◆DATALOGIC™

Magellan™ 1000i

On-Counter Presentation Omnidirectional Bar Code Reader

Product Reference Guide

<div align="center">**Disclaimer**</div>

Table of Contents

Chapter 1

Getting Started

The Magellan® 1000i 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
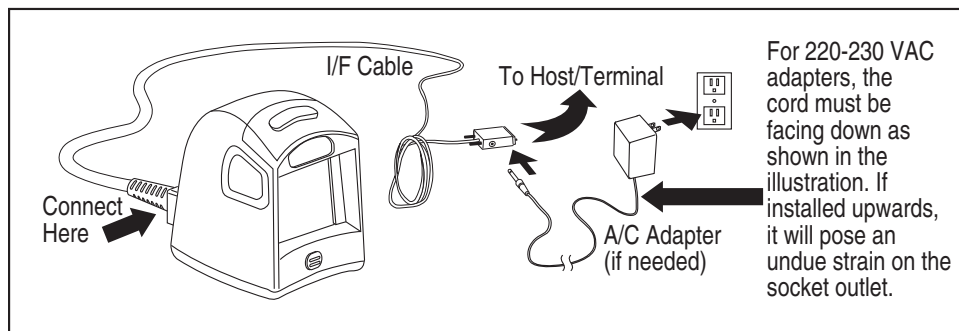
USB Connection — Connect the scanner to a USB port on the terminal/PC using the correct USB cable for the interface type you ordered. Reference Figure 1 and Figure 2.

> **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
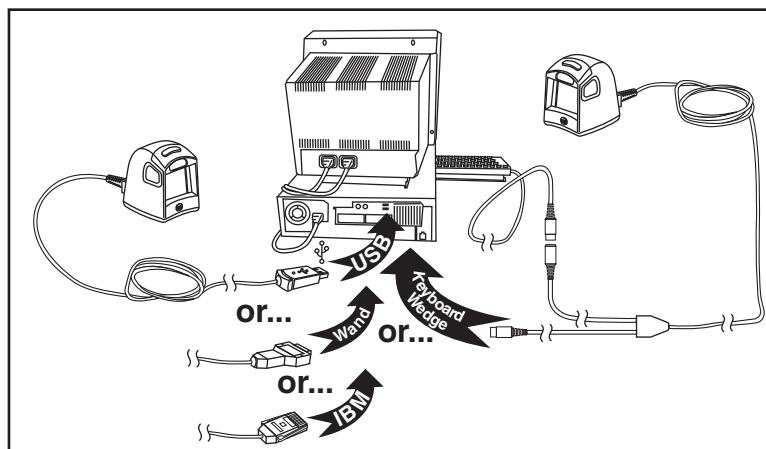
Wand Emulation Connection — Connect the scanner to the appropriated port on the terminal/PC using the correct cable for the interface type you ordered. Reference Figure 2.

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 ooperation.
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.

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 (see the Product Reference Guide for more information about scanner programming)	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	
2	Interface PCB	
6	Main PCB	
10	Button Error	Contact Helpdesk for assistance
12	Imager Module	
13	Software ID Failure	
14	CPLD/Code Mismatch	

1. Field Replaceable Unit (FRU)

NOTES
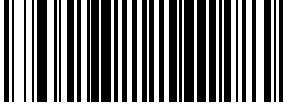
Chapter 2
General Features

Double Read Timeout

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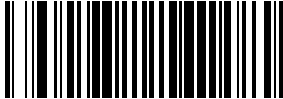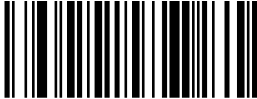
‖‖‖‖‖‖‖‖‖‖‖	START / END

PROGRAMMING BARCODES	
0.1 Second	‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖	0.2 Second
0.3 Second	‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖	**0.4 Second** **DEFAULT**
0.5 Second	‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖	0.6 Second

Double Read Timeout — cont.

START / END

PROGRAMMING BARCODES

0.7 Second

0.8 Second

0.9 Second

1 Second

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 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 Label Gone Timeout
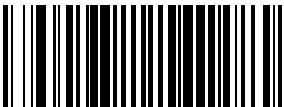
Productivity Index Reporting (PIR)

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.**
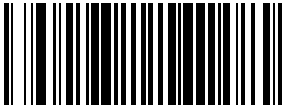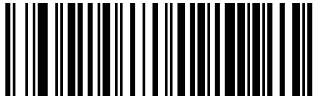
‖‖‖‖‖‖‖‖‖‖‖‖‖	START / END

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	
15 Seconds	‖‖‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖‖‖	30 Seconds
1 Minute	‖‖‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖‖‖	2 Minutes
3 Minutes	‖‖‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖‖‖	4 Minutes
5 Minutes	‖‖‖‖‖‖‖‖‖‖‖‖‖
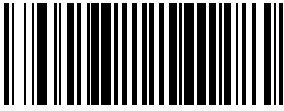
Sleep Mode — cont.

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

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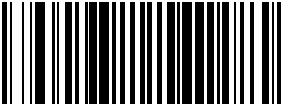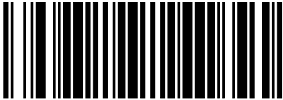
This feature specifies when the scanner will provide indication (beep and/or flash its green LED) upon successfully reading a barcode. Choices are:

- Good Read = Indicate after decode

- Good Read = Indicate after transmit

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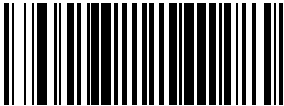
NOTE **This option (Indicate after CTS goes inactive, then active), which uses CTS, is only valid for RS-232 interfaces.**

	START / END

PROGRAMMING BARCODES

After Decode **DEFAULT**	
	After Transmit
After CTS goes inactive, then active	
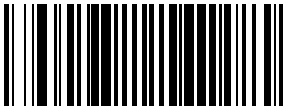
Good Read Beep Control

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

	START / END
PROGRAMMING BARCODES	
Disable	
	Enable **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 **DEFAULT**
High	
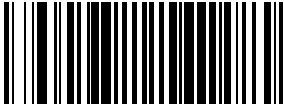
Good Read Beep Length

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**	

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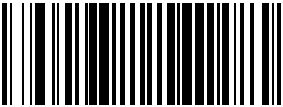
The scanner will return to full pattern Omni-directional Mode after Target Mode Active Time **has elapsed.**

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
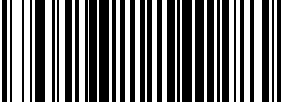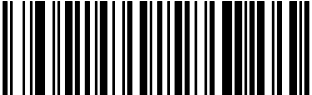
Target Mode Linger Time

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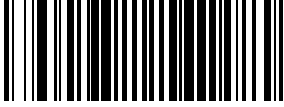
START / END	‖‖‖‖‖‖‖‖‖‖‖‖‖

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%** **DEFAULT**
11%	‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖	12%

Wake Up Intensity — cont.

START / END

PROGRAMMING BARCODES

13%

14%

15%

Chapter 3

Interface Related Features

At the time of this writing, the Scanner 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

a. Consult Table for more information regarding keyboard interface types.

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

NOTE

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
K	WYSE 30/30+ WY-30 Keyboard 83 Keys
L	WYSE 60/85/99 GT/150/160/285 Style IBM Enhanced PC, 520/520ES Style IBM Enhanced PC FR WYSE 55/65/65 ES/120/185/325 Style IBM Enhanced PC
M	WYSE 60/85/99 GT/150/160/285 ANSI Keyboard 105 Keys, 520/520 ES ANSI Keyboard 105 Keys WYSE 55/65/65 ES/120/185/325 ANSI Keyboard 105 Keys
N	WYSE 60/85/99 GT/150/160/285 ASCII Kbd, 520/520 ES ASCII Kbd WYSE 55/65/65 ES/120/185/325 ASCII Keyboard
O	WYSE 60/85/99 GT/150/160/285 ANSI W285 Keyboard 105 Keys, 520/520 ES ANSI W285 Keyboard 105 Keys WYSE 55/65/65 ES/120/185/325 ANSI W285 Keyboard 105 Keys
P	WYSE WINTERM 3320 SE
Q	IBM 3153 IBM 316X, 3179/3180/319X/3270
R	IBM 3151/3152-010, 347X/348X
S	DIGITAL VT 220/320/330/340/350/382
T	DIGITAL VT420
U	DIGITAL VT 510/520 IBM ANSI Style Keyboard
V	DIGITAL VT 510/520 IBM PC Style Keyboard
W	SUN SPARC 5/10
X	SUN 420/440, ITX
Y	WYSE 370/355 Style Enhanced IBM PC

NOTE

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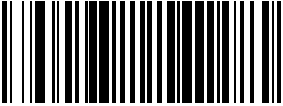
Interface Selection

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

Wand Emulation

USB COM
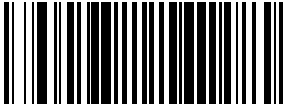
Interface Selection — cont.

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 Selection — cont.

	START / END

PROGRAMMING BARCODES

Keyboard Wedge K	
	Keyboard Wedge L
Keyboard Wedge M	
	Keyboard Wedge N
Keyboard Wedge O	
	Keyboard Wedge P
Keyboard Wedge Q	
	Keyboard Wedge R
Keyboard Wedge S	
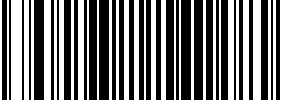
Interface Selection — cont.

START / END

PROGRAMMING BARCODES

Keyboard Wedge T

Keyboard Wedge U

Keyboard Wedge V

Keyboard Wedge W

Keyboard Wedge X

Keyboard Wedge Y

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.
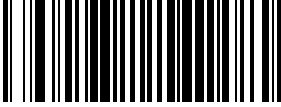
START / END

PROGRAMMING BARCODES

**Obey Host Commands
DEFAULT**

Ignore Host Commands

Interface Features — cont.
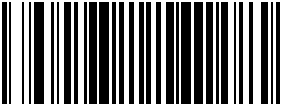
Host Transmission Buffers

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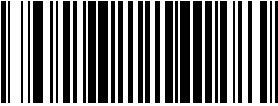
When a DISABLE SCANNER command is received from the host, the scanner will continue to transmit all data that is buffered.

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
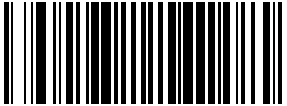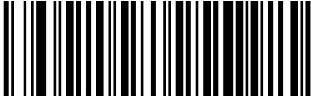
RS-232 Interface Features — cont.

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
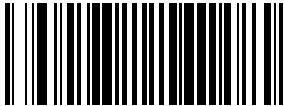
RS-232 Interface Features — cont.

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.
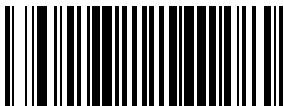
START / END	‖‖‖‖‖‖‖‖‖‖‖

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
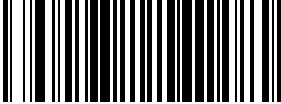
Disables/Enables software control using XON/XOFF characters.

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
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.
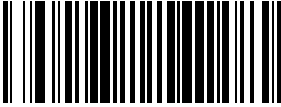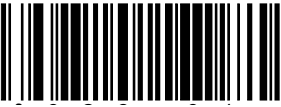
START / END

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
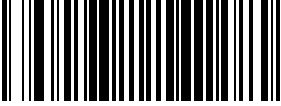
Signal Voltage: Normal/TTL

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
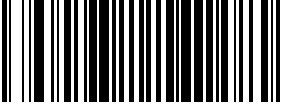
RS-232 Invert

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

START / END	‖‖‖‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖‖‖‖	**Disable RS-232 Invert** **DEFAULT**
Enable RS-232 Invert	‖‖‖‖‖‖‖‖‖‖‖‖
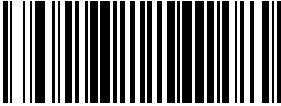
Beep on ASCII BEL

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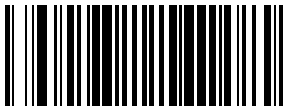
Select for the host to beep (or not) when a not-on-file (host command) condition is detected by the host.

START / END	

PROGRAMMING BARCODES

	Disable Beep on Not On File
Enable Beep on Not On File DEFAULT	

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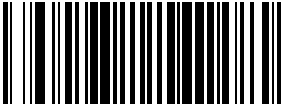
This enables/disables the ability of the scanner to support the RS-232 ACK/NAK protocol. When configured, the scanner and/or host sends an "ACK" when it receives data properly, and sends "NAK" when the data is in error. Selections for this option are:

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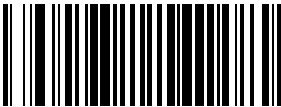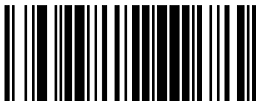
START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖	**Disable ACK NAK** **DEFAULT**
Enable ACK NAK for Transmission	‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖	Enable ACK NAK for host command acknowledge
Enable ACK NAK for transmission and host command	‖‖‖‖‖‖‖‖‖‖‖

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
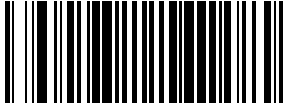
NAK Character

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
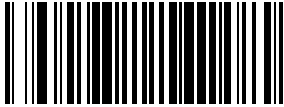
RS-232 Interface Features — cont.

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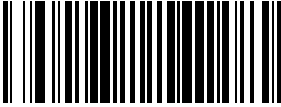
02 = Process error as valid NAK character (risk of duplicate label data)

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	||||||||
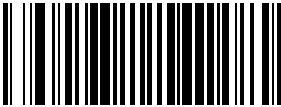
USB-OEM Interface Features

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:
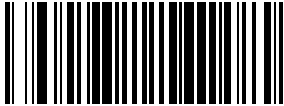
- Table Top Scanner
- Handheld Scanner

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** **DEFAULT**
Enable Convert to Code 39	▐▌▐▌▐▌▌▐▌▐▌▌▐▌▐▌▐▌▌

Wand Emulation

Supported Symbologies

The Wand Emulation interface will transmit barcode data as a wand device would. This interface will transmit the following barcode symbologies:

- UPC/EAN
- UPC/EAN with addons
- Code 39
- Full ASCII Code 39
- Interleaved 2 of 5
- Codabar
- Code 128

Pharmacode 39 is transmitted as Code 39. All other barcode symbology types read by the scanner will be transmitted as Code 128.

Wand Emulation Barcode Format

The following format settings are required for the wand emulation interface. These settings have been pre-configured at the factory for Wand Emulation scanners.
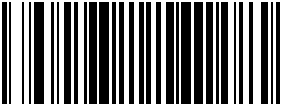
- UPC-A barcodes must include all 12 digits.
- UPC-E barcodes must contain 8 digits, including a system digit, 6 data digits, and the check digit.
- EAN-13 barcodes must have all 13 digits.
- EAN-8 barcodes must include all 8 digits.
- Code 39, Code 39 Full ASCII, and Pharmacode 39 barcodes must NOT contain start / stop characters.
- Codabar barcodes must include the start / stop characters, presented in the ABCD format.
- Interleaved 2 of 5 barcodes must have an even number of digits.

Wand Emulation — cont.

Bar/Space Polarity

Low/High — Black will be transmitted as a low voltage level (0 to +0.7V) and space as high level (+2.4 to +5.25V).

High/Low — Black will be transmitted as a high voltage level (+2.4 to +5.25V) and space as low level (0 to +0.7V).
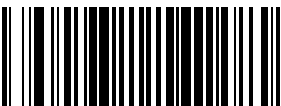
START / END	‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖	Bar/Space = Low/High
Bar/Space = High/Low **DEFAULT**	‖‖‖‖‖‖‖‖‖‖

Wand Idle State

This feature specifies the level of the wand output signal when idle. TTL logic levels:

High voltage level (+2.4 to +5.25V)

Low voltage level (0 to +0.7V).

START / END	‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖	**Wand Idle State = Low** **DEFAULT**
Wand Idle State = High	‖‖‖‖‖‖‖‖‖‖
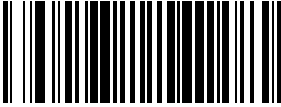
Wand Emulation — cont.

Signal Speed

The speed of the transmission can be set. This selects the width of the minimum narrow bar.
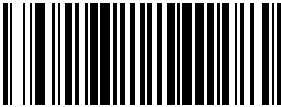
330 microseconds

660 microseconds

START / END	‖‖‖ ‖‖ ‖‖‖ ‖‖ ‖‖‖

PROGRAMMING BARCODES	
‖‖‖ ‖‖ ‖‖ ‖‖ ‖‖‖	Signal Speed = 330mS
Signal Speed = 660mS **DEFAULT**	‖‖ ‖‖‖ ‖‖ ‖‖‖ ‖‖‖

Transmit Trailing Noise
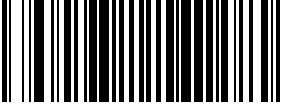
The transmission of noise pulses after the label may be enabled or disabled.

START / END	‖‖‖ ‖‖ ‖‖‖ ‖‖ ‖‖‖

PROGRAMMING BARCODES	
‖‖‖ ‖‖ ‖‖ ‖‖ ‖‖‖	Disable Trailing Noise
Enable Trailing Noise **DEFAULT**	‖‖ ‖‖‖ ‖‖ ‖‖‖ ‖‖‖

Wand Emulation — cont.

Transmit Leading Noise

The transmission of noise pulses before the barcode may be enabled or disabled.

START / END	
PROGRAMMING BARCODES	
	Disable Leading Noise
Enable Leading Noise **DEFAULT**	
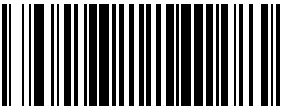
Symbology Conversion

Wand Emulation can convert all barcodes to a single symbology. Choices are:

No Conversion

Convert to Code 39

Convert to Code 128

START / END	
PROGRAMMING BARCODES	
	No Symbology Conversion **DEFAULT**
Convert to C39	
	Convert to C128

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.
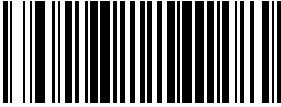
START / END	(barcode)

PROGRAMMING BARCODES

(barcode)	Italy
Norway	(barcode)
(barcode)	Portugal
Spain	(barcode)
(barcode)	Sweden
Switzerland	(barcode)
(barcode)	Japan 106 Key
Hungary	(barcode)
(barcode)	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.
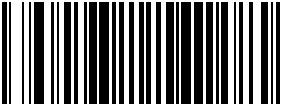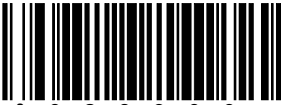
Power-On Simulation

NOTE

This feature does not apply to the USB Keyboard interface.
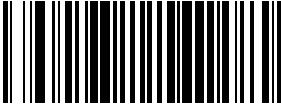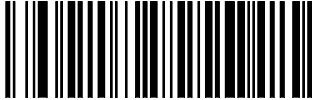
All PCs check the keyboard status during the power-on Selftest. It is recommended that you enable this function if you are working without a keyboard installation. It simulates keyboard timing and passes the keyboard status to the PC during power-on.

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.
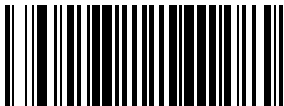
Wedge Quiet Interval

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 000 (no interval) to 255 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

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

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 000 to 255 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:

000 (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 reader 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."

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 or Wand Emulation 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

Label ID Transmission: Enable this option to transmit the Label ID you configure for the scanned symbology.

OR...

| Prefix | Label ID | AIM ID | Bar Code Data | Label ID | Suffix |

AIM ID: This function is used to identify and display the common label identifier for its symbology. When enabled, this ID code will be transmitted before the scanned bar code data.

00 - 20 Characters (ASCII)
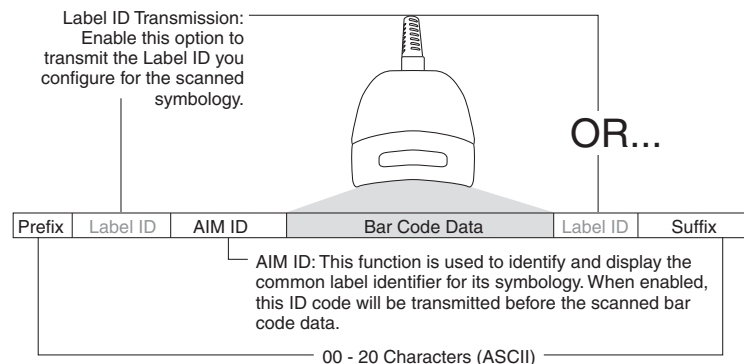
Please Keep In Mind...

- 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
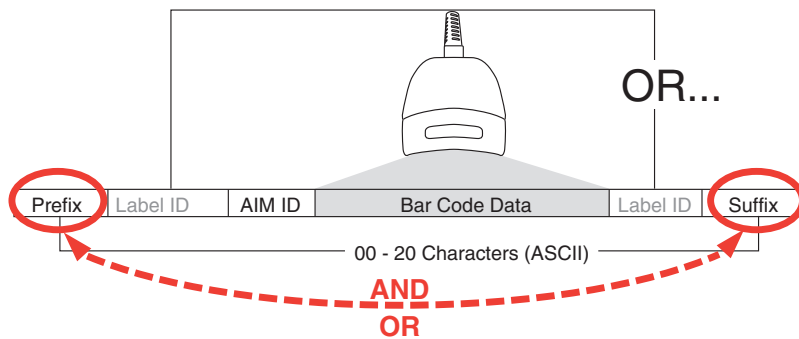
Example: Setting a Prefix

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 to exit Programming Mode.

> **If less than the expected string of 20 characters are selected, scan the END barcode twice to accept the selections and exit Programming Mode.**
>
> **NOTE**
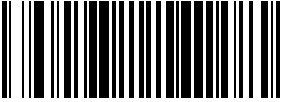
6. The resulting message string would appear as follows:

    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).

DEFAULT SETTING PREFIX: 00 (None)
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:
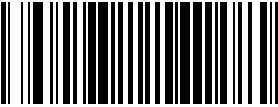
- A close brace character (ASCII ']'), followed by...

- 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

| Prefix | Label ID | AIM ID | Bar Code Data | Label ID | Suffix |
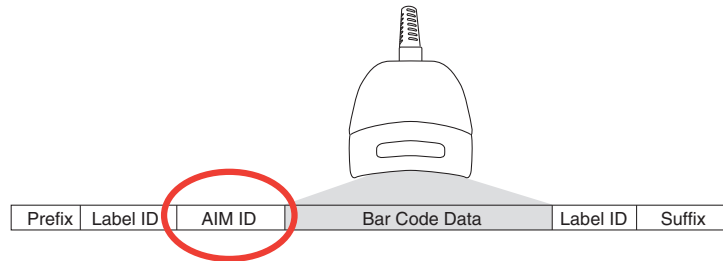
START / END	|||| ‖‖‖
PROGRAMMING BARCODES	
‖‖‖	**Disable AIM ID** **DEFAULT**
Enable AIM ID	‖‖‖

Label ID

A Label ID is a customizable code of up to two ASCII characters (00-FF), 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.

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 either one or two) 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 the example given, the characters '3' and 'D' would be scanned.

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	‖‖‖‖‖‖‖‖‖‖‖

‖‖‖‖‖‖‖‖‖‖‖ **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

‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: G8 (4738 hex)**	Set GTIN w/C128 addon Label ID Character(s)
Set GS1 Omnidirectional Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: R4 (5234 hex)**
‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: RX (5258 hex)**	Set GS1 Expanded Label ID Character(s)
Set Code GS1 DataBar Limited Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: * (524C0000 hex)**
‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: * (2A hex)**	Set Code 39 Label ID Character(s)
Set Pharmacode 39 Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: A (41 hex)**
‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: # (23 hex)**	Set Code 128 Label ID Character(s)
Set I 2 of 5 Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: i (69 hex)**

Label ID — cont.

START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: % (25 hex)**	Set Codabar Label ID Character(s)
Set Code 93 Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: & (26 hex)**
‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: @ (40 hex)**	Set Code 11 Label ID Character(s)
Set MSI/Plessey Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: @ (40 hex)**
‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: s (73 hex)**	Set Std 2 of 5 Label ID Character(s)
Set EAN UCC Composite Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 0**
‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: P (0x5000)[a]**	Set PDF 417 Label ID Character(s)
Set Datamatrix Label ID Character(s)	‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: Dm (0x446D)**

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'.

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.

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

NOTE

START / END	‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖	**Disable** **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**.
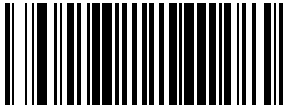
To set Character Conversion:

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.

4. Turn to Appendix C, Alpha-Numeric Pad and scan the barcodes representing the hex characters determined in the previous step.

5. Scan the START/END barcode to exit Programming Mode.

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

NOTE

START / END

PROGRAMMING BARCODES

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

Character Conversion

Chapter 5

Symbologies

The scanner supports the following symbologies (barcode types). Options for each symbology are included in this chapter.
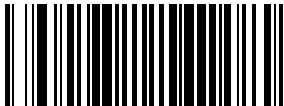
- UPC-A
- UPC-E
- EAN-13
- EAN-8
- GS1 DataBar Omnidirectional / Stacked Omnidirectional
- GS1 DataBar Expanded / Expanded Stacked
- GS1 DataBar Limited
- Code 39

- Pharmacode 39
- 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
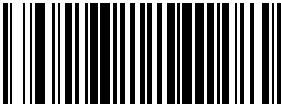
Check Digit Transmission

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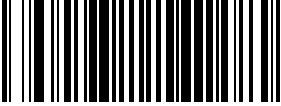
Expands UPC-A data to the EAN-13 data format. Selecting this feature also changes the symbology ID to match those required for EAN-13.

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

UPC-A — continued
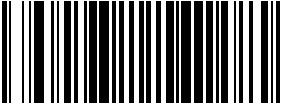
Number System Transmission

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.
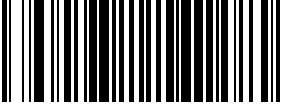
Disable/Enable UPC-E

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

START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖	Disable UPC-E
Enable UPC-E **DEFAULT**	‖‖‖‖‖‖‖‖‖‖‖

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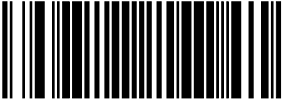
Enable this option to transmit the check digit along with UPC-E barcode data.

START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖	Don't Send Check Digit
Send Check Digit **DEFAULT**	‖‖‖‖‖‖‖‖‖‖‖

UPC-E — continued
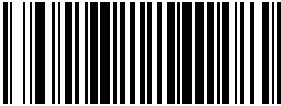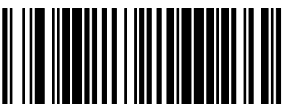
Number System Digit

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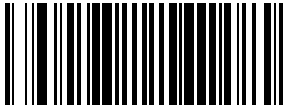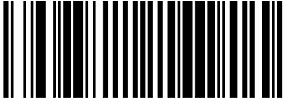
Enables/disables expansion of UPC-E labels to UPC-A. Selecting this feature also changes the symbology ID to match those required for UPC-A.

START / END	

PROGRAMMING BARCODES

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

UPC-E — continued
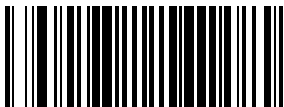
Expand UPC-E to EAN13

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.

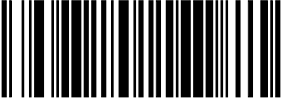|	
START / END	|||||||||||
PROGRAMMING BARCODES	
|||||||||||	**Don't Expand UPC-E to EAN-13** **DEFAULT**
Expand UPC-E to EAN-13	|||||||||||

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.

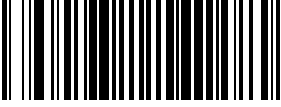|	
START / END	|||||||||||
PROGRAMMING BARCODES	
|||||||||||	Minimum = 1 Read
Minimum = 2 Reads **DEFAULT**	|||||||||||
|||||||||||	Minimum = 3 Reads
Minimum = 4 Reads	|||||||||||

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.
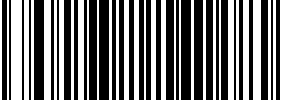
START / END	

PROGRAMMING BARCODES	
	Don't Expand to GTIN DEFAULT
Expand to GTIN	

EAN-13

The following options apply to the EAN-13 symbology.
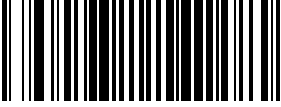
Disable/Enable EAN-13

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.
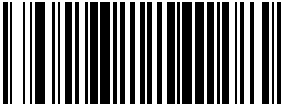
START / END	‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖	Don't Transmit EAN-13 Flag 1 Char
Transmit EAN-13 Flag 1 Char **DEFAULT**	‖‖‖‖‖‖‖‖‖

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:
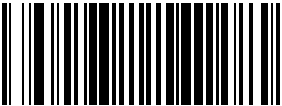
Barcode data:	"9789572222720"
Output:	"9572222724"

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.
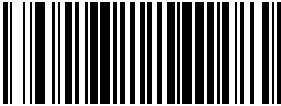
Disable/Enable EAN-8

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

START / END	‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖	Disable EAN-8
Enable EAN-8 **DEFAULT**	‖‖‖‖‖‖‖‖‖
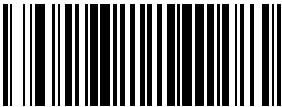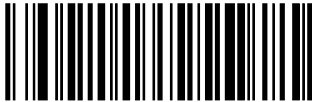
Check Digit Transmission

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 **DEFAULT**	‖‖‖‖‖‖‖‖‖
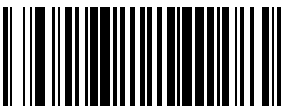
EAN-8 — continued

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	
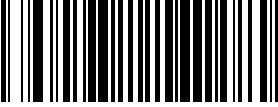
Minimum Reads

This feature specifies the minimum number of consecutive times an EAN-8 label must be decoded before it is accepted as good read.
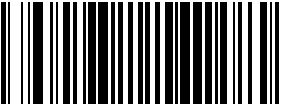
START / END	
PROGRAMMING BARCODES	
	Minimum = 1 Read **DEFAULT**
Minimum = 2 Reads	
	Minimum = 3 Reads
Minimum = 4 Reads	

Enable 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

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
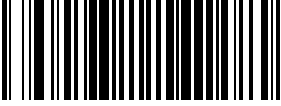
START / END	‖‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖‖	**Disable Optional 2-Digit Add-ons** **DEFAULT**
Enable Optional 2-Digit Add-ons	‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖	**Disable Optional 5-Digit Add-ons** **DEFAULT**
Enable Optional 5-Digit Add-ons	‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖	**Disable Optional Code 128 Add-ons** **DEFAULT**
Enable Optional Code 128 Add-ons	‖‖‖‖‖‖‖‖‖‖

GS1 DataBar Omnidirectional / Stacked Omnidirectional

The following options apply to the GS1 DataBar Omnidirectional symbology.
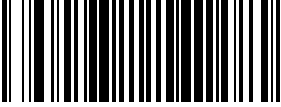
Disable/Enable GS1 DataBar Omnidirectional

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

START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖	**Disable GS1 DataBar Omnidirectional** **DEFAULT**
Enable GS1 DataBar Omnidirectional	‖‖‖‖‖‖‖‖‖‖‖

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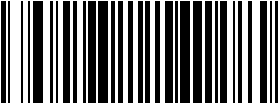
When enabled, GS1 DataBar Omnidirectional barcodes will be translated to the UCC/EAN 128 label data format.

START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖	**Disable UCC/EAN 128 Emulation** **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.
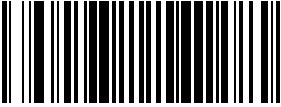
Disable/Enable GS1 DataBar Expanded

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 '000' 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 three digits (zero padded) representing the length in decimal notation.

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

4. Scan the START/END barcode.

START / END	‖‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 008**	Set Length 1
Set Length 2	‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 014**

GS1 DataBar Expanded / Expanded Stacked — continued

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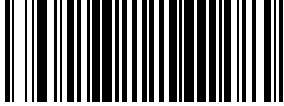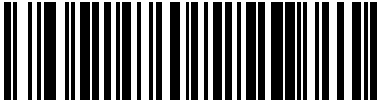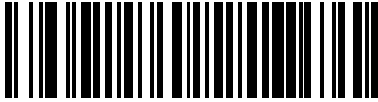
This feature specifies the minimum number of consecutive times an GS1 DataBar Expanded label must be decoded before it is accepted as good read.

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.
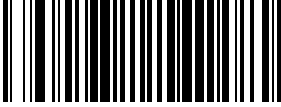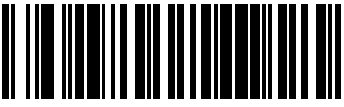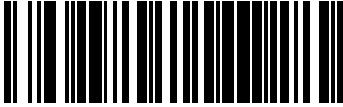
START / END

PROGRAMMING BARCODES

Disable coupon filtering

Enable UPCA coupon decoding
Disable GS1 DataBar coupon decoding
DEFAULT

Enable GS1 DataBar coupon decoding
Disable UPCA coupon decoding

GS1 DataBar Limited

The following options apply to the GS1 DataBar Limited symbology.
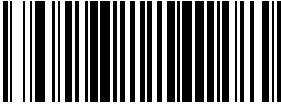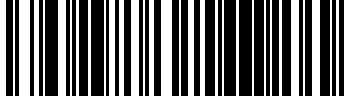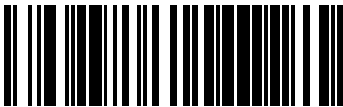
Disable/Enable GS1 DataBar Limited

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

START / END	

PROGRAMMING BARCODES

	Disable GS1 DataBar Limited **DEFAULT**
Enable GS1 DataBar Limited	

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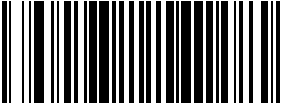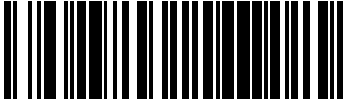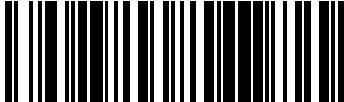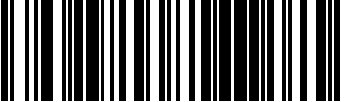
When enabled, GS1 DataBar Limited barcodes will be translated to the GS1-128 label data format.

START / END	

PROGRAMMING BARCODES

	Disable GS1-128 Emulation **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.

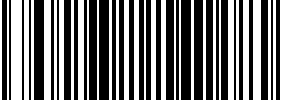| START / END | |||

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.
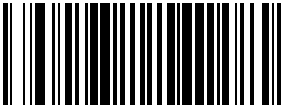
Disable/Enable Code 39

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** **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 '000' 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.

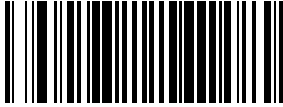| START / END	||||||||||||||||||||||||||
PROGRAMMING BARCODES	
||||||||||||||||||||||||||	**Variable Length Decoding** **DEFAULT**
Fixed Length Decoding	||||||||||||||||||||||||||

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 three digits (zero padded) representing the length in decimal notation.

> **For Code 39 barcodes, all check, data and full ASCII shift characters are included in the length calculations. Start/Stop characters are not included.**
>
> **NOTE**
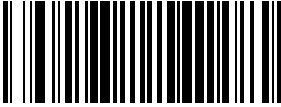
4. Scan the START/END barcode.

START / END	‖‖‖‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖‖‖‖	Set Length 1
DEFAULT SETTING FOR THIS FEATURE: 003	

Set Length 2	‖‖‖‖‖‖‖‖‖‖‖‖
	DEFAULT SETTING FOR THIS FEATURE: 050
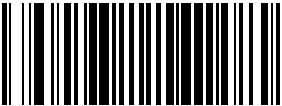
Quiet Zones

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
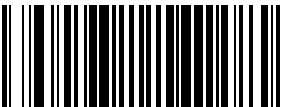
Code 39 Stitching

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	‖‖‖‖‖‖‖‖

Pharmacode 39

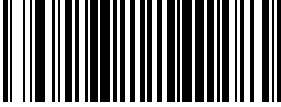The following options apply to the Pharmacode 39 symbology.
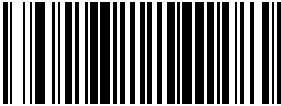
Disable/Enable Pharmacode 39

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

START / END	

PROGRAMMING BARCODES	
	Disable Pharmacode 39 **DEFAULT**
Enable Pharmacode 39	
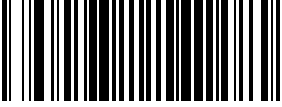
Start/Stop Characters

Enables or disables transmission of Pharmacode 39 start/stop characters.

START / END	

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

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.
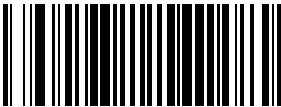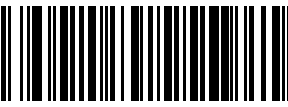
Disable/Enable Code 128

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.

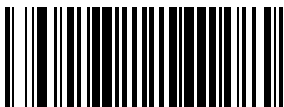|	
START / END	‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖	Disable EAN 128
Enable EAN 128 **DEFAULT**	‖‖‖‖‖‖‖‖‖

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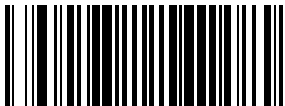
Variable Length Decoding— When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

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 '000' 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
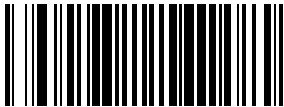
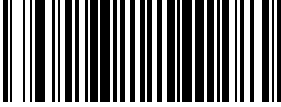1. Scan the START barcode.

2. Scan either the Set Length 1 or Set Length 2 barcode.

3. Turn to Appendix C, Alpha-Numeric Pad and scan the three digits (zero padded) representing the length in decimal notation.

> **For Code 128 barcodes, only the data characters are included in the length calculations.**
>
> **NOTE**
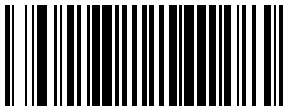
4. Scan the END barcode.

START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 001**	Set Length 1
Set Length 2	‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 080**

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
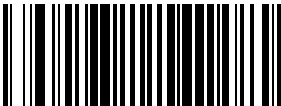
Code 128 Stitching

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.
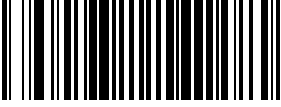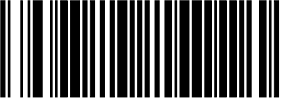
START / END	

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.
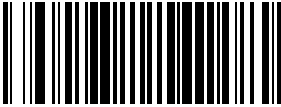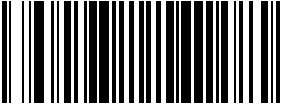
Disable/Enable Interleaved 2 of 5

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

START / END	
PROGRAMMING BARCODES	
	Disable Interleaved 2 of 5 **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 **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 '000' 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 three 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

‖‖‖ ‖‖‖‖ ‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 006**	Set Length 1

Set Length 2	‖‖‖ ‖‖‖‖ ‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 050**
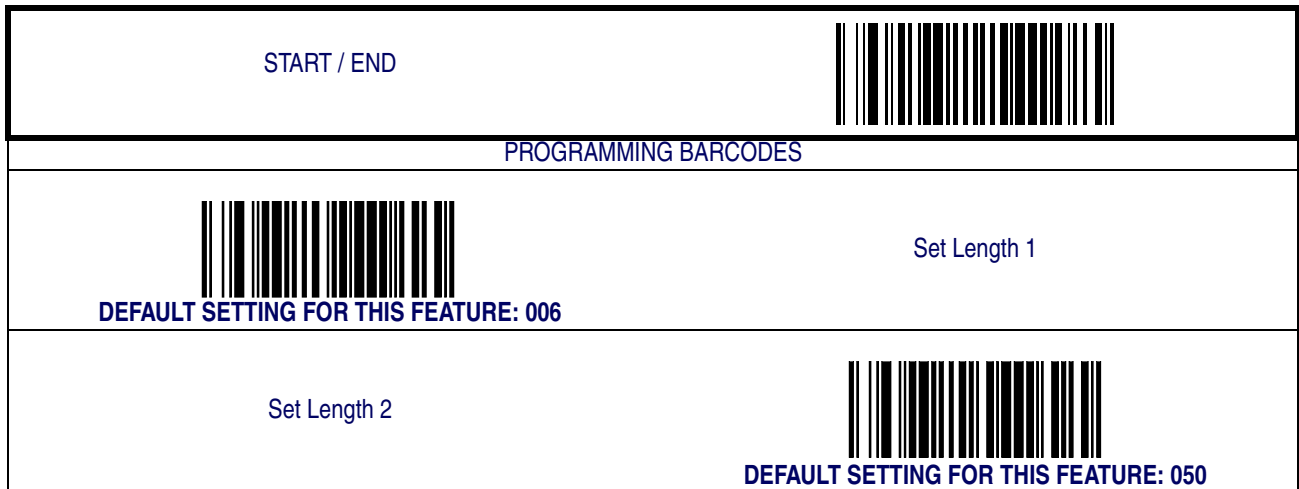
Interleaved 2 of 5 — continued
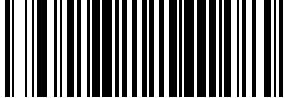
Interleaved 2 of 5 Stitching

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.

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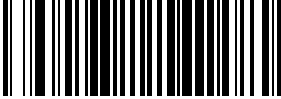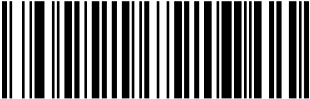
NOTE

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.
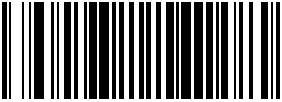
START / END	

PROGRAMMING BARCODES	
	Minimum = 1 Read **DEFAULT**
Minimum = 2 Reads	
	Minimum = 3 Reads
Minimum = 4 Reads	

Codabar

The following options apply to the Codabar symbology.
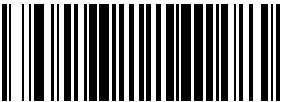
Disable/Enable Codabar

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

START / END

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖

Disable Codabar
DEFAULT

Enable Codabar

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
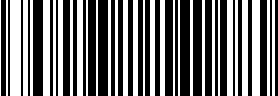
Check Character Verification

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 '000' 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
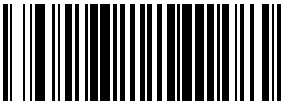
1. Scan the START barcode.

2. Scan either the Set Length 1 or Set Length 2 barcode.

3. Turn to Appendix C, Alpha-Numeric Pad and scan the three digits (zero padded) representing the length in decimal notation.

> **For Codabar barcodes, all start, stop, check and data characters are included in the length calculations.**
>
> **NOTE**
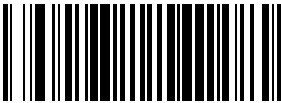
4. Scan the END barcode.

START / END	‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 003**	Set Length 1
Set Length 2	‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 050**

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
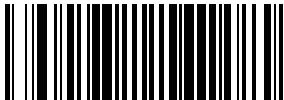
Start/Stop Character Type

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**	
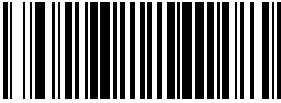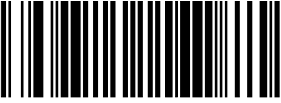
Start/Stop Character Transmission

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	‖‖‖‖‖‖‖‖‖‖
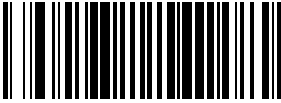
Codabar Stitching

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.

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

NOTE

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 **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
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 '000' 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 three digits (zero padded) representing the length in decimal notation.

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

NOTE

4. Scan the END barcode.

START / END	‖‖‖ ‖‖ ‖‖‖ ‖‖

PROGRAMMING BARCODES

‖‖‖ ‖‖ ‖‖‖ ‖‖ **DEFAULT SETTING FOR THIS FEATURE: 001**	Set Length 1
Set Length 2	‖‖‖ ‖‖ ‖‖‖ ‖‖ **DEFAULT SETTING FOR THIS FEATURE: 050**
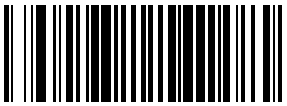
Code 93 — continued
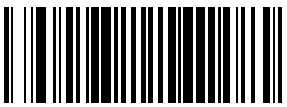
Code 93 Stitching

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.
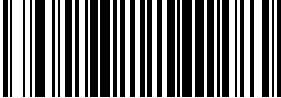
Disable/Enable MSI/Plessey

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 '000' 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 three 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: 004**	Set Length 1
Set Length 2	‖‖‖‖‖‖‖‖‖‖‖ **DEFAULT SETTING FOR THIS FEATURE: 016**

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.

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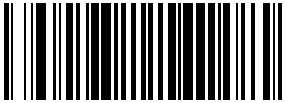
NOTE

START / END	‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖	**Disable MSI/Plessey Stitching** **DEFAULT**
Enable MSI/Plessey Stitching	‖‖‖‖‖‖‖‖

MSI/Plessey — continued

Minimum Reads

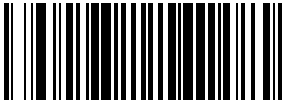This feature specifies the minimum number of consecutive times an MSI/Plessey label must be decoded before it is accepted as good read.
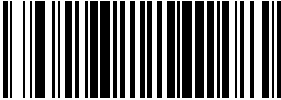
START / END	‖‖‖‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖‖‖‖	**Minimum = 1 Read** **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.

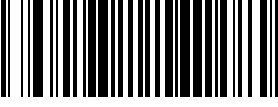| START / END	‖‖‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖‖‖	**Disable Std 2 of 5** **DEFAULT**
Enable Std 2 of 5	‖‖‖‖‖‖‖‖‖‖‖

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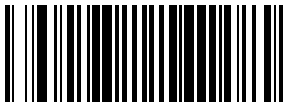
Variable Length Decoding— When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

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 '000' 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

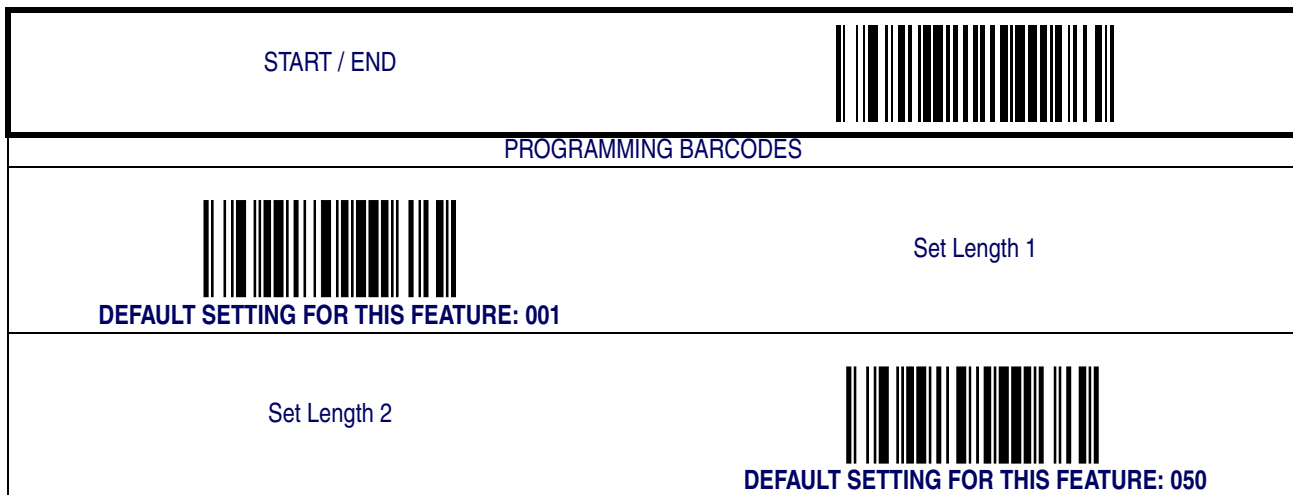## Standard 2 of 5 Length 1, Length 2 Programming Instructions
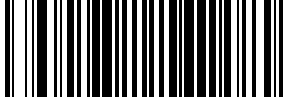
1. Scan the START barcode.

2. Scan either the Set Length 1 or Set Length 2 barcode.

3. Turn to Appendix C, Alpha-Numeric Pad and scan the three digits (zero padded) representing the length in decimal notation.

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

4. Scan the END barcode.

START / END	

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 008	Set Length 1
Set Length 2	**DEFAULT SETTING FOR THIS FEATURE: 050**

Standard 2 of 5 — continued
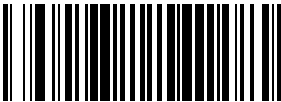
Standard 2 of 5 Stitching

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.

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

NOTE

START / END	‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖	**Disable Std 2 of 5 Stitching** **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.
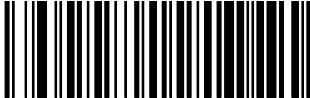
START / END	|||||||||||||||

PROGRAMMING BARCODES	
|||||||||||||||	**Minimum = 1 Read** **DEFAULT**
Minimum = 2 Reads	|||||||||||||||
|||||||||||||||	Minimum = 3 Reads
Minimum = 4 Reads	|||||||||||||||

2D Symbologies & Advanced Decoding Features

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

NOTE

2D Symbologies

The scanner supports the following 2D symbologies (barcode types): PDF 417 and Datamatrix. Options for each symbology are included in this addendum.

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

PDF 417

Disable/Enable PDF 417

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

START / END	
PROGRAMMING BARCODES	
	Disable PDF 417
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.

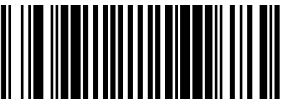**Variable Length Decoding—** When variable length decoding is enabled, the scanner will decode a barcode if the label length falls in the range of the configurable minimum and maximum length.

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 '00' 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**
Fixed Length Decoding	‖‖‖‖‖‖‖‖‖

PDF 417 — continued

PDF 417 Length 1, Length 2 Programming Instructions
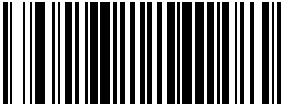
1. Scan the START barcode.

2. Scan either the Set Length 1 or Set Length 2 barcode.

3. Turn to Alpha-Numeric Pad and scan the four hex digits representing the length in hexidecimal notation.

> **For PDF 417 barcodes, only the data characters are included in the length calculations.**
>
> **NOTE**
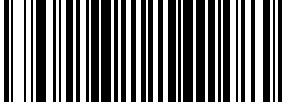
Scan the END barcode.

START / END	‖‖‖‖‖‖‖‖‖
PROGRAMMING BARCODES	
‖‖‖‖‖‖‖‖‖ DEFAULT SETTING FOR THIS FEATURE: 01 (0X0001)	Set Length 1
Set Length 2	‖‖‖‖‖‖‖‖‖ DEFAULT SETTING FOR THIS FEATURE: 2710 (0x0A96)

PDF 417 — continued

Minimum Reads
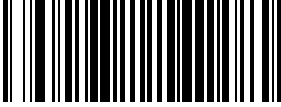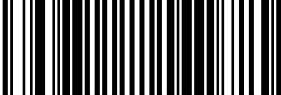
This feature specifies the minimum number of consecutive times a PDF 417 label must be decoded before it is accepted as good read.

START / END	‖‖‖‖‖‖‖‖‖‖‖

PROGRAMMING BARCODES

‖‖‖‖‖‖‖‖‖‖‖	Minimum = 1 Read
Minimum = 2 Reads	‖‖‖‖‖‖‖‖‖‖‖
‖‖‖‖‖‖‖‖‖‖‖	Minimum = 3 Reads
Minimum = 4 Reads	‖‖‖‖‖‖‖‖‖‖‖

Datamatrix

Disable/Enable Datamatrix

When disabled, the scanner will not read Datamatrix barcodes.

START / END

PROGRAMMING BARCODES

Disable Datamatrix

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 '00' 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

Fixed Length Decoding

Datamatrix — continued

Datamatrix Length 1, Length 2 Programming Instructions
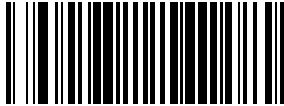
1. Scan the START barcode.

2. Scan either the Set Length 1 or Set Length 2 barcode.

3. Turn to Alpha-Numeric Pad and scan the four hex digits representing the length in hexidecimal notation.

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

NOTE

Scan the END barcode.

START / END	

PROGRAMMING BARCODES

DEFAULT SETTING FOR THIS FEATURE: 1 (0x0001)	Set Length 1
Set Length 2	DEFAULT SETTING FOR THIS FEATURE: 800 (0x0320)

Datamatrix — continued

Minimum Reads

This feature specifies the minimum number of consecutive times a Datamatrix label must be decoded before it is accepted as good read.
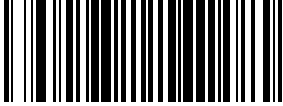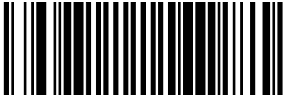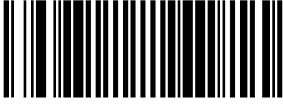
START / END	
PROGRAMMING BARCODES	
	Minimum = 1 Read
Minimum = 2 Reads	
	Minimum = 3 Reads
Minimum = 4 Reads	

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.
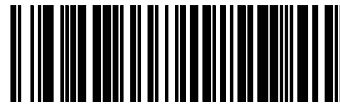
IMAGE CAPTURE

Captured Image Format

Images are captured as 752 x 480 JPEG format with a pre-defined compression ratio, and are displayed via the host application software.

Optical and Read Performance Parameters

Parameter	Specification
Scan Volume	70 cubic inches
Scan Pattern	100 lines
Scan Rate	1,100 digital scan lines
Minimum Resolution	5 mil
Depth of Field (100% UPC Labels)	0 - 6"
Minimum Print Contrast Ratio	25%
Skew (Yaw)	± 75°
Pitch	± 65°
Roll	Between 0 and 360°

Scanner Dimensions
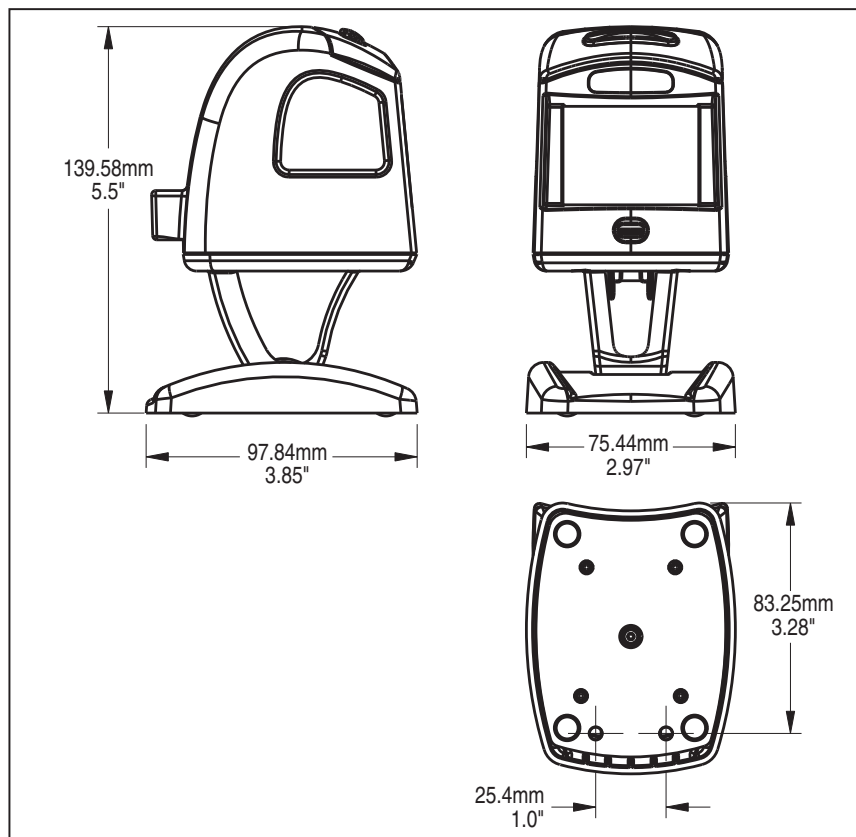
Physical Properties

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	(Two Models) 5V unit = 5.0V ± 5% 12V unit = 7-12V

Input Current
   Operating (idle)
   Operating (label read)
	<300mA
	<400 mA

Environmental Parameters

Parameter	Specification
Mechanical Shock	Multi 1.2m drops
Contaminants Water and Dust	IP52

Temperature Ranges:
   Operating
   Storage
	
	32° F to +104° F (0° C to +40° C)
	-40° F to +158° F (-40° C to + 70°C)

Ambient Light Indoor	40 - 6000 lux
Ambient Light Outdoor	40 - 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)

Cable Pinouts

Standard Cable Pinouts (Primary Interface Cables)

RS-232

```
1
2   CTS                              10 Position RJ
3
4   RTS
5   RXD
6   TXD
7                  Pin 1              (Scanner End)
8   VCC IN
9   GND
10
```

IBM Port 5B/9B/17
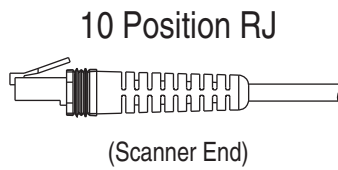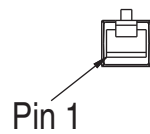
```
1
2                                    10 Position RJ
3
4   DATA -
5
6   DATA +        Pin 1              (Scanner End)
7
8   VCC_IN
9   GND
10
```
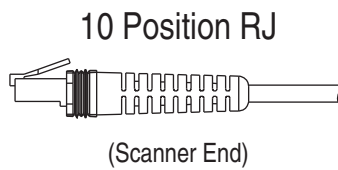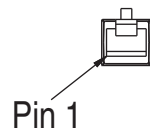
USB-OEM

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

10 Position RJ

Pin 1

(Scanner End)
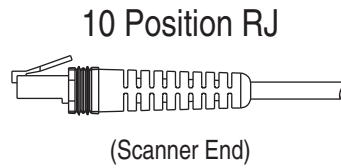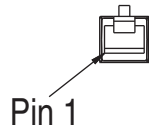
USB, USB Keyboard & USB COM

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

10 Position RJ

Pin 1

(Scanner End)
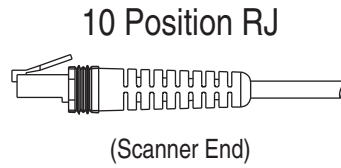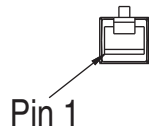
Wand Emulation

1
2
3 WAND~
4
5
6
7
8 VCC_IN
9 GND
10

10 Position RJ

Pin 1

(Scanner End)
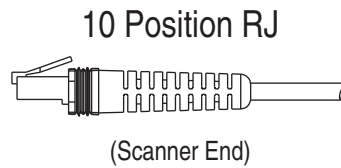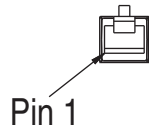
Keyboard Wedge

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

10 Position RJ

Pin 1

(Scanner End)
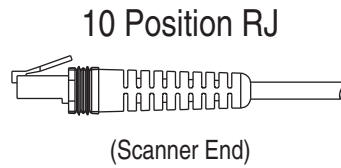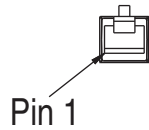
Alpha-Numeric Pad

A

B

C

D

E

F

Alpha-Numeric Pad

||||||||||||||||||
1

||||||||||||||||||
2

||||||||||||||||||
3
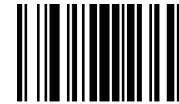
||||||||||||||||||
4
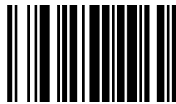
||||||||||||||||||
5

||||||||||||||||||
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
Datamatrix				Dm

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

Wand Emulation

Parameter	Default Setting
Interface Type	Wand Emulation
Code 39 Start/Stop Character Transmission	Enable

Keyboards

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

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; PS/2 25-286; PS/2 30-286; PS/2 50, 50Z; PS/2 60,70,80,90,95 Foreign ALT Mode	Wedge B	AT/PS2	Scan Set 2	No	No
PS/2 25 and 30 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; PS/2 25-286; PS/2 30-286; PS/2 50, 50Z; PS/2 60,70,80,90,95 U.S. Mode + specific country support	Wedge E	AT/PS2	Scan Set 2	Yes	Yes
PS/2 25 and 30 U.S. Mode	Wedge F	AT/PS2	Scan Set 1	Yes	No
IBM 3xxx Terminals (122-key keyboard)	Wedge G	AT/PS2	Scan Set 3	Yes	No
IBM 3xxx Terminals (102-key keyboard)	Wedge H	AT/PS2	Scan Set 3	Yes	No
PS55 5530T with JAPANESE DOS (TDOS)	Wedge I	AT/PS2	Japanese DOS	Yes	No
NEC 9801	Wedge J	NEC 9801	NEC 9801	Yes	No

Table E-2. 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-3. 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-4. **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-5. 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-6. 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-7. 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

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

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

Sample Symbols

GS1 DataBar Omni-

(01)00123456789012

GS1 DataBar Expanded

0100123456789050

ASCII Chart

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

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