
255 = Retry forever
To configure this feature, scan the “START/END” barcode above to place the unit in Programming Mode, then the “Set ACK NAK Retry Count,” followed by the three digits (zero padded) from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing your desired retry count. Exit programming mode by again scanning the “START/END” barcode above

**DEFAULT SETTING FOR THIS FEATURE: 003**

Set ACK NAK Timeout Value

# RS-232 Interface Features — cont.

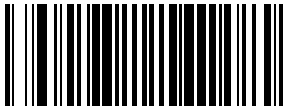
## ACK NAK Error Handling

This item specifies the method the scanner will use to handle errors detected while waiting to receive the ACK character from the host. Errors include unrecognized host commands and communication errors such as parity or framing errors. Choices are:

00 = Ignore errors detected (recommended setting)

01 = Process error as valid ACK character (risk of lost label data)

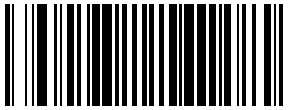
02 = Process error as valid NAK character (risk of duplicate label data)

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Ignore Errors Detected DEFAULT** |
| Process error as valid ACK character |  |
|  | Process error as valid NAK character |

# RS-232 Interface Features — cont.

### Transmission Failure Indication

Enables/disables bad-label indication upon transmission failure.

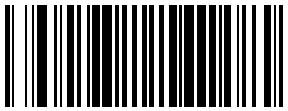
| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | Disable Transmission Error Indication |
| **Enable Transmission Error Indication DEFAULT** |  |

## USB-OEM Interface Features

### USB-OEM Device usage

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

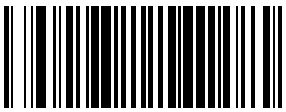
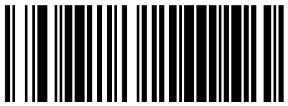
- Table Top Scanner
- Handheld Scanner

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Configure as Table Top Scanner DEFAULT** |
| Configure as Handheld Scanner |  |

# IBM

## IBM Transmit Labels in Code 39 Format

This feature enables/disables scanner's ability to set a symbology identifier for a specified label to Code 39 before transmitting that label data to an IBM host. This applies to: Code 128, Codabar and Code 93 for USB-OEM; Code 128, Codabar and Code 93 for IBM Port 5B; and Codabar and Code 93 for IBM Port 9B.

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Disable Convert to Code 39**<br>**DEFAULT** |
| Enable Convert to Code 39 |  |

# Keyboard Wedge

and

# USB Keyboard

As a keyboard interface, the scanner supports most popular PCs and IBM terminals. The installation of the wedge is a fairly simple process that doesn't require any changes of software or hardware.

NOTE

**All of the options in this section apply to the Keyboard Wedge, however, only some apply to USB Keyboard.**

### Keyboard Layout

The Keyboard Layout option supports many countries. For details about Keyboard Layout, please refer to your operating system manual.

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| | **USA DEFAULT** |
| Belgium | |
| | Britain |
| Denmark | |
| | France |
| Germany | |

## Keyboard Wedge — cont.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Italy |
| Norway | |
| | Portugal |
| Spain | |
| | Sweden |
| Switzerland | |
| | Japan 106 Key |
| Hungary | |
| | Czech |

# Keyboard Wedge — cont.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Slovakia |
| Romania | |
| | Croatia |
| Poland | |

### Caps Lock State

Specifies the format in which the scanner sends character data.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Caps Lock DEFAULT** |
| Caps Lock “ON” | |
| | Shift Lock “ON” |

# Keyboard Wedge — cont.

### Power-On Simulation

**NOTE**

**This feature does not apply to the USB Keyboard interface.**

All PCs check the keyboard status during the power-on Selftest. It is recommended that you enable this function if you are working without a keyboard installation. It simulates keyboard timing and passes the keyboard status to the PC during power-on.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Power-on Simulation DEFAULT** |
| Enable Power-on Simulation | |

### Control Characters

Specifies how the scanner transmits ASCII control characters to the host. Choices are:

- Disable Control Characters
- Enable transmission of control characters to host
- Send characters between 00H and 1FH according to a special function-key mapping table. (This is used to send keys that are not in the normal ASCII set; a unique set is provided for each available scancode set. Reference Appendix E, Keyboard Function Key Mappings.)

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Control Characters DEFAULT** |
| Enable Transmission of Control Characters | |
| | Enable Function Key Mapping |

# Keyboard Wedge — cont.

### Wedge Quiet Interval

NOTE

**This feature does not apply to the USB Keyboard interface.**

Quiet Interval is the amount of time to look for keyboard activity before the scanner breaks the keyboard connection in order to transmit data to the host.

START / END

PROGRAMMING BARCODES

Selectable from 001 to 100 in 10 msec increments. To configure this feature, scan the “START/END” barcode above to place the unit in Programming Mode, then the Set Wedge Quiet Interval barcode followed by the three digits (zero padded) from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing your desired length. Exit programming mode by again scanning the “START/END” barcode above.

**DEFAULT SETTING FOR THIS FEATURE:**
**010 (100 msec)**

Set Wedge Quiet Interval

# Keyboard Wedge — cont.

**Intercharacter Delay**

START / END

PROGRAMMING BARCODES

One-half of the delay specified below is inserted between scancodes within each character. If the transmission speed is too high, the system may not be able to receive all characters. You may need to adjust the delay to make the system work properly. Selectable from 00 to 99 in 10msec increments.

To configure this feature, scan the "START/END" barcode above to place the unit in Programming Mode, then the "Set Intercharacter Delay," followed by the three digits (zero padded) from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing your desired length. Exit programming mode by again scanning the "START/END" barcode above/

**DEFAULT SETTING FOR THIS FEATURE:**
**00 (No Delay)**

Set Intercharacter Delay

## USB COM Interface Set-up

This interface uses the Microsoft Windows USB COM driver. Before plugging your reader into the host PC, please ensure you have already copied the DLS_EUG_CDC_ACM.inf file provided by Datalogic to your PC and the reader's interface is set to USB COM.

1. When you first plug the scanner into the PC, Windows will bring up the "Found New Hardware Wizard." Select "Install from a list" and click on "Next."
2. Click on "Include this location in the search" and enter the path where the file DLS_EUG_CDC_ACM.inf file is stored. Click on "Next."
3. If a message appears that says the software has not passed Windows logo testing, press "Continue" anyway.
4. Click on "Finish."
5. Once the install is complete, reboot the PC.

# Chapter 4
# Data Editing

## Data Editing Overview

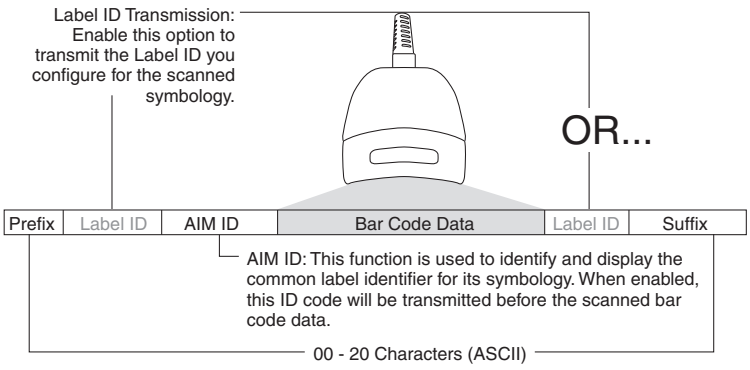
**CAUTION**

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

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

There are several types of selectable data characters that can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. Figure 4-1 shows the available elements you can add to a message string:

**Figure 4-1. Breakdown of a Message String**



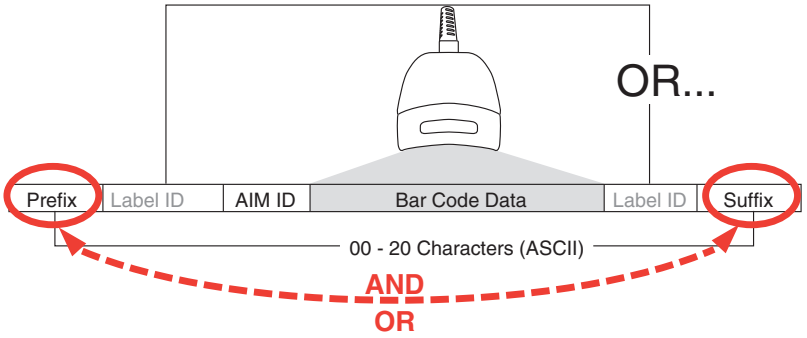

## Please Keep In Mind...

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

# Global Prefix/Suffix

Up to 20 ASCII characters may be added as a prefix (in a position before the barcode data) and/or as a suffix (in a position following the barcode data) as indicated in Figure 4-2.

**Figure 4-2. Prefix and Suffix Positions**




### Example: Setting a Prefix

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

1. Determine which ASCII character(s) are to be added to scanned barcode data. In this example, we'll add a dollar sign ('$') as a prefix.
2. Scan the START barcode.
3. Scan the SET PREFIX barcode.
4. Reference the ASCII Chart on the inside back cover of this manual, to find the hex value assigned to the desired character. The corresponding hex number for the '$' character is 24. To enter this selection code, scan the '2' and '4' barcodes from Appendix C, Alpha-Numeric Pad.
5. Scan the END barcode once to finish the string, then scan END again to exit Programming Mode.

**NOTE**

**If all 20 characters will be used in the prefix or suffix, do not scan the END barcode to finish the string. It is done automatically.**

6. The resulting message string would appear as follows:

   Scanned barcode data:12345
   Resulting message string output: $12345

# Global Prefix/Suffix — cont.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| Sets up to 20 characters each from the set of ASCII characters or any hex value from 0 to FF. To configure this feature, scan the “START/END” barcode above to place the unit in Programming Mode, then the “Set Prefix” or “Set Suffix,” followed by the digits from the Alphanumeric table in Appendix C, Alpha-Numeric Pad representing your desired character(s). Reference the section, "Example: Setting a Prefix", for more information. Exit programming mode by scanning the “START/END” barcode again (scan “START/END” twice if less than 20 characters have been selected).<br>**DEFAULT SETTING PREFIX: 00 (None)**<br>**DEFAULT SETTING SUFFIX: 0D (CR)** | |
| | Set Prefix |
| Set Suffix | |

# AIM ID

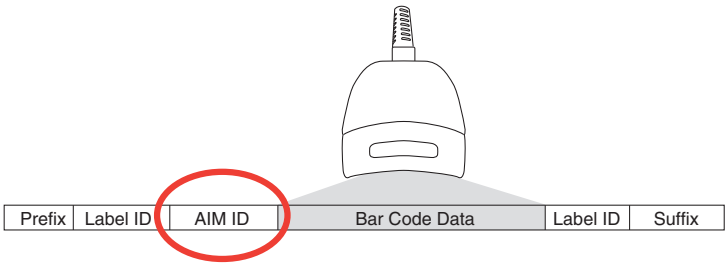
AIM (Automatic Identification Manufacturers) label identifiers are assigned from a globally standardized list — as opposed to custom label ID characters you select yourself — and can be included with scanned barcode data. AIM label identifiers consist of three characters as follows:

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

| SYMBOLOGY | CHAR | SYMBOLOGY | CHAR |
|---|---|---|---|
| UPC/EAN | E | Code 128/EAN 128 | C |
| Code 39 | A | MSI/Plessey | M |
| Codabar | F | RSS (GS1 Omnidirectional, GS1 Expanded) | e |
| Interleaved 2 of 5 | I | Standard 2 of 5 | S |
| Code 93 | G | ISBN | X[a] |

a. ISBN (X with a 0 modifier character)

**Figure 4-3. AIM ID**




START / END

PROGRAMMING BARCODES

**Disable AIM ID**
**DEFAULT**

Enable AIM ID

# Label ID

A Label ID is used to identify a barcode (symbology) type. See Appendix D, Default Settings, for a listing for common symbologies. 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 individually per symbology. If you wish to program the scanner to always include an industry standard label identifier for ALL symbology types, see the previous feature, AIM ID.

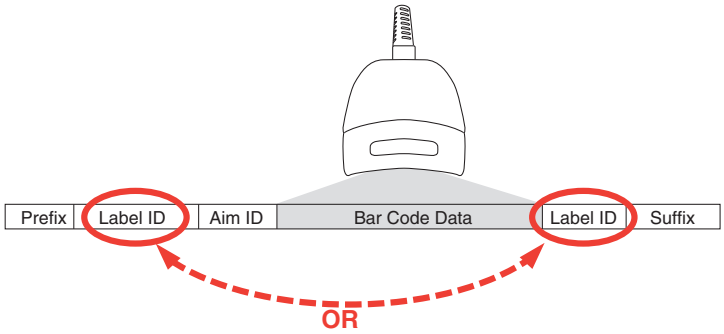
The Label ID is a customizable code of up to three ASCII characters (each of which are 00-FF) followed by a control character (00-01), This control character, when set to zero, does nothing. When set to one, it appends the symbology's AIM ID to the Label ID.

**NOTE** **When the control character is set to 01 for UPC-A and UPC-E, it expands the label to EAN-13 and thus follows the EAN-13 Label ID settings.**

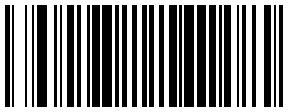
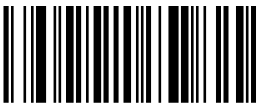
To configure a Label ID:

1. Scan the START barcode.
2. Select Label ID position as either BEFORE or AFTER by scanning the appropriate barcode.
3. Scan a barcode to select the symbology for which you wish to configure a custom Label ID.
4. Determine the desired character(s) (you may choose up to three) which will represent the Label ID for the selected symbology. Next, 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.
5. Turn to Appendix C, Alpha-Numeric Pad and scan the barcodes representing the hex characters determined in the previous step. For example, to make an equal sign (=), scan '3' and 'D' followed by '0' six times. Since this is a three-character buffer, '00' is scanned for character two, '00' for character three and '00' for the control character. ('00' indicates no character.)
6. Scan the END barcode to exit programming mode.

**Figure 4-4. Label ID Position Options**



# Label ID — cont.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | Label ID Transmission: Disable |
| **Label ID Position: Before Barcode Data DEFAULT** |  |
|  | Label ID Position: After Barcode Data |
| | |
| Set UPC-A Label ID Character(s) |  **DEFAULT SETTING FOR THIS FEATURE: A (41 hex)** |
|  **DEFAULT SETTING FOR THIS FEATURE: A (41 hex)** | Set UPC-A w/P2 Addon Label ID Character(s) |
| Set UPC-A w/P5 Addon Label ID Character(s) |  **DEFAULT SETTING FOR THIS FEATURE: A (41 hex)** |
|  **DEFAULT SETTING FOR THIS FEATURE: A (41 hex)** | Set UPC-A w/C128 Addon Label ID Character(s) |
| Set UPC-E Label ID Character(s) |  **DEFAULT SETTING FOR THIS FEATURE: E (45 hex)** |

# Label ID — cont.

START / END

PROGRAMMING BARCODES

**DEFAULT SETTING FOR THIS FEATURE: E (45 hex)**

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

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

**DEFAULT SETTING FOR THIS FEATURE: E (45 hex)**

**DEFAULT SETTING FOR THIS FEATURE: E (45 hex)**

Set UPC-E w/C128 Addon Label ID Character(s)

Set EAN-8 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: FF (4646 hex)**

**DEFAULT SETTING FOR THIS FEATURE: FF (4646 hex)**

Set EAN-8 w/P2 Addon Label ID Character(s)

Set EAN-8 w/P5 Addon Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: FF (4646 hex)**

**DEFAULT SETTING FOR THIS FEATURE: FF (4646 hex)**

Set EAN-8 w/C128 Addon Label ID Character(s)

Set EAN-13 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: F (46 hex)**

# Label ID — cont.

START / END

PROGRAMMING BARCODES

**DEFAULT SETTING FOR THIS FEATURE: F (46 hex)**

Set EAN-13 w/P2 Addon Label ID Character(s)

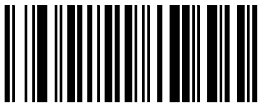
Set EAN-13 w/P5 Addon Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: F (46 hex)**

**DEFAULT SETTING FOR THIS FEATURE: F (46 hex)**

Set EAN-13 w/C128 Addon Label ID Character(s)

Set ISBN Label ID Character(s)



**DEFAULT SETTING FOR THIS FEATURE: I (49 hex)**

**DEFAULT SETTING FOR THIS FEATURE: IA (4941 hex)**

Set IATA Label ID Character(s)

Set GTIN Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: G (47 hex)**

**DEFAULT SETTING FOR THIS FEATURE: G2 (4732 hex)**

Set GTIN w/P2 addon Label ID Character(s)

Set GTIN w/P5 addon Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: G5 (4735 hex)**

# Label ID — cont.

START / END

PROGRAMMING BARCODES

Set GTIN w/C128 addon Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: G8 (4738 hex)**

Set GS1 Omnidirectional Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: R4 (5234 hex)**

Set GS1 Expanded Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: RX (5258 hex)**

Set Code GS1 DataBar Limited Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: * (524C0000 hex)**

Set Code 39 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: * (2A hex)**

Set Pharmacode 39 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: A (41 hex)**

Set Code 128 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: # (23 hex)**

Set I 2 of 5 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: i (69 hex)**

# Label ID — cont.

START / END

PROGRAMMING BARCODES

Set Codabar Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: % (25 hex)**

Set Code 93 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: & (26 hex)**

Set Code 11 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: @ (40 hex)**

Set MSI/Plessey Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: @ (40 hex)**

Set Std 2 of 5 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: s (73 hex)**

Set EAN UCC Composite Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: 0**

Set PDF 417 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: P (5000 hex)**[a]

Set Datamatrix Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: Dm (446D hex)**

a. Default setting exceptions for PDF 417 Label ID are as follows: Default for RS-232 WN is ‘Q’ (0x5100). Default for USB-HID-POS is ‘P ‘ (0x5020), or ‘P-Space’.

# Label ID — cont.

**NOTE**

**For the 2D symbologies on this page, the Label ID is 4 bytes. The first 3 bytes are characters for the label ID. A 00 (hex) value in the first 3 bytes indicates the end of the label ID characters. The 4th byte is a control byte.**

**The use of the control byte is as follows:**
**bit 0-if set to 1, the AIM Id is appended for that label type**

START / END

PROGRAMMING BARCODES

Set Micro PDF 417 Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: mP (6D500000 hex)**

Set QR Code Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: QR (51520000 hex)**

Set Maxicode Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: MC (4D430000 hex)**

Set Aztec Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: Az (417A0000 hex)**

Set GS1 DataBar Omnidirectional 2D Composite Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: R4 (52340000 hex)**

Set GS1 DataBar Limited 2D Composite Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: RL (524C0000 hex)**

Set GS1 DataBar Expanded 2D Composite Label ID Character(s)

**DEFAULT SETTING FOR THIS FEATURE: RX (52340000 hex)**

# Case Conversion

This feature can convert scanned barcode data to either all lower case (a through z) or all upper case (A through Z) characters.

**NOTE**

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable**<br>**DEFAULT** |
| Convert to Upper Case | |
| | 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.

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, AG15TA81, it would look as follows after the character conversion: BG25TB82.

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

To set Character Conversion:

1. Scan the START/END barcode.
2. Scan the Character Conversion barcode.
3. Determine the desired string. Up to sixteen positions can 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.

**The positions not used must be filled with the character 'F'.**

**NOTE**

4. Turn to Appendix C, Alpha-Numeric Pad and scan the barcodes representing the hex characters determined in the previous step. When the last character is scanned, the scanner will sound a triple beep.
5. Scan the START/END barcode to exit Programming Mode.

START / END

PROGRAMMING BARCODES

Character Conversion

**DEFAULT SETTING FOR THIS FEATURE:**
**FFFFFFFFFFFFFFFF hex (no conversion)**

# NOTES

# Chapter 5
# Symbologies

The scanner supports the following symbologies (barcode types). Options for each symbology are included in this chapter.

- UPC-A
- UPC-E
- EAN-13
- EAN-8
- GS1 DataBar Omnidirectional / Stacked Omnidirectional
- GS1 DataBar Expanded / Expanded Stacked
- GS1 DataBar Limited
- Code 39
- Code 32 Italian Pharmacode
- Code 128
- Interleaved 2 of 5
- Codabar
- Code 93
- MSI/Plessey
- Standard 2 of 5

**Factory Defaults—** for the standard RS-232 interface are indicated in bold text throughout this section. Reference Appendix D, Default Settings for default exceptions for your interface.

## UPC-A

### Disable/Enable UPC-A

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Disable UPC-A |
| **Enable UPC-A DEFAULT** | |

# UPC-A — continued

## Check Digit Transmission

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

START / END

PROGRAMMING BARCODES

Don't Send Check Digit

**Send Check Digit**
**DEFAULT**

## Expand UPC-A to EAN-13

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

START / END

PROGRAMMING BARCODES

**Don't Expand to EAN-13**
**DEFAULT**

Expand to EAN-13

# UPC-A — continued

## Number System Transmission

This feature enables/disables transmission of UPC-A System Number.

| START / END |
|---|
| PROGRAMMING BARCODES |
| Disable Number System Transmission |
| **Enable Number System Transmission DEFAULT** |

## UPC-A Minimum Reads

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

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |
| Minimum = 3 Reads |
| Minimum = 4 Reads |

# UPC-A — continued

## UPC-A In-store Minimum Reads

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

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads | |
| | Minimum = 3 Reads |
| Minimum = 4 Reads | |

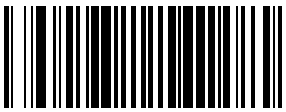
# UPC-E

The following options apply to the UPC-E symbology.

## Disable/Enable UPC-E

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

START / END



PROGRAMMING BARCODES

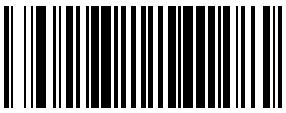
Disable UPC-E

**Enable UPC-E**
**DEFAULT**

## Check Digit Transmission

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

START / END



PROGRAMMING BARCODES

Don't Send Check Digit

**Send Check Digit**
**DEFAULT**

# UPC-E — continued

## Number System Digit

The Number System Digit (NSD) which is always a zero (0) in the leading position can be optionally included (or not) with scanned barcode data.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Exclude Number System Digit DEFAULT** |
| Include Number System Digit |

## Expand to UPC-E to UPC-A

Enables/disables expansion of UPC-E labels to UPC-A. Selecting this feature also changes the symbology ID to match those required for UPC-A.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Don't Expand UPC-E to UPC-A DEFAULT** |
| Expand UPC-E to UPC-A |

# UPC-E — continued

## Expand UPC-E to EAN13

Enables/disables expansion of UPC-E labels to EAN-13. Selecting this feature also changes the symbology ID to match those required for EAN-13.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Don't Expand UPC-E to EAN-13 DEFAULT** |
| Expand UPC-E to EAN-13 | |

## Minimum Reads

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Minimum = 1 Read |
| **Minimum = 2 Reads DEFAULT** | |
| | Minimum = 3 Reads |
| Minimum = 4 Reads | |

## GTIN

The following options apply to the GTIN label data format.

## Expand UPC/EAN to GTIN

When this feature is enabled, the scanner will translate UPC/EAN labels to the 14 digit GTIN format.

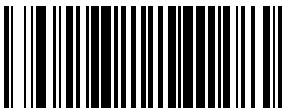
| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Don't Expand to GTIN DEFAULT** |
| Expand to GTIN | |

# EAN-13

The following options apply to the EAN-13 symbology.

## Disable/Enable EAN-13

When disabled, the scanner will not read EAN-13 barcodes.

START / END 

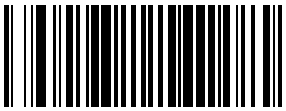
PROGRAMMING BARCODES

 Disable EAN-13

**Enable EAN-13**
**DEFAULT** 

## Check Digit Transmission

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

START / END 

PROGRAMMING BARCODES

 Don't Send Check Digit

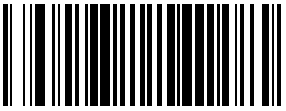
**Send Check Digit**
**DEFAULT** 

# EAN-13 — continued

## EAN-13 Flag 1 Character

Enables/disables transmission of an EAN/JAN13 Flag1 character.

START / END



PROGRAMMING BARCODES

Don't Transmit EAN-13 Flag 1 Char

**Transmit EAN-13 Flag 1 Char**
**DEFAULT**

## ISBN

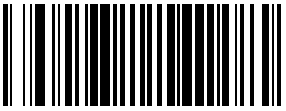
When enabled, this feature truncates the leading three digits from labels that contain ISBN (International Standard Book Number) and appends an ISBN check character to the end of the label. These codes are used for books and magazines. Labels with ISBN codes start with "978".

**Example:**

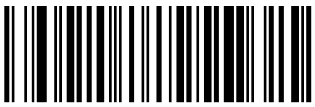
Barcode data: "9789572222720"

Output: "9572222724"

START / END

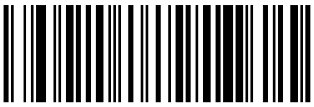


PROGRAMMING BARCODES



**Disable ISBN**
**DEFAULT**

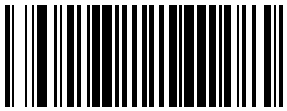
Enable ISBN



# EAN-13 — continued

## Minimum Reads

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

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |  |
|  | Minimum = 3 Reads |
| Minimum = 4 Reads |  |

# EAN-8

The following options apply to the EAN-8 symbology.

## Disable/Enable EAN-8

When disabled, the scanner will not read EAN-8 barcodes.

| START / END |
| --- |
| PROGRAMMING BARCODES |
| Disable EAN-8 |
| **Enable EAN-8**<br>**DEFAULT** |

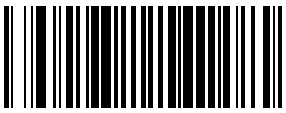
## Check Digit Transmission

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

| START / END |
| --- |
| PROGRAMMING BARCODES |
| Don't Send Check Digit |
| **Send Check Digit**<br>**DEFAULT** |

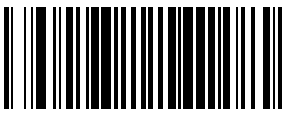
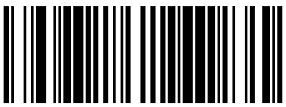
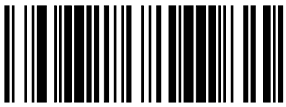
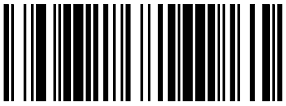
# EAN-8 — continued

**Expand EAN-8 to EAN-13—** Expands EAN-8 data to the EAN-13 data format. Selecting this feature also changes the symbology ID to match those required for EAN-13.

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Don't Expand to EAN-13 DEFAULT** |
| Expand to EAN-13 |  |

## Minimum Reads

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

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |  |
|  | Minimum = 3 Reads |
| Minimum = 4 Reads |  |

## EAN Two-Label

Enables/disables the ability of the scanner to decode EAN two-label pairs.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Disable EAN Two-Label** |
| Enable EAN Two-Label |

## EAN Two-Label Type 1

Specifies label types and number of flag digits for EAN/JAN two-label pair 1. Options are:

- EAN/JAN13, EAN/JAN13 - 2 flag digits each
- EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit
- EAN/JAN13, EAN/JAN8 - 1 flag digit each
- Disable pairs

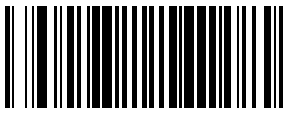
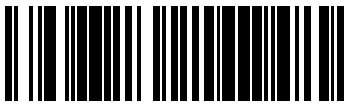
| START / END |
|---|
| PROGRAMMING BARCODES |
| **EAN Two-Label Type 1 = EAN/JAN13, EAN/JAN13 - 2 flag digits each DEFAULT** |
| EAN Two-Label Type 1 = EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit |
| EAN Two-Label Type 1 = EAN/JAN13, EAN/JAN8 - 1 flag digit each |
| EAN Two-Label Type 1 = Disable pairs |

# EAN Two-Label — continued

## EAN Two-Label Type 2

Specifies label types and number of flag digits for EAN/JAN two-label pair 2. Options are:

- EAN/JAN13, EAN/JAN13 - 2 flag digits each
- EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit
- EAN/JAN13, EAN/JAN8 - 1 flag digit each
- Disable pairs

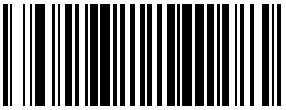
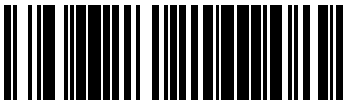
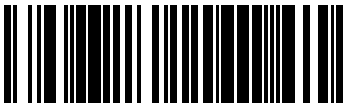
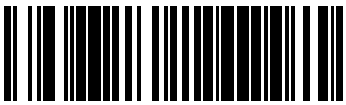
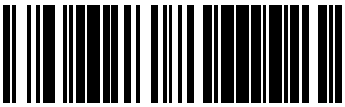
| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **EAN Two-Label Type 2 = EAN/JAN13, EAN/JAN13 - 2 flag digits each DEFAULT** |
| EAN Two-Label Type 2 = EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit |  |
|  | EAN Two-Label Type 2 = EAN/JAN13, EAN/JAN8 - 1 flag digit each |
| EAN Two-Label Type 2 = Disable pairs |  |

# EAN Two-Label — continued

## EAN Two-Label Type 3

Specifies label types and number of flag digits for EAN/JAN two-label pair 3. Options are:

- EAN/JAN13, EAN/JAN13 - 2 flag digits each
- EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit
- EAN/JAN13, EAN/JAN8 - 1 flag digit each
- Disable pairs

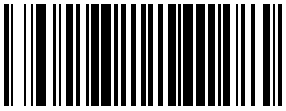
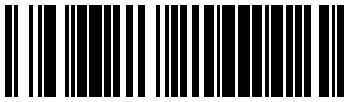
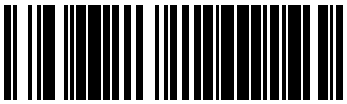
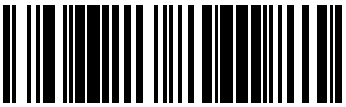
| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **EAN Two-Label Type 3 = EAN/JAN13, EAN/JAN13 - 2 flag digits each DEFAULT** |
| EAN Two-Label Type 3 = EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit |  |
|  | EAN Two-Label Type 3 = EAN/JAN13, EAN/JAN8 - 1 flag digit each |
| EAN Two-Label Type 3 = Disable pairs |  |

# EAN Two-Label — continued

## EAN Two-Label Type 4

Specifies label types and number of flag digits for EAN/JAN two-label pair 4. Options are:

- EAN/JAN13, EAN/JAN13 - 2 flag digits each
- EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit
- EAN/JAN13, EAN/JAN8 - 1 flag digit each
- Disable pairs

| START / END  |
|---|
| PROGRAMMING BARCODES |
|  EAN Two-Label Type 4 = EAN/JAN13, EAN/JAN13 - 2 flag digits each |
| EAN Two-Label Type 4 = EAN/JAN13 - 2 flag digits, EAN/JAN8 - 1 flag digit  |
|  **EAN Two-Label Type 4 = EAN/JAN13, EAN/JAN8 - 1 flag digit each DEFAULT** |
| EAN Two-Label Type 4 = Disable pairs  |

# EAN Two-Label — continued

## EAN Two-Label Combined Transmission

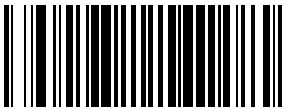
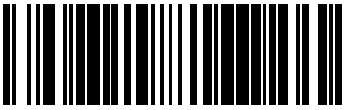
Enables/disables the transmitting of an EAN two label pair as one label.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **EAN Two-Label Combined Transmission = Disable DEFAULT** |
| EAN Two-Label Combined Transmission = Enable | |

# EAN Two-Label — continued

## EAN Two-Label Minimum Reads

This feature specifies the minimum consecutive decodes of an EAN two-label pair before it is accepted as good read..

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |  |
|  | Minimum = 3 Reads |
| Minimum = 4 Reads |  |

# Price Weight Check Digit

Enables/disables calculation and verification of price/weight check digits.

**Applies to all UPC-A labels with a number-system character of 2 and EAN/JAN 13 labels with a Flag1 digit of 2**

**NOTE**

Here are the available options for this feature:

- Disable
- Enable 4-digit price/wt check-digit calculation
- Enable 5-digit price/wt check-digit calculation
- Enable European 4-digit price-weight check-digit calculation
- Enable European 5-digit price-weight check-digit calculation

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Price Weight Check Digit = Disable DEFAULT** |
| Price Weight Check Digit = Enable 4-digit price/wt | |
| | Price Weight Check Digit = Enable 5-digit price/wt |
| Price Weight Check Digit = Enable European 4-digit price/wt | |
| | Price Weight Check Digit = Enable European 5-digit price/wt |

# Add-ons

Add-ons (or supplemental characters) are commonly added to the end of UPC/EAN barcodes. The scanner will read the add-ons if they are enabled and in the field of view. Three add-on types are supported: 2-digit, 5-digit and Code 128 add-ons. Supported options are:

**None—** This option directs the scanner to ignore add-on portion of a UPC/EAN barcode but still read the main portion of the barcode.

**2 Digits—** The scanner will optionally read 2-digit add-ons with the UPC/EAN label.

**5 Digits—** The scanner will optionally read 5-digit add-ons with the UPC/EAN label.

**Code 128 Add-on—** The scanner will optionally read Code 128 add-ons with the UPC/EAN label.

NOTE

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

# Add-ons — continued

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Optional 2-Digit Add-ons**<br>**DEFAULT** |
| Enable Optional 2-Digit Add-ons | |
| | **Disable Optional 5-Digit Add-ons**<br>**DEFAULT** |
| Enable Optional 5-Digit Add-ons | |
| | **Disable Optional Code 128 Add-ons**<br>**DEFAULT** |
| Enable Optional Code 128 Add-ons | |

# Add-ons — continued

### 2-Digit Addons Minimum Reads

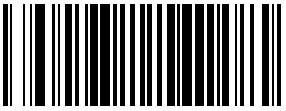
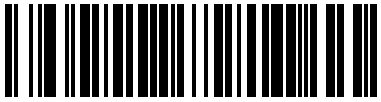
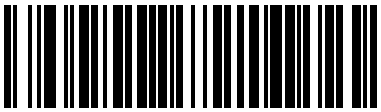
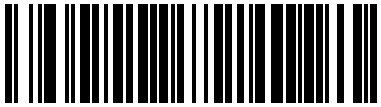
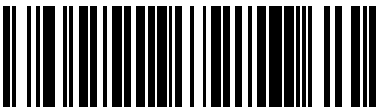
This setting configures the minimum number of times a 2-digit addon must decode before it is marked valid.

| START / END |
|---|
| PROGRAMMING BARCODES |
| Minimum = 1 Read |
| **Minimum = 2 Reads DEFAULT** |
| Minimum = 3 Reads |
| Minimum = 4 Reads |

# Add-ons — continued

### 5-Digit Addons Minimum Reads

This setting configures the minimum number of times a 5-digit addon must decode before it is marked valid.

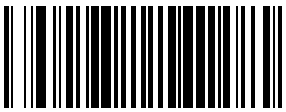
| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |  |
|  | Minimum = 3 Reads |
| Minimum = 4 Reads |  |

# GS1 DataBar Omnidirectional / Stacked Omnidirectional

The following options apply to the GS1 DataBar Omnidirectional symbology.

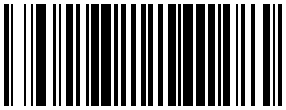
## Disable/Enable GS1 DataBar Omnidirectional

When this feature is disabled, the scanner will not read GS1 DataBar Omnidirectional barcodes.

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Disable GS1 DataBar Omnidirectional**<br>**DEFAULT** |
| Enable GS1 DataBar Omnidirectional |  |

## UCC/EAN 128 Emulation

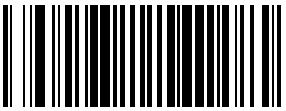
When enabled, GS1 DataBar Omnidirectional barcodes will be translated to the UCC/EAN 128 label data format.

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Disable UCC/EAN 128 Emulation**<br>**DEFAULT** |
| Enable UCC/EAN 128 Emulation |  |

# GS1 DataBar Omnidirectional / Stacked Omnidirectional — continued

## Minimum Reads

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

| START / END  |
|---|
| PROGRAMMING BARCODES |
|  **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads  |
|  Minimum = 3 Reads |
| Minimum = 4 Reads  |

# GS1 DataBar Expanded / Expanded Stacked

The following options apply to the GS1 DataBar Expanded symbology.

## Disable/Enable GS1 DataBar Expanded

When this feature is disabled, the scanner will not read GS1 DataBar Expanded barcodes.

START / END

PROGRAMMING BARCODES

**Disable GS1 DataBar Expanded**
**DEFAULT**

Enable GS1 DataBar Expanded

## GS1-128 Emulation

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

START / END

PROGRAMMING BARCODES

**Disable GS1-128 Emulation**
**DEFAULT**

Enable GS1-128 Emulation

# GS1 DataBar Expanded / Expanded Stacked — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

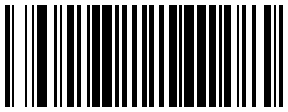
Configuring Fixed Length Decoding:

1. Scan the START/END barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first fixed length by following the GS1 DataBar Expanded Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the GS1 DataBar Expanded Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START/END barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first variable length by following the GS1 DataBar Expanded Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the GS1 DataBar Expanded Length 1, Length 2 Programming Instructions below.

START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# GS1 DataBar Expanded / Expanded Stacked — continued

## GS1 DataBar Expanded Length 1, Length 2 Programming Instructions

1. Scan the START/END barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

NOTE

**For GS1 DataBar Expanded barcodes, only the data characters are included in the length calculations.**

4. Scan the START/END barcode.

START / END

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 01

Set Length 1

Set Length 2

DEFAULT SETTING FOR THIS FEATURE: 74

# GS1 DataBar Expanded / Expanded Stacked — continued

## Minimum Reads

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads | |
| | Minimum = 3 Reads |
| Minimum = 4 Reads | |

# GS1 DataBar Expanded / Expanded Stacked — continued

## Coupon Read Control

This feature controls coupon reading.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable coupon filtering** |
| Enable UPCA coupon decoding<br>Disable GS1 DataBar coupon decoding<br>**DEFAULT** | |
| | Enable GS1 DataBar coupon decoding<br>Disable UPCA coupon decoding |

# GS1 DataBar Limited

The following options apply to the GS1 DataBar Limited symbology.

## Disable/Enable GS1 DataBar Limited

When this feature is disabled, the scanner will not read GS1 DataBar Limited barcodes.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable GS1 DataBar Limited**<br>**DEFAULT** |
| Enable GS1 DataBar Limited | |

## GS1-128 Emulation

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable GS1-128 Emulation**<br>**DEFAULT** |
| Enable GS1-128 Emulation | |

# GS1 DataBar Limited — continued

## Minimum Reads

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads | |
| | Minimum = 3 Reads |
| Minimum = 4 Reads | |

# Code 39

The following options apply to the Code 39 symbology.

## Disable/Enable Code 39

When this feature is disabled, the scanner will not read Code 39 barcodes.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Disable Code 39 |
| **Enable Code 39 DEFAULT** | |

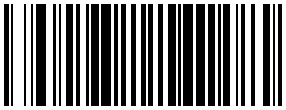
## Check Character Calculation

When enabled, the scanner will calculate the check character of the labels. Turn this option on only when a checksum is present in the Code 39 labels.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Check Char Calculation DEFAULT** |
| Enable Check Char Calculation | |

## Check Character Transmit

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

START / END 

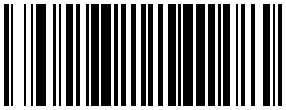
PROGRAMMING BARCODES

Disable Check Char Transmission

**Enable Check Char Transmission**
**DEFAULT**

## Start/Stop Characters

Enables/disables transmission of Code39 start and stop characters.

START / END 

PROGRAMMING BARCODES

**Don't Transmit Start/Stop Characters**
**DEFAULT**

Transmit Start/Stop Characters

## Code 39 Full ASCII

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Code 39 Full ASCII**<br>**DEFAULT** |
| Enable Code 39 Full ASCII | |

# Code 39 — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

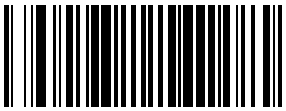
Configuring Fixed Length Decoding:

1. Scan the START/END barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first fixed length by following the Code 39 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the Code 39 Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START/END barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first variable length by following the Code 39 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the Code 39 Length 1, Length 2 Programming Instructions below.

START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

## Code 39 Length 1, Length 2 Programming Instructions

1. Scan the START/END barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

NOTE

**For Code 39 barcodes, all check, data and full ASCII shift characters are included in the length calculations. Start/Stop characters are not included.**

4. Scan the START/END barcode.

| START / END |
|---|
| PROGRAMMING BARCODES |
| DEFAULT SETTING FOR THIS FEATURE: 02 — Set Length 1 |
| Set Length 2 — DEFAULT SETTING FOR THIS FEATURE: 50 |

## Quiet Zones

This feature enables/disables the requirement that quiet zones must be present for Code 39 barcodes.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Don't require Quiet Zones DEFAULT** |
| Require Quiet Zones |

# Code 39 — continued

## Code 39 Stitching

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

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Disable Code 39 Stitching DEFAULT** |
| Enable Code 39 Stitching |

## Minimum Reads

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

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |
| Minimum = 3 Reads |
| Minimum = 4 Reads |

# Code 32 Italian Pharmacode

The following options apply to the Code 32 Italian Pharmacode symbology.

## Disable/Enable Code 32 Italian Pharmacode

When this feature is disabled, the scanner will not read Code 32 Italian Pharmacode barcodes.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Code 32 Italian Pharmacode**<br>**DEFAULT** |
| Enable Code 32 Italian Pharmacode | |

## Start/Stop Characters

Enables or disables transmission of Code 32 Italian Pharmacode start/stop characters.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Don't Transmit Start/Stop Characters**<br>**DEFAULT** |
| Transmit Start/Stop Characters | |

# Code 32 Italian Pharmacode — continued

## Check Character Transmit

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

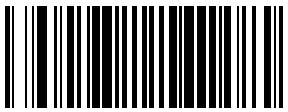
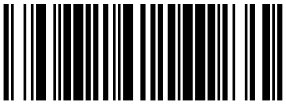
| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Disable Check Char Transmission |
| **Enable Check Char Transmission DEFAULT** | |

# Code 128

The following options apply to the Code 128 symbology.

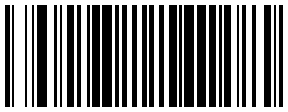
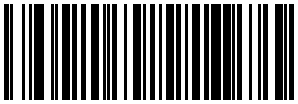
## Disable/Enable Code 128

When this feature is disabled, the scanner will not read Code 128 barcodes.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | Disable Code 128 |
| **Enable Code 128 DEFAULT** |  |

## Disable/Enable EAN 128

When this feature is disabled, the scanner will not read EAN 128 barcodes.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | Disable EAN 128 |
| **Enable EAN 128 DEFAULT** |  |

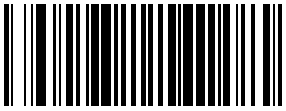
# Code 128 — continued

## Transmit Function Characters

Enables/disables transmission of Code128 function characters 1, 2, 3, and 4. Function codes are transmitted as follows:

- FNC1 = 80 hex
- FNC2 = 81 hex
- FNC3 = 82 hex
- FNC4 = 83 hex

START / END



PROGRAMMING BARCODES

**Don't Transmit Function Characters**
**DEFAULT**

Transmit Function Characters

# Code 128 — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Code 128 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the Code 128 Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first variable length by following the Code 128 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the Code 128 Length 1, Length 2 Programming Instructions below.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Variable Length Decoding DEFAULT** |
| Fixed Length Decoding | |

# Code 128 — continued

## Code 128 Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

**NOTE**

**For Code 128 barcodes, only the data characters are included in the length calculations.**

4. Scan the END barcode.

| START / END |
|---|
| PROGRAMMING BARCODES |
| DEFAULT SETTING FOR THIS FEATURE: 01 — Set Length 1 |
| Set Length 2 — DEFAULT SETTING FOR THIS FEATURE: 80 |

## Code 128 Conversion to Code 39

Enables/disables expansion of Code 128 labels to Code 39.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Disable DEFAULT** |
| Enable |

# Code 128 — continued

## Code 128 Stitching

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

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Disable Code 128 Stitching DEFAULT** |
| Enable Code 128 Stitching |

## Minimum Reads

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

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |
| Minimum = 3 Reads |
| Minimum = 4 Reads |

# Interleaved 2 of 5

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

## Disable/Enable Interleaved 2 of 5

When this feature is disabled, the scanner will not read Interleaved 2 of 5 barcodes.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Interleaved 2 of 5**<br>**DEFAULT** |
| Enable Interleaved 2 of 5 | |

## Check Digit Calculation

When enabled, the scanner will calculate the check digit of the labels.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Check Digit Calculation**<br>**DEFAULT** |
| Enable Check Digit Calculation | |

# Interleaved 2 of 5 — continued

## Check Digit Transmit

Enable this option to transmit the check digit with scanned barcode data.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Check Digit Calculation DEFAULT** |
| Enable Check Digit Calculation | |

# Interleaved 2 of 5 — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

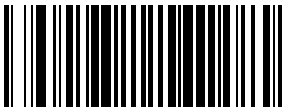
Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Interleaved 2 of 5 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the Interleaved 2 of 5 Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first variable length by following the Interleaved 2 of 5 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the Interleaved 2 of 5 Length 1, Length 2 Programming Instructions below.

START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# Interleaved 2 of 5 — continued

## Interleaved 2 of 5 Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

**NOTE**

**For Interleaved 2 of 5 barcodes, lengths must be an even number. Additionally, all check and data characters are included in the length calculations.**

4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

Set Length 1

**DEFAULT SETTING FOR THIS FEATURE: 06**

Set Length 2

**DEFAULT SETTING FOR THIS FEATURE: 50**

# Interleaved 2 of 5 — continued

## Interleaved 2 of 5 Stitching

Enables/disables stitching for Interleaved 2 of 5 labels. When parts of an Interleaved 2 of 5 barcode are presented to the scanner with this feature enabled, the barcode parts will be assembled by the scanner's software, and the data will be decoded if all barcode proofing requirements are met.

**NOTE**

**Only functions when Fixed Length Decoding is enabled.**

START / END

PROGRAMMING BARCODES

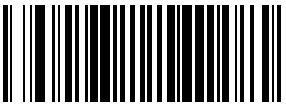
**Disable Interleaved 2 of 5 Stitching**
**DEFAULT**

Enable Interleaved 2 of 5 Stitching

# Interleaved 2 of 5 — continued

## Minimum Reads

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

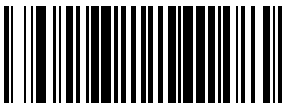
| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |  |
|  | Minimum = 3 Reads |
| Minimum = 4 Reads |  |

# Codabar

The following options apply to the Codabar symbology.

## Disable/Enable Codabar

When this feature is disabled, the scanner will not read Codabar barcodes.

START / END 

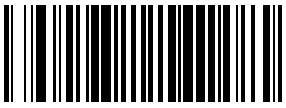
PROGRAMMING BARCODES

**Disable Codabar**
**DEFAULT**

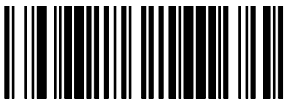
Enable Codabar 

## Check Character Verification

When enabled, the scanner will verify the check character of the labels.

START / END 

PROGRAMMING BARCODES



**Disable Check Char Verification**
**DEFAULT**

Enable Check Char Verification 

## Check Character Transmit

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Disable Check Char Transmission |
| **Enable Check Char Transmission DEFAULT** | |

# Codabar — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

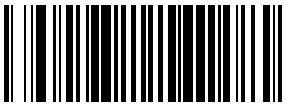
Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Codabar Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the Codabar Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first variable length by following the Codabar Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the Codabar Length 1, Length 2 Programming Instructions below.

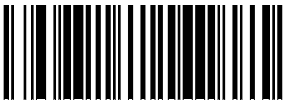
START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding



# Codabar — continued

## Codabar Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

**NOTE**

**For Codabar barcodes, all start, stop, check and data characters are included in the length calculations.**

4. Scan the END barcode.

| START / END |
|---|
| PROGRAMMING BARCODES |
| DEFAULT SETTING FOR THIS FEATURE: 03 — Set Length 1 |
| Set Length 2 — DEFAULT SETTING FOR THIS FEATURE: 50 |

### Quiet Zones

This feature enable/disables the requirement that quiet zones must be present for Codabar barcodes.

| START / END |
|---|
| PROGRAMMING BARCODES |
| Don't require Quiet Zones DEFAULT |
| Require Quiet Zones |

# Codabar — continued

## Start/Stop Character Type

Codabar has four pairs of Start/Stop patterns. Select one pair to match your application.

| START / END |
|---|
| PROGRAMMING BARCODES |
| Start/Stop Type: ABCD/TN*E |
| Start/Stop Type: ABCD/ABCD |
| Start/Stop Type: abcd/tn*e |
| **Start/Stop Type: abcd/abcd DEFAULT** |

## Start/Stop Character Transmission

The transmission of start and end characters of Codabar is selected below.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Disable Start/Stop Char Transmission |
| **Enable Start/Stop Char Transmission DEFAULT** | |

## Start/Stop Character Match

This feature enables/disables the requirement that start and stop characters match.

START / END

PROGRAMMING BARCODES

**Disable Start/Stop Char Match**
**DEFAULT**

Enable Start/Stop Char Match

## Codabar Stitching

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

**NOTE**

**Only functions when Fixed Length Decoding is enabled.**

START / END

PROGRAMMING BARCODES

**Disable Codabar Stitching**
**DEFAULT**

Enable Codabar Stitching

# Codabar — continued

## Minimum Reads

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Minimum = 1 Read**<br>**DEFAULT** |
| Minimum = 2 Reads | |
| | Minimum = 3 Reads |
| Minimum = 4 Reads | |

# Code 93

The following options apply to the Code 93 symbology.

## Disable/Enable Code 93

When this feature is disabled, the scanner will not read Code 93 barcodes.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Code 93**<br>**DEFAULT** |
| Enable Code 93 | |

# Code 93 — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

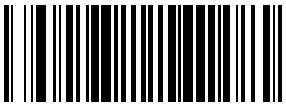
Configuring Fixed Length Decoding:

1. Scan the START/END barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first fixed length by following the Code 93 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the Code 93 Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START/END barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first variable length by following the Code 93 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the Code 93 Length 1, Length 2 Programming Instructions below.

START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# Code 93 — continued

## Code 93 Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

**NOTE**

**For Code 93 barcodes, only the data characters are included in the length calculations.**

4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

**DEFAULT SETTING FOR THIS FEATURE: 01**

Set Length 1

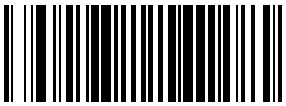
Set Length 2

**DEFAULT SETTING FOR THIS FEATURE: 50**

# Code 93 — continued

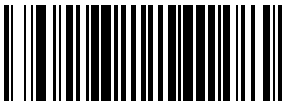
## Code 93 Stitching

Enables/disables stitching for Code 93 barcodes. When parts of a Code 93 label are presented to the scanner with this feature enabled, the barcode parts will be assembled by the scanner's software, and the data will be decoded if all barcode proofing requirements are met.

| START / END  |
|---|
| PROGRAMMING BARCODES |
|  **Disable Code 93 Stitching DEFAULT** |
| Enable Code 93 Stitching  |

## Minimum Reads

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

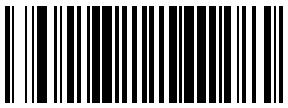
| START / END  |
|---|
| PROGRAMMING BARCODES |
|  **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads  |
|  Minimum = 3 Reads |
| Minimum = 4 Reads  |

# MSI/Plessey

The following options apply to the MSI/Plessey symbology.

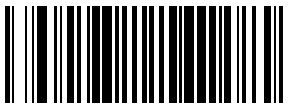
## Disable/Enable MSI/Plessey

When this feature is disabled, the scanner will not read MSI/Plessey barcodes.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Disable MSI/Plessey DEFAULT** |
| Enable MSI/Plessey |  |

## Check Digit Verification

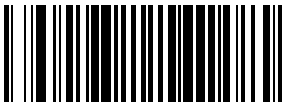
This feature specifies whether one or two check digits are to be calculated and verified.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Disable Check Digit Verification DEFAULT** |
| Enable Check Digit Verification |  |

# MSI/Plessey — continued

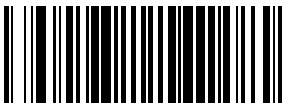
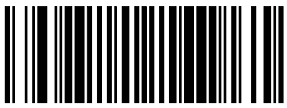
## Check Digit Transmit

When this option is enabled, the scanner will transmit one-digit or two-digit check digits, depending upon the setting for check digit verification.

| START / END  |
|---|
| PROGRAMMING BARCODES |
|  Disable Check Digit Transmission |
| **Enable Check Digit Transmission DEFAULT**  |

## Number of Check Characters

Specifies number of MSI/Plessey check characters to be calculated and verified

| START / END  |
|---|
| PROGRAMMING BARCODES |
|  **1 Check Character DEFAULT** |
| 2 Check Characters  |

# MSI/Plessey — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

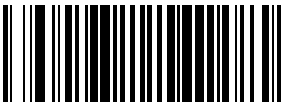
Configuring Fixed Length Decoding:

1. Scan the START/END barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first fixed length by following the MSI/Plessey Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the MSI/Plessey Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START/END barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first variable length by following the MSI/Plessey Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the MSI/Plessey Length 1, Length 2 Programming Instructions below.

START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# MSI/Plessey — continued

## MSI/Plessey Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

**NOTE**

**For MSI/Plessey barcodes, all check and data characters are included in the length calculations.**

4. Scan the END barcode.

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| **DEFAULT SETTING FOR THIS FEATURE: 04** | Set Length 1 |
| Set Length 2 | **DEFAULT SETTING FOR THIS FEATURE: 16** |

# MSI/Plessey — continued

## MSI/Plessey Stitching

Enables/disables stitching for MSI/Plessey barcodes. When parts of an MSI/Plessey label are presented to the scanner with this feature enabled, the barcode parts will be assembled by the scanner's software, and the data will be decoded if all barcode proofing requirements are met.

**NOTE**

**Only functions when Fixed Length Decoding is enabled.**

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable MSI/Plessey Stitching**<br>**DEFAULT** |
| Enable MSI/Plessey Stitching | |

# MSI/Plessey — continued

## Minimum Reads

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

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Minimum = 1 Read**<br>**DEFAULT** |
| Minimum = 2 Reads | |
| | Minimum = 3 Reads |
| Minimum = 4 Reads | |

# Standard 2 of 5

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

## Disable/Enable Standard 2 of 5

When this feature is disabled, the scanner will not read Standard 2 of 5 barcodes.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Disable Std 2 of 5 DEFAULT** |
| Enable Std 2 of 5 |

## Check Digit Verification

When enabled, the scanner will verify the check digit of the labels.

| START / END |
|---|
| PROGRAMMING BARCODES |
| **Disable Check Digit Verification DEFAULT** |
| Enable Check Digit Verification |

# Standard 2 of 5 — continued

## Check Digit Transmit

When this option is enabled, the scanner will transmit the check digit.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | Disable Check Digit Transmission |
| **Enable Check Digit Transmission**<br>**DEFAULT** | |

# Standard 2 of 5 — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

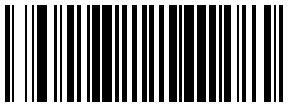
Configuring Fixed Length Decoding:

1. Scan the START/END barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first fixed length by following the Standard 2 of 5 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '00' if there is only one fixed length) by following the Standard 2 of 5 Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START/END barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the START/END barcode.
4. Set Length 1 to the first variable length by following the Standard 2 of 5 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second variable length by following the Standard 2 of 5 Length 1, Length 2 Programming Instructions below.

START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# Standard 2 of 5 — continued

## Standard 2 of 5 Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Appendix C, Alpha-Numeric Pad and scan the two digits (zero padded) representing the length in decimal notation.

**NOTE** **For Standard 2 of 5 barcodes, all check and data characters are included in the length calculations.**

4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 08

Set Length 1

Set Length 2

DEFAULT SETTING FOR THIS FEATURE: 50

# Standard 2 of 5 — continued

## Standard 2 of 5 Stitching

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

**NOTE**

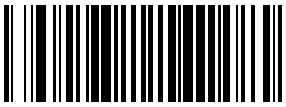
**Only functions when Fixed Length Decoding is enabled.**

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Std 2 of 5 Stitching**<br>**DEFAULT** |
| Enable Std 2 of 5 Stitching | |

# Standard 2 of 5 — continued

## Minimum Reads

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

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Minimum = 1 Read DEFAULT** |
| Minimum = 2 Reads |  |
|  | Minimum = 3 Reads |
| Minimum = 4 Reads |  |

# NOTES

# 2D Symbologies

**The features in this section are available ONLY for models with 2D features activated.**

**NOTE**

## 2D Symbologies

The scanner supports the 2D symbologies (barcode types) listed below. Available options for each 2D symbology are included in this chapter.

- PDF 417
- Micro PDF 417
- Datamatrix
- QR Code
- Maxicode
- Aztec
- Composite Labels

**Factory Defaults—** for the standard RS-232 interface are indicated in bold text throughout.

## 2D Decode Time Max

This feature sets the maximum amount of time the software will spend attempting to decode a 2D label. Follow these instructions to configure this feature:

1. Scan the START barcode.
2. Scan the Set 2D Decode Time Max barcode.
3. Turn to Alpha-Numeric Pad and scan the two digits (zero-padded) representing the desired contrast in decimal notation. The configurable range is 01-0xFF by 01 in increments of 10 msec.
4. Scan the END barcode.

START / END

PROGRAMMING BARCODES

**Set 2D Decode Time Max**
DEFAULT SETTING FOR THIS FEATURE: 350 msec

# PDF 417

## Disable/Enable PDF 417

When disabled, the scanner will not read PDF 417 barcodes.

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| | **Disable PDF 417**<br>**DEFAULT** |
| Enable PDF 417 | |

# PDF 417 — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

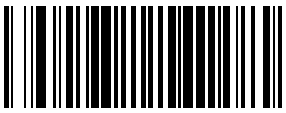
Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '0000' if there is only one fixed length) by following the PDF 417 Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the minimum length by following the PDF 417 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the maximum length by following the PDF 417 Length 1, Length 2 Programming Instructions below.

START / END



PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# PDF 417 — continued

## PDF 417 Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Alpha-Numeric Pad and scan the four digits (zero-padded) representing the length.

NOTE

**For PDF 417 barcodes, only the data characters are included in the length calculations.**

**Any value set higher than 2710 will be considered to be 2710.**

Scan the END barcode.

START / END

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 0001

Set Length 1

Set Length 2

DEFAULT SETTING FOR THIS FEATURE: 2710

# Micro PDF 417

## Disable/Enable Micro PDF 417

When disabled, the scanner will not read Micro PDF 417 barcodes.

START / END

PROGRAMMING BARCODES

Disable Micro PDF 417
**DEFAULT**

Enable Micro PDF 417

# Micro PDF 417 — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '0000' if there is only one fixed length) by following the Micro PDF 417 Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the minimum length by following the Micro PDF 417 Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the maximum length by following the Micro PDF 417 Length 1, Length 2 Programming Instructions below.

START / END

PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# Micro PDF 417 — continued

## Micro PDF 417 Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Alpha-Numeric Pad and scan the four digits (zero-padded) representing the length.

**NOTE**

**For Micro PDF 417 barcodes, only the data characters are included in the length calculations.**

**Any value set higher than 366 will be considered to be 366.**

Scan the END barcode.

START / END

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 0001

Set Length 1

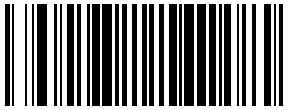
Set Length 2

DEFAULT SETTING FOR THIS FEATURE: 0366

# Datamatrix

## Disable/Enable Datamatrix

When disabled, the scanner will not read Datamatrix barcodes.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Disable Datamatrix**<br>**DEFAULT** |
| Enable Datamatrix |  |

# Datamatrix — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

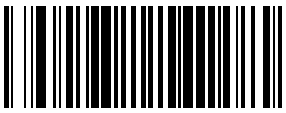
**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '0000' if there is only one fixed length) by following the Datamatrix Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the minimum length by following the Datamatrix Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the maximum length by following the Datamatrix Length 1, Length 2 Programming Instructions below.

| START / END |  |
|---|---|
| PROGRAMMING BARCODES | |
|  | **Variable Length Decoding DEFAULT** |
| Fixed Length Decoding |  |

# Datamatrix — continued

## Datamatrix Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Alpha-Numeric Pad and scan the four digits (zero-padded) representing the length.

NOTE

**For Datamatrix barcodes, only the data characters are included in the length calculations.**

**Any value set higher than 800 will be considered to be 800.**

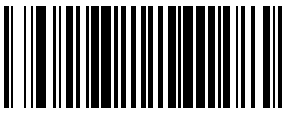
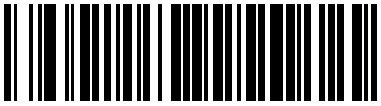
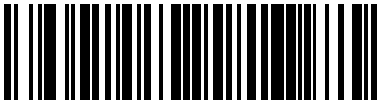
Scan the END barcode.

| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| DEFAULT SETTING FOR THIS FEATURE: 0001 | Set Length 1 |
| Set Length 2 | DEFAULT SETTING FOR THIS FEATURE: 0800 |

# QR Code

## Disable/Enable QR Code

When disabled, the scanner will not read QR Code labels.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Disable QR Code**<br>**DEFAULT** |
| Enable QR Code |  |

# QR Code — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '0000' if there is only one fixed length) by following the QR Code Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the minimum length by following the QR Code Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the maximum length by following the QR Code Length 1, Length 2 Programming Instructions below.

START / END

PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# QR Code — continued

## QR Code Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Alpha-Numeric Pad and scan the four digits (zero-padded) representing the length.

**NOTE**

**For QR Code labels, only the data characters are included in the length calculations.**

**Any value set higher than 2710 will be considered to be 2710.**

Scan the END barcode.

START / END

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 0001

Set Length 1

Set Length 2

DEFAULT SETTING FOR THIS FEATURE: 2710

# Maxicode

## Disable/Enable Maxicode

When disabled, the scanner will not read Maxicode labels.

| START / END | |
|---|---|
| PROGRAMMING BARCODES | |
| | **Disable Maxicode**<br>**DEFAULT** |
| Enable Maxicode | |

# Maxicode — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '0000' if there is only one fixed length) by following the Maxicode Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the minimum length by following the Maxicode Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the maximum length by following the Maxicode Length 1, Length 2 Programming Instructions below.

START / END

PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# Maxicode — continued

## Maxicode Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Alpha-Numeric Pad and scan the four digits (zero-padded) representing the length.

NOTE

**For Maxicode labels, only the data characters are included in the length calculations.**

**Any value set higher than 138 will be considered to be 138.**

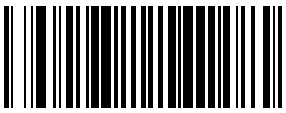
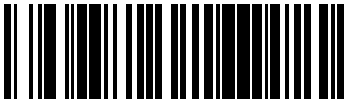
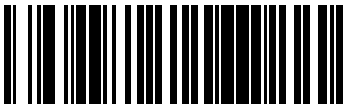
Scan the END barcode.

| START / END |
|---|
| PROGRAMMING BARCODES |
| DEFAULT SETTING FOR THIS FEATURE: 0001 — Set Length 1 |
| Set Length 2 — DEFAULT SETTING FOR THIS FEATURE: 0138 |

# Aztec

## Disable/Enable Aztec

When disabled, the scanner will not read Aztec labels.

| | |
|---|---|
| START / END |  |
| PROGRAMMING BARCODES | |
|  | **Disable Aztec DEFAULT** |
| Enable Aztec |  |

# Aztec — continued

## Length Control

**Fixed Length Decoding—** When fixed length decoding is enabled, the scanner will decode a barcode if the label length matches one of the configurable fixed lengths.

**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

Configuring Fixed Length Decoding:

1. Scan the START barcode.
2. Scan the Fixed Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the first fixed length by following the Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the second fixed length (or to '0000' if there is only one fixed length) by following the Aztec Length 1, Length 2 Programming Instructions below.

Configuring Variable Length Decoding:

1. Scan the START barcode.
2. Scan the Variable Length Decoding barcode.
3. Scan the END barcode.
4. Set Length 1 to the minimum length by following the Aztec Length 1, Length 2 Programming Instructions below.
5. Set Length 2 to the maximum length by following the Aztec Length 1, Length 2 Programming Instructions below.

START / END

PROGRAMMING BARCODES

**Variable Length Decoding**
**DEFAULT**

Fixed Length Decoding

# Aztec — continued

### Aztec Length 1, Length 2 Programming Instructions

1. Scan the START barcode.
2. Scan either the Set Length 1 or Set Length 2 barcode.
3. Turn to Alpha-Numeric Pad and scan the four digits (zero-padded) representing the length.

**NOTE**

**For Aztec labels, only the data characters are included in the length calculations.**

**Any value set higher than 3700 will be considered to be 2710.**

Scan the END barcode.

START / END

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 0001

Set Length 1

Set Length 2

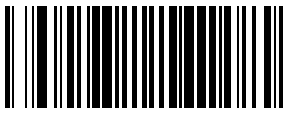
DEFAULT SETTING FOR THIS FEATURE: 2710

## Composite Labels

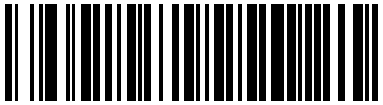
### Disable/Enable GS1 DataBar Omnidirectional 2D Component

When enabled, if a GS1 DataBar Omnidirectional label is decoded which has the 2D linkage flag set, the 2D component must also be decoded or the base label will be discarded.

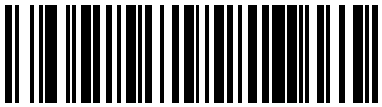
When disabled, only the GS1 DataBar Omnidirectional base label will be decoded and transmitted regardless of the state of the linkage flag.

START / END 

PROGRAMMING BARCODES



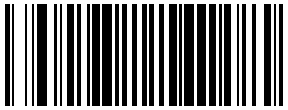
**Disable GS1 DataBar Omnidirectional 2D Component**
**DEFAULT**

Enable GS1 DataBar Omnidirectional 2D Component 

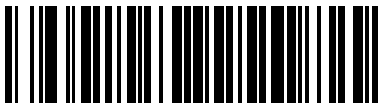
### Disable/Enable GS1 DataBar Expanded 2D Component

When enabled, if a GS1 DataBar Expanded label is decoded which has the 2D linkage flag set, the 2D component must also be decoded or the base label will be discarded.

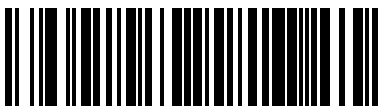
When disabled, only the GS1 DataBar Expanded base label will be decoded and transmitted regardless of the state of the linkage flag.

START / END 

PROGRAMMING BARCODES



**Disable GS1 DataBar Expanded 2D Component**
**DEFAULT**

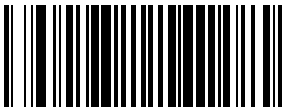
Enable GS1 DataBar Expanded 2D Component 

### Disable/Enable GS1 DataBar Limited 2D Component

When enabled, if a GS1 DataBar Limited label is decoded which has the 2D linkage flag set, the 2D component must also be decoded or the base label will be discarded.

When disabled, only the GS1 DataBar Limited base label will be decoded and transmitted regardless of the state of the linkage flag.

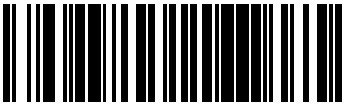
START / END



PROGRAMMING BARCODES

**Disable GS1 DataBar Limited 2D Component**
**DEFAULT**

Enable GS1 DataBar Limited 2D Component

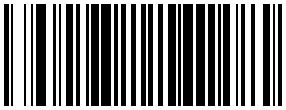


# NOTES

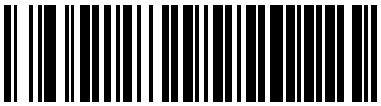
## Pharmacy Patterns

Enables/disables using the pharmacy patterns.

START / END



PROGRAMMING BARCODES



**Pharmacy Patterns = Disable**
**DEFAULT**

Pharmacy Patterns = Enable

# Inverse Label Reading

This controls the method of reading inverse labels (white label on black background).

**NOTE**

**This feature is only available for GS1 DataBar and 2D symbologies.**

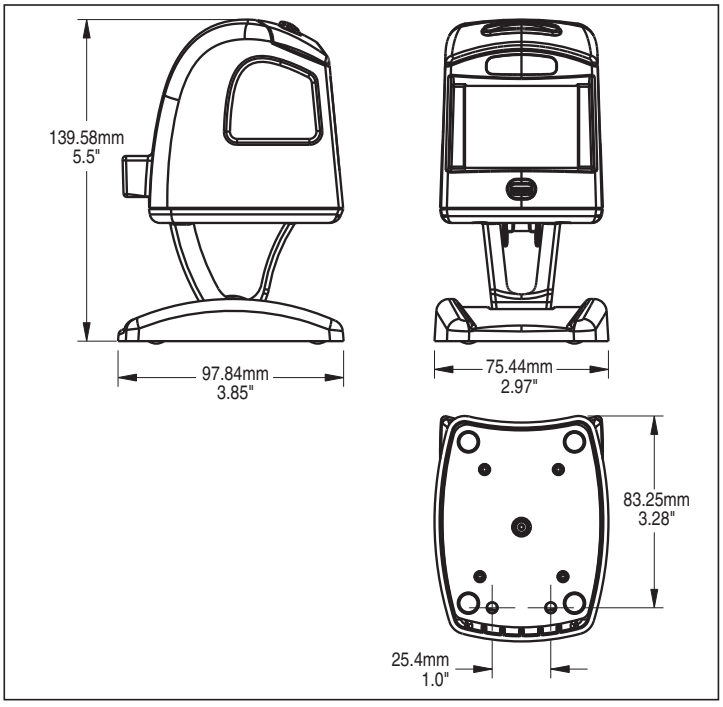
| | |
|---|---|
| START / END | |
| PROGRAMMING BARCODES | |
| | 2D Read Mode = Reads only normal labels<br>DEFAULT |
| 2D Read Mode = Reads both normal and inverse labels | |
| | 2D Read Mode = Reads only inverse labels |

# Chapter A
# Product Specifications

## Optical and Read Performance Parameters

| Parameter | Specification |
|---|---|
| Scan Volume | 70 cubic inches |
| Scan Pattern | 136 Scan Lines |
| Scan Rate | 1,768 scan lines/second |
| Minimum Resolution | 5 mil |
| Depth of Field<br>(100% UPC Labels) | 0 - 7” |
| Minimum Print Contrast Ratio | 25% |
| Skew (Yaw) | ± 75° |
| Pitch | ± 65° |
| Roll | Between 0 and 360° |

## Scanner Dimensions



## Physical Properties

| Parameter | Specification |
|---|---|
| Dimensions (Scanner only): | 3.3” x2.8” x3.7” |
| Dimensions (Scanner w/Base Station): | 5.5” x2.9” x3.8” |
| Weight (Scanner) | 7.0 oz. |
| Weight (Base Station) | 6.6 oz. |

## Electrical Parameters

| Parameter | Specification |
|---|---|
| Operating Voltage | Input voltage 4.5 to 14 VDC |
| Input Current<br>Operating (idle)<br>Operating (label read) | <br><300mA<br><400 mA |

## Environmental Parameters

| Parameter | Specification |
|---|---|
| Mechanical Shock | Multi 1.2m drops |
| Contaminants<br>Water and Dust | <br>IP52 |
| Temperature Ranges:<br>Operating<br>Storage | <br>32° F to +104° F (0° C to +40° C)<br>-40° F to +158° F (-40° C to + 70°C) |
| Ambient Light Indoor | 0 - 6000 lux |
| Ambient Light Outdoor | 0 - 86,100 lux |
| Humidity | 5 to 95% non-condensing |
| Beeper/Speaker | 70-85dBA at a distance of 3’-3” (1 meter) |
| Vibration | Retail/Office |

## Other Parameters

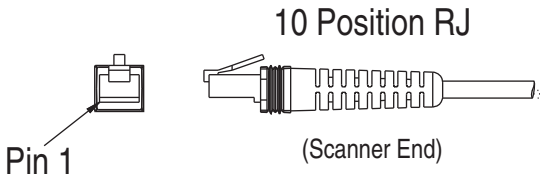
| Parameter | Specification |
|---|---|
| EAS Support | YES (Checkpoint) |

# Chapter B
# Cable Pinouts

## Standard Cable Pinouts (Primary Interface Cables)

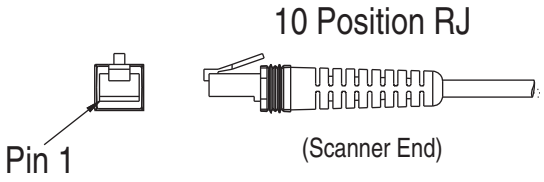
### RS-232

| | |
|---|---|
| 1 | |
| 2 | CTS |
| 3 | |
| 4 | RTS |
| 5 | RXD |
| 6 | TXD |
| 7 | |
| 8 | VCC IN |
| 9 | GND |
| 10 | |



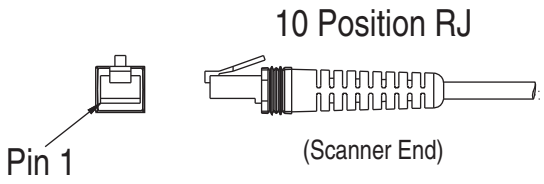

### IBM Port 5B/9B/17

| | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | DATA - |
| 5 | |
| 6 | DATA + |
| 7 | |
| 8 | VCC_IN |
| 9 | GND |
| 10 | |



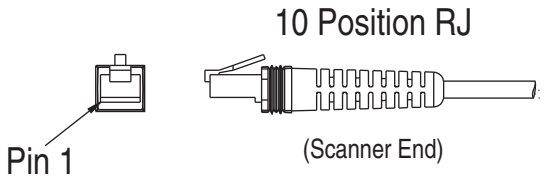
## USB-OEM

| | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | D - |
| 5 | |
| 6 | D + |
| 7 | |
| 8 | VIN |
| 9 | GND |
| 10 | |



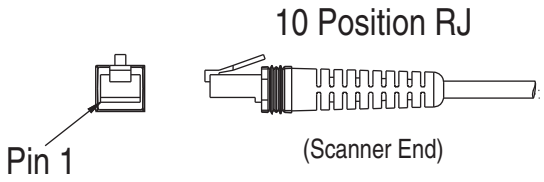

## USB, USB Keyboard & USB COM

| | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | D - |
| 5 | |
| 6 | D + |
| 7 | |
| 8 | VBUS_VIN |
| 9 | GND |
| 10 | |




## Keyboard Wedge

| | |
|---|---|
| 1 | |
| 2 | KB_DATA |
| 3 | AT_CLK |
| 4 | KB_CLK |
| 5 | |
| 6 | AT_DATA |
| 7 | |
| 8 | VCC_IN |
| 9 | GND |
| 10 | |



# Chapter C
# Alpha-Numeric Pad

A

B

C

D

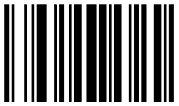
E

F

## Alpha-Numeric Pad

1

2



3

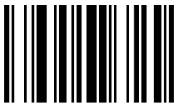
4

5

6

7

8



9

0

# Appendix D
# Default Settings

## Defaults by Symbology

The following is a partial list of key settings for each symbology type.

| Code Type | Read Enable | Checksum Verification Enable | Checksum Transmission Enable | Label ID |
|---|---|---|---|---|
| UPC-A | ✓ | ✓ | ✓ | A |
| UPC-E | ✓ | ✓ | ✓ | E |
| EAN-13 | ✓ | ✓ | ✓ | F |
| EAN-8 | ✓ | ✓ | ✓ | FF |
| GS1 DataBar Omnidirectional | | | | R4 |
| GS1 Expanded | | | | RX |
| Code 39 | ✓ | | ✓ | * |
| PharmaCode 39 | | | | A |
| Code 128 | ✓ | | | # |
| Interleaved 2 of 5 | | | ✓ | i |
| Codabar | | | ✓ | % |
| Code 93 | | | | & |
| MSI/Plessey | | | ✓ | @ |
| Standard 2 of 5 | | | ✓ | s |
| PDF 417 | | | | P |
| Micro PDF 417 | | | | mP |
| Datamatrix | | | | Dm |
| QR Code | | | | QR |
| Maxicode | | | | MC |
| Aztec | | | | Az |
| GS1 DataBar Omnidirectional 2D Composite | | | | R4 |
| GS1 DataBar Expanded 2D Composite | | | | RX |
| GS1 DataBar Limited 2D Composite | | | | RL |

# Interface Default Exceptions

The factory default settings indicated in the programming sections (in bold text) reflect factory configuration for the RS-232 standard interface. The following tables list default exceptions by interface for the remaining available interfaces.

## IBM Interfaces

IBM Interfaces include USB-OEM, IBM Port 9B, IBM Port5B and IBM Port17.

| Parameter | Default Setting |
|---|---|
| IBM Interface Type | IBM Port 9B |
| Number of Host Transmit Buffers | One Buffer |
| Label I.D. Transmission | Disable |
| Suffix Characters | No Suffix |

# Interface Default Exceptions — continued

## RS-232 Wincor/Nixdorf

| Parameter | Default Setting |
|---|---|
| Interface Type | RS-232-WN |
| Number of Host Transmit Buffers | One Buffer |
| RS-232 Parity | Odd |
| RS-232 Hardware Control | CTS Flow Control |
| UPC-E Check Character Conversion | Disabled |
| UCC/EAN-128 Label ID | ‘P’ |
| Code 39 Label ID | ‘M’ |
| Code 93 Label ID | ‘L’ |
| Code 128 Label ID | ‘K’ |
| Codabar Label ID | ‘N’ |
| EAN-8 Label ID | ‘B’ |
| EAN-13 Label ID | ‘A’ |
| ISBN Label ID | ‘A’ |
| Interleaved 2 of 5 Label ID | ‘I’ |
| Standard 2 of 5 Label ID | ‘H’ |
| MSI/Plessey Label ID | ‘O’ |
| UPC-E Label ID | ‘C’ |
| GS1 DataBar Omnidirectional Label ID | ‘E’ |
| GS1 Expanded Label ID | ‘E’ |

# Interface Default Exceptions — continued

## Keyboards

Keyboard interfaces include USB Keyboard and Keyboard Wedge A-J.

| Parameter | Default Setting |
|---|---|
| Keyboard Wedge Interface Type | USB Keyboard |
| Label ID Transmission | Disable |

# Appendix E
# Keyboard Function Key Mappings

## Keyboard Model Cross Reference

Table E-1 summarizes the keyboard models, their defined protocol, scancode set, and some unique features. The remaining tables in this chapter provide the function key maps associated with each of the scancode sets.

**Table E-1. Keyboard Model Cross Reference**

| Model Type | I/F ID | Trans-mission Protocol | Scancode Set | Func. Key Map Support | Use Country Mode |
|---|---|---|---|---|---|
| PC/XT Foreign ALT Mode | Wedge A | PC/XT | Scan Set 1 | No | No |
| AT;<br>PS/2 25-286;<br>PS/2 30-286;<br>PS/2 50, 50Z;<br>PS/2 60,70,80,90,95<br>Foreign ALT Mode | Wedge B | AT/PS2 | Scan Set 2 | No | No |
| PS/2 25 and 30<br>Foreign ALT Mode | Wedge C | AT/PS2 | Scan Set 1 | No | No |
| PC/XT U.S. Mode | Wedge D | PC/XT | Scan Set 1 | Yes | No |
| AT;<br>PS/2 25-286;<br>PS/2 30-286;<br>PS/2 50, 50Z;<br>PS/2 60,70,80,90,95<br>U.S. Mode + specific country support | Wedge E | AT/PS2 | Scan Set 2 | Yes | Yes |
| PS/2 25 and 30<br>U.S. Mode | Wedge F | AT/PS2 | Scan Set 1 | Yes | No |
| IBM 3xxx Terminals<br>(122-key keyboard) | Wedge G | AT/PS2 | Scan Set 3 | Yes | No |
| IBM 3xxx Terminals<br>(102-key keyboard) | Wedge H | AT/PS2 | Scan Set 3 | Yes | No |
| PS55 5530T with<br>JAPANESE DOS (TDOS) | Wedge I | AT/PS2 | Japanese DOS | Yes | No |
| NEC 9801 | Wedge J | NEC 9801 | NEC 9801 | Yes | No |

## Table E-2. USB Function Key Usage Map

| ASCII | Key value | Usage Name | Modifier/ Scancode |
|---|---|---|---|
| 00 | NUL | ALT right Make | 40h 00h |
| 01 | SOH | ALT right Break | 00h 00h[1] |
| 02 | STX | F11 | 00h 44h |
| 03 | ETX | F12 | 00h 45h |
| 04 | EOT | GUI right Make | 80h 00h |
| 05 | ENQ | GUI right Break | 00h 00h[1] |
| 06 | ACK | CTRL right Make | 10h 00h |
| 07 | BEL | CTRL right Break | 00h 00h[1] |
| 08 | BS | BS | 00h 2Ah |
| 09 | HT | TAB right | 00h 2Bh |
| 0A | LF | RIGHT arrow (inner keypad) | 00h 4Fh |
| 0B | VT | TAB left | 02h 2Bh |
| 0C | FF | Enter (right keypad) | 00h 58h |
| 0D | CR | CR | 00h 28h |
| 0E | SO | INSERT (inner keypad) | 00h 49h |
| 0F | SI | PAGE UP (inner keypad) | 00h 4Bh |
| 10 | DLE | PAGE DOWN (inner keypad) | 00h 4Eh |
| 11 | DC1 | HOME (inner keypad) | 00h 4Ah |
| 12 | DC2 | LEFT arrow (inner keypad) | 00h 50h |
| 13 | DC3 | DOWN arrow (inner keypad) | 00h 51h |
| 14 | DC4 | UP arrow (inner keypad) | 00h 52h |
| 15 | NAK | F6 | 00h 3Fh |
| 16 | SYN | F1 | 00h 3Ah |
| 17 | ETB | F2 | 00h 3Bh |
| 18 | CAN | F3 | 00h 3Ch |
| 19 | EM | F4 | 00h 3Dh |
| 1A | SUB | F5 | 00h 3Eh |
| 1B | ESC | ESC | 00h 29h |
| 1C | FS | F7 | 00h 40h |
| 1D | GS | F8 | 00h 41h |
| 1E | RS | F9 | 00h 42h |
| 1F | US | F10 | 00h 43h |

### Table E-3. Scanset 1 Function Key Map

| ASCII (hex) | ASCII code | Key | Scancode |
|---|---|---|---|
| 00 | NUL | ALT right Make | E0h 38h |
| 01 | SOH | ALT right Break | E0h B8h |
| 02 | STX | ALT left Make | 38h |
| 03 | ETX | ALT left Break | B8h |
| 04 | EOT | CTRL left Make | 1Dh |
| 05 | ENQ | CTRL left Break | 9Dh |
| 06 | ACK | CTRL right Make | E0h 1Dh |
| 07 | BEL | CTRL right Break | E0h 9Dh |
| 08 | BS | BS | 0Eh |
| 09 | HT | TAB right | 0Fh |
| 0A | LF | RIGHT arrow (inner keypad) | 4Dh + E0 |
| 0B | VT | TAB left | 0Fh + S |
| 0C | FF | Enter (inner keypad) | 1Ch + E0 |
| 0D | CR | CR | 1Ch |
| 0E | SO | INSERT (inner keypad) | 52h + E0 |
| 0F | SI | PAGE UP (inner keypad) | 49h + E0 |
| 10 | DLE | PAGE DOWN (inner keypad) | 51h + E0 |
| 11 | DC1 | HOME (inner keypad) | 47h + E0 |
| 12 | DC2 | LEFT arrow (inner keypad) | 4Bh + E0 |
| 13 | DC3 | DOWN arrow (inner keypad) | 50h + E0 |
| 14 | DC4 | UP arrow (inner keypad) | 48h + E0 |

### Table E-4. Scanset 2 Function Key Map

| ASCII (hex) | ASCII code | Key | Scancode |
|---|---|---|---|
| 00 | NUL | ALT right Make | E0h 11h |
| 01 | SOH | ALT right Break | E0h F0h 11h |
| 02 | STX | ALT left Make | 11h |
| 03 | ETX | ALT left Break | F0h 11h |
| 04 | EOT | CTRL left Make | 14h |
| 05 | ENQ | CTRL left Break | F0h 14h |
| 06 | ACK | CTRL right Make | E0h 14h |
| 07 | BEL | CTRL right Break | E0h F0h 14h |
| 08 | BS | BS | 66h |
| 09 | HT | TAB right | 0Dh |
| 0A | LF | RIGHT arrow (inner keypad) | 74h + E0 |
| 0B | VT | TAB left | 0Dh + S |
| 0C | FF | Enter (right keypad) | 5Ah + E0 |
| 0D | CR | CR | 5Ah |
| 0E | SO | INSERT (inner keypad) | 70h + E0 |
| 0F | SI | PAGE UP (inner keypad) | 7Dh + E0 |
| 10 | DLE | PAGE DOWN (inner keypad) | 7Ah + E0 |
| 11 | DC1 | HOME (inner keypad) | 6Ch + E0 |
| 12 | DC2 | LEFT arrow (inner keypad) | 6Bh + E0 |
| 13 | DC3 | DOWN arrow (inner keypad) | 72h + E0 |
| 14 | DC4 | UP arrow (inner keypad) | 75h + E0 |
| 15 | NAK | F6 | 0Bh |
| 16 | SYN | F1 | 05h |
| 17 | ETB | F2 | 06h |
| 18 | CAN | F3 | 04h |

| | | | |
|---|---|---|---|
| 19 | EM | F4 | 0Ch |
| 1A | SUB | F5 | 03h |
| 1B | ESC | ESC | 76h |
| 1C | FS | F7 | 83h |
| 1D | GS | F8 | 0Ah |
| 1E | RS | F9 | 01h |
| 1F | US | F10 | 09h |

**Table E-5. Scanset 3, 102-Key Function Key Map**

| ASCII (hex) | ASCII code | Key | Scancode |
|---|---|---|---|
| 00 | NUL | ALT right Make | 39h |
| 01 | SOH | ALT right Break | F0h 39h |
| 02 | STX | ALT left Make | 19h |
| 03 | ETX | ALT left Break | F0h 19h |
| 04 | EOT | CTRL left Make | 11h |
| 05 | ENQ | CTRL left Break | F0h 11h |
| 06 | ACK | CTRL right Make | 58h |
| 07 | BEL | CTRL right Break | F0h 58h |
| 08 | BS | BS | 66h |
| 09 | HT | TAB right | 0Dh |
| 0A | LF | RIGHT arrow (inner keypad) | 6Ah |
| 0B | VT | TAB left | 0Dh + S |
| 0C | FF | Enter (inner keypad) | 79h |
| 0D | CR | CR | 5Ah |
| 0E | SO | INSERT (inner keypad) | 67h |
| 0F | SI | PAGE UP (inner keypad) | 6Fh |
| 10 | DLE | PAGE DOWN (inner keypad) | 6Dh |
| 11 | DC1 | HOME (inner keypad) | 6Eh |
| 12 | DC2 | LEFT arrow (inner keypad) | 61h |
| 13 | DC3 | DOWN arrow (inner keypad) | 60h |
| 14 | DC4 | UP arrow (inner keypad) | 63h |
| 15 | NAK | F6 | 2Fh |
| 16 | SYN | F1 | 07h |
| 17 | ETB | F2 | 0Fh |
| 18 | CAN | F3 | 17h |
| 19 | EM | F4 | 1Fh |
| 1A | SUB | F5 | 27h |
| 1B | ESC | ESC | 08h |
| 1C | FS | F7 | 37h |
| 1D | GS | F8 | 3Fh |
| 1E | RS | F9 | 47h |
| 1F | US | F10 | 4Fh |

### Table E-6. Scanset 3 122-Key Function Key Map

| ASCII (hex) | ASCII code | Key | Scancode |
|---|---|---|---|
| 00 | NUL | ALT Right Make | 39h |
| 01 | SOH | ALT Right Break | F0h 39h |
| 02 | STX | ALT left Make | 19h |
| 03 | ETX | ALT left Break | F0h 19h |
| 04 | EOT | CTRL left (RESET) Make only | 11h |
| 05 | ENQ | CTRL left (RESET) Make/Break | 11h F0h 11h |
| 06 | ACK | ONLINE Enter Make only | 58h |
| 07 | BEL | ONLINE Enter Make/Break | 58h F0h 58h |
| 08 | BS | BS | 66h |
| 09 | HT | TAB right | 0Dh |
| 0A | LF | RIGHT arrow (inner keypad) | 6Ah |
| 0B | VT | TAB left | 0Dh + S |
| 0C | FF | CR (FIELD EXIT) Make only | 5Ah F0h 5Ah |
| 0D | CR | CR (FIELD EXIT) Make/Break | 5Ah |
| 0E | SO | INSERT (inner keypad) | 65h |
| 0F | SI | FIELD + | 79h |
| 10 | DLE | FIELD - | 7Ch |
| 11 | DC1 | HOME (inner keypad) | 62h |
| 12 | DC2 | LEFT arrow (inner keypad) | 61h |
| 13 | DC3 | DOWN arrow (inner keypad) | 60h |
| 14 | DC4 | UP arrow (inner keypad) | 63h |
| 15 | NAK | F6 | 2Fh |
| 16 | SYN | F1 | 07h |
| 17 | ETB | F2 | 0Fh |
| 18 | CAN | F3 | 17h |
| 19 | EM | F4 | 1Fh |
| 1A | SUB | F5 | 27h |
| 1B | ESC | ESC | 08h |
| 1C | FS | F7 | 37h |
| 1D | GS | F8 | 3Fh |
| 1E | RS | F9 | 47h |
| 1F | US | F10 | 4Fh |

## Table E-7. Japanese DOS Function Key Map

| ASCII value | ASCII code | Key | Scancode |
|---|---|---|---|
| 00h | NUL | ALT right Make | 31h |
| 01h | SOH | ALT right Break | B1h |
| 02h | STX | ALT left Make | 31h |
| 03h | ETX | ALT left Break | B1h |
| 04h | EOT | CTRL left Make | 41h |
| 05h | ENQ | CTRL left Break | C1h |
| 06h | ACK | CTRL right Make | 41h |
| 07h | BEL | CTRL right Break | C1h |
| 08h | BS | BS | 3Eh |
| 09h | HT | TAB right | 3Ch |
| 0Ah | LF | RIGHT arrow (inner keypad) | 4Dh |
| 0Bh | VT | TAB left | 3Ch + S |
| 0Ch | FF | Enter (right keypad) | 60h |
| 0Dh | CR | CR | 3Bh |
| 0Eh | SO | INSERT (inner keypad) | 52h |
| 0Fh | SI | PAGE UP (inner keypad) | 49h |
| 10h | DLE | PAGE DOWN (inner keypad) | 51h |
| 11h | DC1 | HOME (inner keypad) | 4Ch |
| 12h | DC2 | LEFT arrow (inner keypad) | 4Bh |
| 13h | DC3 | DOWN arrow (inner keypad) | 4Ah |
| 14h | DC4 | UP arrow (inner keypad) | 4Eh |
| 15h | NAK | F6 | 6Dh |
| 16h | SYN | F1 | 68h |
| 17h | ETB | F2 | 69h |
| 18h | CAN | F3 | 6Ah |
| 19h | EM | F4 | 6Bh |
| 1Ah | SUB | F5 | 6Ch |
| 1Bh | ESC | ESC | 3Dh |
| 1Ch | FS | F7 | 6Eh |
| 1Dh | GS | F8 | 6Fh |
| 1Eh | RS | F9 | 70h |
| 1Fh | US | F10 | 71h |

### Table E-8. NEC 9801-Key Function Key Map

| ASCII value | ASCII code | Key | Scancode |
|---|---|---|---|
| 00h | NUL | unused | n/a |
| 01h | SOH | CR | 1Ch |
| 02h | STX | CAPS LOCK ON (make) | 71h |
| 03h | ETX | CAPS LOCK OFF (break) | F1h |
| 04h | EOT | CTRL left Make | 74h |
| 05h | ENQ | CTRL left Break | F4h |
| 06h | ACK | CTRL-C | 60h |
| 07h | BEL | n/a | n/a |
| 08h | BS | BS | 0Eh |
| 09h | HT | TAB right | 0Fh |
| 0Ah | LF | RIGHT arrow (inner keypad) | 3Ch |
| 0Bh | VT | TAB left | 0Fh + S |
| 0Ch | FF | DELETE | 39h |
| 0Dh | CR | CR | 1Ch |
| 0Eh | SO | INSERT (inner keypad) | 38h |
| 0Fh | SI | KATAKANA LOCK ON (Make) | 72h |
| 10h | DLE | KATAKANA LOCK OFF (Break) | F2h |
| 11h | DC1 | HOME (inner keypad) | 3Eh |
| 12h | DC2 | LEFT arrow (inner keypad) | 3Bh |
| 13h | DC3 | DOWN arrow (inner keypad) | 3Dh |
| 14h | DC4 | UP arrow (inner keypad) | 3Ah |
| 15h | NAK | F6 | 67h |
| 16h | SYN | F1 | 62h |
| 17h | ETB | F2 | 63h |
| 18h | CAN | F3 | 64h |
| 19h | EM | F4 | 65h |
| 1Ah | SUB | F5 | 66h |
| 1Bh | ESC | ESC | 00h |
| 1Ch | FS | F7 | 68h |
| 1Dh | GS | F8 | 69h |
| 1Eh | RS | F9 | 6Ah |
| 1Fh | US | F10 | 6Bh |

# NOTES

# Chapter F
# Host Commands

## Accepting RS-232 Commands

The scanner responds to the following RS-232 commands:

| COMMAND | ASCII | HEX | COMMENT |
|---|---|---|---|
| Enable Scanner | E | 0x45 | |
| Disable Scanner | D | 0x44 | |
| Reset Scanner | R | 0x52 | |
| Not On File Indication | F | 0x46 | Long series of beeps |
| Beep Good Read Tone | B | 0x42 | Beeps if Good Read Beep is enabled |
| Force Good Read Tone | ! | 0x01 | Beeps regardless of beep setting |
| Bel | ‘ | 0x07 | Force Good Read Tone |
| Identification request | i | 0x69 | Returns long response[a] |
| Health request | h | 0x68 | Returns long response[a] |
| Status request | s | 0x73 | Returns long response[a] |

a. Call Tech Support for information.

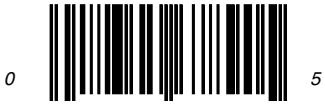
If one of the above commands is received, the scanner will perform the steps indicated for the command. Host commands for other interfaces are also available. Contact Tech Support for more details.

# NOTES

# Chapter G
# Sample Symbols

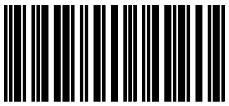
## 1D Symbol Samples

UPC-A



0 1234567890

Interleaved 2 of 5

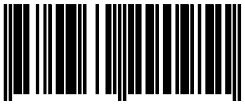


1234567890

Code 128

Code 128

EAN-13



9 780330 290951

Code 39

BC321

Codabar

A13579B

Code 93

123456-9$

Code 2 of 5

*123456*

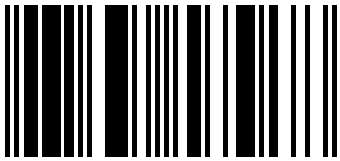
GS1 DataBar Omnidirectional

*(01)00123456789012*

GS1 DataBar Expanded

0100123456789050

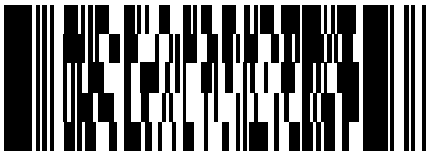
GS1 DataBar Limited



(01)16543210987654

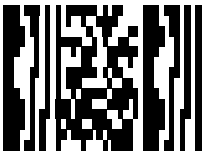
# 2D Sample Symbols

PDF 417



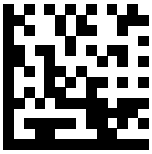
A12B3C

Micro PDF 417



BV17453

Datamatrix



1314H17LL

QR Code

35900G9

Maxicode

111TUVCCIUL7-1

Aztec

This is an Aztec Code

# Composite Sample Symbols

GS1 DataBar Limited Composite

(17) 050923 (10) ABC123

(01) 0 4012345 67890 1

GS1 DataBar Truncated Composite

(17)050923(10)ABC123

(01)09876543217899

# ASCII Chart

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

**Australia**
Datalogic Scanning Pty Ltd
Telephone: [61] (2) 9870 3200
australia.scanning@datalogic.com

**France and Benelux**
Datalogic Scanning SAS
Telephone: [33].01.64.86.71.00
france.scanning@datalogic.com

**Germany**
Datalogic Scanning GmbH
Telephone: 49 (0) 61 51/93 58-0
germany.scanning@datalogic.com

**India**
Datalogic Scanning India
Telephone: 91- 22 - 64504739
india.scanning@datalogic.com

**Italy**
Datalogic Scanning SpA
Telephone: [39] (0) 39/62903.1
italy.scanning@datalogic.com

**Japan**
Datalogic Scanning KK
Telephone: 81 (0)3 3491 6761
japan.scanning@datalogic.com

**Latin America**
Datalogic Scanning, Inc
Telephone: (305) 591-3222
latinamerica.scanning@datalogic.com

**Singapore**
Datalogic Scanning Singapore PTE LTD
Telephone: (65) 6435-1311
singapore.scanning@datalogic.com

**Iberia**
Datalogic Scanning SAS Sucursal en España
Telephone: 34 91 746 28 60
spain.scanning@datalogic.com

**United Kingdom**
Datalogic Scanning LTD
Telephone: 44 (0) 1582 464900
uk.scanning@datalogic.com

**www.scanning.datalogic.com**

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

 R44-3035 (Rev. X3) 10/09