

8620 Ring Scanner

Command Reference Manual

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Limited Warranty

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Getting Started

Introduction

The 8620 Ring Scanner is a wearable scanner that is part of the Dolphin 75e Wearable Solution.

About this Guide

This guide provides the list of setup commands supported by the 8620 Ring Scanner and their explanations. Use these commands when creating setup files to configure your ring scanner. For more information on setup refer to the list of additional documents below.

An asterisk (*) next to an option indicates the default setting.

Additional Documents

The guide is intended to supplement the following documents available at www.honeywellaidc.com:

- *Dolphin 75e Wearable Solution with Windows Embedded 8.1 Handheld User's Guide*
- *Dolphin 75e with Windows Embedded Handheld 8.1 User's Guide*



Programming Commands

8620 Programming Commands

Selection	Setting <i>* Indicates default</i>	Command <i># Indicates a numeric entry</i>	Page
Product Default Settings			
Resetting Defaults	Reset Defaults	DEFAULT	7-1
Programming the Interface			
Plug and Play Codes: USB	USB HID POS	PAP131	2-1
Input/Output Selections			
Good Read Delay	*No Delay	DLYGRD0	3-1
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	Short (1000ms)	DLY2RR1000	3-6
	Medium (2000ms)	DLY2RR2000	3-6
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Selection	Setting <i>* Indicates default</i>	Command <i># Indicates a numeric entry</i>	Page
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Selection	Setting <i>* Indicates default</i>	Command <i># Indicates a numeric entry</i>	Page
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Selection	Setting <i>* Indicates default</i>	Command <i># Indicates a numeric entry</i>	Page
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GS1 DataBar Expanded	Default All GS1 DataBar Expanded Settings	RSEDFT	6-23
	Off	RSEENA0	6-23
	*On	RSEENA1	6-23
GS1 DataBar Expanded Msg. Length	Minimum (4 - 74) *4	RSEMIN##	6-23
	Maximum (4 - 74) *74	RSEMAX##	6-23

Selection	Setting <i>* Indicates default</i>	Command <i># Indicates a numeric entry</i>	Page
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	On	TRIENA1	6-23
Codablock A	Default All Codablock A Settings	CBADFT	6-23
	*Off	CBAENA0	6-23
	On	CBAENA1	6-23
Codablock A Msg. Length	Minimum (1 - 600) *1	CBAMIN####	6-24
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Codablock F	Default All Codablock F Settings	CBFDFT	6-24
	*Off	CBFENA0	6-24
	On	CBFENA1	6-24
Codablock F Msg. Length	Minimum (1 - 2048) *1	CBFMIN####	6-24
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Label Code	On	LBLENA1	6-24
	* Off	LBLENA0	6-24
PDF417	Default All PDF417 Settings	PDFDFT	6-25
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PDF417 Msg. Length	Minimum (1-2750) *1	PDFMIN	6-25
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MacroPDF417	*On	PDFMAC1	6-25
	Off	PDFMAC0	6-25
MicroPDF417	Default All Micro PDF417 Settings	MPDDFT	6-26
	On	MPDENA1	6-26
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GS1 Composite Codes Msg. Length	Minimum (1-2435) *1	COMMINS	6-27
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GS1 Emulation	GS1-128 Emulation	EANEMU1	6-27
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TCIF Linked Code 39	On	T39ENA1	6-27
	*Off	T39ENA0	6-27
QR Code	Default All QR Code Settings	QRCDFT	6-28
	*On	QRCENA1	6-28
	Off	QRCENA0	6-28

Selection	Setting <i>* Indicates default</i>	Command <i># Indicates a numeric entry</i>	Page
QR Code Msg. Length	Minimum (1-7089) *1	QRCMIN	6-28
	Maximum (1-7089) *7089	QRCMAX	6-28
QR Code Append	*On	QRCAPP1	6-28
	Off	QRCAPP0	6-28
QR Code Page	QR Code Page (*3)	QRCDCP##	6-28
Data Matrix	Default All Data Matrix Settings	IDMDFT	6-29
	*On	IDMENA1	6-29
	Off	IDMENA0	6-29
Data Matrix Msg. Length	Minimum (1-3116) *1	IDMMIN	6-29
	Maximum (1-3116) *3116	IDMMAX	6-29
Data Matrix Append	*On	IDMAPP1	6-29
	Off	IDMAPP0	6-29
Data Matrix Code Page	Data Matrix Code Page (*51)	IDMDCP##	6-29
MaxiCode	Default All MaxiCode Settings	MAXDFT	6-30
	*On	MAXENA1	6-30
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	Maximum (1-150) *150	MAXMAX	6-30
Aztec Code	Default All Aztec Code Settings	AZTDFT	6-30
	*On	AZTENA1	6-30
	Off	AZTENA0	6-30
Aztec Code Msg. Length	Minimum (1-3832) *1	AZTMIN	6-30
	Maximum (1-3832) *3832	AZTMAX	6-30
Aztec Append	*On	AZTAPP1	6-31
	Off	AZTAPP0	6-31
Aztec Code Page	Aztec Code Page (*51)	AZTDCP##	6-31
Chinese Sensible (Han Xin) Code	Default All Han Xin Code Settings	HX_DFT	6-31
	On	HX_ENA1	6-31
	*Off	HX_ENA0	6-31
Chinese Sensible (Han Xin) Code Msg. Length	Minimum (1-7833) *1	HX_MIN	6-31
	Maximum (1-7833) *7833	HX_MAX	6-31
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2D Postal Codes	*Off	POSTAL0	6-32

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	British Post On	POSTAL7	6-32
	Canadian Post On	POSTAL30	6-32
	Intelligent Mail Bar Code On	POSTAL10	6-32
	Japanese Post On	POSTAL3	6-32
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	Planet Code On	POSTAL5	6-32
	Postal-4i On	POSTAL9	6-32
	Postnet On	POSTAL6	6-32
	Postnet with B and B' Fields On	POSTAL11	6-32
	InfoMail On	POSTAL2	6-32
Combination 2D Postal Codes	InfoMail and British Post On	POSTAL8	6-32
	Intelligent Mail Bar Code and Postnet with B and B' Fields On	POSTAL20	6-32
	Postnet and Postal-4i On	POSTAL14	6-32
	Postnet and Intelligent Mail Bar Code On	POSTAL16	6-32
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	Postal-4i and Postnet with B and B' Fields On	POSTAL19	6-32
	Planet and Postnet On	POSTAL12	6-32
	Planet and Postnet with B and B' Fields On	POSTAL18	6-32
	Planet and Postal-4i On	POSTAL13	6-32
	Planet and Intelligent Mail Bar Code On	POSTAL15	6-33
	Planet, Postnet, and Postal-4i On	POSTAL21	6-33
	Planet, Postnet, and Intelligent Mail Bar Code On	POSTAL22	6-33
	Planet, Postal-4i, and Intelligent Mail Bar Code On	POSTAL23	6-33
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	Planet, Postal-4i, and Postnet with B and B' Fields On	POSTAL25	6-33
	Planet, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL26	6-33
	Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL27	6-33
	Planet, Postal-4i, Intelligent Mail Bar Code, and Postnet On	POSTAL28	6-33
	Planet, Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On	POSTAL29	6-33
	Planet Code Check Digit	Transmit	PLNCKX1	6-33
*Don't Transmit		PLNCKX0	6-33

Selection	Setting <i>* Indicates default</i>	Command <i># Indicates a numeric entry</i>	Page
Postnet Check Digit	Transmit	NETCKX1	6-33
	*Don't Transmit	NETCKX0	6-33
Australian Post Interpretation	Bar Output	AUSINT0	6-34
	Numeric N Table	AUSINT1	6-34
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Postal Codes - Linear			
China Post (Hong Kong 2 of 5)	Default All China Post (Hong Kong 2 of 5) Settings	CPCDFT	6-34
	*Off	CPCENA0	6-34
	On	CPCENA1	6-34
China Post (Hong Kong 2 of 5) Msg. Length	Minimum (2 - 80) *4	CPCMIN##	6-34
	Maximum (2 - 80) *80	CPCMAX##	6-34
Korea Post	Default All Korea Post Settings	KPCDFT	6-35
	*Off	KPCENA0	6-35
	On	KPCENA1	6-35
Korea Post Msg. Length	Minimum (2 - 80) *4	KPCMIN##	6-35
	Maximum (2 - 80) *48	KPCMAX##	6-35
Korea Post Check Digit	Transmit Check Digit	KPCCHK1	6-35
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Add Code I.D. Prefix to All Symbologies (Temporary)		PRECA2,BK2995C80!	7-1
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Application Plug-Ins (Apps)	*Decoding Apps On	PLGDCE1	7-2
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	*Formatting Apps On	PLGFOE1	7-2
	Formatting Apps Off	PLGFOE0	7-2
	List Apps	PLGINF	7-2

Interface and Input/Output Settings

Interface

USB HID POS

The scanner uses USB HID POS interface when connected to a terminal.

Command	Description
PAP131	USB HID POS Interface

Input/Output Settings

Good Read Delay

Set the minimum amount of time before the scanner can read another bar code. *Default = 0 ms (No Delay).*

Command	Description
DLYGRD0	* No Delay
DLYGRD500	Short Delay (500 ms)
DLYGRD1000	Medium Delay (1000 ms)
DLYGRD1500	Long Delay (1500 ms)

User-Specified Good Read Delay

Set your own user-specified good read delay from 0-30,000 milliseconds.

Command	Description
DLYGRD####	User-Specified Good Read Delay

Manual Trigger Mode

When in manual trigger mode, the scanner scans until a bar code is read, or until the trigger is released. Two modes are available, **Normal** and **Enhanced**. Normal mode offers good scan speed and the longest working ranges (depth of field). Enhanced mode will give you the highest possible scan speed but slightly less range than Normal mode. Enhanced mode is best used when you require a very fast scan speed and don't require a long working range. *Default = Manual Trigger-Normal.*

Command	Description
PAPHHF	* Manual Trigger Mode - Normal
PAPHHS	Manual Trigger Mode - Enhanced

Host Trigger Control

When host trigger control is on the scanner sends trigger events, beep events, no read events and bar code events to the host when the trigger is pulled so that the host knows what to do. This is needed when the scanner is connected to a terminal.

When host trigger control is off, the scanner controls the trigger. Use this setting when the scanner is not connected to a terminal (for example when connected to a PC).

Command	Description
TRGPRO0	Host Trigger Control Off
TRGPRO1	* Host Trigger Control On

Serial Trigger Mode

You can activate the scanner either by pressing the trigger, or using a serial trigger command (see [Trigger Commands](#) on page 8-3). When in serial mode, the scanner scans until a bar code has been read or until the deactivate command is sent. The scanner can also be set to turn itself off after a specified time has elapsed (see [Read Time-Out](#), which follows).

Read Time-Out

Set a time-out (in milliseconds) of how long the scanner stays on when triggered by the serial trigger command and no bar code has been read. Once the scanner has timed out, the scanner turns off. You can re-activate the scanner by pressing the trigger or using a serial trigger command. *Default = 30,000 ms.*

Command	Description
TRGSTO####	Read Time-Out

Mobile Phone Read Mode

When this mode is selected, your scanner is optimized to read bar codes from mobile phone or other LED displays. However, the speed of scanning printed bar codes may be slightly lower when this mode is enabled. You can enable Mobile Phone Reading for either a hand held device, or for a hands-free (presentation) application.

Command	Description
PAPHHC	Mobile Phone - Manual Trigger
PAPSPC	Mobile Phone - Streaming Presentation

Note: To turn off Mobile Phone Read Mode, set the scanner back to Manual Trigger Mode (see page 3-1).

Presentation Mode

Presentation Mode uses ambient light and scanner illumination to detect bar codes. When in Presentation Mode, the LEDs remain dim until a bar code is presented to the scanner, then the aimer turns on and the LEDs turn up to read the code. If the light level in the room is not high enough, Presentation Mode may not work properly.

Command	Description
PAPTPR	Presentation mode

Presentation LED Behavior after Decode

When a scanner is in presentation mode, the LEDs dim 30 seconds after a bar code is decoded. If you wish to dim the LEDs immediately after a bar code is decoded, use the **LEDs Off** command, below. *Default = LEDs On.*

Command	Description
TRGPCK0	LEDs Off
TRGPCK1	* LEDs On

Presentation Sensitivity

Presentation Sensitivity is a numeric range that increases or decreases the scanner's reaction time to bar code presentation. To set the sensitivity, scan the **Sensitivity** bar code, then scan the degree of sensitivity (from 0-20) from the inside back cover, and **Save**. 0 is the most sensitive setting, and 20 is the least sensitive. *Default = 1.*

Command	Description
TRGPMS##	Sensitivity

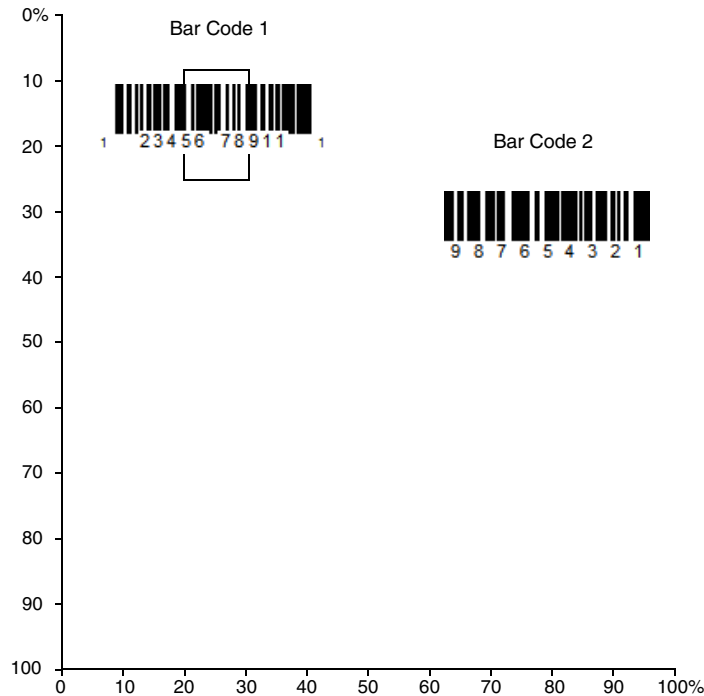
Presentation Centering

Use Presentation Centering to narrow the scanner's field of view when it is in the stand to make sure the scanner reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, Presentation Centering will ensure that only the desired codes are read.

Note: To adjust centering when the scanner is hand-held, see [Centering](#) (page 3-7).

If a bar code is not touched by a predefined window, it will not be decoded or output by the scanner. If Presentation Centering is turned on by **Presentation Centering On**, the scanner only reads codes that pass through the centering window you specify using the **Top of Presentation Centering Window**, **Bottom of Presentation Centering Window**, **Left**, and **Right of Presentation Centering Window** bar codes.

In the example below, the white box is the centering window. The centering window has been set to 20% left, 30% right, 8% top, and 25% bottom. Since Bar Code 1 passes through the centering window, it will be read. Bar Code 2 does not pass through the centering window, so it will not be read.



Note: A bar code needs only to be touched by the centering window in order to be read. It does not need to pass completely through the centering window.

Send **Presentation Centering On**, then send one of the following commands to change the top, bottom, left, or right of the centering window with the percent you want to shift the centering window. *Default Presentation Centering = 40% for Top and Left, 60% for Bottom and Right.*

Command	Description
PDCWIN1	Presentation Centering On
PDCWIN0	Presentation Centering Off
PDCTOP###	Top of Presentation Centering Window
PDCBOT###	Bottom of Presentation Centering Window
PDCLFT###	Left of Presentation Centering Window
PDCRGT###	Right of Presentation Centering Window

CodeGate®

When CodeGate is **On**, the trigger is used to allow decoded data to be transmitted to the host system. The scanner remains on, scanning and decoding bar codes, but the bar code data is not transmitted until the trigger is pressed. When CodeGate is **Off**, bar code data is transmitted when it is decoded. *Default = CodeGate.*

Command	Description
AOSCGD0	* CodeGate Off
AOSCGD1	CodeGate On

Streaming Presentation™ Mode

When in Streaming Presentation mode, the scanner's illumination remains on all the time to continuously search for bar codes (no aimer). Two modes are available, **Normal** and **Enhanced**. Normal mode offers good scan speed and the longest working ranges (depth of field). Enhanced mode will give you the highest possible scan speed but slightly less range than Normal mode. Enhanced mode is best used when you require a very fast scan speed and don't require a long working range.

Command	Description
PAPSPN	Streaming Presentation Mode - Normal
PAPSPE	Streaming Presentation Mode - Enhanced

When using [Preferred Symbology](#) (page 3-8), a lower priority symbol must be centered on the aiming pattern to be read in Streaming Presentation Mode.

Hands Free Time-Out

Presentation Mode is referred to as "hands free" mode. If the scanner's trigger is pulled when using a hands free mode, the scanner changes to manual trigger mode. You can set the time the scanner should remain in manual trigger mode by setting the Hands Free Time-Out. Once the time-out value is reached, (if there have been no further trigger pulls) the scanner reverts to the original hands free mode.

Set the **Hands Free Time-Out** duration from 0-300,000 milliseconds. *Default = 5,000 ms.*

Command	Description
TRGPTO#####	Hands Free Time-Out

Reread Delay

This sets the time period before the scanner can read the *same* bar code a second time. Setting a reread delay protects against accidental rereads of the same bar code. Longer delays are effective in minimizing accidental rereads. Use shorter delays in applications where repetitive bar code scanning is required. Reread Delay only works when in a [Presentation Mode](#) (see page 3-2). *Default = Medium.*

Command	Description
DLYRRD500	Short (500 ms)
DLYRRD750	* Medium (750 ms)
DLYRRD1000	Long (1000 ms)
DLYRRD2000	Extra Long (2000 ms)

User-Specified Reread Delay

Use the User-Specified Reread Delay to set the delay from 0-30,000 milliseconds.

Command	Description
DLYRRD	User-Specified Reread Delay

2D Reread Delay

Sometimes 2D bar codes can take longer to read than other bar codes. If you wish to set a separate Reread Delay for 2D bar codes, use the 2D Reread Delay. **2D Reread Delay Off** indicates that the time set for [Reread Delay](#) is used for both 1D and 2D bar codes. *Default = 2D Reread Delay Off.*

Command	Description
DLY2RR0	* 2D Reread Delay Off
DLY2RR1000	Short (1000ms)
DLY2RR2000	Medium (2000ms)
DLY2RR3000	Long (3000ms)
DLY2RR4000	Extra Long (4000ms)

Illumination Lights

If you want the illumination lights on while reading a bar code, send the **Lights On** command below. However, if you want to turn the lights off, send the **Lights Off** command. *Default = Lights On.*

Note: This setting does not affect the aimer light. The aiming light can be set using [Aimer Mode](#) (page 3-7).

Command	Description
SCNLED1	* Lights On
SCNLED0	Lights Off

Aimer Delay

The aimer delay allows a delay time for the operator to aim the scanner before the picture is taken. Use these settings to set the time between when the trigger is pulled and when the picture is taken. During the delay time, the aiming light will appear, but the LEDs won't turn on until the delay time is over. *Default = Off.*

Command	Description
SCNDLY200	200 milliseconds
SCNDLY400	400 milliseconds
SCNDLY0	* Off (no delay)

User-Specified Aimer Delay

If you want to set your own length for the duration of the delay, set the time-out from 0 - 4,000 ms.

Command	Description
SCNDLY	Delay Duration

Aimer Mode

This feature allows you to turn the aimer on and off. When the Interlaced bar code is scanned, the aimer is interlaced with the illumination LEDs. *Default = Interlaced.*

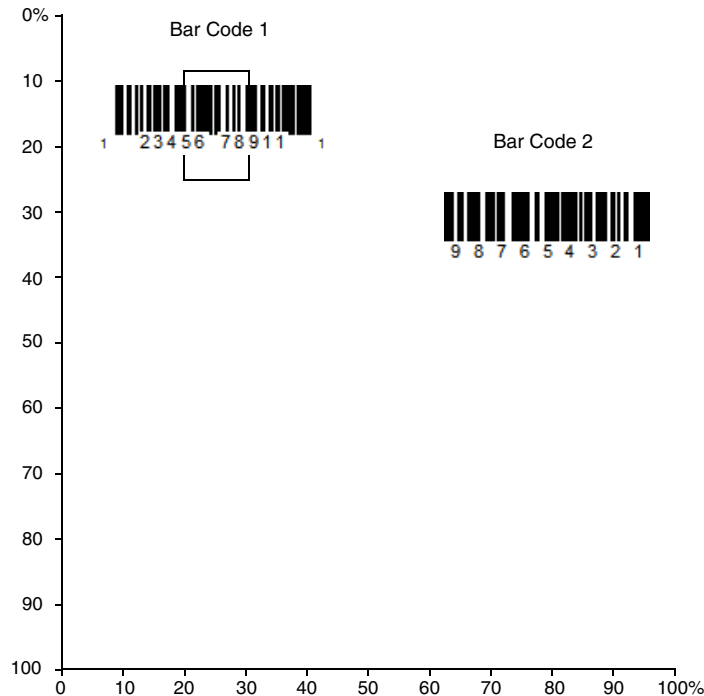
Command	Description
SCNAIM0	Off
SCNAIM2	* Interlaced

Centering

Use Centering to narrow the scanner's field of view to make sure that when the scanner is hand-held, it reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, centering will ensure that only the desired codes are read. (Centering can be used in conjunction with [Aimer Delay](#), page 3-6, for the most error-free operation in applications where multiple codes are spaced closely together. Using the Aimer Delay and Centering features, the scanner can emulate the operation of older systems, such as linear laser bar code scanners.)

If a bar code is not touched by a predefined window, it will not be decoded or output by the scanner. If centering is turned on by scanning **Centering On**, the scanner only reads codes that pass through the centering window you specify using the **Top of Centering Window** and **Bottom of Centering Window** bar codes.

In the example below, the white box is the centering window. The centering window has been set to 8% top and 25% bottom. Since Bar Code 1 passes through the centering window, it will be read. Bar Code 2 does not pass through the centering window, so it will not be read.



Note: A bar code needs only to be touched by the centering window in order to be read. It does not need to pass completely through the centering window.

Send **Centering On** and then send one of the following commands with the percent you want to shift to change the top and bottom of the centering window. *Default Centering = 40% for Top, 60% for Bottom.*

Command	Description
DECWIN1	Centering On
DECWIN0	* Centering Off
DECTOP	Top of Centering Window
DECBOT	Bottom of Centering Window

Preferred Symbology

The scanner can be programmed to specify one symbology as a higher priority over other symbologies in situations where both bar code symbologies appear on the same label, but the lower priority symbology cannot be disabled.

For example, you may be using the scanner in a retail setting to read U.P.C. symbols, but have occasional need to read a code on a drivers license. Since some licenses have a Code 39 symbol as well as the PDF417 symbol, you can use Preferred Symbology to specify that the PDF417 symbol be read instead of the Code 39.

Preferred Symbology classifies each symbology as **high priority**, **low priority**, or as an **unspecified type**. When a low priority symbology is presented, the scanner ignores it for a set period of time (see [Preferred Symbology Time-out](#) on page 3-9) while it searches for the high priority symbology. If a high priority symbology is located during this period, then that data is read immediately.

If the time-out period expires before a high priority symbology is read, the scanner will read any bar code in its view (low priority or unspecified). If there is no bar code in the scanner's view after the time-out period expires, then no data is reported.

Note: A low priority symbol must be centered on the aiming pattern to be read.

Default = Preferred Symbology Off.

Command	Description
PRFENA1	Preferred Symbology On
PRFENA0	* Preferred Symbology Off

High Priority Symbology

To specify the high priority symbology, send the High Priority Symbology command below. On the [Symbology Charts](#) on page A-1, find the symbology you want to set as high priority. Locate the Hex value for that symbology and add the 2 digit hex value to the command. *Default = None.*

Command	Description
PRFCOD##	High Priority Symbology

Low Priority Symbology

To specify the low priority symbology, send the Low Priority Symbology command below. On the [Symbology Charts](#) on page A-1, find the symbology you want to set as low priority. Locate the Hex value for that symbology and add the 2 digit hex value to the command.

If you want to set additional low priority symbologies, use **FF**, then add the 2 digit hex value from the Programming Chart for the next symbology. You can program up to 5 low priority symbologies. *Default = None.*

Command	Description
PRFBLK##	Low Priority Symbology

Preferred Symbology Time-out

Once you have enabled Preferred Symbology and entered the high and low priority symbologies, you must set the time-out period. This is the period of time the scanner will search for a high priority bar code after a low priority bar code has been encountered. Set the delay from 1-3,000 milliseconds. *Default = 500 ms.*

Command	Description
PRFPTO####	Preferred Symbology Time-out

Preferred Symbology Default

Scan the bar code below to set all Preferred Symbology entries to their default values.

Command	Description
PRFDFT	Preferred Symbology Default

Output Sequence Overview

Output Sequence Editor

This programming selection allows you to program the scanner to output data (when scanning more than one symbol) in whatever order your application requires, regardless of the order in which the bar codes are scanned. The **Default Sequence** command programs the scanner to the Universal values, shown below. These are the defaults. Be **certain** you want to delete or clear all formats before you send the **Default Sequence** command.

Note: To make Output Sequence Editor selections, you'll need to know the code I.D., code length, and character match(es) your application requires.

Output Sequence Command Line Format

Command	Code I. D.	Length	Character Match Sequence	End Output Sequence Editor
SEQBLK	XX (hex value)	#### (numerical value)	XX (hex value)	FF

Field	Description
Command	Output Sequence Editor command SEQBLK.
Code I. D.	Two digit hex value to indicate symbology I.D. See the Symbology Charts on page A-1.

Field	Description
Length	Data output length (up to 9999 characters). Be sure to calculate any programmed prefixes, suffixes, or formatted characters as part of the length. <i>Note: 50 characters is entered as 0050. 9999 is a universal number, indicating all lengths.)</i>
Character Match Sequence	Two character match sequence. Use the ASCII Conversion Chart (Code Page 1252) , page A-3, to find the Hex value that represents the character(s) you want to match. <i>Note: 99 is the Universal number, indicating all characters.</i>
End Output Sequence Editor	Use FF to end the output sequence or to add another Output Sequence for an additional symbology continue with <Code ID><Length><Character Match Sequence><End Output Sequence><FF><Code ID>< ... >.

Output Sequence Example

In this example, you are scanning Code 93, Code 128, and Code 39 bar codes, but you want the scanner to output Code 39 1st, Code 128 2nd, and Code 93 3rd, as shown below.

Note: Code 93 must be enabled to use this example.



A - Code 39



B - Code 128



C - Code 93

You would set up the sequence editor with the following command line:

```
SEQBLK62999941FF6A999942FF69999943FF
```

The breakdown of the command line is shown below:

SEQBLKsequence editor start command

62 code identifier for **Code 39**

9999 code length that must match for Code 39, 9999 = all lengths

41 start character match for Code 39, 41h = "A"

FF termination string for first code

6A code identifier for **Code 128**

9999 code length that must match for Code 128, 9999 = all lengths

42 start character match for Code 128, 42h = "B"

FF termination string for second code

69 code identifier for **Code 93**

9999 code length that must match for Code 93, 9999 = all lengths

43 start character match for Code 93, 43h = "C"

FF termination string for third code

To program the previous example using specific lengths, you would have to count any programmed prefixes, suffixes, or formatted characters as part of the length. If you use the example on [page 3-10](#), but assume a <CR> suffix and specific code lengths, you would use the following command line:

SEQBLK62001241FF6A001342FF69001243FF

The breakdown of the command line is shown below:

SEQBLKsequence editor start command

62 code identifier for **Code 39**

0012 A - Code 39 sample length (11) plus CR suffix (1) = 12

41 start character match for Code 39, 41h = "A"

FF termination string for first code

6A code identifier for **Code 128**

0013 B - Code 128 sample length (12) plus CR suffix (1) = 13

42 start character match for Code 128, 42h = "B"

FF termination string for second code

69 code identifier for **Code 93**

0012 C - Code 93 sample length (11) plus CR suffix (1) = 12

43 start character match for Code 93, 43h = "C"

FF termination string for third code

Output Sequence Editor

Command	Description
SEQBLK	Enter Sequence
SEQDFT	Default Sequence

Partial Sequence

If an output sequence operation is terminated before all your output sequence criteria are met, the bar code data acquired to that point is a "partial sequence."

Use **Discard Partial Sequence** to discard partial sequences when the output sequence operation is terminated before completion. Or use **Transmit Partial Sequence** to transmit partial sequences. (Any fields in the sequence where no data match occurred will be skipped in the output.)

Command	Description
SEQTTS1	Transmit Partial Sequence
SEQTTS0	* Discard Partial Sequence

Require Output Sequence

When an output sequence is **Required**, all output data must conform to an edited sequence or the scanner will not transmit the output data to the host device. When it's **On/Not Required**, the scanner will attempt to get the output data to conform to an edited sequence but, if it cannot, the scanner transmits all output data to the host device as is.

When the output sequence is **Off**, the bar code data is output to the host as the scanner decodes it. *Default = Off.*

Note: This selection is unavailable when the Multiple Symbols Selection is turned on.

Command	Description
SEQ_EN2	Required
SEQ_EN1	On/Not Required
SEQ_EN0	*Off

Multiple Symbols

When this programming selection is turned **On**, it allows you to read multiple symbols with a single pull of the scanner's trigger. If you press and hold the trigger, aiming the scanner at a series of symbols, it reads unique symbols once, beeping (if turned on) for each read. The scanner attempts to find and decode new symbols as long as the trigger is pulled. When this programming selection is turned **Off**, the scanner will only read the symbol closest to the aiming beam. *Default = Off.*

Command	Description
SHOTGN1	On
SHOTGN0	* Off

No Read

With No Read turned **On**, the scanner notifies you if a code cannot be read. If using an EZConfig-Scanning Tool Scan Data Window (see page 7-2), an "NR" appears when a code cannot be read. If No Read is turned **Off**, the "NR" will not appear. *Default = Off.*

Command	Description
SHWNRD1	On
SHWNRD0	* Off

If you want a different notation than "NR," for example, "Error," or "Bad Code," you can edit the output message (see [Data Formatting](#) beginning on page 5-1). The hex code for the No Read symbol is 9C.

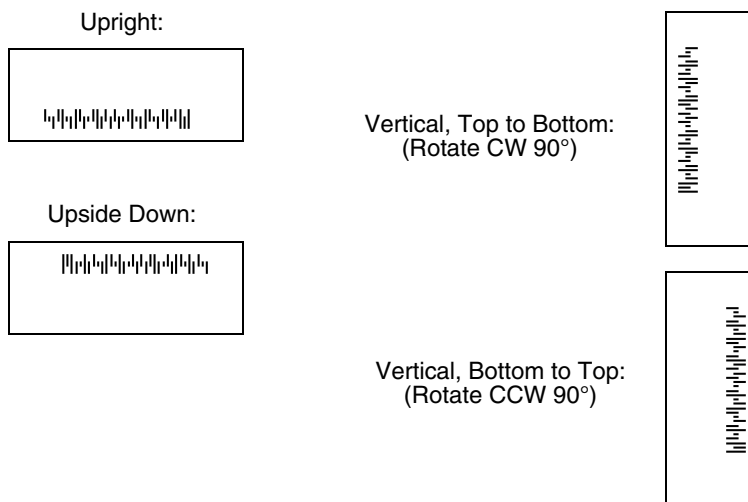
Video Reverse

Video Reverse is used to allow the scanner to read bar codes that are inverted. The **Video Reverse Off** bar code below is an example of this type of bar code. Use **Video Reverse Only** to read *only* inverted bar codes. Use **Video Reverse and Standard Bar Codes** to read both types of codes.

Command	Description
VIDREV1	Video Reverse Only
VIDREV2	Video Reverse and Standard Bar Codes
VIDREV0	* Video Reverse Off

Working Orientation

Some bar codes are direction-sensitive. For example, KIX codes, and can misread when scanned sideways or upside down. Use the working orientation settings if your direction-sensitive codes will not usually be presented upright to the scanner. *Default = Upright.*



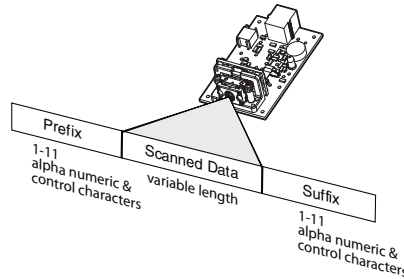
Command	Description
ROTATN0	* Upright
ROTATN1	Vertical, Bottom to Top
ROTATN2	Upside Down
ROTATN3	Vertical, Top to Bottom



Prefix/Suffix Overview

When a bar code is scanned, additional information is sent to the host computer along with the bar code data. This group of bar code data and additional, user-defined data is called a “message string.” The selections in this section are used to build the user-defined data into the message string.

Prefix and Suffix characters are data characters that can be sent before and after scanned data. You can specify if they should be sent with all symbologies, or only with specific symbologies. The following illustration shows the breakdown of a message string:



Points to Keep In Mind

- It is not necessary to build a message string. The selections in this chapter are only used if you wish to alter the default settings. *Default prefix = None. Default suffix = None.*
- A prefix or suffix may be added or cleared from one symbology or all symbologies.
- You can add any prefix or suffix from the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3, plus Code I.D. and AIM I.D.
- You can string together several entries for several symbologies at one time.
- Enter prefixes and suffixes in the order in which you want them to appear on the output.
- When setting up for specific symbologies (as opposed to all symbologies), the specific symbology ID value counts as an added prefix or suffix character.
- The maximum size of a prefix or suffix configuration is 200 characters, which includes header information.

To Add a Prefix or Suffix:

Step 1. Use the **Add Prefix** or **Add Suffix** command.

Command	Description
PREBK2	Add Prefix
SUFBK2	Add Suffix

Step 2. Add the 2 digit Hex value from the Symbology Chart (included in the [Symbology Charts](#), beginning on page A-1) for the symbology to which you want to apply the prefix or suffix. For example, for Code 128, Code ID is “j” and Hex ID is “6A”.

Step 3. Add the hex value from the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3, for the prefix or suffix you wish to enter.

Step 4. Repeat Steps 2 and 3 for every prefix or suffix character.

Step 5. To add the Code I.D., add **5C80**.

To add AIM I.D., add **5C81**.

To add a backslash (\), add **5C5C**.

Note: To add a backslash (\) as in Step 5, you must add 5C twice – once to create the leading backslash and then to create the backslash itself.

Repeat Steps 1-6 to add a prefix or suffix for another symbology.

Example: Add a Tab Suffix to All Symbologies

Step 1. Use the **Add Suffix** command.

Step 2. Add **99** to apply this suffix to all symbologies.

Step 3. Add **09**. This corresponds with the hex value for a horizontal tab, shown in the [ASCII Conversion Chart \(Code Page 1252\)](#)., beginning on page A-3.

To Clear One or All Prefixes or Suffixes

You can clear a single prefix or suffix, or clear all prefixes/suffixes for a symbology. If you have been entering prefixes and suffixes for single symbologies, you can use **Clear One Prefix (Suffix)** to delete a specific character from a symbology. When you **Clear All Prefixes (Suffixes)**, all the prefixes or suffixes for a symbology are deleted.

Step 1. Use the **Clear One Prefix, Clear All Prefixes, Clear One Suffix** or **Clear All Suffixes** command.

Command	Description
PRECL2	Clear One Prefix
PRECA2	Clear All Prefixes
SUFCL2	Clear One Suffix
SUFCA2	Clear All Suffixes

Step 2. Add the 2 digit Hex value from the Symbology Chart (included in the [Symbology Charts](#), beginning on page A-1) for the symbology from which you want to clear the prefix or suffix or add **99** for all symbologies.

To Add a Carriage Return Suffix to All Symbologies

Use the following command if you wish to add a carriage return suffix to all symbologies at once. This action first clears all current suffixes, then programs a carriage return suffix for all symbologies.

Command	Description
VSUFRCR	Add CR Suffix All Symbologies

Function Code Transmit

When this selection is enabled and function codes are contained within the scanned data, the scanner transmits the function code to the terminal. Charts of these function codes are provided in [Supported Interface Keys](#) starting on [page 8-3](#). *Default = Enable.*

Command	Description
RMVFNC0	* Enable
RMVFNC1	Disable

Data Formatting

Data Format Editor Introduction

You may use the Data Format Editor to change the scanner's output. For example, you can use the Data Format Editor to insert characters at certain points in bar code data as it is scanned. The selections in the following pages are used only if you wish to alter the output. *Default Data Format setting = None.*

Normally, when you scan a bar code, it is output automatically. However, when you create a format, you must use a "send" command (see [Send Commands](#) on page 5-2) within the format program to output data.

Multiple formats may be programmed into the scanner. They are stacked in the order in which they are entered. However, the following list presents the order in which formats are applied:

1. Specific Terminal ID, Actual Code ID, Actual Length
2. Specific Terminal ID, Actual Code ID, Universal Length
3. Specific Terminal ID, Universal Code ID, Actual Length
4. Specific Terminal ID, Universal Code ID, Universal Length
5. Universal Terminal ID, Actual Code ID, Actual Length
6. Universal Terminal ID, Actual Code ID, Universal Length
7. Universal Terminal ID, Universal Code ID, Actual Length
8. Universal Terminal ID, Universal Code ID, Universal Length

The maximum size of a data format configuration is 2000 bytes, which includes header information.

If a bar code is read that fails the first data format, the next data format, if there is one, will be used on the bar code data. If there is no other data format, the raw data is output.

If you have changed data format settings, and wish to clear all formats and return to the factory defaults, use the **Default Data Format** code below.

Command	Description
DFMDF3	* Default Data Format

Add a Data Format

Step 1. Use the **Enter Data Format** command ([page 5-1](#)).

Command	Description
DFMBK3	Enter Data Format

Step 2. Select Primary/Alternate Format

Determine if this will be your primary data format, or one of 3 alternate formats. This allows you to save a total of 4 different data formats. To program your primary format, add **0**. For an alternate format use **1**, **2**, or **3**, depending on which alternate format you are programming. (See "Primary/Alternate Data Formats" on page 5-12 for further information.)

Step 3. Terminal Type

Add the Terminal ID (refer to [Terminal ID Table](#) (page 5-2) and locate the Terminal ID number for your PC). For example, scan **131** for an HID POS.

Note: 099 indicates all terminal types.

Step 4. Code I.D.

Add the Code ID (refer to [Symbology Charts](#), beginning on page A-1 to find hex value for the symbology to which you want to apply the data format).

If you wish to create a data format for all symbologies, with the exception of some specific symbologies, refer to B8 ([page 5-10](#)).

If you are creating a data format for Batch Mode Quantity, use 35 for the Code I.D.

Note: 99 indicates all symbologies.

Step 5. Length

Add the length (up to 9999 characters) of data will be acceptable for this symbology. For example, 50 characters is entered as 0050.

Note: 9999 indicates all lengths.

Step 6. Editor Commands

Refer to [Data Format Editor Commands](#) (page 5-2). Add the commands that represent the command you want to enter. 94 alphanumeric characters may be entered for each symbology data format.

Other Programming Selections

Clear One Data Format

This deletes one data format for one symbology. If you are clearing the primary format, add **0**. If you are clearing an alternate format, add **1**, **2**, or **3**, depending on the format you are clearing. Add the Terminal Type and Code I.D. (see [Symbology Charts](#) on page A-1), and the bar code data length for the specific data format that you want to delete. All other formats remain unaffected.

Clear all Data Formats

This clears all data formats.

Command	Description
DFMCL3	Clear One Data Format
DFMCA3	Clear All Data Formats

Terminal ID Table

Terminal	Model(s)	Terminal ID
USB	HID POS	131

Data Format Editor Commands

When working with the Data Format Editor, a virtual cursor is moved along your input data string. The following commands are used to both move this cursor to different positions, and to select, replace, and insert data into the final output.

Send Commands

Send all characters

- F1 Include in the output message all of the characters from the input message, starting from current cursor position, followed by an insert character. *Syntax = F1xx* where xx stands for the insert character's hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

Send a number of characters

- F2 Include in the output message a number of characters followed by an insert character. Start from the current cursor position and continue for "nn" characters or through the last character in the input message, followed by character "xx." *Syntax = F2nxx* where nn stands for the numeric value (00-99) for the number of characters, and xx stands for the insert character's hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

F2 Example: Send a number of characters



Send the first 10 characters from the bar code above, followed by a carriage return. Command string: **F2100D**

F2 is the “Send a number of characters” command

10 is the number of characters to send

0D is the hex value for a CR

The data is output as: **1234567890**

F2 and F1 Example: Split characters into 2 lines

Send the first 10 characters from the bar code above, followed by a carriage return, followed by the rest of the characters.

Command string: **F2100DF10D**

F2 is the “Send a number of characters” command

10 is the number of characters to send for the first line

0D is the hex value for a CR

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

1234567890

ABCDEFGHIJ

<CR>

Send all characters up to a particular character

- F3 Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the search character “ss,” followed by an insert character. The cursor is moved forward to the “ss” character. *Syntax = F3ssxx* where ss stands for the search character’s hex value for its ASCII code, and xx stands for the insert character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

F3 Example: Send all characters up to a particular character



Using the bar code above, send all characters up to but not including “D,” followed by a carriage return.

Command string: **F3440D**

F3 is the “Send all characters up to a particular character” command

44 is the hex value for a 'D'

0D is the hex value for a CR

The data is output as:

1234567890ABC

<CR>

Send all characters up to a string

- B9 Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the search string “s...s.” The cursor is moved forward to the beginning of the “s...s” string. *Syntax = B9nnns...s* where nnnn stands for the length of the string, and s...s stands for the string to be matched. The string is made up of hex values for the characters in the string. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

B9 Example: Send all characters up to a defined string



Using the bar code above, send all characters up to but not including “AB.”

Command string: **B90024142**

B9 is the “Send all characters up to a string” command

0002 is the length of the string (2 characters)

41 is the hex value for A

42 is the hex value for B

The data is output as: **1234567890**

Send all but the last characters

- E9 Include in the output message all but the last “nn” characters, starting from the current cursor position. The cursor is moved forward to one position past the last input message character included. *Syntax = E9nn* where nn stands for the numeric value (00-99) for the number of characters that will not be sent at the end of the message.

Insert a character multiple times

- F4 Send “xx” character “nn” times in the output message, leaving the cursor in the current position. *Syntax = F4xxnn* where xx stands for the insert character’s hex value for its ASCII code, and nn is the numeric value (00-99) for the number of times it should be sent. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

E9 and F4 Example: Send all but the last characters, followed by 2 tabs



Send all characters except for the last 8 from the bar code above, followed by 2 tabs.

Command string: **E908F40902**

E9 is the “Send all but the last characters” command

08 is the number of characters at the end to ignore

F4 is the “Insert a character multiple times” command

09 is the hex value for a horizontal tab

02 is the number of times the tab character is sent

The data is output as: **1234567890AB <tab><tab>**

Insert a string

- BA Send “ss” string of “nn” length in the output message, leaving the cursor in the current position. *Syntax = BAnnnns...s* where nnnn stands for the length of the string, and s...s stands for the string. The string is made up of hex values for the characters in the string. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

B9 and BA Example: Look for the string “AB” and insert 2 asterisks ()**



Using the bar code above, send all characters up to but not including “AB.” Insert 2 asterisks at that point, and send the rest of the data with a carriage return after.

Command string: **B900024142BA00022A2AF10D**

B9 is the “Send all characters up to a string” command

0002 is the length of the string (2 characters)

41 is the hex value for A

42 is the hex value for B

BA is the “Insert a string” command

0002 is the length of the string to be added (2 characters)

2A is the hex value for an asterisk (*)

2A is the hex value for an asterisk (*)

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

1234567890ABCDEFGHIJ**

<CR>

Insert symbology name

- B3 Insert the name of the bar code’s symbology in the output message, without moving the cursor. Only symbologies with a Honeywell ID are included (see [Symbology Charts](#) on page A-1). Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#)., beginning on page A-3 for decimal, hex and character codes.

Insert bar code length

- B4 Insert the bar code’s length in the output message, without moving the cursor. The length is expressed as a numeric string and does not include leading zeroes.

B3 and B4 Example: Insert the symbology name and length



Send the symbology name and length before the bar code data from the bar code above. Break up these insertions with spaces. End with a carriage return.

Command string: **B3F42001B4F42001F10D**

B3 is the “Insert symbology name” command

F4 is the “Insert a character multiple times” command

20 is the hex value for a space

01 is the number of times the space character is sent

B4 is the “Insert bar code length” command

F4 is the “Insert a character multiple times” command

20 is the hex value for a space

01 is the number of times the space character is sent

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

Code128 20 1234567890ABCDEFGHIJ

<CR>

Insert key strokes

- B5 Insert a key stroke or combination of key strokes. Key strokes are dependent on your keyboard (see on page A-9). Any key can be inserted, including arrows and functions. *Syntax = B5xxssnn* where xx is the number of keys pressed (without key modifiers), ss is the key modifier from the table below, and nn is the key number from the , page A-9.

Key Modifiers	
No Key Modifier	00
Shift Left	01
Shift Right	02
Alt Left	04
Alt Right	08
Control Left	10
Control Right	20

For example, B501021F inserts an "A" on a 104 key, U.S. style keyboard. B5 = the command, 01 = number of keys pressed (without the key modifier), 02 is the key modifier for Shift Right, and 1F is the "a" key. If a lower case "a" were to be inserted, B501001F would be entered.

If there are three keystrokes, the syntax would change from B5xxssnn for one keystroke to B5xxssnnssnnssnn. An example that would insert "abc" is as follows: B503001F00320030F833.

Note: Key modifiers can be added together when needed. Example: Control Left+Shift Left = 11.

Move Commands

Move the cursor forward a number of characters

- F5 Move the cursor ahead "nn" characters from current cursor position.
Syntax = F5nn where nn is the numeric value (00-99) for the number of characters the cursor should be moved ahead.

F5 Example: Move the cursor forward and send the data



Move the cursor forward 3 characters, then send the rest of the bar code data from the bar code above. End with a carriage return.

Command string: **F503F10D**

F5 is the "Move the cursor forward a number of characters" command

03 is the number of characters to move the cursor

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as:

4567890ABCDEFGHIJ

<CR>

Move the cursor backward a number of characters

- F6 Move the cursor back "nn" characters from current cursor position.
Syntax = F6nn where nn is the numeric value (00-99) for the number of characters the cursor should be moved back.

Move the cursor to the beginning

- F7 Move the cursor to the first character in the input message. *Syntax = F7.*

FE and F7 Example: Manipulate bar codes that begin with a 1



Search for bar codes that begin with a 1. If a bar code matches, move the cursor back to the beginning of the data and send 6 characters followed by a carriage return. Using the bar code above:

Command string: **FE31F7F2060D**

FE is the "Compare characters" command

31 is the hex value for 1

F7 is the "Move the cursor to the beginning" command

F2 is the "Send a number of characters" command

06 is the number of characters to send

0D is the hex value for a CR

The data is output as:

123456

<CR>

Move the cursor to the end

EA Move the cursor to the last character in the input message. *Syntax = EA.*

Search Commands

Search forward for a character

- F8 Search the input message forward for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character. *Syntax = F8xx* where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

F8 Example: Send bar code data that starts after a particular character



Search for the letter “D” in bar codes and send all the data that follows, including the “D.” Using the bar code above:

Command string: **F844F10D**

F8 is the “Search forward for a character” command

44 is the hex value for “D”

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

DEFGHIJ

<CR>

Search backward for a character

- F9 Search the input message backward for “xx” character from the current cursor position, leaving the cursor pointing to the “xx” character. *Syntax = F9xx* where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

Search forward for a string

- B0 Search forward for “s” string from the current cursor position, leaving cursor pointing to “s” string. *Syntax = B0nnnnS* where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B0000454657374 will search forward for the first occurrence of the 4 character string “Test.” Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

B0 Example: Send bar code data that starts after a string of characters



Search for the letters “FGH” in bar codes and send all the data that follows, including “FGH.” Using the bar code above:

Command string: **B00003464748F10D**

B0 is the “Search forward for a string” command

0003 is the string length (3 characters)

46 is the hex value for “F”

47 is the hex value for “G”

48 is the hex value for “H”

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

FGHIJ

<CR>

Search backward for a string

- B1 Search backward for “s” string from the current cursor position, leaving cursor pointing to “s” string. Syntax = B1nnnnS where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B1000454657374 will search backward for the first occurrence of the 4 character string “Test.” Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

Search forward for a non-matching character

- E6 Search the input message forward for the first non-“xx” character from the current cursor position, leaving the cursor pointing to the non-“xx” character. Syntax = E6xx where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

E6 Example: Remove zeroes at the beginning of bar code data



This example shows a bar code that has been zero filled. You may want to ignore the zeroes and send all the data that follows. E6 searches forward for the first character that is not zero, then sends all the data after, followed by a carriage return. Using the bar code above:

Command string: **E630F10D**

E6 is the “Search forward for a non-matching character” command

30 is the hex value for 0

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

37692

<CR>

Search backward for a non-matching character

- E7 Search the input message backward for the first non-“xx” character from the current cursor position, leaving the cursor pointing to the non-“xx” character. Syntax = E7xx where xx stands for the search character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#), beginning on page A-3 for decimal, hex and character codes.

Miscellaneous Commands

Suppress characters

- FB Suppress all occurrences of up to 15 different characters, starting at the current cursor position, as the cursor is advanced by other commands. When the FC command is encountered, the suppress function is terminated. The cursor is not moved by the FB command. Syntax = FBnnxxyy ..zz where nn is a count of the number of suppressed characters in the list, and xxyy .. zz is the list of characters to be suppressed.

FB Example: Remove spaces in bar code data



This example shows a bar code that has spaces in the data. You may want to remove the spaces before sending the data. Using the bar code above:

Command string: **FB0120F10D**

FB is the “Suppress characters” command

01 is the number of character types to be suppressed

20 is the hex value for a space

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

34567890

<CR>

Stop suppressing characters

FC Disables suppress filter and clear all suppressed characters. *Syntax = FC.*

Replace characters

E4 Replaces up to 15 characters in the output message, without moving the cursor. Replacement continues until the E5 command is encountered. *Syntax = E4nnxx₁xx₂yy₁yy₂...zz₁zz₂* where nn is the total count of the number of characters in the list (characters to be replaced plus replacement characters); xx₁ defines characters to be replaced and xx₂ defines replacement characters, continuing through zz₁ and zz₂.

E4 Example: Replace zeroes with CRs in bar code data



If the bar code has characters that the host application does not want included, you can use the E4 command to replace those characters with something else. In this example, you will replace the zeroes in the bar code above with carriage returns.

Command string: **E402300DF10D**

E4 is the “Replace characters” command

02 is the total count of characters to be replaced, plus the replacement characters (0 is replaced by CR, so total characters = 2)

30 is the hex value for 0

0D is the hex value for a CR (the character that will replace the 0)

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as:

1234

5678

ABC

<CR>

Stop replacing characters

E5 Terminates character replacement. *Syntax = E5.*

Compare characters

FE Compare the character in the current cursor position to the character “xx.” If characters are equal, move the cursor forward one position. *Syntax = FExx* where xx stands for the comparison character’s hex value for its ASCII code. Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#)., beginning on page A-3 for decimal, hex and character codes.

Compare string

B2 Compare the string in the input message to the string “s.” If the strings are equal, move the cursor forward past the end of the string. *Syntax = B2nnnnS* where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B2000454657374 will compare the string at the current cursor position with the 4 character string “Test.” Refer to the [ASCII Conversion Chart \(Code Page 1252\)](#)., beginning on page A-3 for decimal, hex and character codes.

Check for a number

EC Check to make sure there is an ASCII number at the current cursor position. The format is aborted if the character is not numeric.

EC Example: Only output the data if the bar code begins with a number


If you want only data from bar codes that begin with a number, you can use EC to check for the number.

Command string: **ECF10D**

EC is the “Check for a number” command

F1 is the “Send all characters” command

0D is the hex value for a CR

If this bar code is read,  the next data format, if there is one, will be used on the data. If there is no other format, the format fails and the raw data is output as **AB1234**.

If this bar code is read:  the data is output as:

1234AB
<CR>

Check for non-numeric character

ED Check to make sure there is a non-numeric ASCII character at the current cursor position. The format is aborted if the character is numeric.

ED Example: Only output the data if the bar code begins with a letter


If you want only data from bar codes that begin with a letter, you can use ED to check for the letter.

Command string: **EDF10D**

ED is the “Check for a non-numeric character” command

F1 is the “Send all characters” command

0D is the hex value for a CR

If this bar code is read,  the next data format, if there is one, will be used on this data. If there is no other format, the format fails and the raw data is output as **1234AB**.

If this bar code is read:  the data is output as:

AB1234
<CR>

Insert a delay

EF Inserts a delay of up to 49,995 milliseconds (in multiples of 5), starting from the current cursor position. Syntax = EFnnnn where nnnn stands for the delay in 5ms increments, up to 9999. This command can only be used with keyboard emulation.a

Discard Data

B8 Discards types of data. For example, you may want to discard Code 128 bar codes that begin with the letter A. In step 4 (page 5-1), select 6A (for Code 128), and in step 5, select 9999 (for all lengths). Enter FE41B8 to compare and discard Code 128 bar codes that begin with the letter A. Syntax = B8.

Note: The B8 command must be entered after all other commands.

*The Data Format must be **Required** (see page 5-11) in order for the B8 command to work.*

*If Data Format is **On, but Not Required** (page 5-11), bar code data that meets the B8 format is scanned and output as usual.*

*Because the data format needs to be **On** and **Required** (page 5-11) for the B8 command, you must input data formats for all bar codes you wish to discard as well as all bar codes you wish to output.*

*Other data format settings impact the B8 command. If Data Format Non-Match Error Tone is **On** (page 5-11), the scanner emits an error tone. If Data format Non-Match Error Tone is **Off**, the code is disabled for reading and no tone is sounded.*

Data Formatter

When Data Formatter is turned Off, the bar code data is output to the host as read, including prefixes and suffixes.

Command	Description
DFM_EN0	Data Formatter Off

You may wish to require the data to conform to a data format you have created and saved. The following settings can be applied to your data format:

Data Formatter On, Not Required, Keep Prefix/Suffix

Scanned data is modified according to your data format, and prefixes and suffixes are transmitted.

Data Formatter On, Not Required, Drop Prefix/Suffix

Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted. If a data format is *not* found for that symbol, the prefixes and suffixes *are* transmitted.

Data Format Required, Keep Prefix/Suffix

Scanned data is modified according to your data format, and prefixes and suffixes are transmitted. Any data that does not match your data format requirements generates an error tone and the data in that bar code is not transmitted. If you wish to process this type of bar code without generating an error tone, see [Data Format Non-Match Error Tone](#).

Data Format Required, Drop Prefix/Suffix

Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted. Any data that does not match your data format requirements generates an error tone. If you wish to process this type of bar code without generating an error tone, see [Data Format Non-Match Error Tone](#).

Choose one of the following options. *Default = Data Formatter On, Not Required, Keep Prefix/Suffix.*

Command	Description
DFM_EN1	* Data Formatter On, Not Required, Keep Prefix/Suffix
DFM_EN3	Data Formatter On, Not Required, Drop Prefix/Suffix
DFM_EN2	Data Format Required, Keep Prefix/Suffix
DFM_EN4	Data Format Required, Drop Prefix/Suffix

Data Format Non-Match Error Tone

When a bar code is encountered that doesn't match your required data format, the scanner normally generates an error tone. However, you may want to continue scanning bar codes without hearing the error tone. If you use the **Data Format Non-Match Error Tone Off** command, data that doesn't conform to your data format is not transmitted, and no error tone will sound. If you wish to hear the error tone when a non-matching bar code is found, use the **Data Format Non-Match Error Tone On** command. *Default = Data Format Non-Match Error Tone On.*

Command	Description
DFMDEC0	* Data Format Non-Match Error Tone On
DFMCED1	Data Format Non-Match Error Tone Off

Primary/Alternate Data Formats

You can save up to four data formats, and switch between these formats. Your primary data format is saved under **0**. Your other three formats are saved under **1, 2, and 3**. To set your device to use one of these formats, use one of the commands below.

Command	Description
ALTFNM0	Primary Data Format
ALTFNM1	Data Format 1
ALTFNM2	Data Format 2
ALTFNM3	Data Format 3

Single Scan Data Format Change

You can also switch between data formats for a single scan. The next bar code is scanned using an alternate data format, then reverts to the format you have selected above (either Primary, 1, 2, or 3).

For example, you may have set your device to the data format you saved as Data Format 3. You can switch to Data Format 1 for a single trigger pull by using the **Single Scan-Data Format 1** command below. The next bar code that is scanned uses Data Format 1, then reverts back to Data Format 3.

Command	Description
VSAF_0	Single Scan-Primary Data Format
VSAF_1	Single Scan-Data Format 1
VSAF_2	Single Scan-Data Format 2
VSAF_3	Single Scan-Data Format 3

Symbologies

This programming section contains the following menu selections.

- All Symbologies
- Aztec Code
- China Post (Hong Kong 2 of 5)
- Chinese Sensible (Han Xin) Code
- Codabar
- Codablock A
- Codablock F
- Code 11
- Code 128
- Code 32 Pharmaceutical (PARAF)
- Code 39
- Code 93
- Data Matrix
- EAN/JAN-13
- EAN/JAN-8
- GS1 Composite Codes
- GS1 DataBar Expanded
- GS1 DataBar Limited
- GS1 DataBar Omnidirectional
- GS1 Emulation
- GS1-128
- Interleaved 2 of 5
- Korea Post
- Matrix 2 of 5
- MaxiCode
- MicroPDF417
- MSI
- NEC 2 of 5
- Postal Codes - 2D
- Postal Codes - Linear
- PDF417
- GS1 DataBar Omnidirectional
- QR Code
- Straight 2 of 5 IATA (two-bar start/stop)
- Straight 2 of 5 Industrial (three-bar start/stop)
- TCIF Linked Code 39 (TLC39)
- Telepen
- Trioptic Code
- UPC-A
- UPC-A/EAN-13 with Extended Coupon Code
- UPC-E0
- UPC-E1

All Symbologies

If you want to decode all the symbologies allowable for your scanner, use the **All Symbologies On** command. If on the other hand, you want to decode only a particular symbology, use **All Symbologies Off** followed by the On command for that particular symbology.

Note: Scanner performance may reduce by scanning All Symbologies On. Only use All Symbologies On when needed.

Command	Description
ALLENA1	All Symbologies On
ALLENA0	All Symbologies Off

Note: When All Symbologies On is used, 2D Postal Codes are not enabled. 2D Postal Codes must be enabled separately.

Message Length Description

You are able to set the valid reading length of some of the bar code symbologies. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data. This helps reduce the chances of a misread.

EXAMPLE: Decode only those bar codes with a count of 9-20 characters.
Min. length = 09Max. length = 20

EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15Max. length = 15

For a value other than the minimum and maximum message length defaults, use the minimum length and maximum length commands, included in the explanation of the symbology, to set value of the message length. The minimum and maximum lengths and the defaults are included with the respective symbologies.

Codabar

Command	Description
CBRDFT	Default All Codabar Settings

Codabar On/Off

Command	Description
CBRENA1	* On
CBRENA0	Off

Codabar Start/Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. *Default = Don't Transmit.*

Command	Description
CBRSSX1	Transmit
CBRSSX0	* Don't Transmit

Codabar Check Character

Codabar check characters are created using different "modulos." You can program the scanner to read only Codabar bar codes with Modulo 16 check characters. *Default = No Check Character.*

No Check Character indicates that the scanner reads and transmits bar code data with or without a check character.

When Check Character is set to **Validate and Transmit**, the scanner will only read Codabar bar codes printed with a check character, and will transmit this character at the end of the scanned data.

When Check Character is set to **Validate, but Don't Transmit**, the unit will only read Codabar bar codes printed **with** a check character, but will not transmit the check character with the scanned data.

Command	Description
CBRCK20	* No Check Character
CBRCK21	Validate Modulo 16, but Don't Transmit
CBRCK22	Validate Modulo 16 and Transmit

Codabar Concatenation

Codabar supports symbol concatenation. When you enable concatenation, the scanner looks for a Codabar symbol having a “D” start character, adjacent to a symbol having a “D” stop character. In this case the two messages are concatenated into one with the “D” characters omitted.



Select Require to prevent the scanner from decoding a single “D” Codabar symbol without its companion. This selection has no effect on Codabar symbols without Stop/Start D characters.

Command	Description
CBRCCT1	On
CBRCCT0	* Off
CBRCCT2	Require

Codabar Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 2-60. Minimum Default = 4, Maximum Default = 60.

Command	Description
CBRMIN##	Minimum Message Length
CBRMAX##	Maximum Message Length

Code 39

Command	Description
C39DFT	Default All Code 39 Settings

Code 39 On/Off

Command	Description
C39ENA1	* On
C39ENA0	Off

Code 39 Start/Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters. *Default = Don't Transmit.*

Command	Description
C39SSX1	Transmit
C39SSX0	* Don't Transmit

Code 39 Check Character

No Check Character indicates that the scanner reads and transmits bar code data with or without a check character.

When Check Character is set to **Validate, but Don't Transmit**, the unit only reads Code 39 bar codes printed with a check character, but will not transmit the check character with the scanned data.

When Check Character is set to **Validate and Transmit**, the scanner only reads Code 39 bar codes printed with a check character, and will transmit this character at the end of the scanned data. *Default = No Check Character.*

Command	Description
C39CK20	* No Check Character
C39CK21	Validate, but Don't Transmit
C39CK22	Validate and Transmit

Code 39 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 0-48. Minimum Default = 0, Maximum Default = 48.

Command	Description
C39MIN##	Minimum Message Length
C39MAX##	Maximum Message Length

Code 39 Append

This function allows the scanner to append the data from several Code 39 bar codes together before transmitting them to the host computer. When the scanner encounters a Code 39 bar code with the append trigger character(s), it buffers Code 39 bar codes until it reads a Code 39 bar code that does not have the append trigger. The data is then transmitted in the order in which the bar codes were read (FIFO). *Default = Off.*

Command	Description
C39APP1	On
C39APP0	* Off

Code 32 Pharmaceutical (PARAF)

Code 32 Pharmaceutical is a form of the Code 39 symbology used by Italian pharmacies. This symbology is also known as PARAF.

Note: Trioptic Code (page 6-23) must be turned off while scanning Code 32 Pharmaceutical codes.

Command	Description
C39B321	On
C39B320	* Off

Full ASCII

If Full ASCII Code 39 decoding is enabled, certain character pairs within the bar code symbol will be interpreted as a single character. For example: \$V will be decoded as the ASCII character SYN, and /C will be decoded as the ASCII character #. *Default = Off.*

NUL %U	DLE \$P	SP SPACE	0 0	@ %V	P P	' %W	p +P
SOH \$A	DC1 \$Q	! /A	1 1	A A	Q Q	a +A	q +Q
STX \$B	DC2 \$R	" /B	2 2	B B	R R	b +B	r +R
ETX \$C	DC3 \$S	# /C	3 3	C C	S S	c +C	s +S
EOT \$D	DC4 \$T	\$ /D	4 4	D D	T T	d +D	t +T
ENQ \$E	NAK \$U	% /E	5 5	E E	U U	e +E	u +U
ACK \$F	SYN \$V	& /F	6 6	F F	V V	f +F	v +V
BEL \$G	ETB \$W	' /G	7 7	G G	W W	g +G	w +W
BS \$H	CAN \$X	(/H	8 8	H H	X X	h +H	x +X
HT \$I	EM \$Y	) /I	9 9	I I	Y Y	i +I	y +Y
LF \$J	SUB \$Z	* /J	: /Z	J J	Z Z	j +J	z +Z
VT \$K	ESC %A	+ /K	; %F	K K	[%K	k +K	{ %P
FF \$L	FS %B	, /L	< %G	L L	\ %L	l +L	| %Q
CR \$M	GS %C	- /M	= %H	M M	] %M	m +M	} %R
SO \$N	RS %D	. /N	> %I	N N	^ %N	n +N	~ %S
SI \$O	US %E	/ /O	? %J	O O	_ %O	o +O	DEL %T

Character pairs /M and /N decode as a minus sign and period respectively.
Character pairs /P through /Y decode as 0 through 9.

Command	Description
C39ASC1	Full ASCII On

Command	Description
C39ASC0	* Full ASCII Off

Code 39 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, use the command below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and set the value. The data characters should then appear properly.

Command	Description
C39DCP##	Code 39 Code Page

Interleaved 2 of 5

Command	Description
I25DFT	Default All Interleaved 2 of 5 Settings

Interleaved 2 of 5 On/Off

Command	Description
I25EN1	* On
I25EN0	Off

Check Digit

No Check Digit indicates that the scanner reads and transmits bar code data with or without a check digit.

When Check Digit is set to **Validate, but Don't Transmit**, the unit only reads Interleaved 2 of 5 bar codes printed with a check digit, but will not transmit the check digit with the scanned data.

When Check Digit is set to **Validate and Transmit**, the scanner only reads Interleaved 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data. *Default = No Check Digit.*

Command	Description
I25CK20	* No Check Digit
I25CK21	Validate, but Don't Transmit
I25CK22	Validate and Transmit

Interleaved 2 of 5 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.

Command	Description
I25MIN##	Minimum Message Length
I25MAX##	Maximum Message Length

NEC 2 of 5

Command	Description
N25DFT	Default All NEC 2 of 5 Settings

NEC 2 of 5 On/Off

Command	Description
N25ENA1	* On
N25ENA0	Off

Check Digit

No Check Digit indicates that the scanner reads and transmits bar code data with or without a check digit.

When Check Digit is set to **Validate, but Don't Transmit**, the unit only reads NEC 2 of 5 bar codes printed with a check digit, but will not transmit the check digit with the scanned data.

When Check Digit is set to **Validate and Transmit**, the scanner only reads NEC 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data. *Default = No Check Digit.*

Command	Description
N25CK20	* No Check Digit
N25CK21	Validate, but Don't Transmit
N25CK22	Validate and Transmit

NEC 2 of 5 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.

Command	Description
N25MIN##	Minimum Message Length
N25MAX##	Maximum Message Length

Code 93

Command	Description
C93DFT	Default All Code 93 Settings

Code 93 On/Off

Command	Description
C93ENA1	* On
C93ENA0	Off

Code 93 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.

Command	Description
C93MIN##	Minimum Message Length
C93MAX##	Maximum Message Length

Code 93 Append

This function allows the scanner to append the data from several Code 93 bar codes together before transmitting them to the host computer. When this function is enabled, the scanner stores those Code 93 bar codes that start with a space (excluding the start and stop symbols), and does not immediately transmit the data. The scanner stores the data in the order in which the bar codes are read, deleting the first space from each. The scanner transmits the appended data when it reads a Code 93 bar code that starts with a character other than a space. *Default = Off.*

Command	Description
C93APP1	On
C93APP0	* Off

Code 93 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and set the value. The data characters should then appear properly.

Command	Description
C93DCP##	Code 93 Code Page

Straight 2 of 5 Industrial (three-bar start/stop)

Command	Description
R25DFT	Default All Straight 2 of 5 Industrial Settings

Straight 2 of 5 Industrial On/Off

Command	Description
R25ENA1	On
R25ENA0	* Off

Straight 2 of 5 Industrial Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.

Command	Description
R25MIN##	Minimum Message Length
R25MAX##	Maximum Message Length

Straight 2 of 5 IATA (two-bar start/stop)

Command	Description
A25DFT	Default All Straight 2 of 5 IATA Settings

Straight 2 of 5 IATA On/Off

Command	Description
A25ENA1	On
A25ENA0	* Off

Straight 2 of 5 IATA Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.

Command	Description
A25MIN##	Minimum Message Length
A25MAX##	Maximum Message Length

Matrix 2 of 5

Command	Description
X25DFT	Default All Matrix 2 of 5 Settings

Matrix 2 of 5 On/Off

Command	Description
X25ENA1	On
X25ENA0	* Off

Matrix 2 of 5 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.

Command	Description
X25MIN##	Minimum Message Length
X25MAX##	Maximum Message Length

Code 11

Command	Description
C11DFT	Default All Code 11 Settings

Code 11 On/Off

Command	Description
C11ENA1	On
C11ENA0	* Off

Check Digits Required

This option sets whether 1 or 2 check digits are required with Code 11 bar codes. *Default = Two Check Digits.*

Command	Description
C11CK20	One Check Digit
C11CK21	* Two Check Digits

Code 11 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.

Command	Description
C11MIN##	Minimum Message Length
C11MAX##	Maximum Message Length

Code 128

Command	Description
128DFT	Default All Code 128 Settings

Code 128 On/Off

Command	Description
128ENA1	* On
128ENA0	Off

ISBT 128 Concatenation

In 1994 the International Society of Blood Transfusion (ISBT) ratified a standard for communicating critical blood information in a uniform manner. The use of ISBT formats requires a paid license. The ISBT 128 Application Specification describes 1) the critical data elements for labeling blood products, 2) the current recommendation to use Code 128 due to its high degree of security and its space-efficient design, 3) a variation of Code 128 that supports concatenation of neighboring symbols, and 4) the standard layout for bar codes on a blood product label. Use the commands below to turn concatenation on or off. *Default =Off.*

Command	Description
ISBENA1	On
ISBENA0	* Off

Code 128 Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.

Command	Description
128MIN##	Minimum Message Length
128MAX##	Maximum Message Length

Code 128 Append

This function allows the scanner to append the data from several Code 128 bar codes together before transmitting them to the host computer. When the scanner encounters a Code 128 bar code with the append trigger character(s), it buffers Code 128 bar codes until it reads a Code 128 bar code that does not have the append trigger. The data is then transmitted in the order in which the bar codes were read (FIFO). *Default = On.*

Command	Description
128APP1	* On
128APP0	Off

Code 128 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and set the value. The data characters should then appear properly.

Command	Description
128DCP##	Code 128 Code Page

GS1-128

Command	Description
GS1DFT	Default All GS1-128 Settings

GS1-128 On/Off

Command	Description
GS1ENA1	* On
GS1ENA0	Off

GS1-128 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 1, Maximum Default = 80.

Command	Description
GS1MIN##	Minimum Message Length
GS1MAX##	Maximum Message Length

Telepen

Command	Description
TELDFT	Default All Telepen Settings

Telepen On/Off

Command	Description
TELENA1	On
TELENA0	* Off

Telepen Output

Using AIM Telepen Output, the scanner reads symbols with start/stop pattern 1 and decodes them as standard full ASCII (start/stop pattern 1). When Original Telepen Output is selected, the scanner reads symbols with start/stop pattern 1 and decodes them as compressed numeric with optional full ASCII (start/stop pattern 2). *Default = AIM Telepen Output.*

Command	Description
TELOLD0	* AIM Telepen Output
TELOLD1	Original Telepen Output

Telepen Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-60. Minimum Default = 1, Maximum Default = 60.

Command	Description
TELMIN##	Minimum Message Length
TELMAX##	Maximum Message Length

UPC-A

Command	Description
UPADFT	Default All UPC-A Settings

UPC-A On/Off

Command	Description
UPBENA1	* On
UPBENA0	Off

Note: To convert UPC-A bar codes to EAN-13, see [Convert UPC-A to EAN-13](#) on page 6-18.

UPC-A Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not.
Default = On.

Command	Description
UPACKX1	* On
UPACKX0	Off

UPC-A Number System

The numeric system digit of a U.P.C. symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will not transmit it. Default = On.

Command	Description
UPANSX1	* On
UPANSX0	Off

UPC-A Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-A data.
Default = Off for both 2 Digit and 5 Digit Addenda.

Command	Description
UPAAD21	2 Digit Addenda On
UPAAD20	* 2 Digit Addenda Off
UPAAD51	5 Digit Addenda On
UPAAD50	* 5 Digit Addenda Off

UPC-A Addenda Required

When **Required** is scanned, the scanner will only read UPC-A bar codes that have addenda. You must then turn on a 2 or 5 digit addenda listed on [page 6-14](#). *Default = Not Required.*

Command	Description
UPAARQ1	Required
UPAARQ0	* Not Required

Addenda Timeout

You can set a time during which the scanner looks for an addenda. If an addenda is not found within this time period, the data can be either transmitted or discarded, based on the setting you are using for [UPC-A Addenda Required](#) (page 6-15). Set the length (in milliseconds) for this timeout. *Default = 120.*

Command	Description
DLYADD	Addenda Timeout

UPC-A Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. *Default = On.*

Command	Description
UPAADS1	* On
UPAADS0	Off

UPC-A/EAN-13 with Extended Coupon Code

Use the following codes to enable or disable UPC-A and EAN-13 with Extended Coupon Code. When left on the default setting (**Off**), the scanner treats Coupon Codes and Extended Coupon Codes as single bar codes.

If you scan the **Allow Concatenation** code, when the scanner sees the coupon code and the extended coupon code in a single scan, it transmits both as one symbologies. Otherwise, it transmits the first coupon code it reads.

If you scan the **Require Concatenation** code, the scanner must see and read the coupon code and extended coupon code in a single read to transmit the data. No data is output unless both codes are read. *Default = Off.*

Command	Description
CPNENA0	* Off
CPNENA1	Allow Concatenation
CPNENA2	Require Concatenation

Coupon GS1 DataBar Output

If you scan coupons that have both UPC and GS1 DataBar codes, you may wish to scan and output only the data from the GS1 DataBar code. Use the **GS1 Output On** command below to scan and output only the GS1 DataBar code data. *Default = GS1 Output Off.*

Command	Description
CPNGS10	* GS1 Output Off
CPNGS11	GS1 Output On

UPC-E0

Command	Description
UPEDFT	Default All UPC-E Settings

UPC-E0 On/Off

Most U.P.C. bar codes lead with the 0 number system. To read these codes, use the **UPC-E0 On** selection. If you need to read codes that lead with the 1 number system, use [UPC-E1](#) (page 6-17). *Default = On.*

Command	Description
UPEENO1	* UPC-E0 On
UPEENO0	UPC-E0 Off

UPC-E0 Expand

UPC-E Expand expands the UPC-E code to the 12 digit, UPC-A format. *Default = Off.*

Command	Description
UPEEXP1	On
UPEEXP0	* Off

UPC-E0 Addenda Required

When **Required** is scanned, the scanner will only read UPC-E bar codes that have addenda. *Default = Not Required.*

Command	Description
UPEARQ1	Required
UPEARQ0	* Not Required

UPC-E0 Addenda Separator

When this feature is **On**, there is a space between the data from the bar code and the data from the addenda. When turned **Off**, there is no space. *Default = On.*

Command	Description
UPEADS1	* On
UPEADS0	Off

UPC-E0 Check Digit

Check Digit specifies whether the check digit should be transmitted at the end of the scanned data or not. *Default = On.*

Command	Description
UPECKX1	* On
UPECKX0	Off

UPC-E0 Leading Zero

This feature allows the transmission of a leading zero (0) at the beginning of scanned data. To prevent transmission, scan **Off**. *Default = On.*

Command	Description
UPENSX1	* On
UPENSX0	Off

UPC-E0 Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-E data. *Default = Off for both 2 Digit and 5 Digit Addenda.*

Command	Description
UPEAD21	2 Digit Addenda On
UPEAD20	* 2 Digit Addenda Off
UPEAD50	5 Digit Addenda On
UPEAD50	* 5 Digit Addenda Off

UPC-E1

Most U.P.C. bar codes lead with the 0 number system. For these codes, use [UPC-E0](#) (page 6-16). If you need to read codes that lead with the 1 number system, use the **UPC-E1 On** selection. *Default = Off.*

Command	Description
UPEEN11	UPC-E1 On

Command	Description
UPEEN10	* UPC-E1 Off

EAN/JAN-13

Command	Description
E13DFT	Default All EAN/JAN Settings

>EAN/JAN-13 On/Off

Command	Description
E13ENA1	* On
E13ENA0	Off

Convert UPC-A to EAN-13

When **UPC-A Converted to EAN-13** is selected, UPC-A bar codes are converted to 13 digit EAN-13 codes by adding a zero to the front. When **Do not Convert UPC-A** is selected, UPC-A codes are read as UPC-A.

Command	Description
UPAENA0	UPC-A Converted to EAN-13
UPAENA1	* Do not Convert UPC-A

EAN/JAN-13 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not.
Default = On.

Command	Description
E13CKX1	* On
E13CKX0	Off

EAN/JAN-13 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-13 data. *Default = Off for both 2 Digit and 5 Digit Addenda.*

Command	Description
E13AD21	2 Digit Addenda On
E13AD20	* 2 Digit Addenda Off

Command	Description
E13AD51	5 Digit Addenda On
E13AD50	* 5 Digit Addenda Off

EAN/JAN-13 Addenda Required

When **Required** is scanned, the scanner will only read EAN/JAN-13 bar codes that have addenda. *Default = Not Required.*

Command	Description
E13ARQ1	Required
E13ARQ0	* Not Required

EAN/JAN-13 Addenda Separator

When this feature is **On**, there is a space between the data from the bar code and the data from the addenda. When turned **Off**, there is no space. *Default = On.*

Command	Description
E13ADS1	* On
E13ADS0	Off

Note: If you want to enable or disable EAN13 with Extended Coupon Code, refer to [UPC-A/EAN-13 with Extended Coupon Code](#) (page 6-15).

ISBN Translate

When **On** is scanned, EAN-13 Bookland symbols are translated into their equivalent ISBN number format. *Default = Off.*

Command	Description
E13ISB1	On
E13ISB0	* Off

EAN/JAN-8

Command	Description
EA8DFT	Default All EAN/JAN-8 Settings

EAN/JAN-8 On/Off

Command	Description
EA8ENA1	* On
EA8ENA0	Off

EAN/JAN-8 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not.
Default = On.

Command	Description
EA8CKX1	* On
EA8CKX0	Off

EAN/JAN-8 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-8 data. *Default = Off for both 2 Digit and 5 Digit Addenda.*

Command	Description
EA8AD21	2 Digit Addenda On
EA8AD20	* 2 Digit Addenda Off
EA8AD50	5 Digit Addenda On
EA8AD50	* 5 Digit Addenda Off

EAN/JAN-8 Addenda Required

When **Required** is scanned, the scanner will only read EAN/JAN-8 bar codes that have addenda. *Default = Not Required.*

Command	Description
EA8ARQ1	Required
EA8ARQ0	* Not Required

EAN/JAN-8 Addenda Separator

When this feature is **On**, there is a space between the data from the bar code and the data from the addenda. When turned **Off**, there is no space. *Default = On.*

Command	Description
EA8ADS1	* On
EA8ADS0	Off

MSI

Command	Description
MSIDFT	Default All MSI Settings

MSI On/Off

Command	Description
MSIENA1	On
MSIENA0	* Off

MSI Check Character

Different types of check characters are used with MSI bar codes. You can program the scanner to read MSI bar codes with Type 10 check characters. *Default = Validate Type 10, but Don't Transmit.*

When Check Character is set to **Validate Type 10/11 and Transmit**, the scanner will only read MSI bar codes printed with the specified type check character(s), and will transmit the character(s) at the end of the scanned data.

When Check Character is set to **Validate Type 10/11, but Don't Transmit**, the unit will only read MSI bar codes printed with the specified type check character(s), but will not transmit the check character(s) with the scanned data.

Command	Description
MSICHK0	* Validate Type 10, but Don't Transmit
MSICHK1	Validate Type 10 and Transmit
MSICHK2	Validate 2 Type 10 Characters, but Don't Transmit
MSICHK3	Validate 2 Type 10 Characters and Transmit
MSICHK4	Validate Type 10 then Type 11 Character, but Don't Transmit
MSICHK5	Validate Type 10 then Type 11 Character and Transmit
MSICHK6	Disable MSI Check Characters

MSI Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 4-48. Minimum Default = 4, Maximum Default = 48.

Command	Description
MSIMIN##	Minimum Message Length
MSIMAX##	Maximum Message Length

GS1 DataBar Omnidirectional

Command	Description
RSSDFT	Default All GS1 DataBar Omnidirectional Settings

GS1 DataBar Omnidirectional On/Off

Command	Description
RSSENA1	* On
RSSENA1	Off

GS1 DataBar Limited

Command	Description
RSLDFT	Default All GS1 DataBar Limited Settings

GS1 DataBar Limited On/Off

Command	Description
RSLENA1	* On
RSLENA0	Off

GS1 DataBar Expanded

Command	Description
RSEDFT	Default All GS1 DataBar Expanded Settings

GS1 DataBar Expanded On/Off

Command	Description
RSEENA1	* On
RSEENA0	Off

GS1 DataBar Expanded Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 4-74. Minimum Default = 4, Maximum Default = 74.

Command	Description
RSEMIN##	Minimum Message Length
RSEMAX##	Maximum Message Length

Trioptic Code

Note: If you are going to scan Code 32 Pharmaceutical codes ([page 6-5](#)), Trioptic Code must be off.

Trioptic Code is used for labeling magnetic storage media.

Command	Description
TRIENA1	On
TRIENA0	* Off

Codablock A

Command	Description
CBADFT	Default All Codablock A Settings

>Codablock A On/Off

Command	Description
CBAENA1	On
CBAENA0	* Off

Codablock A Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-600. Minimum Default = 1, Maximum Default = 600.

Command	Description
CBAMIN##	Minimum Message Length
CBAMAX##	Maximum Message Length

Codablock F

Command	Description
CBFDFT	Default All Codablock F Settings

Codablock F On/Off

Command	Description
CBFENA1	On
CBFENA0	* Off

Codablock F Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-2048. Minimum Default = 1, Maximum Default = 2048.

Command	Description
CBFMIN##	Minimum Message Length
CBFMAX##	Maximum Message Length

Label Code

The standard Label Code is used in libraries. *Default = Off.*

Command	Description
LBLENA1	On
LBLENA0	*Off

PDF417

Command	Description
PDFDFT	Default All PDF417 Settings

PDF417 On/Off

Command	Description
PDFENA1	* On
PDFENA0	Off

PDF417 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-2750. Minimum Default = 1, Maximum Default = 2750.

Command	Description
PDFMIN##	Minimum Message Length
PDFMAX##	Maximum Message Length

PDF417 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and set the value. The data characters should then appear properly.

Command	Description
PDFDCP##	PDF Code Page

MacroPDF417

MacroPDF417 is an implementation of PDF417 capable of encoding very large amounts of data into multiple PDF417 bar codes. When this selection is enabled, these multiple bar codes are assembled into a single data string. *Default = On.*

Command	Description
PDFMAC1	* On
PDFMAC0	Off

MicroPDF417

Command	Description
MPDDFT	Default All MicroPDF417 Settings

MicroPDF417 On/Off

Command	Description
MPDENA1	On
MPDENA0	* Off

MicroPDF417 Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-366. Minimum Default = 1, Maximum Default = 366.

Command	Description
MPDMIN##	Minimum Message Length
MPDMAX##	Maximum Message Length

GS1 Composite Codes

Linear codes are combined with a unique 2D composite component to form a new class called GS1 Composite symbology. GS1 Composite symbologies allow for the co-existence of symbologies already in use. *Default = Off.*

Command	Description
COMENA1	On
COMENA0	* Off

UPC/EAN Version

Use the **UPC/EAN Version On** bar code to decode GS1 Composite symbols that have a U.P.C. or an EAN linear component. (This does not affect GS1 Composite symbols with a GS1-128 or GS1 linear component.) *Default = UPC/EAN Version Off.*

Command	Description
COMUPC1	UPC/EAN Version On
COMUPC0	* UPC/EAN Version Off

Note: If you scan coupons that have both UPC and GS1 DataBar codes, you may wish to scan and output only the data from the GS1 DataBar code. See [Coupon GS1 DataBar Output](#) (page 6-16) for further information.

GS1 Composite Code Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-2435. Minimum Default = 1, Maximum Default = 2435.

Command	Description
COMMIN##	Minimum Message Length
COMMAX##	Maximum Message Length

GS1 Emulation

The scanner can automatically format the output from any GS1 data carrier to emulate what would be encoded in an equivalent GS1-128 or GS1 DataBar symbol. GS1 data carriers include UPC-A and UPC-E, EAN-13 and EAN-8, ITF-14, GS1-128, and GS1-128 DataBar and GS1 Composites. (Any application that accepts GS1 data can be simplified since it only needs to recognize one data carrier type.)

If **GS1-128 Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-128 AIM ID, jC1 (see [Symbology Charts](#) on page A-1).

If **GS1 DataBar Emulation** is scanned, all retail codes (U.P.C., UPC-E, EAN8, EAN13) are expanded out to 16 digits. If the AIM ID is enabled, the value will be the GS1-DataBar AIM ID, j ϵ m (see [Symbology Charts](#) on page A-1).

If **GS1 Code Expansion Off** is scanned, retail code expansion is disabled, and UPC-E expansion is controlled by the [UPC-E0 Expand](#) (page 6-16) setting. If the AIM ID is enabled, the value will be the GS1-128 AIM ID, jC1 (see [Symbology Charts](#) on page A-1).

If **EAN8 to EAN13 Conversion** is scanned, all EAN8 bar codes are converted to EAN13 format.

Default = GS1 Emulation Off.

Command	Description
EANEMU1	GS1-128 Emulation
EANEMU2	GS1 DataBar Emulation
EANEMU3	GS1 Code Expansion Off
EANEMU4	EAN8 to EAN13 Conversion
EANEMU0	* GS1 Emulation Off

TCIF Linked Code 39 (TLC39)

This code is a composite code since it has a Code 39 linear component and a MicroPDF417 stacked code component. All bar code readers are capable of reading the Code 39 linear component. The MicroPDF417 component can only be decoded if **TLC39 On** is selected. The linear component may be decoded as Code 39 even if TLC39 is off. *Default = Off.*

Command	Description
T39ENA1	On
T39ENA0	* Off

QR Code

Command	Description
QRCDFT	Default All QR Code Settings

QR Code On/Off

This selection applies to both QR Code and Micro QR Code.

Command	Description
QRCENA1	* On
QRCENA0	Off

QR Code Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-7089. Minimum Default = 1, Maximum Default = 7089.

Command	Description
QRCMIN##	Minimum Message Length
QRCMAX##	Maximum Message Length

QR Code Append

This function allows the scanner to append the data from several QR Code bar codes together before transmitting them to the host computer. When the scanner encounters a QR Code bar code with the append trigger character(s), it buffers the number of QR Code bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. *Default = On.*

Command	Description
QRCAPP1	* On
QRCAPP0	Off

QR Code Page

QR Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and set the value. The data characters should then appear properly.

Command	Description
QRCDCP	QR Code Page

Data Matrix

Command	Description
IDMDFT	Default All Data Matrix Settings

Data Matrix On/Off

Command	Description
IDMENA1	* On
IDMENA0	Off

Data Matrix Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-3116. Minimum Default = 1, Maximum Default = 3116.

Command	Description
IDMMIN##	Minimum Message Length
IDMMAX##	Maximum Message Length

Data Matrix Append

This function allows the scanner to append the data from several Data Matrix bar codes together before transmitting them to the host computer. When the scanner encounters an Data Matrix bar code with the append trigger character(s), it buffers the number of Data Matrix bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. *Default = On.*

Command	Description
IDMAPP1	* On
IDMAPP0	Off

Data Matrix Code Page

Data Matrix Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and set the value. The data characters should then appear properly.

Command	Description
IDMDCP	Data Matrix Code Page

MaxiCode

Command	Description
MAXDFT	Default All MaxiCode Settings

MaxiCode On/Off

Command	Description
MAXENA1	On
MAXENA0	* Off

MaxiCode Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-150. Minimum Default = 1, Maximum Default = 150.

Command	Description
MAXMIN##	Minimum Message Length
MAXMAX##	Maximum Message Length

Aztec Code

Command	Description
AZTDFT	Default All Aztec Code Settings

Aztec Code On/Off

Command	Description
AZTENA1	* On
AZTENA0	Off

Aztec Code Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-3832. Minimum Default = 1, Maximum Default = 3832.

Command	Description
AZTMIN##	Minimum Message Length
AZTMAX##	Maximum Message Length

Aztec Append

This function allows the scanner to append the data from several Aztec bar codes together before transmitting them to the host computer. When the scanner encounters an Aztec bar code with the append trigger character(s), it buffers the number of Aztec bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. *Default = On.*

Command	Description
AZTAPP1	* On
AZTAPP0	Off

Aztec Code Page

Aztec Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see [ISO 2022/ISO 646 Character Replacements](#) on page A-7), and set the value. The data characters should then appear properly.

Command	Description
AZTDCP##	Aztec Code Page

Chinese Sensible (Han Xin) Code

Command	Description
HX_DFT	Default All Han Xin Settings

Han Xin Code On/Off

Command	Description
HX_ENA1	On
HX_ENA0	* Off

Han Xin Code Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 1-7833. Minimum Default = 1, Maximum Default = 7833.

Command	Description
HX_MIN##	Minimum Message Length
AHX_MAX##	Maximum Message Length

Postal Codes - 2D

The following lists the possible 2D postal codes, and 2D postal code combinations that are allowed. Only one 2D postal code selection can be active at a time. If you enable a second 2D postal code selection, the first selection is overwritten. *Default = 2D Postal Codes Off.*

Command	Description
POSTAL0	* 2D Postal Codes Off

Single 2D Postal Codes:

Command	Description
POSTAL1	Australian Post On
POSTAL7	British Post On
POSTAL30	Canadian Post On
POSTAL10	Intelligent Mail Bar Code On
POSTAL3	Japanese Post On
POSTAL4	KIX Post On
POSTAL5	Planet Code On (Also see Planet Code Check Digit , page 6-33.)
POSTAL9	Postal-4i On
POSTAL6	Postnet On (Also see Postnet Check Digit , page 6-33.)
POSTAL11	Postnet with B and B' Fields On
POSTAL2	InfoMail On

Combination 2D Postal Codes:

Command	Description
POSTAL8	InfoMail and British Post On
POSTAL20	Intelligent Mail Bar Code and Postnet with B and B' Fields On
POSTAL14	Postnet and Postal-4i On
POSTAL16	Postnet and Intelligent Mail Bar Code On
POSTAL17	Postal-4i and Intelligent Mail Bar Code On
POSTAL19	Postal-4i and Postnet with B and B' Fields On
POSTAL12	Planet Code and Postnet On
POSTAL18	Planet Code and Postnet with B and B' Fields On
POSTAL13	Planet Code and Postal-4i On

Command	Description
POSTAL15	Planet Code and Intelligent Mail Bar Code On
POSTAL21	Planet Code, Postnet, and Postal-4i On
POSTAL22	Planet Code, Postnet, and Intelligent Mail Bar Code On
POSTAL23	Planet Code, Postal-4i, and Intelligent Mail Bar Code On
POSTAL24	Postnet, Postal-4i, and Intelligent Mail Bar Code On
POSTAL25	Planet Code, Postal-4i, and Postnet with B and B' Fields On
POSTAL26	Planet Code, Intelligent Mail Bar Code, and Postnet with B and B' Fields On
POSTAL27	Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On
POSTAL28	Planet Code, Postal-4i, Intelligent Mail Bar Code, and Postnet On
POSTAL29	Planet Code, Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On

Planet Code Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of Planet Code data. *Default = Don't Transmit.*

Command	Description
PLNCKX1	Transmit Check Digit
PLNCKX0	* Don't Transmit Check Digit

Postnet Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of Postnet data. *Default = Don't Transmit.*

Command	Description
NETCKX1	Transmit Check Digit
NETCKX0	* Don't Transmit Check Digit

Australian Post Interpretation

This option controls what interpretation is applied to customer fields in Australian 4-State symbols.

Bar Output lists the bar patterns in "0123" format.

Numeric N Table causes that field to be interpreted as numeric data using the N Table.

Alphanumeric C Table causes the field to be interpreted as alphanumeric data using the C Table. Refer to the Australian Post Specification Tables.

Combination C and N Tables causes the field to be interpreted using either the C or N Tables.

Command	Description
AUSINT0	* Bar Output
AUSINT1	Numeric N Table
AUSINT2	Alphanumeric C Table
AUSINT3	Combination C and N Tables

Postal Codes - Linear

The following lists linear postal codes. Any combination of linear postal code selections can be active at a time.

China Post (Hong Kong 2 of 5)

Command	Description
CPCDFT	Default All China Post (Hong Kong 2 of 5) Settings

China Post (Hong Kong 2 of 5) On/Off

Command	Description
CPCENA1	On
CPCENA0	* Off

China Post (Hong Kong 2 of 5) Message Length

Use the commands below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.

Command	Description
CPCMIN##	Minimum Message Length
CPCMAX##	Maximum Message Length

Korea Post

Command	Description
KPCDFT	Default All Korea Post Settings

Korea Post

Command	Description
KPCENA1	On
KPCENA0	* Off

Korea Post Message Length

Scan the bar codes below to change the message length. Refer to [Message Length Description](#) (page 6-1) for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 48.

Command	Description
KPCMIN##	Minimum Message Length
KPCMAX##	Maximum Message Length

Korea Post Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data.
Default = Don't Transmit.

Command	Description
KPCCHK1	Transmit Check Digit
KPCCHK0	* Don't Transmit Check Digit



Reset Factory Defaults

To restore custom defaults to your scanner, use the **Reset Factory Defaults** command.

Command	Description
DEFAULT	Reset Factory Defaults

To Add a Test Code I.D. Prefix to All Symbologies

This selection allows you to turn on transmission of a Code I.D. before the decoded symbology. (See the [Symbology Charts](#), beginning on page A-1) for the single character code that identifies each symbology.) This action first clears all current prefixes, then programs a Code I.D. prefix for all symbologies. This is a temporary setting that will be removed when the unit is power cycled.

Command	Description
PREA2BK2995C80!	Add Code I.D. Prefix to All Symbologies (Temporary)

Show Decoder Revision

Scan the bar code below to output the decoder revision.

Command	Description
REV_DR	Show Decoder Revision

Show Scan Driver Revision

Scan the bar code below to output the scan driver revision. The scan driver controls image capture.

Command	Description
REV_SD	Show Scan Driver Revision

Show Software Revision

Scan the bar code below to output the current software revision, unit serial number, and other product information for both the scanner and base.

Command	Description
REVINF	Show Software Revision

Show Data Format

Scan the bar code below to show current data format settings.

Command	Description
DFMBK3?	Data Format Settings

Test Menu

When you use the Test Menu **On** command, then scan a programming code, the scanner displays the content of a programming code. The programming function will still occur, but in addition, the content of that programming code is output to the terminal.

Note: This feature should not be used during normal scanner operation.

Command	Description
TSTMNU1	On
TSTMNU0	* Off

TotalFreedom

TotalFreedom is an open system architecture that makes it possible for you create applications that reside on your scanner. Decoding apps and Data Formatting apps can be created using TotalFreedom. For further information about TotalFreedom, go to our website at www.honeywellaidc.com.

Application Plug-Ins (Apps)

Any apps that you are using can be turned off or on by using the following commands. Apps are stored in groups: Decoding, and Formatting. You can enable and disable these groups of apps by using that group's **On** or **Off** command below. You can also use the **List Apps** command to output a list of all your apps.

Command	Description
PLGDCE1	* Decoding Apps On
PLGDCE0	Decoding Apps Off
PLGFOE1	* Formatting Apps On
PLGFOE0	Formatting Apps Off
PLGINF	List Apps

Note: You must reset your device in order for the apps setting to take effect.

Serial Programming Commands

The serial programming commands can also be used to configure the scanner.

Conventions

The following conventions are used for menu and query command descriptions:

parameter A label representing the actual value you should send as part of a command.

[*option*] An optional part of a command.

{*Data*} Alternatives in a command.

bold Names of menus, menu commands, buttons, dialog boxes, and windows that appear on the screen.

Menu Command Syntax

Menu commands have the following syntax (spaces have been used for clarity only):

Prefix Tag SubTag {Data} [, SubTag {Data}] [; Tag SubTag {Data}] [...] Storage

Prefix Three ASCII characters: **SYN M CR** (ASCII 22,77,13).

Tag A 3 character case-insensitive field that identifies the desired menu command group. For example, all Code 39 configuration settings are identified with a Tag of **C39**.

SubTag A 3 character case-insensitive field that identifies the desired menu command within the tag group. For example, the SubTag to enable Code 39 is **ENA**.

Data The new value for a menu setting, identified by the Tag and SubTag.

Storage A single character that specifies the storage table to which the command is applied:

! (exclamation point) => performs the command's operation on the device's volatile menu configuration table.

. (period) => performs the command's operation on the device's non-volatile menu configuration table. Use the non-volatile table only for semi-permanent changes you want saved through a power cycle.

IMPORTANT: The scanner's flash has a limited number of write cycles. When sending commands frequently Honeywell recommends using the volatile (! exclamation point) memory as often as possible.

Serial Command Example

Enable Code 39 symbology: **SYN M CR C39ENA1**. or **\x16M\x0DC39ENA1**.

Prefix	Tag	SubTag	Data	Storage
SYN M CR	C39	ENA	1	.

Query Commands

Several special characters can be used to query the device about its settings.

^ What is the default value for the setting(s).

? What is the device's current value for the setting(s).

***** What is the range of possible values for the setting(s). (The device's response uses a dash (-) to indicate a continuous range of values. A pipe (|) separates items in a list of non-continuous values.)

:Name: Field Usage (Optional)

This command returns the query information from the scanner.

Tag Field Usage

When a query is used in place of a Tag field, the query applies to the *entire* set of commands available for the particular storage table indicated by the Storage field of the command. In this case, the SubTag and Data fields should not be used because they are ignored by the device.

SubTag Field Usage

When a query is used in place of a SubTag field, the query applies only to the subset of commands available that match the Tag field. In this case, the Data field should not be used because it is ignored by the device.

Data Field Usage

When a query is used in place of the Data field, the query applies only to the specific command identified by the Tag and SubTag fields.

Concatenation of Multiple Commands

Multiple commands can be issued within one Prefix/Storage sequence. Only the Tag, SubTag, and Data fields must be repeated for each command in the sequence. If additional commands are to be applied to the same Tag, then the new command sequence is separated with a comma (,) and only the SubTag and Data fields of the additional command are issued. If the additional command requires a different Tag field, the command is separated from previous commands by a semicolon (;).

Responses

The device responds to serial commands with one of three responses:

ACK Indicates a good command which has been processed.

ENQ Indicates an invalid Tag or SubTag command.

NAK Indicates the command was good, but the Data field entry was out of the allowable range for this Tag and SubTag combination, e.g., an entry for a minimum message length of 100 when the field will only accept 2 characters.

When responding, the device echoes back the command sequence with the status character inserted directly before each of the punctuation marks (the period, exclamation point, comma, or semicolon) in the command.

Examples of Query Commands

In the following examples, a bracketed notation [] depicts a non-displayable response.

Example: What is the range of possible values for Codabar Coding Enable?

Enter: **cbrena*.**

Response: **CBRENA0-1[ACK]**

This response indicates that Codabar Coding Enable (CBRENA) has a range of values from 0 to 1 (off and on).

Example: What is the default value for Codabar Coding Enable?

Enter: **cbrena^.**

Response: **CBRENA1[ACK]**

This response indicates that the default setting for Codabar Coding Enable (CBRENA) is 1, or on.

Example: What is the device's current setting for Codabar Coding Enable?

Enter: **cbrena?.**

Response: **CBRENA1[ACK]**

This response indicates that the device's Codabar Coding Enable (CBRENA) is set to 1, or on.

Example: What are the device's settings for all Codabar selections?

Enter: **cbr?.**

**Response: CBRENA1[ACK],
SSX0[ACK],
CK20[ACK],
CCT1[ACK],
MIN2[ACK],
MAX60[ACK],
DFT[ACK].**

This response indicates:

- Codabar Coding Enable (CBRENA) is set to 1, or on
- Start/Stop Character (SSX) is set to 0, or Don't Transmit
- Check Character (CK2) is set to 0, or Not Required
- Concatenation (CCT) is set to 1, or Enabled
- Minimum Message Length (MIN) is set to 2 characters
- Maximum Message Length (MAX) is set to 60 characters
- Default setting (DFT) has no value

Trigger Commands

You can activate and deactivate the scanner with serial trigger commands. First, the scanner must be put in Manual Trigger Mode by scanning a Manual Trigger Mode bar code ([page 3-5](#)), or by sending a serial menu command for triggering ([page 3-2](#)). Once the scanner is in serial trigger mode, the trigger is activated and deactivated by sending the following commands:

Activate: ***SYN T CR.***

Deactivate: ***SYN U CR.***

The scanner scans until a bar code has been read, until the deactivate command is sent, or until the serial time-out has been reached (see "Read Time-Out" on page 3-7 for a description, and the serial command on [page 3-2](#)).

Resetting the Custom Defaults

If you want the custom default settings restored to your scanner, send the **Reset Defaults** command. This resets the scanner to the default settings.

The tables on the following pages list the factory default settings for each of the commands (indicated by an asterisk (*) on the programming pages).



Reference Charts

Symbology Charts

Note: “m” represents the AIM modifier character. Refer to *International Technical Specification, Symbology Identifiers*, for AIM modifier character details.

Prefix/Suffix entries for specific symbologies override the universal (All Symbologies, 99) entry.

Refer to [Data Editing](#) beginning on page 4-1 and [Data Formatting](#) beginning on page 5-1 for information about using Code ID and AIM ID.

Linear Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
All Symbologies				99
Codabar	]Fm	0-1	a	61
Code 11	]H3		h	68
Code 128	]Cm	0, 1, 2, 4	j	6A
Code 32 Pharmaceutical (PARAF)	]X0		<	3C
Code 39 (supports Full ASCII mode)	]Am	0, 1, 3, 4, 5, 7	b	62
TCIF Linked Code 39 (TLC39)	]L2		T	54
Code 93 and 93i	]Gm	0-9, A-Z, a-m	i	69
EAN	]Em	0, 1, 3, 4	d	64
EAN-13 (including Bookland EAN)	]E0		d	64
EAN-13 with Add-On	]E3		d	64
EAN-13 with Extended Coupon Code	]E3		d	64
EAN-8	]E4		D	44
EAN-8 with Add-On	]E3		D	44
GS1				
GS1 DataBar	]em	0	y	79
GS1 DataBar Limited	]em		{	7B
GS1 DataBar Expanded	]em		}	7D
GS1-128	]C1		l	49
2 of 5				
China Post (Hong Kong 2 of 5)	]X0		Q	51
Interleaved 2 of 5	]Im	0, 1, 3	e	65
Matrix 2 of 5	]X0		m	6D
NEC 2 of 5	]X0		Y	59
Straight 2 of 5 IATA	]Rm	0, 1, 3	f	66
Straight 2 of 5 Industrial	]S0		f	66
MSI	]Mm	0, 1	g	67
Telepen	]Bm		t	74
UPC		0, 1, 2, 3, 8, 9, A, B, C		

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
UPC-A	]E0		c	63
UPC-A with Add-On	]E3		c	63
UPC-A with Extended Coupon Code	]E3		c	63
UPC-E	]E0		E	45
UPC-E with Add-On	]E3		E	45
UPC-E1	]X0		E	45

Add Honeywell Code ID				5C80
Add AIM Code ID				5C81
Add Backslash				5C5C
Batch mode quantity			5	35

2D Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
<i>All Symbologies</i>				99
Aztec Code	]zm	0-9, A-C	z	7A
Chinese Sensible Code (Han Xin Code)	]X0		H	48
Codablock A	]O6	0, 1, 4, 5, 6	V	56
Codablock F	]Om	0, 1, 4, 5, 6	q	71
Code 49	]Tm	0, 1, 2, 4	l	6C
Data Matrix	]dm	0-6	w	77
GS1	]em	0-3		
GS1 Composite	]em	0-3	y	79
GS1 DataBar Omnidirectional	]em		y	79
MaxiCode	]Um	0-3	x	78
PDF417	]Lm	0-2	r	72
MicroPDF417	]Lm	3-5	R	52
QR Code	]Qm	0-6	s	73
Micro QR Code	]Qm		s	73

Postal Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (m)	ID	Hex
All Symbologies				99
Australian Post	]X0		A	41
British Post	]X0		B	42
Canadian Post	]X0		C	43
China Post	]X0		Q	51
InfoMail	]X0		,	2c
Intelligent Mail Bar Code	]X0		M	4D
Japanese Post	]X0		J	4A
KIX (Netherlands) Post	]X0		K	4B
Korea Post	]X0		?	3F
Planet Code	]X0		L	4C
Postal-4i	]X0		N	4E
Postnet	]X0		P	50

ASCII Conversion Chart (Code Page 1252).

Non-printable characters		ASCII control
DEC	HEX	Char
0	00	NUL
1	01	SOH
2	02	STX
3	03	ETX
4	04	EOT
5	05	ENQ
6	06	ACK
7	07	BEL
8	08	BS
9	09	HT
10	0A	LF
11	0B	VT
12	0C	FF
13	0D	CR
14	0E	SO
15	0F	SI
16	10	DLE
17	11	DC1
18	12	DC2
19	13	DC3
20	14	DC4
21	15	NAK
22	16	SYN

Non-printable ASCII control characters		
DEC	HEX	Char
23	17	ETB
24	18	CAN
25	19	EM
26	1A	SUB
27	1B	ESC
28	1C	FS
29	1D	GS
30	1E	RS
31	1F	US
127	7F	␣

Lower ASCII Reference Table

Note: Windows Code page 1252 and lower ASCII use the same characters.

Printable Characters								
DEC	HEX	Character	DEC	HEX	Character	DEC	HEX	Character
32	20	<SPACE>	64	40	@	96	60	`
33	21	!	65	41	A	97	61	a
34	22	"	66	42	B	98	62	b
35	23	#	67	43	C	99	63	c
36	24	\$	68	44	D	100	64	d
37	25	%	69	45	E	101	65	e
38	26	&	70	46	F	102	66	f
39	27	'	71	47	G	103	67	g
40	28	(	72	48	H	104	68	h
41	29	)	73	49	I	105	69	i
42	2A	*	74	4A	J	106	6A	j
43	2B	+	75	4B	K	107	6B	k
44	2C	,	76	4C	L	108	6C	l
45	2D	-	77	4D	M	109	6D	m
46	2E	.	78	4E	N	110	6E	n
47	2F	/	79	4F	O	111	6F	o
48	30	0	80	50	P	112	70	p
49	31	1	81	51	Q	113	71	q
50	32	2	82	52	R	114	72	r
51	33	3	83	53	S	115	73	s
52	34	4	84	54	T	116	74	t
53	35	5	85	55	U	117	75	u
54	36	6	86	56	V	118	76	v
55	37	7	87	57	W	119	77	w
56	38	8	88	58	X	120	78	x
57	39	9	89	59	Y	121	79	y
58	3A	:	90	5A	Z	122	7A	z
59	3B	;	91	5B	[	123	7B	{
60	3C	<	92	5C	\	124	7C	|
61	3D	=	93	5D	]	125	7D	}
62	3E	>	94	5E	^	126	7E	~

Printable Characters (Continued)								
DEC	HEX	Character	DEC	HEX	Character	DEC	HEX	Character
63	3F	?	95	5F	_	127	7F	Δ

Extended ASCII Characters						
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code	
128	80	€	Ç	up arrow ↑	0x48	
129	81		ü	down arrow ↓	0x50	
130	82	,	é	right arrow →	0x4B	
131	83	f	â	left arrow ←	0x4D	
132	84	„	ä	Insert	0x52	
133	85	…	à	Delete	0x53	
134	86	†	á	Home	0x47	
135	87	‡	ç	End	0x4F	
136	88	^	ê	Page Up	0x49	
137	89	‰	ë	Page Down	0x51	
138	8A	Š	è	Right ALT	0x38	
139	8B	‹	ï	Right CTRL	0x1D	
140	8C	Œ	î	Reserved	n/a	
141	8D		ì	Reserved	n/a	
142	8E	Ž	Ä	Numeric Keypad Enter	0x1C	
143	8F		Å	Numeric Keypad /	0x35	
144	90		É	F1	0x3B	
145	91	‘	æ	F2	0x3C	
146	92	’	Æ	F3	0x3D	
147	93	“	ô	F4	0x3E	
148	94	”	ö	F5	0x3F	
149	95	•	ò	F6	0x40	
150	96	—	û	F7	0x41	
151	97	—	ù	F8	0x42	
152	98	˜	ÿ	F9	0x43	
153	99	™	Ö	F10	0x44	
154	9A	š	Ü	F11	0x57	
155	9B	›	ø	F12	0x58	
156	9C	œ	£	Numeric Keypad +	0x4E	
157	9D		¥	Numeric Keypad -	0x4A	
158	9E	ž	Pts	Numeric Keypad *	0x37	
159	9F	ÿ	f	Caps Lock	0x3A	
160	A0		á	Num Lock	0x45	
161	A1	ı	í	Left Alt	0x38	
162	A2	ç	ó	Left Ctrl	0x1D	
163	A3	£	ú	Left Shift	0x2A	
164	A4	¤	ñ	Right Shift	0x36	
165	A5	¥	Ñ	Print Screen	n/a	
166	A6	ı	ª	Tab	0x0F	
167	A7	§	º	Shift Tab	0x8F	
168	A8	¨	¿	Enter	0x1C	
169	A9	©	ƒ	Esc	0x01	
170	AA	ª	¬	Alt Make	0x36	
171	AB	«	½	Alt Break	0xB6	
172	AC	¬	¼	Control Make	0x1D	
173	AD		ı	Control Break	0x9D	
174	AE	®	«	Alt Sequence with 1 Character	0x36	

Extended ASCII Characters (Continued)					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
175	AF	—	»	Ctrl Sequence with 1 Character	0x1D
176	B0	°	☐		
177	B1	±	☐		
178	B2	²	☐		
179	B3	³	|		
180	B4	´	|		
181	B5	µ	|		
182	B6	¶	|		
183	B7	·	|		
184	B8	¸	|		
185	B9	¹	|		
186	BA	º	||		
187	BB	»	|		
188	BC	¼	|		
189	BD	½	|		
190	BE	¾	|		
191	BF	¿	|		
192	C0	À	|		
193	C1	Á	|		
194	C2	Â	|		
195	C3	Ã	|		
196	C4	Ä	|		
197	C5	Å	|		
198	C6	Æ	|		
199	C7	Ç	|		
200	C8	È	|		
201	C9	É	|		
202	CA	Ê	|		
203	CB	Ë	|		
204	CC	Ì	|		
205	CD	Í	|		
206	CE	Î	|		
207	CF	Ï	|		
208	D0	Ð	|		
209	D1	Ñ	|		
210	D2	Ò	|		
211	D3	Ó	|		
212	D4	Ô	|		
213	D5	Õ	|		
214	D6	Ö	|		
215	D7	×	|		
216	D8	Ø	|		
217	D9	Ù	|		
218	DA	Ú	|		
219	DB	Û	■		
220	DC	Ü	■		
221	DD	Ý	■		
222	DE	Þ	■		
223	DF	ß	■		
224	E0	à	α		
225	E1	á	β		
226	E2	â	Γ		

Extended ASCII Characters (Continued)					
DEC	HEX	CP 1252	ASCII	Alternate Extended	PS2 Scan Code
227	E3	ã	π		
228	E4	ä	Σ		
229	E5	å	σ		
230	E6	æ	μ		
231	E7	ç	τ		
232	E8	è	Φ		
233	E9	é	Θ		
234	EA	ê	Ω		
235	EB	ë	ō		
236	EC	ì	∞		
237	ED	í	φ		
238	EE	î	ε		
239	EF	ï	∩		
240	F0	ð	≡		
241	F1	ñ	±		
242	F2	ò	≥		
243	F3	ó	≤		
244	F4	ô	∫		
245	F5	õ	∫		
246	F6	ö	+		
247	F7	÷	≈		
248	F8	ø	°		
249	F9	ù	·		
250	FA	ú	·		
251	FB	û	√		
252	FC	ü	n		
253	FD	ý	²		
254	FE	þ	■		
255	FF	ÿ			

ISO 2022/ISO 646 Character Replacements

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, select the code page with which the bar codes were created. The data characters should then appear properly.

Code Page Selection Method/Country	Standard	Keyboard Country	Honeywell Code Page Option
United States (standard ASCII)	ISO/IEC 646-IRV	n/a	1
Automatic National Character Replacement	ISO/IEC 2022	n/a	2 (default)
Binary Code page	n/a	n/a	3
<i>Default "Automatic National Character replacement" will select the below Honeywell Code Page options for Code 128, Code 39 and Code 93.</i>			
United States	ISO/IEC 646-06	0	1
Canada	ISO /IEC 646-121	54	95
Canada	ISO /IEC 646-122	18	96
Japan	ISO/IEC 646-14	28	98

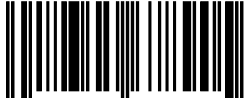
Code Page Selection Method/Country	Standard	Keyboard Country	Honeywell Code Page Option
China	ISO/IEC 646-57	92	99
Great Britain (UK)	ISO /IEC 646-04	7	87
France	ISO /IEC 646-69	3	83
Germany	ISO/IEC646-21	4	84
Switzerland	ISO /IEC 646-CH	6	86
Sweden / Finland (extended Annex C)	ISO/IEC 646-11	2	82
Ireland	ISO /IEC 646-207	73	97
Denmark	ISO/IEC 646-08	8	88
Norway	ISO/IEC 646-60	9	94
Italy	ISO/IEC 646-15	5	85
Portugal	ISO/IEC 646-16	13	92
Spain	ISO/IEC 646-17	10	90
Spain	ISO/IEC 646-85	51	91

Dec			35	36	64	91	92	93	94	96	123	124	125	126
Hex			23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
US	0	1	#	\$	@	[	\	\]	^	`	{	|	}	~
CA	54	95	#	\$	à	â	ç	ê	î	ô	é	ù	è	û
CA	18	96	#	\$	à	â	ç	ê	É	ô	é	ù	è	û
JP	28	98	#	\$	@	[	¥	]	^	`	{	|	}	-
CN	92	99	#	¥	@	[	\	\]	^	`	{	|	}	-
GB	7	87	£	\$	@	[	\	\]	^	`	{	|	}	~
FR	3	83	£	\$	à	°	ç	§	^	μ	é	ù	è	..
DE	4	84	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
CH	6	86	ù	\$	à	é	ç	ê	î	ô	ä	ö	ü	û
SE/FI	2	82	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
DK	8	88	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
NO	9	94	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	..
IE	73	97	£	\$	Ó	É	Í	Ú	Á	ó	é	í	ú	á
IT	5	85	£	\$	§	°	ç	é	^	ù	à	ò	è	ì
PT	13	92	#	\$	§	Ã	Ç	Õ	^	`	ã	ç	õ	°
ES	10	90	#	\$	§	i	Ñ	¿	^	`	°	ñ	ç	~
ES	51	91	#	\$	·	i	Ñ	Ç	¿	`	´	ñ	ç	..
COUNTRY	Country Keyboard	Honeywell CodePage	ISO / IEC 646 National Character Replacements											



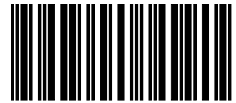
Sample Symbols

UPC-A



0 123456 7890

Interleaved 2 of 5



1234567890

EAN-13



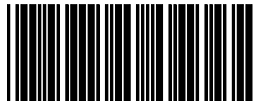
9 780330 290951

Code 128



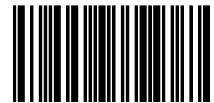
Code 128

Code 39



BC321

Codabar



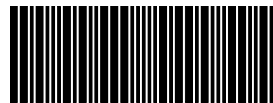
A13579B

Code 93



123456-9\$

Code 2 of 5



123456

Matrix 2 of 5



6543210

RSS-14



(01)00123456789012

Sample Symbols

PDF417



Car Registration

Code 49



1234567890

Postnet



Zip Code

Data Matrix



Test Symbol

QR Code



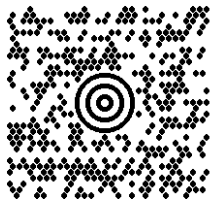
Numbers

Aztec



Package Label

MaxiCode



Test Message

Micro PDF417



Test Message

OCR-A with Modulo 36
check character

532427D

OCR-A with Modulo 10
check character

5324277



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