

*Laser Programming Guide*

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**WASP BAR CODE LASER  
SCANNER**

LASER PROGRAMMING GUIDE

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# NOTES

# INTRODUCTION

This manual contains instructions for changing interfaces and bar codes for customizing the scanner's operation. Since the *Wasp Laser* scanner contains software enhancements and characteristics that set it apart from other scanners, it is recommended that this guide be used as the sole source of programming labels and information (except for other *Wasp Laser* product-specific publications).

The organization of this manual is intended to support a variety of users while making it quick and easy to find the information you need. Look at the descriptions that follow to find where to go from here.

## UNDERSTANDING THE BASICS

If you do not regularly use bar code labels to configure (program) scanners, it will be very helpful to read the introductory portions of this manual prior to beginning your programming session. In addition to the information that follows, information of specific interest to you is titled:

- Integrating Peripherals with Host Systems
- Changing Interfaces
- Customizing Your Scanner Operation
- Programming Overview
- What is Programming Mode?
- How to Program Using Bar codes
- The Programming Session
- Scanner Response When in Programming Mode
- If You Make A Mistake
- Where to Go From Here

## INTEGRATING PERIPHERALS WITH HOST SYSTEMS

It's important to understand that the scanner must contain software and hardware that supports a specific interface in order to use that interface. The following pages describe interface hardware and list software interface groups available on current models.

Optimally, you'll want details about how your scanner was configured at the factory before attempting to customize any settings. If you don't have that information, contact your dealer for factory configuration information.

After determining the changes and/or additions you desire, locate the programming labels and follow the related instructions in this manual to adjust the scanner. Once you've completed these steps, you can begin scanning.

## CHANGING INTERFACES

To change a scanner's interface...

### HARDWARE

If necessary, replace the scanner's interface cable to match the new host terminal's connection requirements. To disconnect the cable from the scanner, insert a .050" hex driver or bent paper clip into the CABLE RELEASE hole, and press down to unlock the cable connector. Reference Figure 1.

#### NOTE

*We recommend that you disconnect power before plugging/unplugging cables to avoid any possibility of equipment damage.*

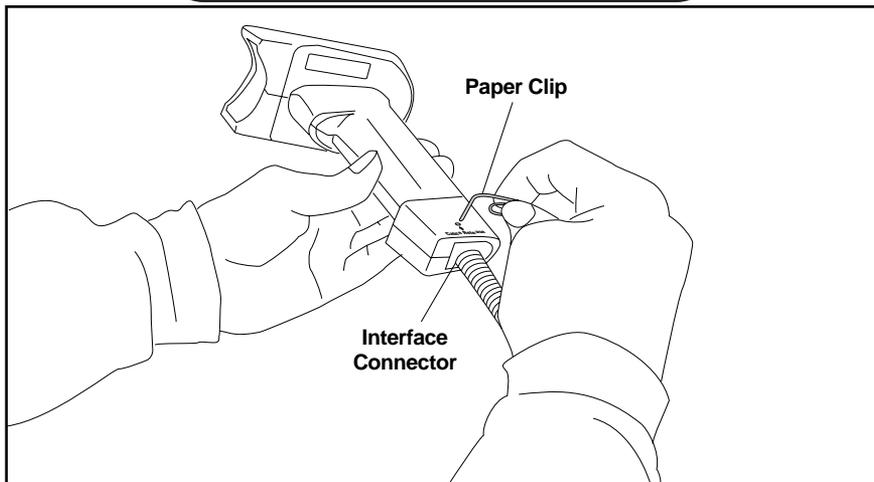


Figure 1. Disconnecting the Interface Cable

### SOFTWARE

1. Verify that your scanner supports the desired interface<sup>1</sup>. The list below indicates interfaces available at the time of this writing. Your scanner comes equipped from the factory with the ability to connect and communicate with at least two major interface types, for example, Keyboard Wedge/Wand Emulation and OCIA/RS-232 are two common pairings. Contact Informatics if you don't know your scanner's interface group, or need to have the scanner altered to change to another I/F group.

---

<sup>1</sup> Contact Informatics if your desired interface is not listed. Interface group definitions are subject to change without notice.

## OCIA

- PSC OCIA
- NCR 8-Bit OCIA
- SNI OCIA
- NCR 9-Bit OCIA

## RS-232

- PSC RS-232
- SNI RS-232

## IBM

- IBM 4683/84, 4693/94 Port 5B
- 4682/92 Port E
- IBM 4683/84, 4693/94 Port 9A, 9B, 9C, 9E

## Wand Emulation

### Keyboard Wedge

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

2. Turn to the appropriate page in this manual and enable the desired interface or interface sub-type by scanning its programming bar code. These interface/interface sub-type selection bar codes are located at the beginning of each of these sections of the manual: *IBM*, *OCIA*, *Wand Emulation*, *RS-232*, and *Keyboard Wedge*. This will enable the software for the new interface and disable the 'old' interface software. Once enabled, the new interface becomes the default interface that is active whenever power is applied to the scanner.
3. Scan a bar code to verify that the scanner communicates correctly with the host system. Some sample bar codes are provided on the last pages of this manual. If any changes to the scanner's factory settings are needed, use the instructions titled, *Customizing Your Scanner Operation*.

## CUSTOMIZING YOUR SCANNER OPERATION

When enabling a new interface, it may be necessary to modify the original factory settings to match your specific host system's communication and symbology requirements. Check with your system administrator to identify your host system's specific interface requirements to ensure that they match the new interface you've selected. Also, the scanner's operational features, such as speaker volume, can be customized to match your unique requirements.

1. Use the labels in this manual to modify the standard configuration to match your specific interface requirements or user preference.

### NOTE

*Ensure that your planned modifications are compatible with the current interface. For example, baud rate selections are only valid in the RS-232 interface. The scanner will sound an error tone (six rapid beeps) when scanning programming labels for features invalid to the current interface.*

2. Enable any additional symbologies as required and exit Programming Mode.
3. Scan a regular bar code label and verify that the scanner and host communicate correctly.
4. You have completed the factory settings change procedure.

If you experience difficulties, have questions or require additional information, contact Informatics, Inc.



## PROGRAMMING OVERVIEW

This section describes how to set the scanner's programmable features. These features can be configured using the bar code labels contained in this manual or by using commands sent from the host. Refer to Appendix A, *Additional Information*, for host programming details. If you program the scanner using these bar codes, the scanner stores the changes until reprogrammed.

### WHAT IS PROGRAMMING MODE?

To change the scanner's programmed settings, it is necessary to place the scanner in Programming Mode using the special SET label. This ensures that the scanner only recognizes the special programming labels contained in this programming guide.

### HOW TO PROGRAM USING BAR CODES

The following pages contain special bar code labels that are used to change or enable the scanner's programmable options. All programming sessions follow this order, unless otherwise instructed:

1. **Scan the SET label at the top of the page.** The scanner will emit a 'good read' beep, indicating it has read the label.
2. **Scan the feature label(s) for the programmable options you wish to enable.** With few exceptions<sup>1</sup>, the scanner will emit a triple beep each time you scan a valid programming label. (Note that not all features are available for all interfaces and that the scanner will sound an error tone when scanning programming labels for features invalid to the current interface.)
3. **Scan the END label at the bottom of the page** to complete the programming session and exit Programming Mode. The scanner will sound one 'good read' beep upon exiting Programming Mode.
4. **Maintain a good record of all changes made** to ensure that you know if the original factory settings have been changed.

---

1 Some features, such as Minimum Label Length or Label ID, require you to select the length by scanning a series of single-digit bar codes. A single 'good read' beep is sounded when scanning these single digits in Programming Mode. Only the final required digit in the sequence will produce a triple beep when scanned, indicating a successfully programmed feature.

## THE PROGRAMMING SESSION

It is possible to program multiple features during a single programming session (a programming session is defined as the period of time between scanning the “set” label and scanning the “end” label). However, it is recommended that sessions be limited to one feature, as it can be difficult to discover where an error has been made, should you make a mistake in the programming sequence. Additionally, it can be confusing to determine which features may or may not have been successfully set following such a session.

The scanner will not exit Programming Mode unless the END label is scanned. Disconnecting power during Programming Mode, before scanning the END label, will cause the scanner to forget any programming labels scanned during the current programming session and will cause the scanner to return to its previous settings.

## SCANNER RESPONSE WHEN IN PROGRAMMING MODE

As discussed earlier, Programming Mode is entered by scanning a SET label. The green LED will flash continuously at 1Hz duty cycle while the scanner is in Programming Mode. As long as it is in Programming Mode, the scanner will not decode regular bar code labels and will only enable features supported by the currently active interface.

Scanning regular (non-programming) bar code labels — the scanner will reject the label, sounding an error tone (six rapid beeps).

Scanning a valid programming label —

- a. If the feature is supported by the active interface, the scanner will sound three beeps.
- b. If incorrect programming has been entered, the error tone will be sounded (six rapid beeps). Additionally, when programming a feature requiring you to scan single digits to set a multi-digit number, such as Minimum Label Length or Label ID, scanning the END label before completing all input will result in an error tone and cause the scanner to exit Programming Mode. Under these circumstances, the current feature you were trying to set is thrown out; any previous labels scanned during the session will take effect.

## IF YOU MAKE A MISTAKE...

If, during a programming session, you find that you are unsure of the scanner's settings or wish to re-set the scanner's configuration, use the Return to Factory Settings label on this page to return the scanner's configuration to the factory settings. Scanning this label will also reset any changes made during previous programming sessions.

## RETURN TO FACTORY SETTINGS

Scan this label to return the scanner to the default settings configured at the factory for your scanner's original interface specifications. This label is typically used to return the scanner to a "known" operating state when the present programming status is not known, faulty, or suspect.



**Use this label with caution, since it will disable ALL features that may have been programmed since the scanner's installation.**



If you don't have a record of your site/system's original configuration, you may need to call Informatics for assistance to return the scanner to normal function. Please be prepared to provide information about the store/chain, location, and other pertinent information about the scanner being repaired.

## WHERE TO GO FROM HERE

Programming is easy and straightforward if you follow these steps:

1. If you are changing interfaces, first connect the scanner to the new host using the new interface cable. Scan the interface enable bar code label<sup>1</sup>.
2. Scan any feature labels that are unique to the interface you are currently programming. These interface specific programming labels immediately follow each interface selection label.
3. Turn to the Symbology section if you are going to change any bar code symbologies or modify any symbology related features.
4. Turn to the General Features section of this guide if you wish to change or modify any of the scanner's other features.

Once the necessary changes have been made, and you have scanned the END label, you are ready to scan.

---

<sup>1</sup> This step is not necessary unless you require a specific interface sub-type such as SNI OCIA or IBM sub-type 4682/92 Port E. Interface software is automatically selected when the hardware connection (via a new interface cable) is made.

# IBM 4683/84 • 4693/94 PORT 5B INTERFACE SELECTION

Scan this label to enable the IBM 468x Port 5B interface.



## IBM 4683/84 • 4693/94 PORT 5B SETTINGS

Data Format: Send As Code 39 — converts bar codes data (UPC/EAN, add-ons, Code 93, Codabar, MSI/Plessey and Code 128) into Code 39 format before sending the data to the host.

These settings are for IBM 4683/84 • 4693/94 Port 5B interface ONLY.

Limit Command Set — is an option that causes the scanner to ignore 'enable scanner' and 'disable scanner' commands sent from the host.

Transmit Unsolicited Status<sup>1</sup> — when enabled, this option causes the scanner to transmit a status message to the host upon receipt of an "SNRM".

DATA FORMAT	SET	-----	
	SEND AS CODE 39	-----	
	DON'T SEND AS CODE 39	-----	
	ENABLE LIMIT COMMAND SET	---	
	DISABLE LIMIT COMMAND SET	--	
	TRANSMIT UNSOLICITED STATUS	-	
	DON'T TRANSMIT UNSOLICITED STATUS		
	END	-----	

1 For this IBM interface, the setting for Unsolicited Status is normally Enabled.

# IBM 4683/84 • 4693/94 PORT 9A, 9B, 9C, 9E I/F SELECTION

Scan this label to enable the IBM 468x/9x Port 9x interface.



## IBM 4683/84 • 4693/94 PORT 9A, 9B, 9C, 9E SETTINGS

Data Format: Send As Code 39 — converts bar codes data (UPC/EAN, add-ons, Code 93, Codabar, MSI/Plessey and Code 128) into Code 39 format before sending the data to the host.

These settings are for IBM 4683/84 • 4693/94 Port 9A, 9B, 9C, 9E interface ONLY.

Limit Command Set — is an option that causes the scanner to ignore 'enable scanner' and 'disable scanner' commands sent from the host.

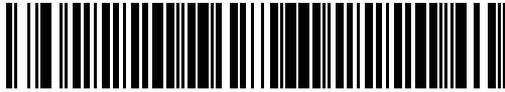
Transmit Unsolicited Status<sup>1</sup> — when enabled, this option causes the scanner to transmit a status message to the host upon receipt of an "SNRM".

DATA FORMAT	SET	-----	
	SEND AS CODE 39	-----	
	DON'T SEND AS CODE 39	-----	
	ENABLE LIMIT COMMAND SET	---	
	DISABLE LIMIT COMMAND SET	--	
	TRANSMIT UNSOLICITED STATUS	-	
	DON'T TRANSMIT UNSOLICITED STATUS		
END	-----		

1 For this IBM interface, the setting for Unsolicited Status is normally Disabled.

## IBM 4682/92 PORT E INTERFACE SELECTION

Scan this label to enable the IBM 468x/9x Port E interface.



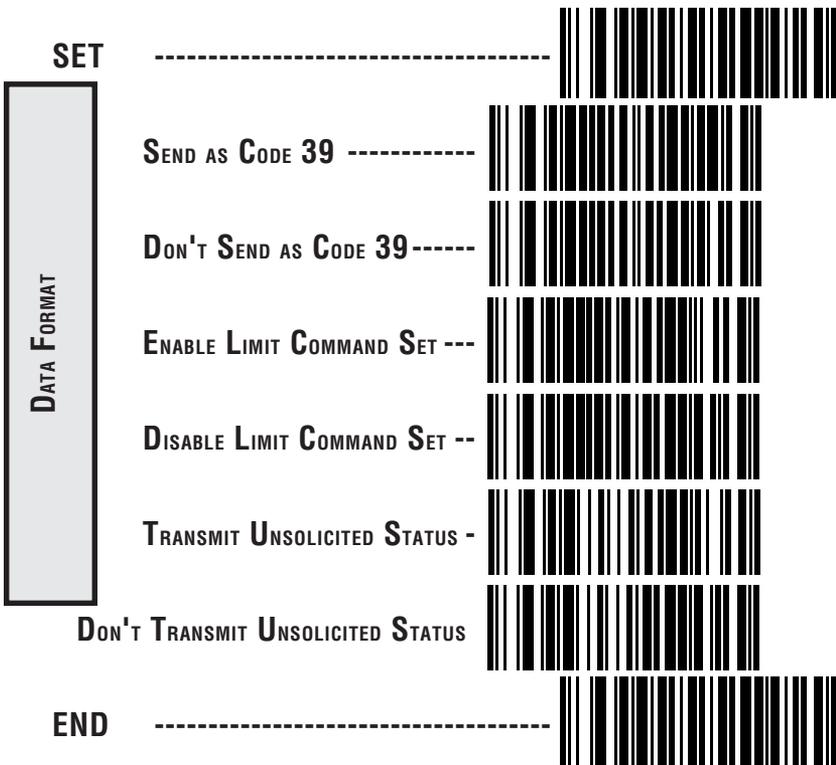
### IBM 4682/92 PORT E SETTINGS

Data Format: Send As Code 39 — converts bar codes data (UPC/EAN, add-ons, Code 93, Codabar, MSI/Plessey and Code 128) into Code 39 format before sending the data to the host.

These settings are for IBM 4682/92 Port E interface ONLY.

Limit Command Set — is an option that causes the scanner to ignore 'enable scanner' and 'disable scanner' commands sent from the host.

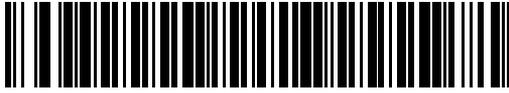
Transmit Unsolicited Status<sup>1</sup> — when enabled, this option causes the scanner to transmit a status message to the host upon receipt of an "SNRM".



1 For this IBM interface, the setting for Unsolicited Status is normally Disabled.

## OCIA INTERFACE SELECTION

Scan this label to enable the OCIA interface.



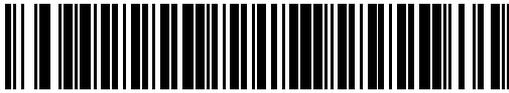
## NCR OCIA EIGHT BIT (SHORT FORMAT) INTERFACE SELECTION

Scan this label to enable the NCR OCIA (short format) interface.



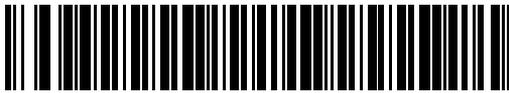
## NCR OCIA NINE BIT (LONG FORMAT) INTERFACE SELECTION

Scan this label to enable the NCR OCIA Nine Bit (long format) interface.



## SNI OCIA INTERFACE SELECTION

Scan this label to enable the SNI OCIA interface.



## OCIA OPTIONS

Use these labels to change the settings as desired. The following brief descriptions explain each selection.

**Beep if Not on File** — when enabled requires the scanner to beep when a label is scanned that is not on file.

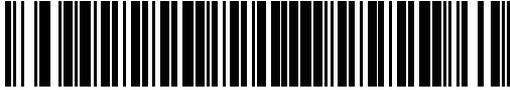
**Host Commands** — when enabled allows the scanner to accept commands directly from the host.

**Intercharacter Delay** — refers to a pause, if any, between each character before being sent to the host. This time delay is used to control the flow of data from the scanner, but it should not be required for most applications. When enabled, OCIA intercharacter delay is set at 70 $\mu$ s.

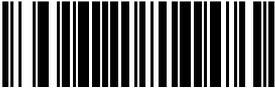


# WAND EMULATION INTERFACE SELECTION

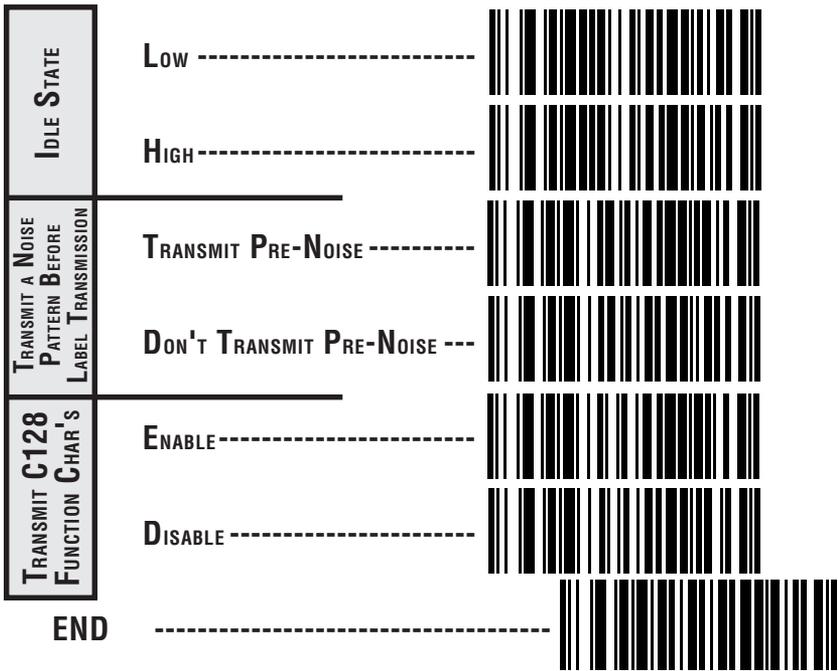
Scan this label to enable the Wand Emulation interface.



## WAND EMULATION SETTINGS

		SET	
POLARITY	SPACE LOW, BAR HIGH	-----	
	SPACE HIGH, BAR LOW	-----	
SIGNAL SPEED	LOW (660 $\mu$ s)	-----	
	HIGH (330 $\mu$ s)	-----	
DATA FORMAT	TRANSMIT IN NORMAL FORMAT	--	
	TRANSMIT IN C39 FORMAT	----	
	TRANSMIT IN C128 FORMAT	----	
	TRANSMIT IN C39 FULL ASCII	-----	

WAND EMULATION  
INTERFACE



Go to the sections titled *Symbology Selection* and *General Features* in the back of this programming guide if you want to change any other settings for this interface.

## RS-232 INTERFACE SELECTION

Scan this label to enable the standard RS-232 interface.



## SNI RS-232 INTERFACE SELECTION

Scan this label to enable the SNI RS-232 interface.



## RS-232 COMMUNICATION PARAMETERS

This section contains the following RS-232 communication parameters in the order listed:

- Baud Rate
- Data Bits
- Parity
- Stop Bit(s)
- Hardware Handshaking (CTS/RTS)
- Software Handshaking (Xon/Xoff)
- ACK/NAK Options
- Intercharacter Delay

Go to the sections titled *Symbology Selection* and *General Features* in the back of this programming guide if you want to change any other settings for this interface.

## BAUD RATE

Use the bar codes on this page to select the communications Baud Rate. Only one Baud Rate selection may be active at any one time. The last Baud Rate label you scan during a programming session will be the setting that is stored when you scan the END label.

BAUD RATE

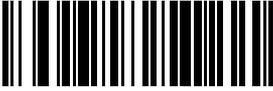
**SET** -----



= 1200 -----



= 2400 -----



= 4800 -----



= 9600 -----



= 19200 -----



= 38400 -----



**END** -----



**RS-232  
INTERFACE**

### DATA FORMAT TABLE

There are many possible data format configurations for an RS-232 interface. Check your host system manual to find out your system's communications requirements. This table shows the acceptable format options.

Data Bits	Start Bit	Parity Bit(s)	Stop Bit(s)
Seven	1	0	2
Seven	1	1	1
Seven	1	1	2
Eight	1	0	1
Eight	1	0	2
Eight	1	1	1

## DATA FORMAT SETTINGS

The bar codes on this page can be used to select the data format configuration needed to communicate with your system.

<b>PARITY</b>	<b>SET</b>	-----	
	<b>NONE</b>	-----	
	<b>EVEN</b>	-----	
	<b>ODD</b>	-----	
	<b>MARK</b>	-----	
	<b>SPACE</b>	-----	
	<b>STOP BITS</b>	<b>ONE</b>	-----
<b>TWO</b>		-----	
<b>DATA BITS</b>		<b>SEVEN BITS</b>	-----
	<b>EIGHT BITS</b>	-----	
	<b>END</b>	-----	

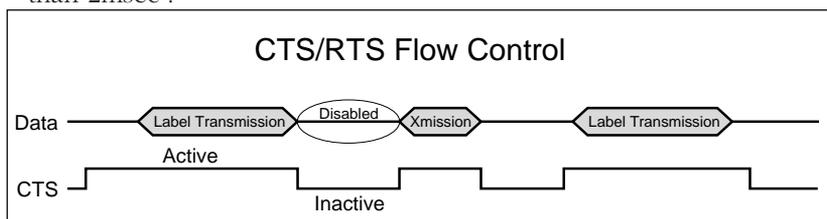
**RS-232**  
INTERFACE

## HANDSHAKING

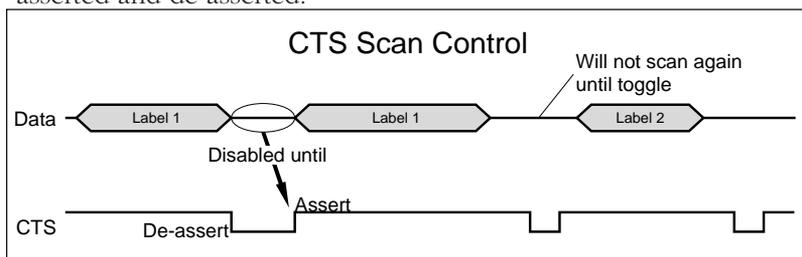
Review your system documentation to identify handshaking requirements, and use these labels to change the settings if required. The following brief descriptions explain each selection.

### HARDWARE CONTROL

**CTS/RTS Flow Control** — is hardware handshaking. The scanner activates the RTS (Ready to Send) line when it is ready to send data to the host. The scanner waits for an active Clear to Send (CTS) signal from the host before transmitting data. If hardware control is disabled, CTS/RTS communication will not take place. If the host deactivates the CTS line during data transmission, the host will receive additional characters for no more than 2msec<sup>1</sup>.



**CTS Scan Control** — is also a hardware control. When scan control is enabled, label transmission is disabled until CTS is asserted and de-asserted.



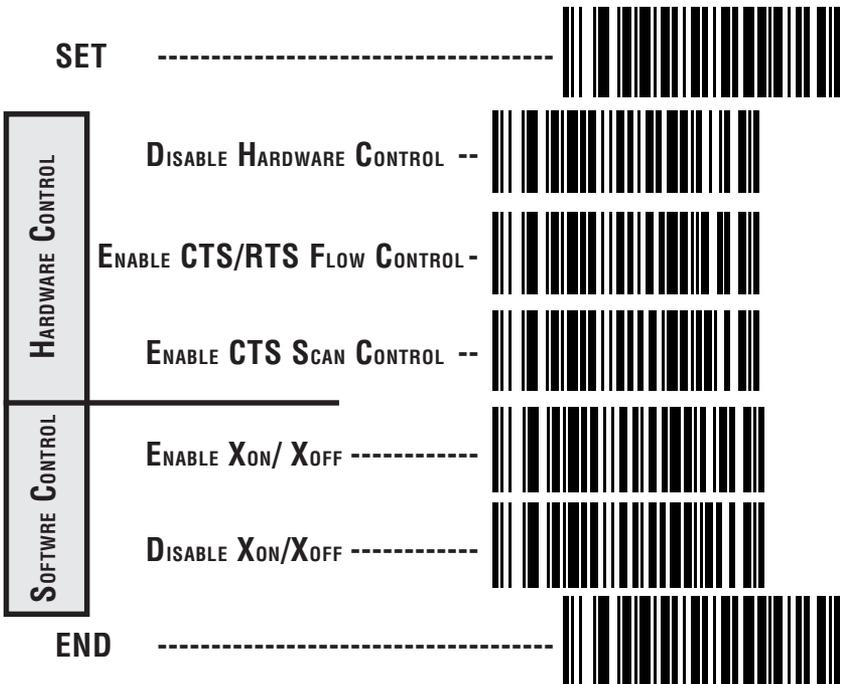
1 Varies slightly depending upon baud rate selected.

## SOFTWARE CONTROL

**XON/XOFF** — this is software handshaking that allows the host to control data transmission. If the host sends an XOFF command to the scanner, the scanner will not send the bar code data until it receives an XON command from the host. If the host sends the XOFF command during data transmission, the host will receive additional characters for no more than 2msec<sup>1</sup>.

### NOTE

*Hardware/software controls are mutually exclusive. Enable only one of these features at a time, as enabling multiple controls can produce unpredictable results.*



<sup>1</sup> Varies slightly depending upon baud rate selected.

## RS-232 ACK/NAK OPTIONS (QUICKSCAN 6000 PLUS ONLY)

Several ACK/NAK parameters can be set for your QuickScan 6000 Plus scanner. Contact Informatics, Inc. if the specific ACK/NAK option you wish to set is not included in this section.

Options for RS-232 ACK/NAK are:

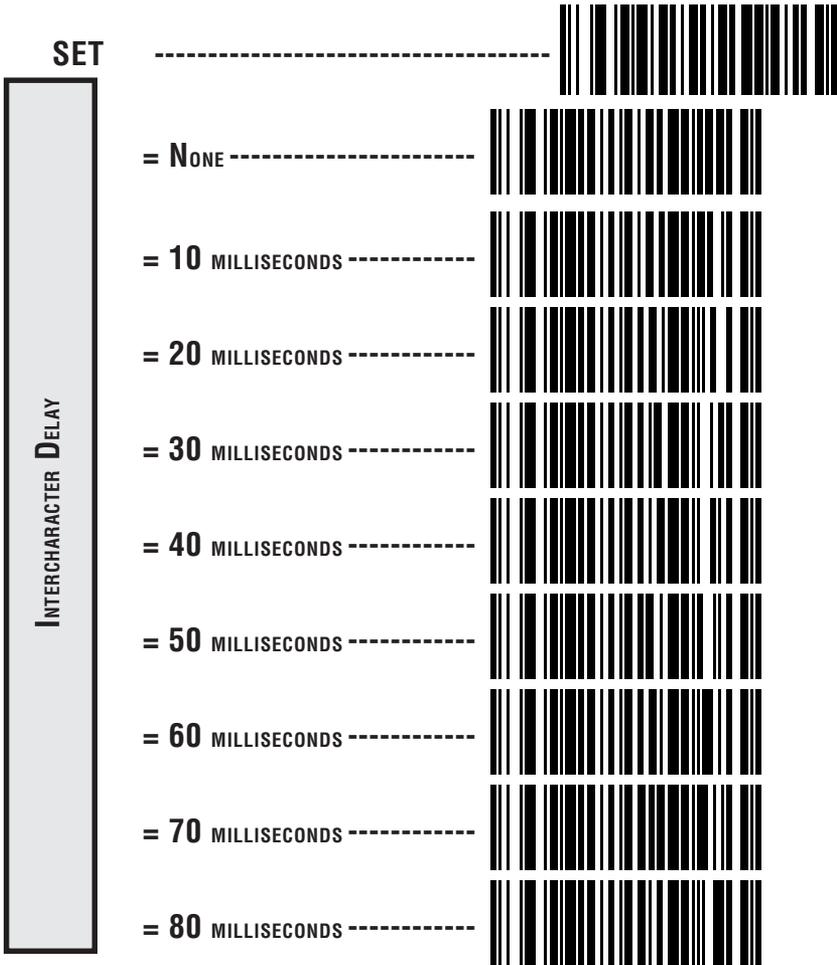
- Disable ACK/NAK
- Enable ACK/NAK for bar code transmission
- Enable ACK/NAK for host command acknowledge
- Enable ACK/NAK for bar code transmission and host command acknowledge.

**(THESE FEATURES AVAILABLE FOR QUICKSCAN 6000 PLUS ONLY)**

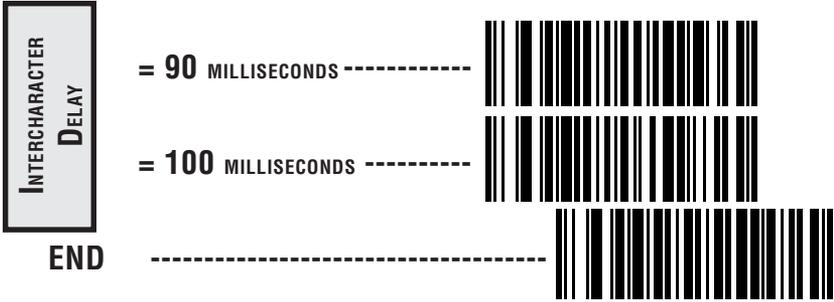


## INTERCHARACTER DELAY

Intercharacter Delay refers to the pause, if any, between each character before it is sent to the host. This time delay is used to control the flow of data from the scanner, but it should not be required for most applications. Use these labels to select the desired Intercharacter Delay.



# INTERCHARACTER DELAY (continued)



This section contains the following PC Keyboard Wedge communication parameters in the order listed:

### KEYBOARD WEDGE COMMUNICATION PARAMETERS

- Interface Selection
- Connect to Laptop
- Caps lock Settings
- Country modes
- Intercharacter Delay

Go to the sections titled *Symbology Selection* and *General Features* in the back of this programming guide if you want to change any other settings.

#### NOTE

*If the transmission parameters are configured such that a label results in no actual data to send, the label will be accepted, beeped, and no data transmitted.*

### PC KEYBOARD WEDGE INTERFACE SELECTION

The scanner supports ten PC Keyboard Wedge interfaces. The table below defines the different interface selections.

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

#### NOTE

*We recommend that you disconnect power before plugging/unplugging cables to avoid any possibility of equipment damage.*

# PC KEYBOARD WEDGE INTERFACE SELECTION—CONTINUED

The scanner supports ten PC Keyboard Wedge interfaces. The table below defines the different interface selections.

<b>INTERFACE (I/F) TYPE</b> (SEE TABLE ON PREVIOUS PAGE)	<b>SET</b> -----	
	<b>A</b> -----	
	<b>B</b> -----	
	<b>C</b> -----	
	<b>D</b> -----	
	<b>E</b> -----	
	<b>F</b> -----	
	<b>G</b> -----	
	<b>H</b> -----	
	<b>I</b> -----	
	<b>J</b> -----	
<b>END</b> -----		

**KEYBOARD WEDGE  
INTERFACE**

## PC KEYBOARD WEDGE – CONNECT TO A LAPTOP/NO KEYBOARD ATTACHED

If no keyboard is attached, the scanner must provide the acknowledge signal to the PC. In this case, enable the "Laptop/No External Keyboard" mode. If a keyboard is attached, enable "Keyboard Attached".

**Laptop (integrated keyboard)** — Scan the "Laptop/No External Keyboard" label below when the scanner is connected to a laptop computer or when the scanner is operated with no external keyboard attached.

**PC (external keyboard)** — If you move the scanner to a standard PC, change the setting to "Keyboard Attached".

**Send Control Characters** — When this feature is disabled, all ASCII characters except NUL (00h) are transmitted. Enabling this feature limits transmission of ASCII characters to the following:

- Only ASCII characters between 20h..127h, plus...
  - Carriage Return (CR=0Dh)
  - BackSpace (BS=08h)
  - Right Tab (HT=09h)
  - Left Tab (0Bh)
  - Esc (1Bh)



## CAPS LOCK

Three caps lock settings are available; these are:

- Caps Lock Off — to send character data (to the host) in normal format.
- Caps Lock On — to send character data (to the host) in reverse case:  
(a...z) = (A...Z)  
(A...Z) = (a...z)  
Use this feature if your caps lock is on.
- Caps Lock = Shift-Lock — to send character data (to the host) in shifted case. Use this feature if your shift lock is on. **For use with interface type G (122-keyboard) ONLY.**



## COUNTRY MODE

The following country/languages can be selected:

- USA
- Belgium
- Britain
- Denmark
- France
- Germany
- Italy
- Norway
- Portugal
- Spain
- Sweden
- Switzerland
- Japanese 106-Key

**SET** -----

**USA** -----

**BELGIUM** -----

**BRITAIN** -----

**DENMARK** -----

**FRANCE** -----

**GERMANY** -----

**ITALY** -----

**NORWAY** -----

**PORTUGAL** -----

**COUNTRY MODE**

**KEYBOARD WEDGE  
INTERFACE**

**COUNTRY MODE — CONTINUED**

**COUNTRY MODE**

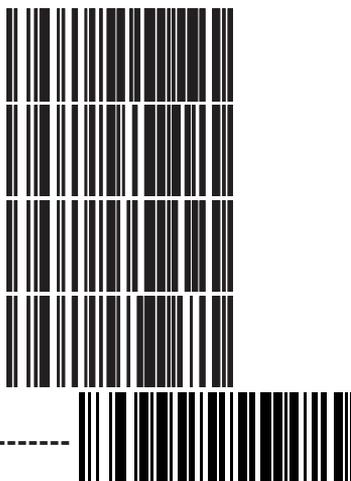
**SPAIN** -----

**SWEDEN** -----

**SWITZERLAND** -----

**JAPANESE 106-KEY** -----

**END**



## INTERCHARACTER DELAY

Intercharacter Delay refers to the pause, if any, between each character before it is sent to the host. This time delay is used to control the flow of data from the scanner, but it should not be required for most applications. Use these labels to select the desired Intercharacter Delay.

INTERCHARACTER DELAY	SET -----	
	= NONE -----	
	= 5 MILLISECONDS -----	
	= 10 MILLISECONDS -----	
	= 15 MILLISECONDS -----	
	= 20 MILLISECONDS -----	
	= 25 MILLISECONDS -----	
	= 30 MILLISECONDS -----	
	= 35 MILLISECONDS -----	
	= 40 MILLISECONDS -----	
	= 45 MILLISECONDS -----	
	= 50 MILLISECONDS -----	

KEYBOARD WEDGE  
INTERFACE

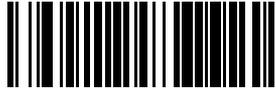
## INTERCHARACTER DELAY—CONTINUED

INTERCHARACTER DELAY

= 55 MILLISECONDS -----



= 60 MILLISECONDS -----



= 65 MILLISECONDS -----



= 70 MILLISECONDS -----



= 75 MILLISECONDS -----



= 80 MILLISECONDS -----



= 85 MILLISECONDS -----



= 90 MILLISECONDS -----



= 95 MILLISECONDS -----



= 99 MILLISECONDS -----



END

-----



KEYBOARD WEDGE  
INTERFACE

# LABEL TRANSMIT FORMAT CONFIGURATION ITEMS (RS-232 AND KEYBOARD WEDGE INTERFACES ONLY)

If you need to send information in addition to label data, the scanner can be configured to transmit prefixes and/or suffixes as well as symbology specific identifier characters (Label I.D.).

## PREFIX & SUFFIX

As the examples below show, none, one or two symbology specific ASCII characters can be added to the beginning of label in addition to multiple prefix and suffix characters.

### NOTE

*Using this feature requires a thorough understanding of your specific system requirements.*

The options available using this feature are:

- symbology specific (0 - 2) characters + label data  
PP + label data
- non-symbology specific characters (1-2) as a prefix + label data  
 $C_p C_p$  + label data
- label data + non-symbology specific characters (0-2) as a suffix  
label data +  $C_s C_s$
- non-symbology specific characters (1-2) as a prefix + symbology specific characters (0-2) + label data  
 $C_p C_p$  + PP + label data
- symbology specific characters (0-2) + label data + non-symbology specific characters (1-2) as a suffix  
PP + label data +  $C_s C_s$

- non- symbology specific characters (1-2) as a prefix + label data + non- symbology specific characters (1-2) as a suffix  
 $C_p C_p + \text{label data} + C_s C_s$
- non- symbology specific characters (1-2) as a prefix + symbology specific characters (0-2) + label data + non- symbology specific characters (1-2) as a suffix  
 $C_p C_p + PP + \text{label data} + C_s C_s$
- non- symbology specific characters (1-2) as a prefix + label data + symbology specific characters + non- symbology specific characters used as suffixes.  
 $C_p C_p + \text{label data} + PP + C_s C_s$

---

PP = symbology specific characters (Label I.D.)

$C_p C_p$  = non- symbology specific ASCII characters used as prefixes

$C_s C_s$  = non- symbology specific ASCII characters used as suffixes

---

## SETTING NON-SYBOLOGY SPECIFIC PREFIX(ES)

These characters will be added to the standard label format when your host system has specific and unique requirements for information added to the barcode label data before it is sent to the host. Identify your specific system requirements before adding or modifying these settings, then...

1. Look at the ASCII chart shown on page 38 and identify the ASCII character(s) and the corresponding Hex Code(s) for the ASCII characters you will use as prefixes.

For example, if you are going to send two prefix characters as 'STX' (start transmit) and 'SP' (Space). The ASCII chart shows that 'STX' equals 02<sub>hex</sub> and 'SP' equals 20<sub>hex</sub>.

2. Scan the SET label.
3. Scan the SET PREFIX label on this page.
4. Scan the digits that correspond to the Hex Values.

For the example in step four, scan 0, 2, 2, 0.

### NOTE

*If you make a mistake, or lose your place while setting this option, scan the END label to exit Programming Mode. The scanner will sound an error tone (six rapid beeps) to indicate that programming was incomplete, and the setting will remain as it was before entering Programming Mode.*

5. Scan END.

You have added a two character prefix to all label data, regardless of label symbology, that will be added to the label data before it is sent to the host.

SET

-----



SET PREFIX

-----



**GO TO THE SECOND PAGE FOLLOWING THIS AND SCAN THE APPROPRIATE CHARACTERS BEFORE SCANNING THE END LABEL TO EXIT PROGRAMMING SESSION.**

## SETTING NON-SYMBOLGY SPECIFIC SUFFIX(ES)

These characters will be added to the standard label format when your system has specific and unique requirements for information added to the barcode label data before it is sent to the host. Suffix characters follow the label data.

Identify your specific system requirements before adding or modifying these settings, then...

1. Look at the ASCII chart shown on page 38 and identify the ASCII character(s) and the corresponding Hex Code(s) for the ASCII characters you will use as suffixes.

For example, if you are going to send two suffix characters as 'BEL' (sound host tone) and 'ETX' (end transmission). The ASCII chart shows that 'BEL' equals 07<sub>hex</sub> and 'ETX' equals 03<sub>hex</sub>.

2. Scan the SET label.
3. Scan the SET SUFFIX label on this page.
4. Scan the digits that correspond to the Hex Values.

For the example in step five, scan 0, 7, 0, 3.

### NOTE

*If you make a mistake, or lose your place while setting this option, scan the END label to exit Programming Mode. The scanner will sound an error tone (six rapid beeps) to indicate that programming was incomplete, and the setting will remain as it was before entering Programming Mode.*

5. Scan END.

You have added a two character suffix to all label data, regardless of label symbology, that will be added to the label data before it is sent to the host.

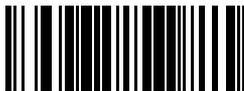
SET

-----



SET SUFFIX

-----



GO TO THE NEXT TWO PAGES AND SCAN THE APPROPRIATE CHARACTERS BEFORE SCANNING THE **END** LABEL TO EXIT PROGRAMMING SESSION.

## SETTING A SINGLE CHARACTER PREFIX OR SUFFIX

To set one ASCII character as a prefix or suffix, follow steps one through four on the previous two pages (select prefix or suffix), then...

1. Scan the two digit Hex Code for that character.  
(e.g. 03, 8F, ...FF)

### NOTE

*If you make a mistake, or lose your place while setting this option, scan the END label to exit Programming Mode. The scanner will sound an error tone (six rapid beeps) to indicate that programming was incomplete, and the setting will remain as it was before entering Programming Mode.*

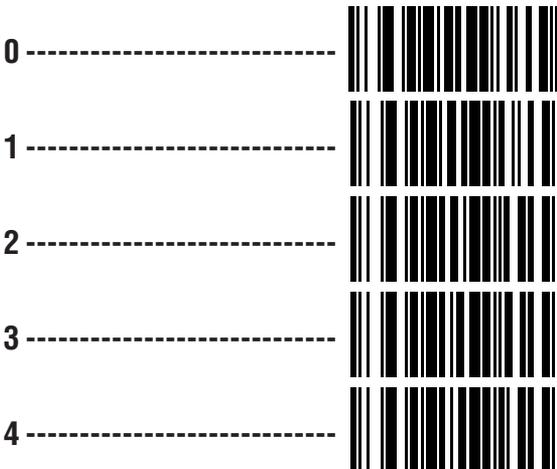
2. Scan the ONE CHARACTER ONLY label on the following page.
3. Scan the END label.

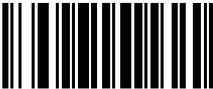
You have set a single character prefix or suffix.

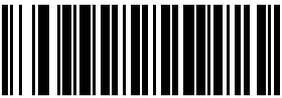
## SETTING PREFIX AND/OR SUFFIX CHARACTERS

### NOTE

*You must scan the SET label and either the SET PREFIX or SET SUFFIX label before using the labels on this page.*



5	-----	
6	-----	
7	-----	
8	-----	
9	-----	
A	-----	
B	-----	
C	-----	
D	-----	
E	-----	
F	-----	
ONE CHARACTER ONLY	-----	

END ----- 

## ASCII CHARACTER SET

The table on this page shows a set of ASCII characters and their corresponding Hex Values. The Hex Values in this table are needed for setting symbol-ogy specific label identifiers, as well as enabling custom prefix and suffix characters.

ASCII CHAR.	HEX VALUE						
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

## SETTING SYMBOLOGY SPECIFIC LABEL IDENTIFIERS (LABEL I.D.)

Symbology-specific label identifiers comprise one or two ASCII characters that can precede or follow barcode label data as it is transmitted to the host. The host uses these characters as a means of distinguishing between symbologies.

Industry standards have been established for symbology-specific label identifiers, and are listed in the table below. Most scanners will have factory default identifiers preset to these standards.

UPC-A----- 'A'	EAN-8 (5 Add-on)----- 'F'
UPC-E----- 'E'	EAN-8 (8 Add-on)----- 'FF'
EAN-8----- 'FF'	EAN-13 (2 add-on) ----- 'F'
EAN-13 ----- 'F'	EAN-13 (5 Add-on) ----- 'F'
UPC-A (2 add-on) ----- 'A'	EAN-13 (8 Add-on) ----- 'F'
UPC-A (5 Add-on) ----- 'A'	Code 39 ----- '*'
UPC-A (8 Add-on) ----- 'A'	Codabar ----- '%'
UPC-E (2 add-on) ----- 'E'	Interleaved.2 of 5 ----- 'i'
UPC-E (5 Add-on) ----- 'E'	Code 93 ----- '&'
UPC-E (8 Add-on) ----- 'E'	Code 128 ----- '#'
EAN-8 (2 add-on)----- 'FF'	MSI/Plessey----- '@'

**TABLE 1. INDUSTRY STANDARD LABEL IDENTIFIERS (ALL ARE PREFIXES)**

To set symbology-specific label identifiers:

1. Look at the ASCII chart shown on the previous page and identify the ASCII character(s) and the corresponding Hex Code(s) for the ASCII characters you will use as identifiers. You will also need to determine whether the character(s) will need to be sent as a prefix or a suffix.

For example: You need to change the label identifier prefix for UPC-A to 'A1'.

2. Scan the SET label below.
3. Scan either the TRANSMIT LABEL I.D. AS PREFIX or TRANSMIT LABEL I.D. AS SUFFIX, depending on your requirements.

For our example, the 'transmit as prefix' label would be scanned.

## SETTING SYMBOLOGY SPECIFIC LABEL IDENTIFIERS (LABEL I.D.) CONTINUED

4. Scan the label representing the symbology whose label identifier you wish to modify.

In our example, we would scan the 'UPC-A' symbology label.

5. Identify and scan the digits that correspond to the Hex Values.

The hex values from the ASCII chart that correspond to 'A1' from our example are as follows:  $41_{\text{hex}} = \text{'A'}$ , and  $31_{\text{hex}} = \text{'1'}$ . Thus, we would scan digit programming labels in this order: 4, 1, 3, 1.

6. Scan the END label.

In our example, you have changed the default label identifier prefix for UPC-A from 'A' to 'A1'.



## LABEL I.D. SYMBOLOGY SELECTION

SET SYMBOLOGY SPECIFIC LABEL IDENTIFIER FOR:

UPC-A -----



UPC-A w/2 DIGIT ADD-ON ----



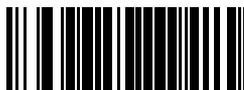
UPC-A w/5 DIGIT ADD-ON ----



UPC-A w/C128 ADD-ON -----



UPC-E -----



UPC-E w/2 DIGIT ADD-ON ----



UPC-E w/5 DIGIT ADD-ON ----



UPC-E w/C128 ADD-ON -----



EAN-8 -----



EAN-8 w/2 DIGIT ADD-ON -----



EAN-8 w/5 DIGIT ADD-ON -----



EAN-8 w/C128 ADD-ON -----



EAN-13 -----

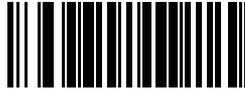


LABEL TRANSMIT  
FORMAT CONFIG

**LABEL I.D. SYMBOLOGY SELECTION  
CONTINUED**

**SET SYMBOLOGY SPECIFIC LABEL IDENTIFIER FOR:**

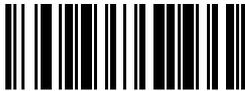
**EAN-13 w/2 DIGIT ADD-ON** -----



**EAN-13 w/5 DIGIT ADD-ON** -----



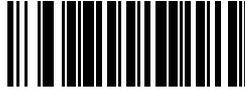
**EAN-13 w/C128 ADD-ON** -----



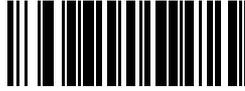
**CODE 39** -----



**CODABAR** -----



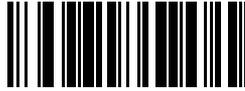
**INTERLEAVED 2 OF 5** -----



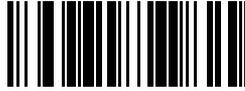
**STANDARD 2 OF 5** -----



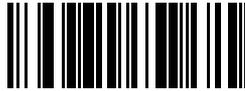
**CODE 93** -----



**CODE 128** -----



**MSI/PLESSEY** -----



**END** -----



**LABEL TRANSMIT  
FORMAT CONFIG**

## HOW TO SET SINGLE CHARACTER LABEL I.D.

If you only want a single character identifier, follow this modified procedure for setting label identifier.

1. Look at the ASCII chart shown on page 38 and identify the ASCII character and the corresponding Hex Code for the ASCII character you will use as the symbology specific identifier.
2. Scan the SET label.
3. Scan the label identifier label for the symbology identifier that you are going to change.

As an example, assume that you want to change the label identifier for EAN-8 from the default setting FF to the ASCII value 8. Scan the Set Symbology Specific Label Identifier barcode for EAN-8.

5. Identify the hex value that correspond to the ASCII character.

In this example '8' equals  $38_{\text{hex}}$ .

Simply follow the hex value for '8' ( $38_{\text{hex}}$ ) with the One Character Only label. This tells the scanner that '8' is a single digit label identifier.

6. Scan the barcodes values.

For the example in step five, scan 3, 8, One Character Only on the following two pages.

### NOTE

*If you make a mistake, or lose your place while setting this option, scan the END label to exit Programming Mode. The scanner will sound an error tone (six rapid beeps) to indicate that programming was incomplete, and the setting will remain as it was before entering Programming Mode.*

7. Scan the END label.

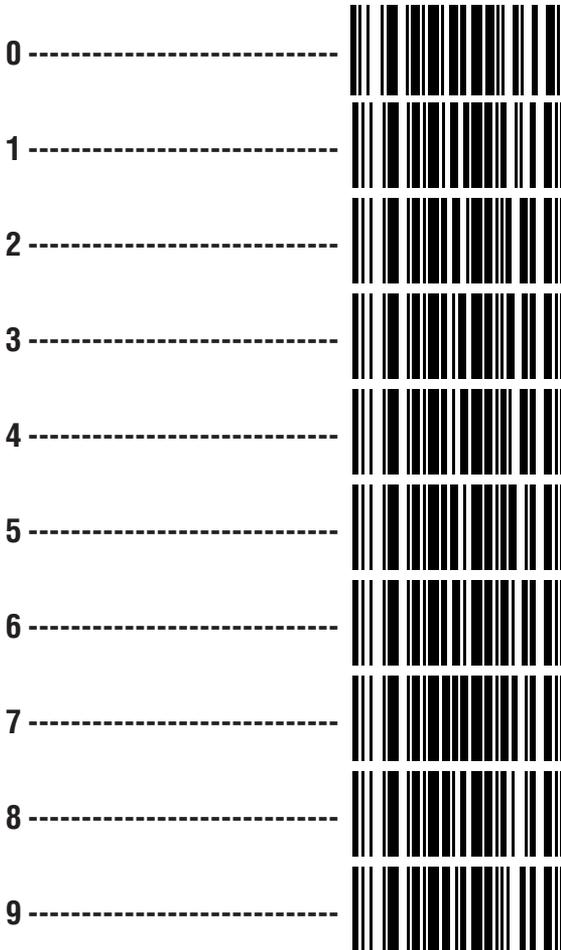
You have changed the default label identifier for EAN-8 from 'FF' to '8'.

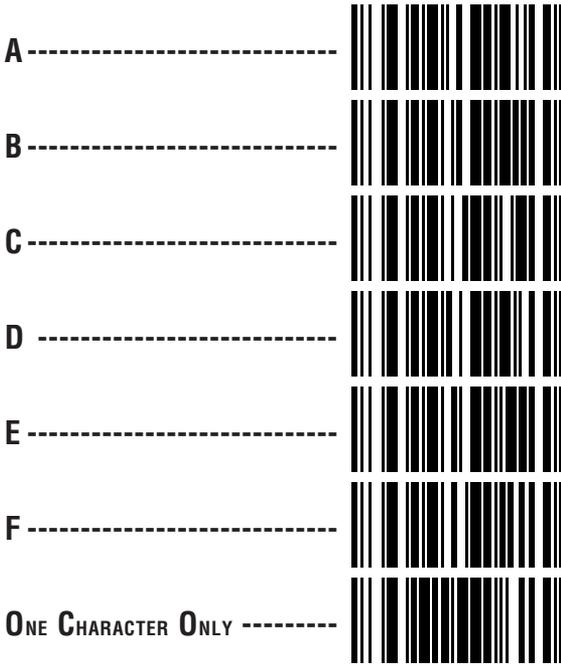
## DISABLING LABEL I.D. FOR A SPECIFIC SYMBOLOGY

This procedure is the same as setting a single character symbology identifier, except you should scan two zeros and the One Character Only labels before scanning the END label.

### SYMBOLOGY SPECIFIC LABEL IDENTIFIERS CHARACTERS

Use the labels on this page to change or modify symbology identifiers.





# SYMBOLOGIES

Symbology selection (bar code type) determines which symbologies the scanner will decode. The chart below shows the symbologies that are supported by each interface. Once you have identified the symbologies you wish to enable, turn to the following pages, enable those symbologies and set the data format options (e.g. check digit, start/stop characters) required by your host system for each symbology type. You must enable the symbology format options settings that are compatible with your host system.

The factory settings for each interface were chosen to meet the standard industry requirements and in most cases you will not need to change the symbology format settings. If you are unsure of your system requirements, test the scanner using the factory settings before making any changes.

## SYMBOLOGIES SUPPORTED

INTERFACE TYPE	UPC-A & E, EAN-8 & 13	UPC/EAN w/P2 Addons	UPC/EAN w/P5 Addons	UPC/EAN w/C128 Addons	Code 39	Code 39/Pharmacode	Interleaved 2 of 5	Interleaved 2 of 5/IATA	Standard 2 of 5	Codabar	Code 93	Code 128	MSI/Plessey
IBM Port 5B	●	●	●		●	●	●	●	○	●	●	●	
IBM Port 9B	●	●	●		●	●	●	●	●	●	●	●	
IBM Port E	●	○	○		●	●	●	●	○	●	●	●	
NCR OCIA (8 bit)	●	○	○		○	○	○	○	○	○	○	○	
NCR OCIA (9 bit)	●	○	○		●	●	●	●	○	○	○	●	
OCIA	●	●	●		●	●	●	●	○	●	●	●	
SNI OCIA	●	●	●		●	●	●	●	●	●	●	●	
Wand Emulation	●	●	●	●	●	●	●	●	●	●	●	●	●
RS-232	●	●	●	●	●	●	●	●	●	●	●	●	●
Keyboard Wedge	●	●	●		●	●	●	●	●	●	●	●	●

### KEY

- Supported
- The symbology can be enabled through configuration items, however, labels shall not be decoded or transmitted by the interface.

# SYMBOLGY OPTIONS OVERVIEW

**Enable All Symbolgies** — allows the scanner to auto-discriminate between all the symbolgies in this list. Use this selection only if you must constantly read a wide variety of symbolgies. Turn to the following pages for enabling additional symbolgy specific options.

**Disable All Symbolgies** — disables all symbolgies<sup>1</sup>. The scanner will only recognize the programming labels contained in this manual while you are in Programming Mode.

**Enable UPC/EAN** — tells the scanner to recognize UPC-A, UPC-E, EAN-8, and EAN-13. If you enable this symbolgy, additional options for symbolgy expansion and reading add-ons are available. Allows selection of expansion and add-on options.

**Enable Code 39** — selects Code 39 as an active symbolgy. Allows selection of Check Digit, Start/Stop and Single Digit options.

**PharmaCode 39** — is a symbolgy subset of Code 39. Enabling PharmaCode 39 selects this special Italian code as the active Code 39 symbolgy (superceding standard Code 39 features).

## NOTE

*Standard Code 39 must be enabled before PharmaCode can be enabled.*

**Enable Interleaved 2 of 5** — selects Interleaved 2 of 5 as an active symbolgy. Allows change of Check Digit or label format (fixed or variable length) options.

**Enable Standard 2 of 5** — selects Standard 2 of 5 as an active symbolgy. Options for this symbolgy are similar to Interleaved 2 of 5 features.

---

1 Code 128 is always active for the purpose of reading programming bar code labels, however, the scanner does not transmit data to the host when in Programming Mode. Scanning the DISABLE ALL SYMBOLGIES label will disable Code 128 transmission to the host.

---

**IATA** — is a special symbology subset of Standard 2 of 5. Enabling IATA selects this custom code as the active Standard 2 of 5 symbology (superceding any other Standard 2 of 5 features).

**NOTE**

*Standard 2 of 5 must be enabled before IATA can be enabled.*

**Enable Codabar** — selects Codabar as an active symbology. Allows selection of Check Digit, Start/Stop character and format, or label format (fixed or variable length) options.

**Enable Code 93** — selects Code 93 as an active symbology. The scanner is preset to recognize all Code 93 bar codes that have between 2 and 50 characters. Code 93 has no user selectable options.

**Enable Code 128<sup>1</sup>** — selects Code 128 as an active symbology. The scanner is preset to recognize all Code 128 bar codes that have between 2 and 50 characters. Code 128 has no user selectable options.

**Enable MSI/Plessey** — selects MSI/Plessey as an active symbology. Allows selection of Check Digit or label format (fixed or variable length) options.

## UNIVERSAL SYMBOLOGY SELECTION

To set the scanner to read all symbologies, scan the ENABLE ALL SYMBOLOGIES bar code below.

**NOTE**

*DO NOT scan SET or END bar codes when programming universal symbology features. Programming mode is automatically entered and exited when one of the two special bar codes below are scanned.*

### ENABLE ALL SYMBOLOGIES



### DISABLE ALL SYMBOLOGIES<sup>1</sup>



<sup>1</sup> Code 128 is always active for the purpose of reading programming bar code labels, however, the scanner does not transmit data to the host when in Programming Mode.

# SYMBOLGY SELECTION

The bar code programming labels on the following pages allow you to enable or disable individual symbologies.

**NOTE**

*If you enable a symbology that has additional features that should be set, turn to the pages that support that symbology and its programmable features.*

**SET** ----- 

**ENABLE UPC/EAN** ----- 

**DISABLE UPC/EAN** ----- 

**ENABLE CODE 39** ----- 

**DISABLE CODE 39** ----- 

**ENABLE PHARMA CODE<sup>2</sup> 39** ----- 

**DISABLE PHARMA CODE 39** ----- 

2 Code 39 must first be enabled for the scanner to read PharmaCode 39 labels. Enabling PharmaCode 39 will convert Code 39 data to PharmaCode format whenever possible.

<b>ENABLE INTERLEAVED 2 OF 5 ---</b>	
<b>DISABLE INTERLEAVED 2 OF 5 ---</b>	
<b>ENABLE STANDARD 2 OF 5 -----</b>	
<b>DISABLE STANDARD 2 OF 5 ----</b>	
<b>ENABLE IATA<sup>3</sup> -----</b>	
<b>DISABLE IATA -----</b>	

---

3 Standard 2 of 5 must first be enabled before IATA can be enabled, however, the scanner will not read Standard 2 of 5 labels when IATA is enabled.

**ENABLE CODABAR** ----- 

**DISABLE CODABAR** ----- 

**ENABLE CODE 93**----- 

**DISABLE CODE 93** ----- 

**ENABLE CODE 128** ----- 

**DISABLE CODE 128<sup>4</sup>** ----- 

**ENABLE MSI/P<sub>LESSEY</sub>** ----- 

**DISABLE MSI/P<sub>LESSEY</sub>** ----- 

**END** ----- 

---

4 Code 128 is always active for the purpose of reading programming bar code labels. Scanning the DISABLE ALL SYMBOLOGIES or the DISABLE CODE 128 labels disables Code 128 transmission to the host (disables decoding of all C128 non-programming labels).

## UPC/EAN OPTIONS

The information below provides a brief description of the programmable UPC/EAN features included on the following pages.

**Expand UPC-A to EAN-13** — adds a leading zero to a UPC-A label which 'expands' the label to the EAN-13 data format. Selecting this feature also changes the symbology ID to match those required for EAN-13.

**Expand UPC-E to UPC-A** — expands UPC-E labels to UPC-A data format. Selecting this feature also changes the symbology ID to match those required for UPC-A.

If this feature and Expand UPC-A to EAN-13 are both enabled, label data will be sent to the host in EAN-13 label format.

**Expand EAN-8 to EAN-13** — adds five zeros in front of an EAN-8 label. Data is sent in EAN-13 data format. Selecting this feature also changes the symbology ID to match those required for EAN-13.

**Expand UPC-E to EAN-13** — expands UPC-E labels to EAN-13 data format. Selecting this feature also changes the symbology ID to match those required for EAN-13.

### **UPC-A or UPC-E and EAN-8 or EAN-13 Two and Five Digit Add-Ons**

Optional — scanner will read UPC/EAN bar codes with or without add-ons.

Required — UPC/EAN bar codes must have add-on or label will not be read.

Disable — scanner will not recognize/read add-on portion of UPC/EAN labels, but will read the main body of the label.

**Price/Weight Check Digit** — provides options for enabling price/weight check digits. The feature includes selections for domestic four or five digit, and European four or five digit, as well as the option to disable the price/weight check.

## UPC/EAN EXPANSION

Use these labels to enable or disable:

- Expand UPC-A to EAN-13
- Expand EAN-8 to EAN-13
- Expand UPC-E to UPC-A
- Expand UPC-E to EAN-13



1 When any expansion feature is enabled, the transmission of the Prefix, Suffix, Check Digit and Number System Digit (NSD) are controlled by your selections for the symbology 'expanded to' rather than the symbology 'expanded from'. For example, if you expand UPC-E to UPC-A, settings for UPC-A determine how the scanner sends a bar code's contents.

## UPC/EAN ADD-ONS

If you need to scan UPC or EAN labels that include Add-on codes, the selections on this page set the scanner's Add-on feature. There are three Add-on read modes available: optional, required and disabled.

**Optional** — the scanner will recognize UPC bar codes with or without Add-ons.

### NOTE

*Due to the structure of Add-on codes, selecting the Optional setting makes it impossible to ensure that the scanner will always read the Add-on portion of the label. Informatics makes no guarantee, either written or implied, that scanners with optional Add-on decoding enabled will perform with the speed and accuracy required for any given application.*

**Required** — the scanner will not recognize or decode any UPC/EAN labels that do not contain an Add-on segment.

**Disabled** — the scanner will not recognize or decode any Add-on segment of UPC/EAN labels. The scanner will read and decode the standard UPC/EAN portion of the label.



## C128 AND CUSTOM ADD-ONS

A wide array of add-on options are available to streamline your installation to best advantage. Call your salesman or service provider for assistance in customizing your scanner's add-on capabilities to your own unique specifications.

## PRICE/WEIGHT CHECK DIGIT

The price/weight check digit selections allow you to specify whether the scanner should calculate an extra check digit based on a four or five-digit price/weight block and compare it with the price/weight check digit contained in the bar code. If the calculated check digit does not match the value of the check digit contained in the bar code, the label will be rejected as invalid. Select domestic four or five digit, European four or five digit, or disable the price/weight check.

<b>P R I C E / W E I G H T  C H E C K  D I G I T</b>	<b>SET</b> -----	
	<b>DISABLE PRICE/WEIGHT CHECK -</b>	
	<b>ENABLE 4 DIGIT CHECK -----</b>	
	<b>ENABLE 5 DIGIT CHECK -----</b>	
	<b>ENABLE EURO 4 DIGIT CHECK --</b>	
	<b>ENABLE EURO 5 DIGIT CHECK --</b>	
	<b>END</b> -----	

## UPC DATA FORMAT SETTINGS

These settings affect UPC data format when RS-232 or OCIA is the active interface. Number System Digit (NSD) settings operate with RS-232 and Keyboard Wedge interfaces ONLY.



<sup>1</sup> NSD = Number System Digit. The NSD character is the character that precedes the UPC bar code. The NSD for regular UPC-A bar codes is a zero. Other commonly used Number System Digits used with UPC-A are:

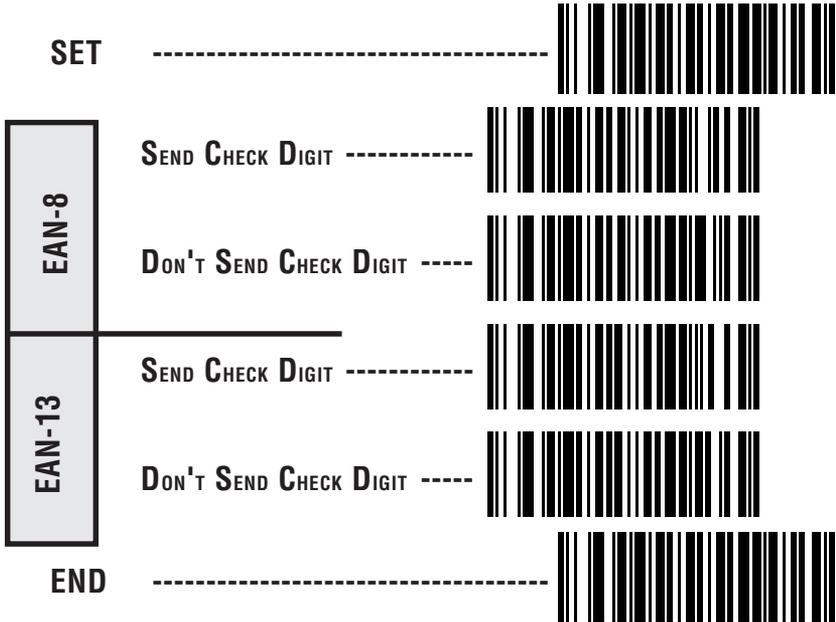
- 2 - used for random weight items such as meat and produce
- 3 - used for the drug and health items
- 4 - used for in-store non-food items
- 5 - used for coupons



<sup>2</sup> If UPC-E is expanded to UPC-A, the transmission of Check Digit (CD) and NSD will be determined by the UPC-A settings on this page, not by these settings.

## EAN DATA FORMAT SETTINGS

These settings affect EAN data format when RS-232, Keyboard Wedge or OCIA is the active interface.



## CODE 39 OPTIONS

The Code 39 symbology has the following programmable features:

**Check Digit** — calculate the Check Digit to verify that the Check Digit contained in the barcode label is correct. If you enable this feature, your barcodes must contain a Check Digit.

You may also choose to transmit or not transmit the Check Digit independent of whether the Check Digit is calculated by the scanner. If you choose to *Transmit Check Digit*, but not calculate, the scanner sends the Check Digit encoded in the barcode without verifying its accuracy. If you choose *Don't Transmit Check Digit*, the scanner will remove the Check Digit's contents before sending the barcode data to the host.

**Start/Stop Characters** — you can choose either Send or Don't Send depending on your host's interface requirement.

**Code 39 Full ASCII** — enable or disable the ability to decode Code 39 Full ASCII labels.

**Code 39 Minimum Label Length** — set the minimum label length required for Code 39 labels (not including the check character). This feature is provided to ignore small label segments, reducing the possibility that a portion of a good label is incorrectly seen as an entire label.

# CODE 39 (CONTINUED)

Use these labels to change the Code 39 programmable features.



## CODE 39 (CONTINUED)

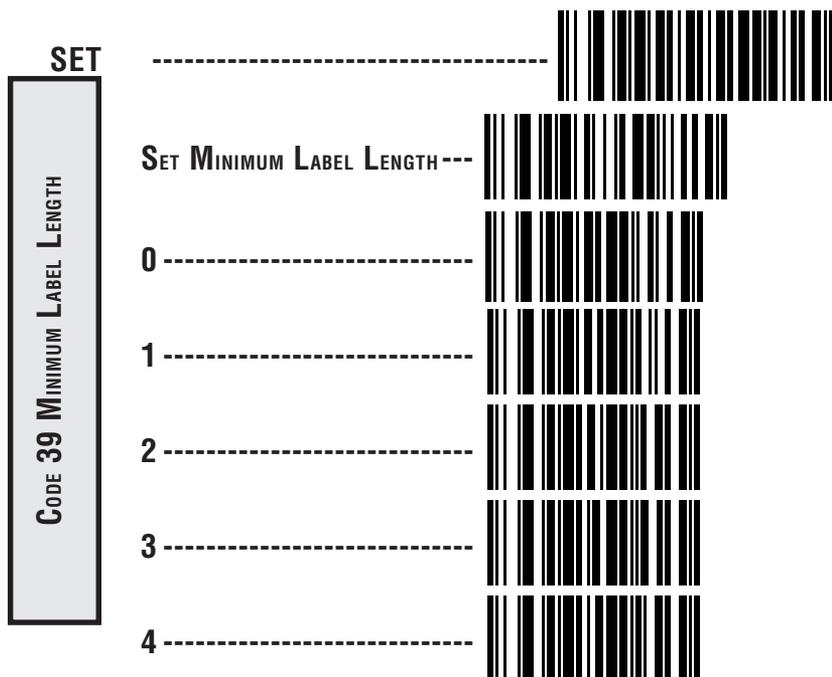
Follow these steps to set Code 39 Minimum Label Length:

1. Identify the minimum length setting you want to make. The selectable range is 00 to 48 characters (Note: For the IBM Interface, the selectable range is 00 to 32 characters).
2. Scan the SET label.
3. Scan the SET CODE 39 MINIMUM LABEL LENGTH barcode.

### SETTING LENGTHS

If you are setting a length less than ten, you must scan a zero first and then the length digit ( 04, 06, 08).

4. Set the minimum label length by scanning the correct digits from below and the next page.
5. Scan the END label.



CODE 39 MINIMUM LABEL LENGTH

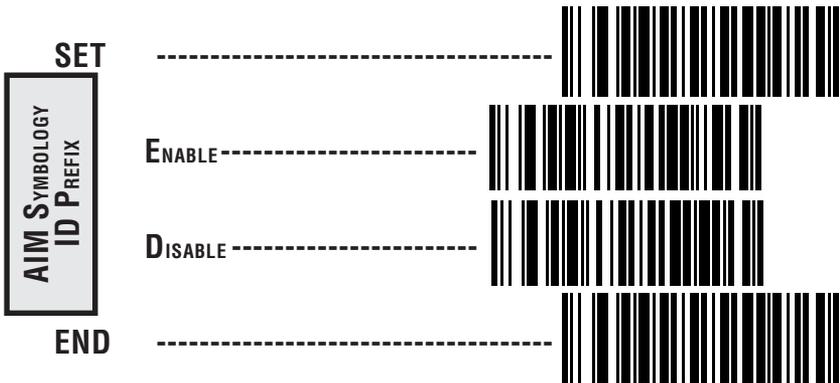


## CODE 128 OPTIONS

### AIM SYMBOLGY ID PREFIX

The Automatic Identification Manufacturers, Inc. of the United States (AIM USA) have standardized the reporting of data sources from barcode reading devices. Sending the AIM symbology prefix identifies the symbology to the host terminal, allowing it to specifically differentiate between UCC-128 (Code 128 with Function Character 1 in the first position) and standard Code 128 symbols. When this feature is disabled, the host cannot differentiate between these symbols.

Scan the labels below to enable or disable the sending of an AIM symbology ID prefix.



## INTERLEAVED 2 OF 5

The Interleaved 2 of 5 symbology has the following programmable features:

**Check Digit** — calculate the Check Digit to verify that the Check Digit contained in the barcode label is correct. If you enable this feature, your barcodes must contain a Check Digit.

You may also choose to transmit or not transmit the Check Digit independent of whether the Check Digit is calculated by the scanner. The *Transmit Check Digit* will have no effect unless the *Compute Check Digit* feature is enabled. If you choose *Don't Compute Check Digit*, the scanner sends the Check Digit encoded in the bar code without verifying its accuracy. If you choose both *Compute Check Digit* and *Don't Transmit Check Digit*, the scanner will remove the Check Digit's contents before sending the bar code data to the host.

**Label Format** — provides the selection between fixed or variable length labels. If your application has labels with specific fixed lengths, we recommend selecting fixed lengths to improve read rate and avoid short reads.

You can select any valid number of digits for reading specific length labels only. Read the following details for specific Interleaved 2 of 5 limits.

### INTERLEAVED 2 OF 5 LABEL LENGTHS

**Interleaved 2 of 5 Minimum Label Length** — set the minimum label length required for I 2/5 labels (not including the check character). This feature is provided to ignore small label segments, reducing the possibility that a portion of a good label is incorrectly seen as an entire label.

**Variable Length** — If you select variable length, the scanner will recognize labels with an even number of digits between 04 and 50 digits (Note: For IBM Interface the scanner recognizes labels with an even number of digits between 04 and 32).

**Fixed Length** — If you select fixed length, there are three labels for programming your scanner to read either one or two fixed lengths. The labels are:

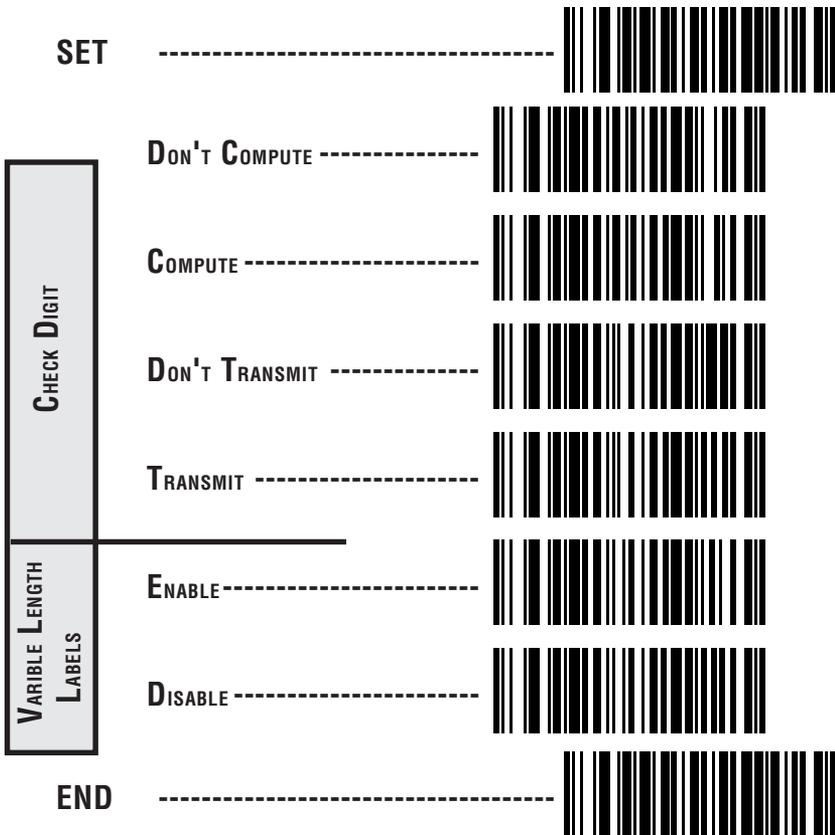
- **Set First Fixed Length** — use this label to instruct the scanner that the next two programming labels you scan will define the first fixed label length. This setting can be any even number of digits between 02 and 50 digits. (Note: For the IBM Interfaces the setting can be any even number of digits between 02 and 32 digits).

- **Set Second Fixed Length** — use this label to instruct the scanner that the next two programming labels you scan will define the second fixed label length. Again, this setting can be any even number of digits between 02 and 50 digits. (Note: For IBM Interface: use even number of digits between 02 and 32).
- **No Second Fixed Length** — scan this label after setting the first fixed length to instruct the scanner to recognize only the label length chosen as the first fixed length.

## CHECK DIGIT AND VARIABLE LENGTH LABEL SELECTIONS

These programming labels determine whether you compute and send the check digit contents.

If you want to set the scanner to read only fixed length labels, follow the procedures on the pages immediately following.



## SETTING INTERLEAVED 2 OF 5 FIXED AND MINIMUM LABEL LENGTHS

All interfaces that are shipped with the standard factory configuration are set to read variable length labels. If you switch from variable to fixed length labels (by disabling variable lengths on the previous page), the default fixed label lengths are 14 digits and 8 digits. Follow the steps below to change these defaults. All fixed length settings for Interleaved 2 of 5 must be an even number.

### SET FIXED

1. Identify the fixed length settings you want to make.
2. Scan the SET label.
3. Scan the ENABLE FIRST FIXED barcode.

### SETTING FIXED LENGTHS

If you are setting a length less than ten, you must scan a zero first and then the length digit ( 04, 06, 08).

4. Set the first fixed label length by scanning the correct digits from the next two pages.

If you need to set a second fixed length, continue with step five. If you do not need to set a second fixed length scan the NO SECOND FIXED LENGTH below and skip to step seven.

5. Scan the SET SECOND FIXED label.
6. Set the second fixed label length by scanning the correct digits from this page.
7. Scan the END label to complete the procedure.

### SETTING MINIMUM LABEL LENGTH

1. Identify the minimum length setting you want to make. The selectable range is 00 to 50 characters (Note: For the IBM Interface the range is 00 to 32 characters).
2. Scan the SET label.
3. Scan the SET MINIMUM LABEL LENGTH barcode.

If you are setting a length less than ten, you must scan a zero first and then the length digit ( 04, 06, 08).

4. Set the minimum label length by scanning the correct digits from the next two pages
5. Scan the END label.

**INTERLEAVED 2 OF 5 FIXED AND MINIMUM LABEL LENGTHS**

<b>SET</b>	-----	
<b>SET FIRST FIXED LENGTH</b>	-----	
<b>SET SECOND FIXED LENGTH</b>	----	
<b>NO SECOND FIXED LENGTH</b>	-----	
<b>SET MINIMUM LABEL LENGTH</b>	---	
<b>0</b>	-----	
<b>1</b>	-----	
<b>2</b>	-----	
<b>3</b>	-----	
<b>4</b>	-----	
<b>6</b>	-----	
<b>8</b>	-----	
<b>END</b>	-----	

## STANDARD 2 OF 5

The Standard 2 of 5 symbology has the following programmable features:

**Check Digit** — calculate the Check Digit to verify that the Check Digit contained in the bar code label is correct. If you enable this feature, your bar codes must contain a Check Digit.

You may also choose to transmit or not transmit the Check Digit independent of whether the Check Digit is calculated by the scanner. The *Transmit Check Digit* will have no effect unless the *Compute Check Digit* feature is enabled. If you choose *Don't Compute Check Digit*, the scanner sends the Check Digit encoded in the bar code without verifying its accuracy. If you choose both *Compute Check Digit* and *Don't Transmit Check Digit*, the scanner will remove the Check Digit's contents before sending the bar code data to the host.

The *Transmit Check Digit* option has no effect unless the *Compute Check Digit* option is enabled.

**Label Format** — provides the selection between fixed or variable length labels. If your application has labels with specific fixed lengths, we recommend selecting fixed lengths to improve read rate and avoid short reads.

You can select any valid number of digits for reading specific length labels only. Read the following details for specific Standard 2 of 5 limits.

### STANDARD 2 OF 5 LABEL LENGTHS

**Standard 2 of 5 Minimum Label Length** — set the minimum label length required for Standard 2/5 labels (not including the check character). This feature is provided to ignore small label segments, reducing the possibility that a portion of a good label is incorrectly seen as an entire label.

**Variable Length** — If you select variable length, the scanner will recognize labels with a number of digits between 01 and 50 digits. (Note: for IBM Interface the number of recognized labels is between 01 and 32 digits).

**Fixed Length** — If you select fixed length, there are three labels for programming your scanner to read either one or two fixed lengths. The labels are:

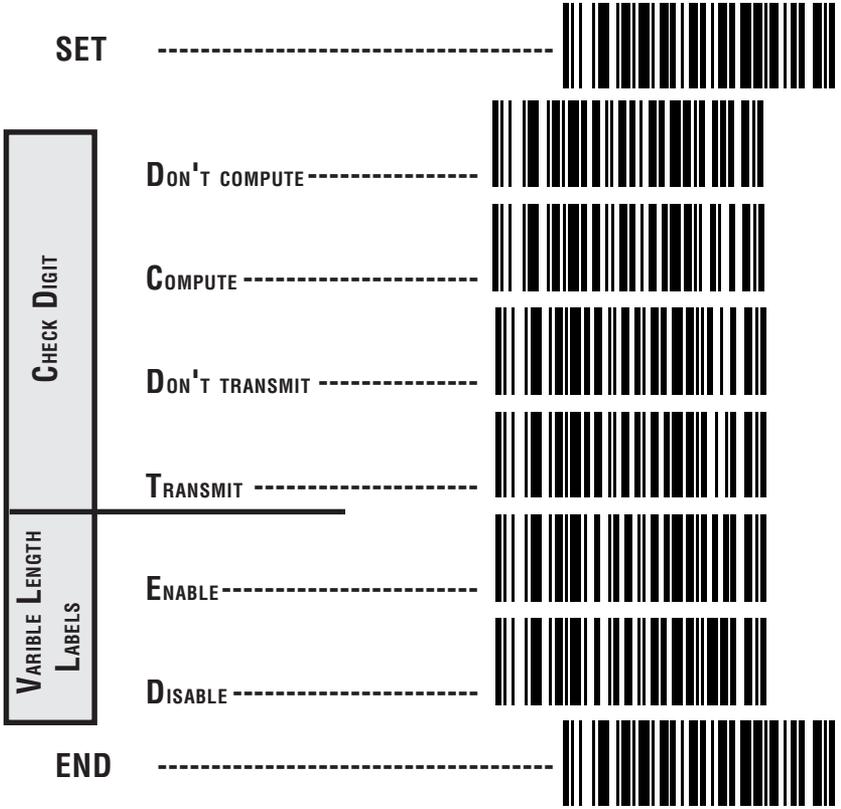
- **Set First Fixed Length** — use this label to instruct the scanner that the next two programming labels you scan will define the first fixed label length. This setting can be any number of digits between 01 and 50 digits (IBM Interface: 01 to 32 digits).

- **Set Second Fixed Length** — use this label to instruct the scanner that the next two programming labels you scan will define the second fixed label length. Again, this setting can be any number of digits between 01 and 50 digits. (IBM Interface: between 01 and 32 digits).
- **No Second Fixed Length** — scan this label after setting the first fixed length to instruct the scanner to recognize only the label length chosen as the first fixed length.

## CHECK DIGIT AND VARIABLE LENGTH LABEL SELECTIONS

These programming labels determine whether you compute and send the check digit contents.

If you want to set the scanner to read only fixed length labels, follow the procedures on the pages immediately following.



## SETTING STANDARD 2 OF 5 FIXED AND MINIMUM LABEL LENGTHS

All interfaces that are shipped with the standard factory configuration are set to read variable length labels. If you switch from variable to fixed length labels, the default fixed label lengths are 14 digits and 8 digits. Follow the steps below to change these defaults.

### SET FIXED

1. Identify the fixed length settings you want to make.
2. Scan the SET label.
3. Scan the ENABLE FIRST FIXED bar code.

### SETTING FIXED LENGTHS

If you are setting a length less than ten, you must scan a zero first and then the length digit ( 04, 07, 08).

4. Set the first fixed label length by scanning the correct digits from the next two pages.

If you need to set a second fixed length, continue with step five. If you do not need to set a second fixed length scan the NO SECOND FIXED LENGTH below and skip to step seven.

5. Scan the SET SECOND FIXED label.
6. Set the second fixed label length by scanning the correct digits from this page.
7. Scan the END label to complete the procedure.

### SETTING MINIMUM LABEL LENGTH

1. Identify the minimum length setting you want to make. The selectable range is 01 to 50 characters. (Note:For the IBM Interface the range is 01 to 32 characters).
2. Scan the SET label.
3. Scan the SET MINIMUM LABEL LENGTH bar code.

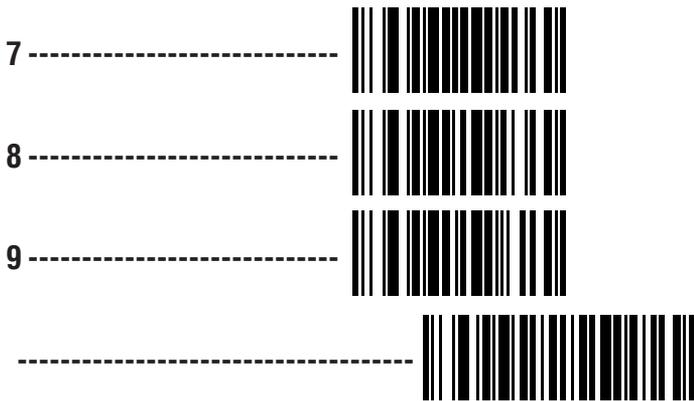
If you are setting a length less than ten, you must scan a zero first and then the length digit ( 04, 07, 08).

4. Set the minimum label length by scanning the correct digits from the next two pages.
5. Scan the END label.

**STANDARD 2 OF 5 FIXED AND MINIMUM LABEL LENGTHS**

<b>SET</b> -----	
<b>SET FIRST FIXED LENGTH</b> -----	
<b>SET SECOND FIXED LENGTH</b> ----	
<b>NO SECOND FIXED LENGTH</b> ----	
<b>SET MINIMUM LABEL LENGTH</b> ---	
<b>0</b> -----	
<b>1</b> -----	
<b>2</b> -----	
<b>3</b> -----	
<b>4</b> -----	
<b>5</b> -----	
<b>6</b> -----	

**STANDARD 2 OF 5 FIXED AND  
MINIMUM LABEL LENGTHS**



## CODABAR OPTIONS

The Codabar symbology has the following programmable features:

**Check Digit** — calculate the Check Digit to verify the label's contents have been read correctly. If you enable this feature, your bar codes must include a Check Digit. You may also choose to transmit or not transmit the Check Digit.

**Start/Stop Characters** — you can choose either Send or Don't Send depending on your host's interface requirement.

**Start/Stop Format** — if you need to send the Start/Stop characters, there are four standard format options that you can select from; ABCD/TN\*E, ABCD/ABCD, abcd/trn\*e, or abcd/abcd. This setting must match your system requirements. If you select one of these options, it determines how the ASCII characters A, B, C, D that are used for Start/Stop characters, will be translated before being sent to the host.

**Start/Stop Match** — the requirement that the Start and Stop characters must match (be identical) can be enabled or disabled.

**Label Format** — provides the selection between fixed or variable length labels. If your application has labels with specific fixed length, we recommend selecting fixed lengths to improve read rate.

If you select variable length, the scanner will recognize labels with between 2 and 47 digits (not including the optional check digit). Note: For IBM Interface: between 2 and 32 digits.

**Set First Fixed Length** — if you select fixed length, use this feature to set a first fixed label length to a setting between 03 and 50 digits. (IBM Interface: between 03 and 32 digits).

**Set Second Fixed Length** — if you select fixed length, use this feature to set a second fixed label length to a setting between 03 and 50 digits. (IBM Interface: between 03 and 32 digits).

**No Second Fixed Length** — scan this label after setting the first fixed length to instruct the scanner to recognize only the label length chosen as the first label length.

**Gap Check** — allows the scanner to combine two label halves printed in close proximity to each other that may have been printed at different times and perhaps different locations.

## CODABAR CHECK DIGIT & VARIABLE LENGTH

These programming labels determine whether you compute and send the check digit contents and enables variable length.

If you want to set the scanner to read only fixed length labels, follow the procedures on the following pages.



## CODABAR START/STOP CHARACTER

These bar codes allow you to set the Start/Stop character format and transmission. Refer to your host user's manual to identify your system requirements, then use these labels to select which characters are transmitted.



<sup>1</sup> Choosing Transmit *Start/Stop* characters requires selecting one of these four data format selections: ABCD/TN\*E, abcd, tn\*e, ABCD/ABCD, or abcd/abcd. Refer to Appendix A, *Standard Factory Settings*, to identify the default setting for your scanner's interface type.

## CODABAR FIXED LENGTH

Most scanners shipped from the factory are set to read variable length labels for Codabar. If you switch from variable to fixed length labels, the factory set fixed label lengths are 14 and 08. Follow the steps below to change these defaults.

### ENABLE FIXED

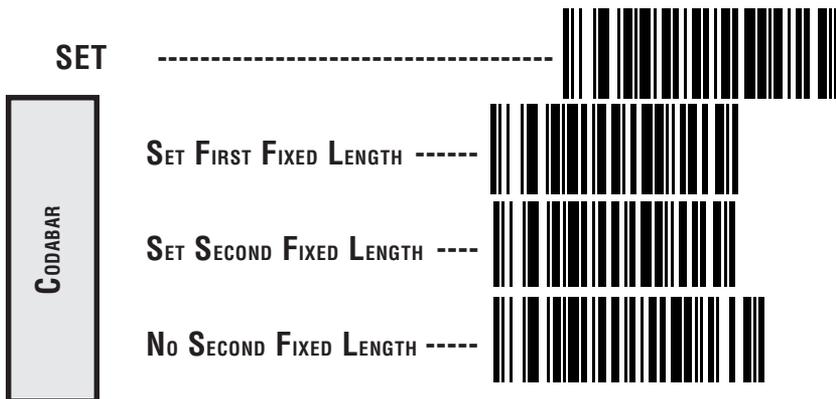
1. Identify the fixed length settings you want to make.
2. Scan the SET label.
3. Scan the SET FIRST FIXED LENGTH label.

### SETTING LENGTHS

If you are setting a length less than ten, you must scan a zero first and then the length digit (02, ...09).

4. Set the first fixed length label by scanning the correct digits from the next page. The selectable range is from 03 to 50 (IBM Interface the range is 03 to 32 digits).

If you need to set a second fixed length, continue with step five. If you do not need to set a second fixed length, scan the NO SECOND FIXED LENGTH label below and skip to step seven.



5. Scan the SET SECOND FIXED LENGTH label.
6. Set the second fixed label length by scanning the correct digits from this page. The selectable range is from 03 to 50 (IBM Interface the range is from 03 to 32 digits).
7. Scan the END label to complete the procedure.

**CODABAR SET FIXED LENGTHS**

0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
END		

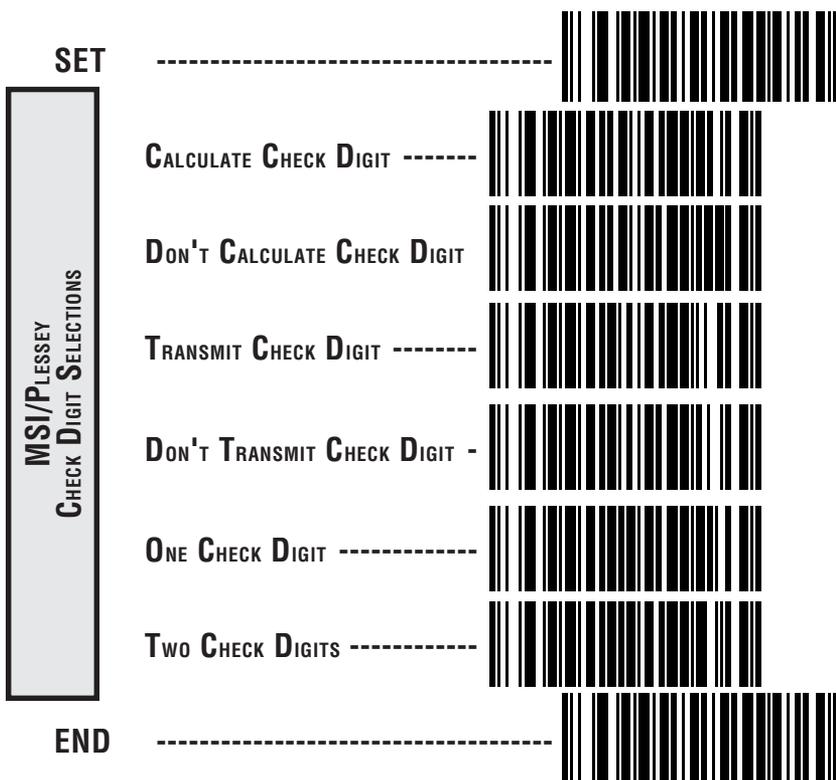
## MSI/PLESSEY CHECK DIGIT

MSI/Plessey Check Digit options include:

**Check Digit Calculation** — calculate the Check Digit to verify the labels contents have been read correctly. If you enable this feature, your bar codes must include a Check Digit. You may also choose to transmit or not transmit the Check Digit.

**Transmit Check Digit** — enable or disable transmission of MSI/Plessey Check Digit(s).

**Number of Check Digits** — specify either one or two Check Digits.



## MSI/PLESSEY FIXED LENGTH

You have the option of requiring MSI/Plessey labels to have one or two fixed length(s).

To set fixed length(s) for MSI/Plessey labels:

1. Identify the fixed length setting(s) you wish to make. Fixed lengths can be set from four to fifteen, including check character(s).
2. Scan the SET label.
3. Scan the ENABLE MSI/PLESSEY FIXED label.
4. Scan the SET FIRST FIXED LENGTH label.
5. Set the first fixed label length by scanning the correct digits on the following page. If you are setting a length less than ten, you must scan a zero first and then the length digit (e.g., 04, 06, 09). If a second fixed length is not needed, skip to Step 8.
6. If a second fixed length is desired, scan the SET SECOND FIXED LENGTH label.
7. Set the second fixed label length by scanning the correct digits on the following page. Remember, if you're setting a length less than ten, you must scan a zero first and then the length digit.
8. Scan the END label.



MSI/P<sub>LESSEY</sub> SET FIXED LENGTHS

SET FIRST FIXED LENGTH -----	
SET SECOND FIXED LENGTH ----	
NO SECOND FIXED LENGTH -----	
0 -----	
1 -----	
2 -----	
3 -----	
4 -----	
5 -----	
6 -----	
7 -----	
8 -----	
9 -----	
END -----	

# GENERAL FEATURES

The following section contains the general features that are common to all interfaces. These features allow modification of the scanner's behavior to accommodate user preferences.

## GOOD READ BEEPER SETTINGS

These labels provide options for the scanner's audible 'beep' signal.

**Audible Signal**—enables/disables the beep upon completion of a good read.

### NOTE

*It is strongly recommended that this feature remain enabled, as the good read beep provides the best scanning status feedback to the user. Error tones are always enabled and cannot be disabled.*

**Power-up Beep**—when enabled, beeps upon scanner power up.

**Beeper Volume**—allows setting of the beeper to NORMAL or HIGH volume.

**Good Read Beep Duration**—can be adjusted to short (100msec), medium (250msec), or long (500msec) durations.

**When to Beep**—may be programmed to announce a 'good read' upon completion of one of the following events:

- Decode of a bar codes label
- Transmission from the scanner to the host
- CTS activation at the host terminal (RS-232 models ONLY)

<b>AUDIBLE SIGNAL</b>	<b>SET</b> -----	
	<b>OFF</b> -----	
<b>POWER-UP BEEP</b>	<b>ON</b> -----	
	<b>ENABLE</b> -----	
<b>BEEPER VOLUME</b>	<b>DISABLE</b> -----	
	<b>NORMAL</b> -----	
<b>BEEP DURATION</b>	<b>LOUD</b> -----	
	<b>SHORT</b> -----	
	<b>MEDIUM</b> -----	
<b>WHEN TO BEEP</b>	<b>LONG</b> -----	
	<b>AFTER DECODE</b> -----	
	<b>AFTER LABEL X-MISSION</b> -----	
<b>END</b> -----	<b>AFTER CTS ACTIVATION</b> -----	

## READ VERIFICATION

**Wasp Laser** programming has been improved to allow selection of read verification "minimum read" requirements by symbology type, as well as universally. This means that the scanner needn't waste valuable time verifying high-confidence symbologies, while offering the security of multiple read verification on less reliable codes.

### NOTE

*The more times the scanner is required to read and compare the bar codes data, the longer it will take to complete a good read cycle.*

### UNIVERSAL READ VERIFICATION

To set read requirements universally (read requirements will be in effect for all symbologies), scan one of the selections below for one, two, three or four reads required before a bar code's data can be transmitted to the host.

### NOTE

*DO NOT scan SET or END bar codes when programming these features. Programming mode is automatically entered and exited when one of the four bar codes below are scanned.*

#### VERIFY 1 READ, ALL SYMBOLOGIES



#### VERIFY 2 READS, ALL SYMBOLOGIES



#### VERIFY 3 READS, ALL SYMBOLOGIES



#### VERIFY 4 READS, ALL SYMBOLOGIES

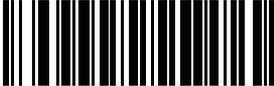


UNIVERSAL READ VERIFICATION

## READ VERIFICATION BY SYMBOLOGY

To set the minimum read requirement for a desired symbology:

1. Scan the SET label.
2. Scan one symbology label below to select the symbology to be verified.
3. Scan the label on the following page representing the amount of times you wish a bar code label of that symbology type to be read before transmission to the host.
4. Repeat steps one through three above until read verification has been selected for all symbologies you desire to be verified.
5. Scan the END label.

<b>READ VERIFICATION SYMBOLOGY TYPE</b>	<b>SET</b> -----	
	<b>VERIFY UPC-A</b> -----	
	<b>VERIFY UPC-E</b> -----	
	<b>VERIFY EAN-8</b> -----	
	<b>VERIFY EAN-13</b> -----	
	<b>VERIFY INSTORE LABEL<sup>1</sup></b> -----	
	<b>VERIFY CODE 39</b> -----	

<sup>1</sup> Instore labels are UPC-A bar codes with a number system character of 2 or 4, and EAN-8 and EAN-13 bar codes with a Flag 1 character of 2.

**READ VERIFICATION SYMBOLOGY TYPE**

---

**VERIFY READS  
(APPLIES TO ALL SYMBOLOGIES ABOVE)**

**VERIFY INTERLEAVED 2 OF 5** ----



**VERIFY STANDARD 2 OF 5** -----



**VERIFY CODABAR** -----



**VERIFY CODE 93** -----



**VERIFY CODE 128** -----



**VERIFY MSI/PLESSEY** -----



**ONE READ** -----



**TWO READS** -----



**THREE READS** -----



**FOUR READS** -----



**END** -----



## LOW POWER MODE

**Wasp Laser** incorporates two optional low power modes to optimize power usage and extend scanner life.

### NOTE

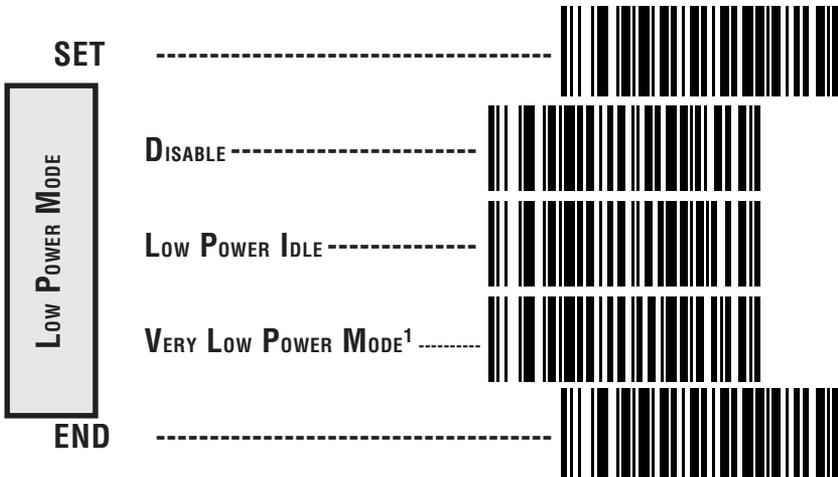
*These features are only available with RS-232, Wand Emulation and Keyboard Wedge host interfaces.*

### WARNING

*DO NOT use Very Low Power Mode in conjunction with Stand Mode, as this feature is not compatible and may cause unexpected behavior.*

Low Power Idle—places the scanner's microcontroller into a WAIT state during idle periods. Any interrupt will bring the scanner to life, including internal timer and watchdog events.

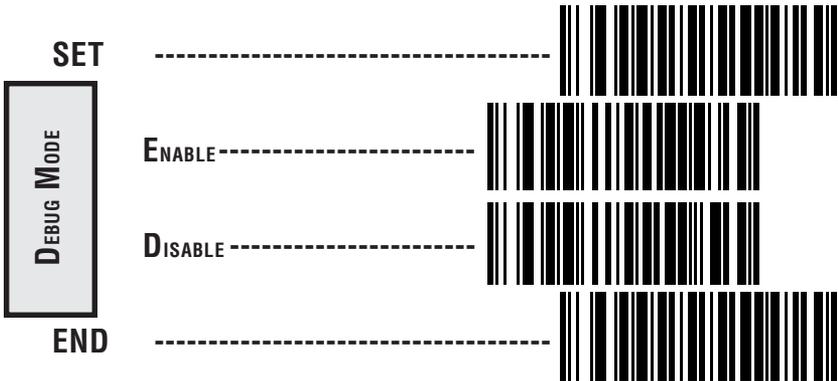
Very Low Power Mode—(**RS-232 and Wand Emulation interfaces ONLY**<sup>1</sup>) places the scanner in a STOP state during idle periods. The scanner can only be brought out of its STOP state by a trigger pull or hardware reset.



1 Very Low Power Mode can be used with RS-232 and Wand Emulation Interfaces ONLY . If Very Low Power Mode is selected with other interfaces will cause the scanner to default to Low Power Idle instead.

## DEBUG MODE

When enabled, this mode will cause any product labels that are read to be discarded with no attempt made to transmit them to a host. Any host scanning control will also be disabled while this option is in effect. This mode may be enabled in conjunction with any of the defined host interfaces. All other programmable options that are set for that interface will remain in effect while in debug mode.

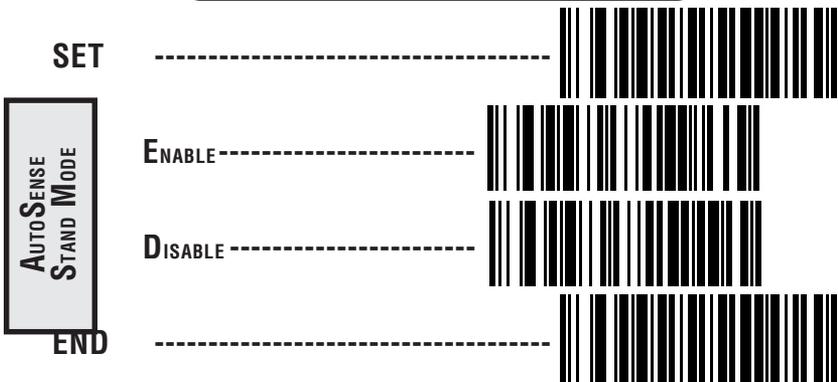


## AUTOSENSE® STAND MODE

AutoSense Stand Mode must be enabled when the scanner is used with the **Wasp Laser** stand accessory. This feature allows "hands free" operation of the scanner when placed in the stand.

**WARNING**

*Very Low Power Mode must be disabled when using AutoSense Stand Mode, as these features are not compatible and may cause unexpected behavior.*



# APPENDIX A

## ADDITIONAL INFORMATION

### HOST PROGRAMMING

Some interfaces and host systems include the ability to configure the scanner by sending commands to the scanner. Consult your host system manual for more information about this feature.

### CREATING MULTIFUNCTION LABELS

The term, multifunction label, describes a programming label that contains multiple programming features in one programming label. These labels can be created with label making software that supports Code 128.

### NEED MORE INFORMATION?

If you require more information about using your host system to change the scanner's programmable features or detailed instructions about creating multifunction labels, contact Informatics at (972) 881-5500.

# APPENDIX B

## SAMPLE BARCODES

CODE 128



Code 128.Test

CODE 39



Code 39.Test

INTERLEAVED 2 OF 5



0123456789

CODABAR



\$99.95

CODE 93



Code 93.test

UPC-A



0  
00112 23344

**UPC-A w/2 DIGIT ADD-ON**



**UPC-A w/ 5 DIGIT ADD-ON**



**UPC-E**



**EAN-8 (JAN-8)**

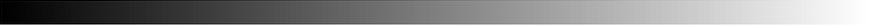


**EAN-13 (JAN-13)**



**MSI/PLESSEY**





# NOTES

		DEFAULT								
FEATURE		IBM 468x/9x Port 5B	IBM 468x/9x Port 9x	OCIA	OCIA (SNI)	Wand Emulation	RS-232	SNI RS-232	Keyboard Wedge	Record Your Own Default Set
General	Features									
	Audible Signal	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
	Power-Up Beep	Enable	Enable	Enable	Disable	Enable	Enable	Enable	Enable	
	Beeper Volume	High	High	High	Low	High	High	Low	High	
	Beep Duration	100ms	100ms	100ms	100ms	100ms	100ms	100ms	100ms	
	When to Beep	Beep/LED After Decode	Beep/LED After Decode	Beep/LED After Decode	Beep/LED After Decode	Beep/LED After Decode	Beep/LED After Decode	Beep/LED After Decode	Beep/LED After Decode	
	Low Power Mode	Disable	Disable	Disable	Disable	Disable	Disable	Disable	Disable	
	Debug Mode	Disable	Disable	Disable	Disable	Disable	Disable	Disable	Disable	
	AutoSense Stand Mode	Disable	Disable	Disable	Disable	Disable	Disable	Disable	Disable	
IBM I/F s	Settings									
	IBM Port 5B I/F	Enable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	IBM Port 9X I/F	N/A	Enable	N/A	N/A	N/A	N/A	N/A	N/A	
	IBM Port E I/F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Send as Code 39	Disable	Disable	N/A	N/A	N/A	N/A	N/A	N/A	
	Limit Command Set	Disable	Disable	N/A	N/A	N/A	N/A	N/A	N/A	
	Unsolicited Status	Transmit	Don't Transmit	N/A	N/A	N/A	N/A	N/A	N/A	
OCIA I/F	Settings									
	OCIA I/F	N/A	N/A	Enable	N/A	N/A	N/A	N/A	N/A	
	NCR OCIA 8- Bit I/F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	NCR OCIA 9- Bit I/F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	SNI OCIA I/F	N/A	N/A	Disable	Enable	N/A	N/A	N/A	N/A	
	Beep if Not on File	N/A	N/A	Disable	Disable	N/A	N/A	N/A	N/A	
	Host Commands	N/A	N/A	Enable	Enable	N/A	N/A	N/A	N/A	
	Intercharacter Delay	N/A	N/A	Disable	Disable	N/A	N/A	N/A	N/A	
Wand Em.	I/F Settings									
	Wand Emulation I/F	N/A	N/A	N/A	N/A	Enable	N/A	N/A	N/A	
	Polarity	N/A	N/A	N/A	N/A	Space Low, Bar High	N/A	N/A	N/A	
	Signal Speed	N/A	N/A	N/A	N/A	660µsec/ module	N/A	N/A	N/A	
	Data Format	N/A	N/A	N/A	N/A	Transmit as normal	N/A	N/A	N/A	

		DEFAULT								
FEATURE		IBM 468x/9x Port 5B	IBM 468x/9x Port 9x	OCIA	OCIA (SNI)	Wand Emulation	RS-232	SNI RS-232	Keyboard Wedge	Record Your Own Default Se
Wand Em.	Continued									
	Idle State	N/A	N/A	N/A	N/A	Idle Low	N/A	N/A	N/A	
	Transmit Pre-Noise	N/A	N/A	N/A	N/A	Enable	N/A	N/A	N/A	
	Transmit C128 Function Characters	Disable	Disable	Disable	Disable	Enable	Disable	Disable	Disable	
RS-232 I/F	Settings									
	RS-232 I/F	N/A	N/A	N/A	N/A	N/A	Enable Std	N/A	N/A	
	SNI RS-232 I/F	N/A	N/A	N/A	N/A	N/A	N/A	Enable	N/A	
	Baud Rate	N/A	N/A	N/A	N/A	N/A	9600	9600	N/A	
	Parity	N/A	N/A	N/A	N/A	N/A	None	Odd	N/A	
	Stop Bits	N/A	N/A	N/A	N/A	N/A	1	1	N/A	
	Data Bits	N/A	N/A	N/A	N/A	N/A	8	8	N/A	
	Hardware Control (RTS/CTS)	N/A	N/A	N/A	N/A	N/A	Disable	UseCTSRTS Flow Control	N/A	
	Software Control	N/A	N/A	N/A	N/A	N/A	Xon/Xoff	Disable Xon/Xoff	N/A	
	Intercharacter Delay	N/A	N/A	N/A	N/A	N/A	0	0	N/A	
Keyboard	Wedge I/F Settings									
	KBD Wedge I/F Type	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Type E	
	External Keyboard/No Keyboard	N/A	N/A	N/A	N/A	N/A	N/A	N/A	External Kbd	
	Send Control Characters	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Disable	
	Intercharacter Delay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	
Label Transmit	Format Config Items									
	Prefix	N/A	N/A	N/A	N/A	N/A	Disable	Disable	Disable	
	Suffix	N/A	N/A	N/A	N/A	N/A	Global D00	Global D00	Global D00	
	Label I.D. Control	N/A	N/A	N/A	N/A	N/A	Transmit as Prefix	Transmit as Prefix	Transmit as Prefix	
	UPC-A Label I.D.	N/A	N/A	N/A	N/A	N/A	4100	4100	4100	
	Code 39 Label I.D.	N/A	N/A	N/A	N/A	N/A	2A00	4D00	2A00	
	Codabar Label I.D.	N/A	N/A	N/A	N/A	N/A	2500	4E00	2500	
	12 of 5 Label I.D.	N/A	N/A	N/A	N/A	N/A	6900	4900	6900	

FEATURE	DEFAULT								
	IBM 468x/9x Port 5B	IBM 468x/9x Port 9x	OCIA	OCIA (SNI)	Wand Emulation	RS-232	SNI RS-232	Keyboard Wedge	Record Your Own Default Set
Label Continued Transmit									
Code 93 Label I.D.	N/A	N/A	N/A	N/A	N/A	2600	4C00	2600	
Code 128 Label I.D.	N/A	N/A	N/A	N/A	N/A	2300	4B00	2300	
MSI/Plessey Label I.D.	N/A	N/A	N/A	N/A	N/A	4000	4F00	4	
Symbology									
UPC/EAN	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
Code 39	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
Interleaved 2 of 5	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
Codabar	Disable	Disable	Disable	Disable	Enable	Enable	Enable	Enable	
Code 93	Disable	Disable	Disable	Disable	Enable	Enable	Enable	Enable	
Code 128	Disable	Disable	Disable	Disable	Enable	Enable	Enable	Enable	
MSI/Plessey	Disable	Disable	Disable	Disable	Enable	Enable	Enable	Enable	
UPC/EAN Options									
UPC-A to EAN- 13 Expansion	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Expand	Don't Expand	
UPC-E to UPC- A Expansion	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	
EAN-8 to EAN- 13 Expansion	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	
UPC-E to EAN- 13 Expansion	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	Don't Expand	
2 and 5 Digit Addons									
Price/Weight Check Digit	Disable	Disable	Disable	Disable	Disable	Disable	Disable	Disable	
UPC-A Check Digit	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
UPC-A NSD	Transmit	Transmit	Transmit	Transmit	Don't Transmit	Transmit	Transmit	Transmit	
UPC-E Check Digit	Enable	Enable	Disable	Disable	Enable	Enable	Disable	Enable	
UPC-E NSD	Transmit	Transmit	Transmit	Disable	Don't Transmit	Transmit	Transmit	Transmit	
EAN-8 Check Digit	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
EAN-13 Check Digit	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
Code 39 Options									
Check Digit Compute	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	
Check Digit Transmit	Don't Transmit	Don't Transmit	Don't Transmit	Don't Transmit	Don't Transmit	Don't Transmit	Don't Transmit	Don't Transmit	
Start/Stop Character	Don't Transmit	Don't Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	Don't Transmit	

		DEFAULT								
FEATURE		IBM 468x/9x Port 5B	IBM 468x/9x Port 9x	OCIA	OCIA (SNI)	Wand Emulation	RS-232	SNI RS-232	Keyboard Wedge	Record Your Own Default Set
Code 39	Continued									
	C39 Full ASCII	Disable	Disable	Disable	Disable	Disable	Disable	Disable	Disable	
	Minimum Label Length	2	2	2	2	2	2	2	2	
Code 128	Options									
	AIM Symbology ID Prefix	Disable	Disable	Disable	Disable	Disable	Disable	Disable	Disable	
I 2 of 5	Options									
	Check Digit Compute	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	
	Check Digit Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	
	Variable Length Labels	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
	Fixed Length 1	14	14	14	14	14	14	14	14	
	Fixed Length 2	8	8	8	8	8	8	8	8	
	Minimum Label Length	8	8	8	8	8	8	8	8	
Codabar	Options									
	Check Digit Compute	Require	Require	Require	Ignore	Ignore	Require	Ignore	Require	
	Check Digit Transmit	Transmit	Transmit	Don't Transmit	Transmit	Transmit	Transmit	Transmit	Don't Transmit	
	Variable Length Labels	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable	
	Gap Check	Disable	Disable	Disable	Disable	Disable	Disable	Disable	Disable	
	Start/Stop Match	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	
	Start/Stop Transmission	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Disable	
	Start/Stop Format	ABCD/ ABCD	ABCD/ ABCD	ABCD/ ABCD	abcd/ abcd	ABCD/ TN*E	ABCD/ ABCD	abcd/ abcd	ABCD/ ABCD	
	Fixed Length 1	14	14	14	14	14	14	14	14	
	Fixed Length 2	8	8	8	8	8	8	8	8	
MSI/Plessey	Options									
	Check Digit Calculation	Require	Require	Require	Ignore	Ignore	Require	Require	Require	
	Check Digit Transmission	Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	Transmit	
	One or Two Check Digits	1	1	1	1	1	1	1	1	
	Fixed Length Control	Disable Requirement	Disable Requirement	Disable Requirement	Disable Requirement	Disable Requirement	Disable Requirement	Disable Requirement	Disable Requirement	
	Fixed Length 1	6	6	6	6	6	6	6	6	
	Fixed Length 2	7	7	7	7	7	7	7	7	