



Programming Reference Guide

HP USB Barcode Scanner

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Print this document before setting up the HP USB Barcode Scanner. The document provides the programming bar codes necessary for selecting features for the scanner.

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Programming Reference Guide

HP USB Barcode Scanner

First Edition (August 2006)

Document Part Number: 430944-002

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Programming Your Scanner

You have the option to program your scanner to perform various functions or activate different features. This guide describes the features and provides the programming bar codes necessary for selecting these features for your scanner.

The scanner is shipped with the default settings described in the Chapter 4, “Programming User Preferences,” of the *HP USB Barcode Scanner User guide*. If the default values suite your requirements, programming may not be necessary.

Feature values are set by scanning single bar codes or short bar code sequences. The settings are stored in non-volatile memory and are preserved even when the scanner is powered down.

Throughout the programming bar code menus, the default values are indicated with an asterisk (*).

Chapter Descriptions

- Chapter 2, *Symbologies* describes all symbology features and provides the programming bar codes necessary for selecting these features for your scanner.
- Chapter 3, *Miscellaneous Scanner Options* includes commonly used bar codes to customize how your data is transmitted to your USB host device.
- Chapter 4, *Advanced Data Formatting* (ADF) describes how to customize scanned data before transmitting to the USB host.

- Chapter 5, *Standard Default Parameters* provides a table of USB and miscellaneous scanner defaults.
- Chapter 6, *Programming Reference* provides a table of AIM code identifiers ASCII character conversions, and keyboard maps.
- Chapter 7, *Sample Bar Codes* includes sample bar codes.
- Chapter 8, *Numeric Bar Codes* includes the numeric bar codes to scan for parameters requiring specific numeric values.

Symbologies

This chapter describes all symbology features and provides the programming bar codes necessary for selecting these features for your scanner.

Scanning Sequence Examples

In most cases you need only scan one bar code to set a specific parameter value. For example, if you want to transmit bar code data without the UPC-A check digit, simply scan the **Do Not Transmit UPC-A Check Digit** bar code listed under the “Transmit UPC-A/UPC-E/UPCE1 Check Digit” section in this chapter. The scanner issues a fast warble beep and the LED turns green, signifying a successful parameter entry.

Other parameters, such as **Set Length(s) for D 2 of 5** require that you scan several bar codes in the proper sequence. Refer to the individual parameter, like Set Length(s) for D 2 of 5 in this chapter, for this procedure.

Errors While Scanning

Unless otherwise specified, if you make an error during a scanning sequence, just re-scan the correct parameter.

Symbology Default Parameters

The following table lists the defaults for all symbologies parameters. If you want to change any option, scan the appropriate bar code(s) provided in the “Symbologies Parameters” section in this chapter.

Symbology Default Table

Parameter	Default
UPC/EAN	
UPC-A	Enable
UPC-E	Enable
UPC-E1	Disable
EAN-8/Jan 8	Enable
EAN-13/Jan 13	Enable
Bookland EAN	Disable
Decode UPC/EAN/JAN Supplementals (2 and 5 digits)	Ignore
UPC/EAN/Jan Supplemental Redundancy	7
Transmit UPC-A Check Digit	Enable
Transmit UPC-E Check Digit	Enable
Transmit UPC-E1 Check Digit	Enable
UPC-A Preamble	System Character
UPC-E Preamble	System Character

Symbology Default Table

Parameter	Default
Convert UPC-E to A	Disable
Convert UPC-E1 to A	Disable
EAN-8/JAN-8 Extend	Disable
UPC/EAN Security Levels	0
UCC Coupon Extended Code	Disable
Code 128	
Code 128	Enable
UCC/EAN-128	Enable
Code 39	
Code 39	Enable
Trioptic Code 39	Disable
Convert Code 39 to Code 32 (Italian Pharmacy Code)	Disable
Code 32 Prefix	Disable
Set Length(s) for Code 39	2 to 55
Code 39 Check Digit Verification	Disable
Transmit Code 39 Check Digit	Disable
Code 39 Full ASCII Conversion	Disable
Buffer Code 39	Disable
Code 93	

Symbology Default Table

Parameter	Default
Code 93	Disable
Set Length(s) for Code 93	4 to 55
Code 11	
Code 11	Disable
Set Lengths for Code 11	4 to 55
Code 11 Check Digit Verification	Disable
Transmit Code 11 Check Digit(s)	Disable
Interleaved 2 of 5 (ITF)	
Interleaved 2 of 5 (ITF)	Enable
Set Lengths of 12 or 5	14
12 of 5 Check Digit Verification	Disable
Transmit 12 of 5 Check Digit	Disable
Convert 12 of 5 to EAN 13	Disable
Discrete 2 of 5 (DTF)	
Discrete 2 of 5	Disable
Set Length(s) for D 2 of 5	12
Chinese 2 of 5	
Enable/Disable Chinese 2 of 5	Disable
Codabar (NW-7)	
Codabar	Disable

Symbology Default Table

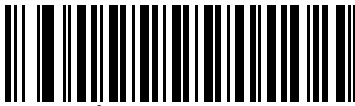
Parameter	Default
Set Lengths for Codebar	5 to 55
CLSI Editing	Disable
NOTIS Editing	Disable
MSI	
MSI	Disable
Set Length(s) for MSI	1 to 55
MSI Check Digits	One
Transmit MSI Digit	Disable
MSI Check Digit Algorithm	Mode 10/Mod 10
RSS (Reduced Space Symbology)	
RSS 14	Disable
RSS Limited	Disable
RSS Expanded	Disable
Convert RSS to UPC/EAN	Disable
Symbology - Specific Security Levels	
Redundancy Level	1

Symbologies Parameters

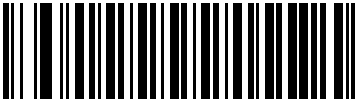
UPC/EAN

Enable/Disable UPC-A/UPC-E

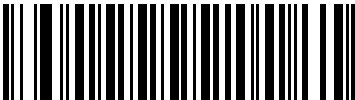
To enable or disable UPC-A or UPC-E, scan the appropriate bar code below.



*Enable UPC-A



Disable UPC-A



*Enable UPC-E



Disable UPC-E

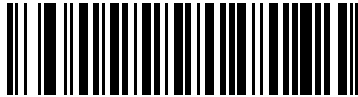
Enable/Disable UPC-E1

UPC-E1 is disabled by default.

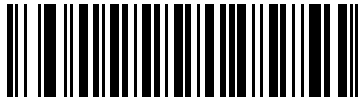
To enable or disable UPC-E1, scan the appropriate bar code below.



UPC-E1 is not a UCC (Uniform Code Council) approved symbology.



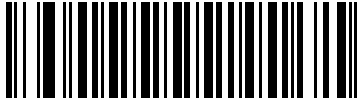
Enable UPC-E1



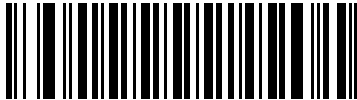
***Disable UPC-E1**

Enable/Disable EAN-13/EAN-8

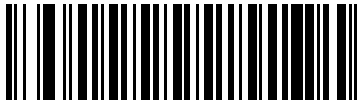
To enable or disable EAN-13 or EAN-8, scan the appropriate bar code below.



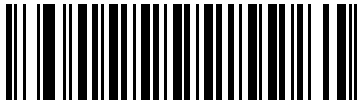
***Enable EAN-13**



Disable EAN-13



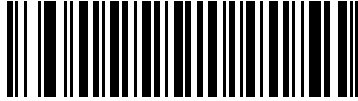
***Enable EAN-8**



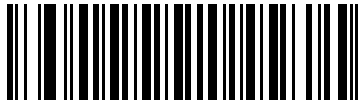
Disable EAN-8

Enable/Disable Bookland EAN

To enable or disable Bookland EAN, scan the appropriate bar code below.



Enable Bookland EAN



*Disable Bookland EAN

Decode UPC/EAN/JAN Supplementals

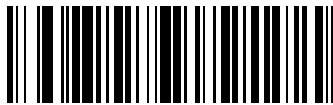
Supplementals are bar codes appended according to specific format conventions (e.g., UPC A+2, UPC E+2, EAN 13+2). Six options are available.

- If **Decode UPC/EAN Only With Supplementals** is selected, UPC/EAN symbols without supplementals are not decoded.
- If **Ignore Supplementals** is selected, and the scanner is presented with a UPC/EAN with a supplemental, the UPC/EAN is decoded and the supplemental bar code is ignored.
- An **Autodiscriminate Option** is also available. If this option is selected, choose an appropriate **UPC/EAN/JAN Supplemental Redundancy** value in this chapter. A value of 5 or more is recommended.

- **Enable 378/379 Supplemental Mode** to enable only EAN13 bar codes starting with a ‘378’ or ‘379’ prefix to be delayed by the supplemental search process. All other UPC/EAN bar codes are exempted from the search and are reported instantly upon their decode.
- Select **Enable 978 Supplemental Mode** to enable only EAN13 bar codes starting with a ‘978’ prefix to be delayed by the supplemental search process. All other UPC/EAN bar codes are exempted from the search and are reported instantly upon their decode.
- Select **Enable Smart Supplemental Mode** to enable only EAN13 bar codes starting with a ‘378’, ‘379’, or ‘978’ prefix to be delayed by the supplemental search process. All other UPC/EAN bar codes are exempted from the search and are reported instantly upon their decode.



In order to minimize the risk of invalid data transmission, it is recommended that you select either to decode or ignore supplemental characters.



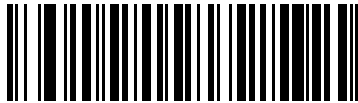
Decode UPC/EAN/JAN Only With Supplementals



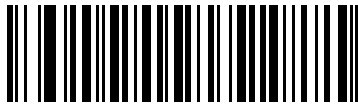
***Ignore Supplementals**



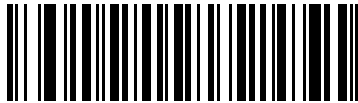
Autodiscriminate UPC/EAN/JAN Supplementals



Enable 378/379 Supplemental Mode



Enable 978 Supplemental Mode



Enable Smart Supplemental Mode

UPC/EAN/JAN Supplemental Redundancy

With **Autodiscriminate UPC/EAN/JAN Supplementals** selected, this option adjusts the number of times a symbol without supplementals is decoded before transmission. The range is from two to thirty times. Five or above is recommended when decoding a mix of UPC/EAN symbols with and without supplementals, and the autodiscriminate option is selected. The default is set at 7.

Scan the bar code below to set a decode redundancy value. Next, scan two numeric bar codes from Chapter 8 in this guide. Single digit numbers must have a leading zero. If you make an error, or want to change your selection, scan Cancel.



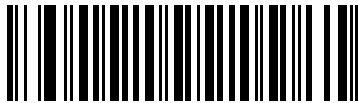
UPC/EAN/JAN Supplemental Redundancy

Transmit UPC-A/UPC-E/UPC-E1 Check Digit

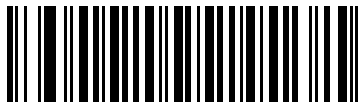
The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the UPCA, UPC-E or UPC-E1 check digit. It is always verified to guarantee the integrity of the data.



***Transmit UPC-A Check Digit**



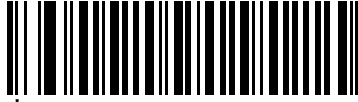
Do Not Transmit UPC-A Check Digit



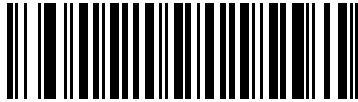
***Transmit UPC-E Check Digit**



Do Not Transmit UPC-E Check Digit



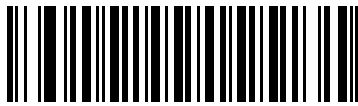
***Transmit UPC-E1 Check Digit**



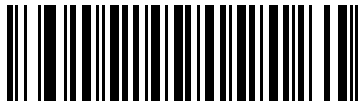
Do Not Transmit UPC-E1 Check Digit

UPC-A Preamble

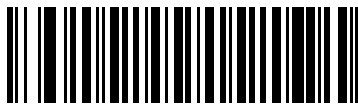
Preamble characters are part of the UPC symbol consisting of Country Code and System Character. Three options are given for transmitting UPC-A preamble to the host device: transmit System Character only, transmit System Character and Country Code (“0” for USA), and no preamble transmitted. Select the appropriate option to match the USB host system.



No Preamble
(<DATA>)



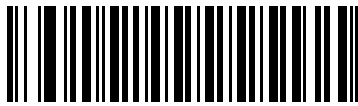
***System Character**
(<SYSTEM CHARACTER> <DATA>)



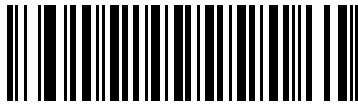
System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)

UPC-E Preamble

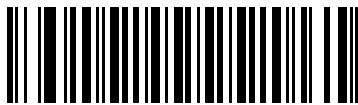
Preamble characters are part of the UPC symbol consisting of Country Code and System Character. Three options are given for transmitting UPC-E preamble to the host device: transmit System Character only, transmit System Character and Country Code (“0” for USA), and no preamble transmitted. Select the appropriate option to match the USB host system.



No Preamble
(<DATA>)



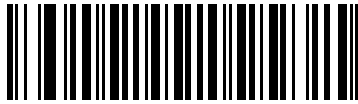
***System Character**
(<SYSTEM CHARACTER> <DATA>)



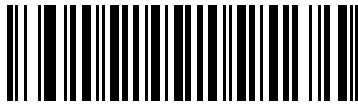
System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)

UPC-E1 Preamble

Preamble characters are part of the UPC symbol consisting of Country Code and System Character. Three options are given for transmitting UPC-E1 preamble to the host device: transmit System Character only, transmit System Character and Country Code (“0” for USA), and no preamble transmitted. Select the appropriate option to match the USB host system.



**No Preamble
(<DATA>)**



***System Character
(<SYSTEM CHARACTER> <DATA>)**

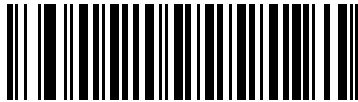


**System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)**

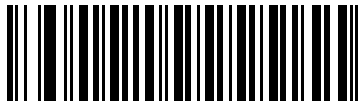
Convert UPC-E to UPC-A

When enabled, UPC-E (zero suppressed) decoded data is converted to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

When disabled, UPC-E decoded data is transmitted as UPC-E data, without conversion.



**Convert UPC-E to UPC-A
(Enable)**

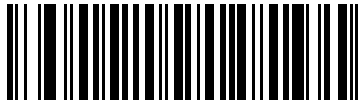


***Do Not Convert UPC-E to UPC-A
(Disable)**

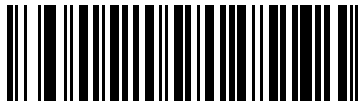
Convert UPC-E1 to UPC-A

When enabled, UPC-E1 decoded data is converted to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

When disabled, UPC-E1 decoded data is transmitted as UPC-E1 data, without conversion.



**Convert UPC-E1 to UPC-A
(Enable)**

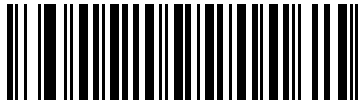


*** Do Not Convert UPC-E1 to UPC-A
(Disable)**

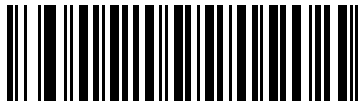
EAN-8/JAN-8 Extend

When enabled, this parameter adds five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols.

When disabled, EAN-8 symbols are transmitted as is.



Enable EAN/JAN Zero Extend



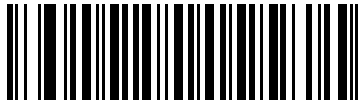
***Disable EAN/JAN Zero Extend**

UPC/EAN Security Level

The scanner offers four levels of decode security for UPC/EAN bar codes. Increasing levels of security are provided for decreasing levels of bar code quality. There is an inverse relationship between security and scanner decode speed, so be sure to choose only that level of security necessary for any given application.

UPC/EAN Security Level 0

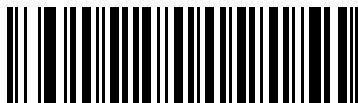
This is the default setting which allows the scanner to operate fastest, while providing sufficient security in decoding “in-spec” UPC/EAN bar codes.



*UPC/EAN Security Level 0

UPC/EAN Security Level 1

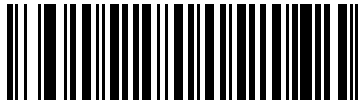
As bar code quality levels diminish, certain characters become prone to misdecodes before others (i.e., 1, 2, 7, 8). If you are experiencing misdecodes of poorly printed bar codes, and the misdecodes are limited to these characters, select this security level.



UPC/EAN Security Level 1

UPC/EAN Security Level 2

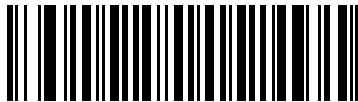
If you are experiencing misdecodes of poorly printed bar codes, and the misdecodes are not limited to characters 1, 2, 7, and 8, select this security level.



UPC/EAN Security Level 2

UPC/EAN Security Level 3

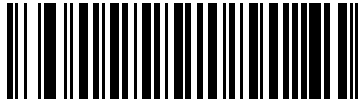
If you have tried Security Level 2, and are still experiencing misdecodes, select this security level. Be advised, selecting this option is an extreme measure against misdecoding severely out of spec bar codes. Selection of this level of security may significantly impair the decoding ability of the scanner. If this level of security is necessary, you should try to improve the quality of your bar codes.



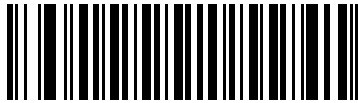
UPC/EAN Security Level 3

UCC Coupon Extended Code

When enabled, this parameter decodes UPCA barcodes starting with digit '5', EAN-13 barcodes starting with digit '99', and UPCA/EAN-128 Coupon Codes. UPCA, EAN-13 and EAN-128 must be enabled to scan all types of Coupon Codes.



Enable UCC Coupon Extended Code



***Disable UCC Coupon Extended Code**



Autodiscrimination of the EAN128 (right half) of a coupon code is controlled by the **Decode UPC/EAN Supplemental Redundancy** parameter.

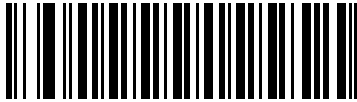
Code 128

Enable/Disable Code 128

To enable or disable Code 128, scan the appropriate bar code below.



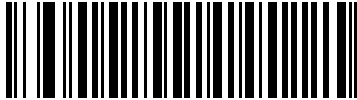
***Enable Code 128**



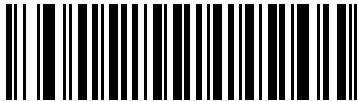
Disable Code 128

Enable/Disable UCC/EAN-128

To enable or disable UCC/EAN-128, scan the appropriate bar code below.



***Enable UCC/EAN-128**

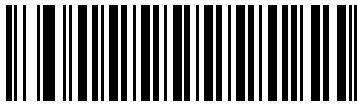


Disable UCC/EAN-128

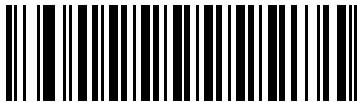
Code 39

Enable/Disable Code 39

To enable or disable Code 39, scan the appropriate bar code below.



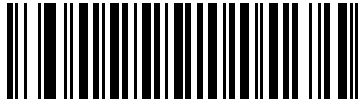
***Enable Code 39**



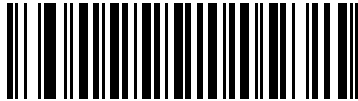
Disable Code 39

Enable/Disable Trioptic Code 39

Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. Trioptic Code 39 symbols always contain six characters. To enable or disable Trioptic Code 39, scan the appropriate bar code below.



Enable Trioptic Code 39



***Disable Trioptic Code 39**



Trioptic Code 39 and Code 39 Full ASCII can not be enabled simultaneously.

Convert Code 39 to Code 32

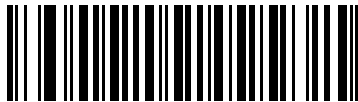
Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate bar code below to enable or disable converting Code 39 to Code 32.



Code 39 must be enabled in order for this parameter to function.



Enable Convert Code 39 to Code 32



***Disable Convert Code 39 to Code 32**

Code 32 Prefix

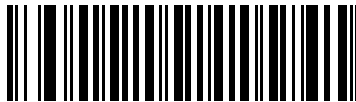
Scan the appropriate bar code below to enable or disable adding the prefix character “A” to all Code 32 bar codes.



Convert Code 39 to Code 32 must be enabled for this parameter to function.



Enable Code 32 Prefix



***Disable Code 32 Prefix**

Set Lengths for Code 39

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Code 39 may be set for any length, one or two discrete lengths, or lengths within a specific range. If Code 39 Full ASCII is enabled, Length Within a Range or Any Length are the preferred options.



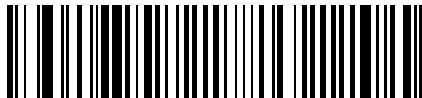
When setting lengths for different bar code types by scanning single digit numbers, single digit numbers must always be preceded by a leading zero.

One Discrete Length - This option allows you to decode only those Code 39 symbols containing a selected length. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, then scan 1 followed by 4. If you make an error or wish to change your selection, scan Cancel.



Code 39 - One Discrete Length

Two Discrete Lengths - This option allows you to decode only those Code 39 symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only those Code 39 symbols containing either 2 or 14 characters, select **Code 39 - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. If you make an error or wish to change your selection, scan Cancel.



Code 39 - Two Discrete Lengths

Length Within Range - This option allows you to decode a Code 39 symbol with a specific length range. The length range is selected from numeric bar codes available in Chapter 8 of this guide. For example, to decode Code 39 symbols containing between 4 and 12 characters, first scan **Code 39 - Length Within Range**. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). If you make an error or wish to change your selection, scan Cancel.



Code 39 - Length Within Range

Any Length - Scanning this option allows you to decode Code 39 symbols containing any number of characters within the scanner capability.

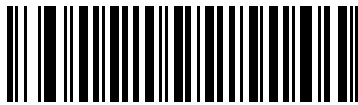


Code 39 - Any Length

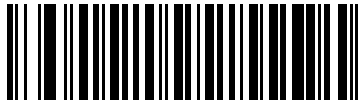
Code 39 Check Digit Verification

When this feature is enabled, the scanner checks the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only those Code 39 symbols which include a modulo 43 check digit are decoded when this feature is enabled.

This feature should only be enabled if your code 39 symbols contain a Modulo 43 check digit.



Enable Code 39 Check Digit



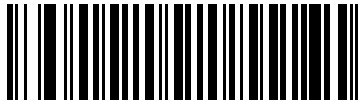
***Disable Code 39 Check Digit**

Transmit Code 39 Check Digit

Scan a bar code below to transmit Code 39 data with or without the check digit.



**Transmit Code 39 Check Digit
(Enable)**



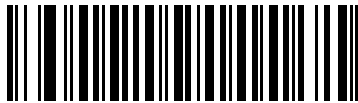
***Do Not Transmit Code 39 Check Digit
(Disable)**



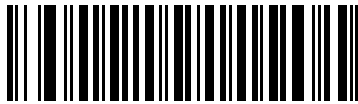
Code 39 Check Digit Verification must be enabled for this parameter to function.

Code 39 Full ASCII Conversion

Code 39 Full ASCII is a variant of Code 39 which pairs characters to encode the full ASCII character set. To enable or disable Code 39 Full ASCII, scan the following appropriate bar code.



Enable Code 39 Full ASCII



***Disable Code 39 Full ASCII**



Trioptic Code 39 and Code 39 Full ASCII can not be enabled simultaneously.



Code 39 Full ASCII Correlation is host-dependent. Refer to Chapter 5 in this guide for the USB host conversion table.

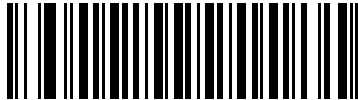
Code 39 Buffering (Scan and Store)

This feature allows the scanner to accumulate data from multiple Code 39 symbols. When you select the Scan and Store option (Buffer Code 39), all Code 39 symbols having a leading space as a first character are temporarily buffered in the unit to be transmitted later. The leading space is not buffered.

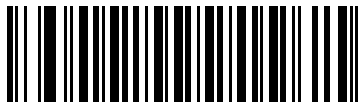
Decode of a valid Code 39 symbol with no leading space causes transmission in sequence of all buffered data in a first-in first-out format, plus transmission of the “triggering” symbol. See the following pages for further details.

When the **Do Not Buffer Code 39** option is selected, all decoded Code 39 symbols are transmitted immediately without being stored in the buffer.

This feature affects Code 39 only. If you select Buffer Code 39, we recommend that you configure the scanner to decode Code 39 symbology only.



**Buffer Code 39
(Enable)**



***Do Not Buffer Code 39
(Disable)**

While there is data in the transmission buffer, selecting **Do Not Buffer Code 39** is not allowed. The buffer holds 200 bytes of information.

To disable Code 39 buffering when there is data in the transmission buffer, first force the buffer transmission (see “Transmit Buffer” in this chapter) or clear the buffer.

Buffer Data

To buffer data, Code 39 buffering must be enabled and a Code 39 symbol must be read with a space immediately following the start pattern.

- Unless the data overflows the transmission buffer, the scanner issues a lo/hi beep to indicate successful decode and buffering. (For overflow conditions, see “Overfilling Transmission Buffer” in this chapter.)
- The scanner adds the decoded data excluding the leading space to the transmission buffer.
- No transmission occurs.

Clear Transmission Buffer

To clear the transmission buffer, scan the Clear Buffer bar code below, which contains only a start character, a dash (minus), and a stop character.

- The scanner issues a short hi/lo/hi beep.
- The scanner erases the transmission buffer.
- No transmission occurs.



Clear Buffer



The Clear Buffer contains only the dash (minus) character. In order to scan this command, be sure Code 39 length is set to include length 1.

Transmit Buffer

There are two methods to transmit the Code 39 buffer.

1. Scan the Transmit Buffer bar code below. Only a start character, a plus (+), and a stop character.
 - The scanner transmits and clears the buffer.
 - The scanner issues a Lo/Hi beep.



Transmit Buffer

2. Scan a Code 39 bar code with a leading character other than a space.
 - The scanner appends new decode data to buffered data.
 - The scanner transmits and clears the buffer.
 - The scanner signals that the buffer was transmitted with a lo/hi beep.
 - Scanner transmits and clears the buffer.



The Transmit Buffer contains only a plus (+) character. In order to scan this command, be sure Code 39 length is set to include length 1.

Overfilling Transmission Buffer

The Code 39 buffer holds 200 characters. If the symbol just read results in an overflow of the transmission buffer:

- The scanner indicates that the symbol was rejected by issuing three long, high beeps.
- No transmission occurs. The data in the buffer is not affected.

Attempt to Transmit an Empty Buffer

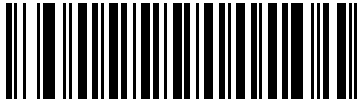
If the symbol just read was the Transmit Buffer symbol and the Code 39 buffer is empty:

- A short lo/hi/lo beep signals that the buffer is empty.
- No transmission occurs.
- The buffer remains empty.

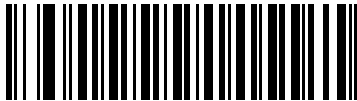
Code 93

Enable/Disable Code 93

To enable or disable Code 93, scan the appropriate bar code below.



Enable Code 93



***Disable Code 93**

Set Lengths for Code 93

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Code 93 may be set for any length, one or two discrete lengths, or lengths within a specific range.

One Discrete Length - This option allows you to decode only those Code 93 symbols containing a selected length. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only Code 93 symbols with 14 characters, scan Code 93 - One Discrete Length, then scan 1 followed by 4. If you make an error or wish to change your selection, scan Cancel.



Code 93 - One Discrete Length

Two Discrete Lengths - This option allows you to decode only those Code 93 symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only those Code 93 symbols containing either 2 or 14 characters, select Code 93 - Two Discrete Lengths, then scan 0, 2, 1, and then 4. If you make an error or wish to change your selection, scan Cancel.



Code 93 - Two Discrete Lengths

Length Within Range - This option allows you to decode a Code 93 symbol with a specific length range. The length range is selected from numeric bar codes is available in Chapter 8 of this guide. For example, to decode Code 93 symbols containing between 4 and 12 characters, first scan Code 93 - Length Within Range. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). If you make an error or wish to change your selection, scan Cancel.



Code 93 - Length Within Range

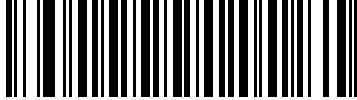
Any Length - Scanning this option allows you to decode Code 93 symbols containing any number of characters within the scanner's capability.



Code 93 - Any Length

Code 11

To enable or disable Code 11, scan the appropriate bar code below.



Enable Code 11

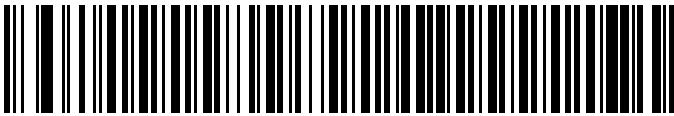


***Disable Code 11**

Set Lengths for Code 11

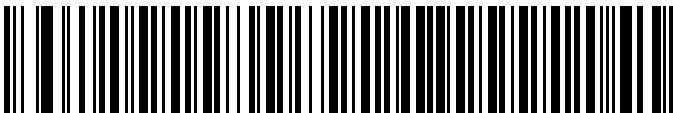
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Code 11 may be set for any length, one or two discrete lengths, or lengths within a specific range.

One Discrete Length - This option allows you to decode only those Code 11 symbols containing a selected length. Lengths are selected from the numeric bar codes beginning available in Chapter 8 of this guide. For example, to decode only Code 11 symbols with 14 characters, scan Code 11 - One Discrete Length, then scan 1 followed by 4. If you make an error or wish to change your selection, scan Cancel.



Code 11 - One Discrete Length

Two Discrete Lengths - This option allows you to decode only those Code 11 symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only those Code 11 symbols containing either 2 or 14 characters, select Code 11 - Two Discrete Lengths, then scan 0, 2, 1, and then 4. If you make an error or wish to change your selection, scan Cancel.



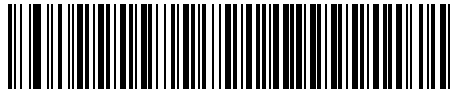
Code 11 - Two Discrete Lengths

Length Within Range - This option allows you to decode a Code 11 symbol with a specific length range. The length range is selected from numeric bar codes available in Chapter 8 of this guide. For example, to decode Code 11 symbols containing between 4 and 12 characters, first scan Code 11 - Length Within Range. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). If you make an error or wish to change your selection, scan Cancel.



Code 11 - Length Within Range

Any Length - Scanning this option allows you to decode Code 11 symbols containing any number of characters within the scanner capability.

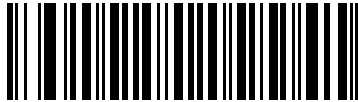


Code 11 - Any Length

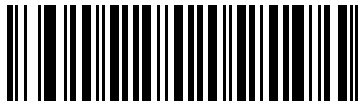
Code 11 Check Digit Verification

This feature allows the scanner to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm. This selects the check digit mechanism for the decoded Code 11 bar code. The options are to check for one check digit, check for two check digits, or disable the feature.

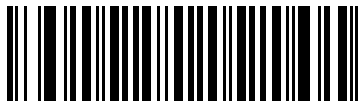
To enable this feature, scan the bar code below corresponding to the number of check digits encoded in your Code 11 symbols.



***Disable**



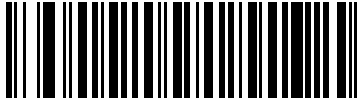
One Check Digit



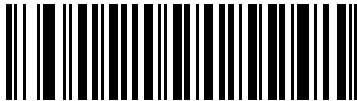
Two Check Digits

Transmit Code 11 Check Digits

This feature selects whether or not to transmit the Code 11 check digit(s).



**Transmit Code 11 Check Digit(s)
(Enable)**



***Do Not Transmit Code 11 Check Digit(s)
(Disable)**



Code 11 Check Digit Verification must be enabled for this parameter to function.

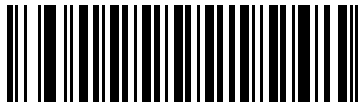
Interleaved 2 of 5 (ITF)

Enable/Disable Interleaved 2 of 5

To enable or disable Interleaved 2 of 5, scan the appropriate bar code below, and select an Interleaved 2 of 5 length from the following pages.



***Enable Interleaved 2 of 5**

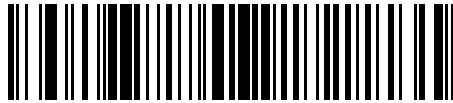


Disable Interleaved 2 of 5

Set Lengths for Interleaved 2 of 5

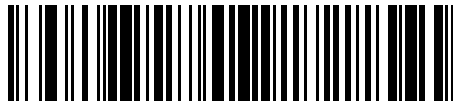
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for I 2 of 5 may be set for any length, one or two discrete lengths, or lengths within a specific range.

One Discrete Length - This option allows you to decode only those I 2 of 5 symbols containing a selected length. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only I 2 of 5 symbols with 14 characters, scan I 2 of 5 - One Discrete Length, then scan 1 followed by 4. If you make an error or wish to change your selection, scan Cancel.



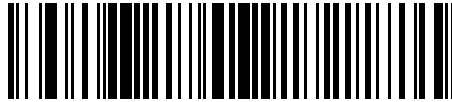
I 2 of 5 - One Discrete Length

Two Discrete Lengths - This option allows you to decode only those I 2 of 5 symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only those I 2 of 5 symbols containing either 2 or 14 characters, select I 2 of 5 - Two Discrete Lengths, then scan 0, 2, 1, and then 4. If you make an error or wish to change your selection, scan Cancel.



I 2 of 5 - Two Discrete Lengths

Length Within Range - This option allows you to decode an I 2 of 5 symbol with a specific length range. The length range is selected from numeric bar codes available in Chapter 8 of this guide. For example, to decode I 2 of 5 symbols containing between 4 and 12 characters, first scan I 2 of 5 - Length Within Range. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). If you make an error or wish to change your selection, scan Cancel.

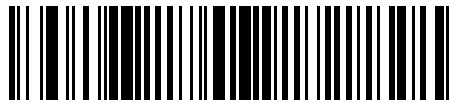


I 2 of 5 - Length Within Range

Any Length - Scanning this option allows you to decode I 2 of 5 symbols containing any number of characters within the scanner capability.



Due to the construction of the I 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is actually encoded in the bar code. To prevent this from happening, it is recommended that specific lengths (**I2 of 5 - One Discrete Length - Two Discrete Lengths**) be selected for I2 of 5 applications.



I 2 of 5 - Any Length

I 2 of 5 Check Digit Verification

When this feature is enabled, the scanner checks the integrity of all I 2 of 5 symbols to verify the data complies with either the specified Uniform Symbology Specification (USS), or the Optical Product Code Council (OPCC) check digit algorithm.



***Disable**



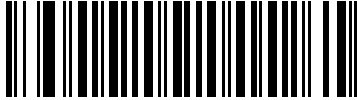
USS Check Digit



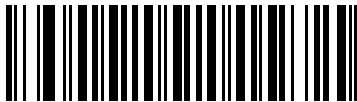
OPCC Check Digit

Transmit I 2 of 5 Check Digit

Scan the appropriate bar code below to transmit I 2 of 5 data with or without the check digit.



**Transmit I 2 of 5 Check Digit
(Enable)**

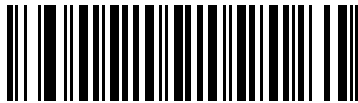


***Do Not Transmit I 2 of 5 Check Digit
(Disable)**

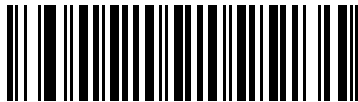
Convert I 2 of 5 to EAN-13

This parameter converts a 14 character I 2 of 5 code into EAN-13, and transmits to the host as EAN-13. In order to accomplish this, the I 2 of 5 code must be enabled, and the code must have a leading zero and a valid EAN-13 check digit.

Scanning a single bar code below, **Convert I 2 of 5 to EAN-13 (Enable)**, accomplishes this function.



**Convert I 2 of 5 to EAN-13
(Enable)**

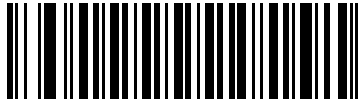


***Do Not Convert I 2 of 5 to EAN-13
(Disable)**

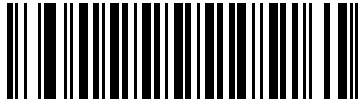
Discrete 2 of 5 (DTF)

Enable/Disable Discrete 2 of 5

To enable or disable Discrete 2 of 5, scan the appropriate bar code below.



Enable Discrete 2 of 5



***Disable Discrete 2 of 5**

Set Lengths for Discrete 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for D 2 of 5 may be set for any length, one or two discrete lengths, or lengths within a specific range.

One Discrete Length - This option allows you to decode only those D 2 of 5 symbols containing a selected length. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only D 2 of 5 symbols with 14 characters, scan D 2 of 5 - One Discrete Length, then scan 1 followed by 4. If you make an error or wish to change your selection, scan Cancel.



D 2 of 5 - One Discrete Length

Two Discrete Lengths - This option allows you to decode only those D 2 of 5 symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only those D 2 of 5 symbols containing either 2 or 14 characters, select D 2 of 5 - Two Discrete Lengths, then scan 0, 2, 1, and then 4. If you make an error or wish to change your selection, scan Cancel.



D 2 of 5 - Two Discrete Lengths

Length Within Range - This option allows you to decode an D 2 of 5 symbol with a specific length range. The length range is selected from numeric bar codes available in Chapter 8 of this guide. For example, to decode D 2 of 5 symbols containing between 4 and 12 characters, first scan D 2 of 5 - Length Within Range. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). If you make an error or wish to change your selection, scan Cancel.



D 2 of 5 - Length Within Range

Any Length - Scanning this option allows you to decode D 2 of 5 symbols containing any number of characters within the scanner capability.



Due to the construction of the D 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is actually encoded in the bar code. To prevent this from happening, it is recommended that specific lengths (**D 2 of 5 - One Discrete Length - Two Discrete Lengths**) be selected for D 2 of 5 applications.



D 2 of 5 - Any Length

Chinese 2 of 5

Enable/Disable Chinese 2 of 5

To enable or disable Chinese 2 of 5, scan the appropriate bar code below.



Enable Chinese 2 of 5

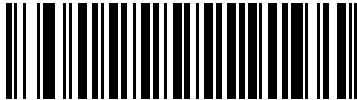


***Disable Chinese 2 of 5**

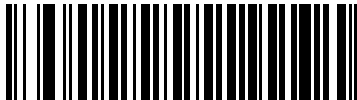
Codabar (NW - 7)

Enable/Disable Codabar

To enable or disable Codabar, scan the appropriate bar code below.



Enable Codabar



***Disable Codabar**

Set Lengths for Codabar

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Codabar may be set for any length, one or two discrete lengths, or lengths within a specific range.

One Discrete Length - This option allows you to decode only those Codabar symbols containing a selected length. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only Codabar symbols with 14 characters, scan Codabar - One Discrete Length, then scan 1 followed by 4. If you make an error or wish to change your selection, scan Cancel.



Codabar - One Discrete Length

Two Discrete Lengths - This option allows you to decode only those Codabar symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only those Codabar symbols containing either 2 or 14 characters, select Codabar - Two Discrete Lengths, then scan 0, 2, 1, and then 4. If you make an error or wish to change your selection, scan Cancel.



Codabar - Two Discrete Lengths

Length Within Range - This option allows you to decode a Codabar symbol with a specific length range. The length range is selected from numeric bar codes available in Chapter 8 of this guide. For example, to decode Codabar symbols containing between 4 and 12 characters, first scan Codabar - Length Within Range. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). If you make an error or wish to change your selection, scan Cancel.



Codabar - Length Within Range

Any Length - Scanning this option allows you to decode Codabar symbols containing any number of characters within the scanner capability.



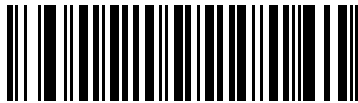
Codabar - Any Length

CLSI Editing

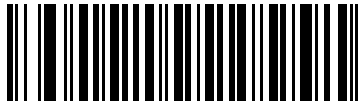
When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol. Enable this feature if your host system requires this data format.



Symbol length does not include start and stop characters.



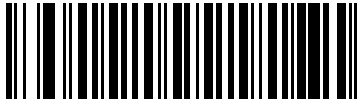
Enable CLSI Editing



***Disable CLSI Editing**

NOTIS Editing

When enabled, this parameter strips the start and stop characters from a decoded Codabar symbol. Enable this feature if your host system requires this data format.



Enable NOTIS Editing

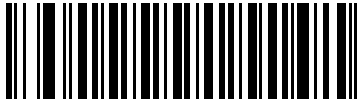


***Disable NOTIS Editing**

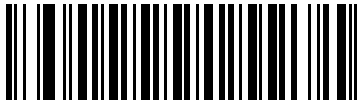
MSI

Enable/Disable MSI

To enable or disable MSI, scan the appropriate bar code below.



Enable MSI



***Disable MSI**

Set Lengths for MSI

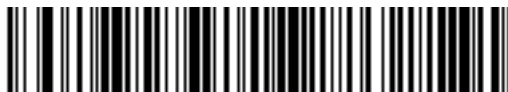
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for MSI may be set for any length, one or two discrete lengths, or lengths within a specific range.

One Discrete Length - This option allows you to decode only those MSI symbols containing a selected length. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only MSI symbols with 14 characters, scan MSI - One Discrete Length, then scan 1 followed by 4. If you make an error or wish to change your selection, scan Cancel.



MSI - One Discrete Length

Two Discrete Lengths - This option allows you to decode only those MSI symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes available in Chapter 8 of this guide. For example, to decode only those MSI symbols containing either 2 or 14 characters, select MSI - Two Discrete Lengths, then scan 0, 2, 1, and then 4. If you make an error or wish to change your selection, scan Cancel.



MSI - Two Discrete Lengths

Length Within Range - This option allows you to decode an MSI symbol with a specific length range. The length range is selected from numeric bar codes available in Chapter 8 of this guide. For example, to decode MSI symbols containing between 4 and 12 characters, first scan MSI - Length Within Range. Then scan 0, 4, 1, and 2 (single digit numbers must always be preceded by a leading zero). If you make an error or wish to change your selection, scan Cancel.

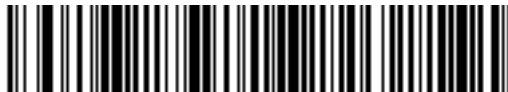


MSI - Length Within Range

Any Length - Scanning this option allows you to decode MSI symbols containing any number of characters within the scanner capability.



Due to the construction of the MSI symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is actually encoded in the bar code. To prevent this from happening, it is recommended that specific lengths (**MIS - One Discrete Length - Two Discrete Lengths**) be selected for MIS applications.

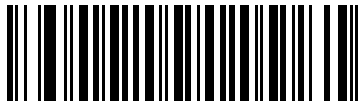


MSI - Any Length

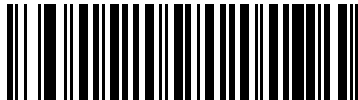
MSI Check Digits

With MSI symbols, one check digit is mandatory and always verified by the reader. The second check digit is optional. If your MSI codes include two check digits, enable the verification of the second check digit by scanning the barcode below.

Refer to **MSI Check Digit Algorithm** in this chapter for the selection of second digit algorithms.



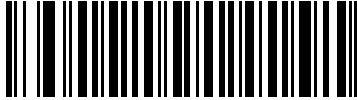
***One MSI Check Digit**



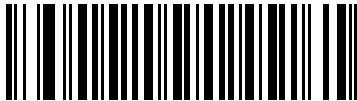
Two MSI Check Digits

Transmit MSI Check Digit(s)

Scan a bar code below to transmit MSI data with or without the check digit.



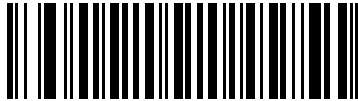
**Transmit MSI Check Digit(s)
(Enable)**



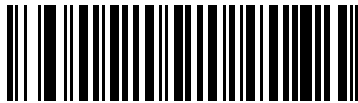
***Do Not Transmit MSI Check Digit(s)
(Disable)**

MSI Check Digit Algorithm

Two algorithms are possible for the verification of the second MSI check digit. Select the bar code below corresponding to the algorithm used to encode your check digit.



MOD 10/MOD 11

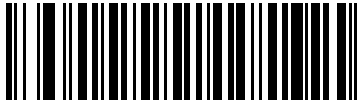


***MOD 10/MOD 10**

RSS (Reduced Space Symbology)

RSS

The variants of RSS are RSS 14, RSS Expanded, and RSS Limited. The limited and expanded versions have stacked variants. Scan the appropriate bar code below to enable or disable each variant of RSS.



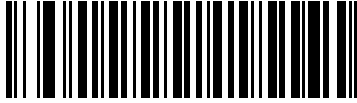
Enable RSS 14



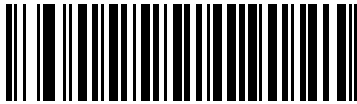
***Disable RSS 14**



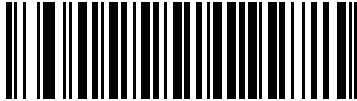
Enable RSS Limited



***Disable RSS Limited**



Enable RSS Expanded

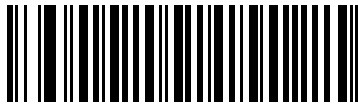


***Disable RSS Expanded**

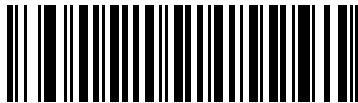
Convert RSS to UPC/EAN

This parameter only applies to RSS-14 and RSS Limited symbols not decoded as part of a Composite symbol. When this conversion is enabled, RSS-14 and RSS Limited symbols encoding a single zero as the first digit have the leading '010' stripped and the bar code reported as EAN-13.

Bar codes beginning with two or more zeros but not six zeros have the leading '0100' stripped and the bar code reported as UPC-A. The UPC-A Preamble parameter to transmit the system character and country code applies to converted bar codes. Note that neither the system character nor the check digit can be stripped.



Enable



***Disable**

Redundancy Level

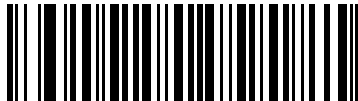
The HP USB Barcode Scanner offers four levels of decode redundancy. Higher redundancy levels are selected for decreasing levels of bar code quality. As redundancy levels increase, the scanner's aggressiveness decreases.

Select the redundancy level appropriate for the bar code quality.

Redundancy Level 1

The following code types must be successfully read twice before being decoded:

Code Type	Code Length
Codabar	8 characters or less
MSI	4 characters or less
D 2 of 5	8 characters or less
1 2 of 5	8 characters or less

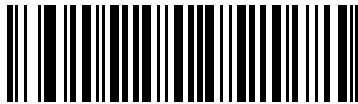


*REDUNDANCY LEVEL 1

Redundancy Level 2

The following code types must be successfully read twice before being decoded:

Code Type	Code Length
All	All

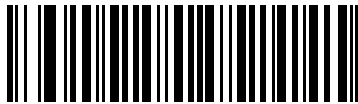


REDUNDANCY LEVEL 2

Redundancy Level 3

Code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Code Length
MSL Plessey	4 characters or less
D 2 or 5	8 characters or less
1 2 of 5	8 characters or less
Codabar	8 characters or less

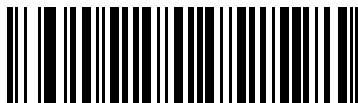


REDUNDANCY LEVEL 3

Redundancy Level 4

The following code types must be successfully read three times before being decoded:

Code Type	Code Length
All	All



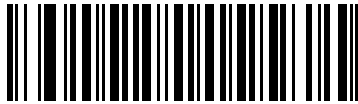
REDUNDANCY LEVEL 4

Security Level

The HP USB Barcode Scanner offers four levels of decode security for delta bar codes. These include the Code 128 family, UPC/EAN and Code 93. Increasing levels of security are provided for decreasing levels of bar code quality. There is an inverse relationship between security and scanner aggressiveness, so be sure to choose only that level of security necessary for any given application.

Security Level 0

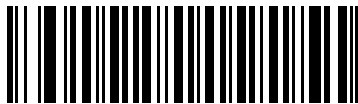
This is the default setting which allows the scanner to operate in its most aggressive state, while providing sufficient security in decoding most “in-spec” bar codes.



***SECURITY LEVEL 0**

Security Level 1

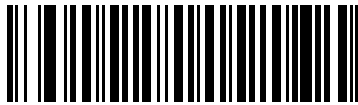
Select this option if misdecodes occur. This security level should eliminate most misdecodes.



SECURITY LEVEL 1

Security Level 2

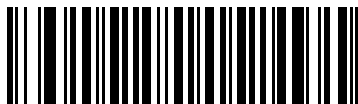
Select this option if Security level 1 fails to eliminate misdecodes.



SECURITY LEVEL 2

Security Level 3

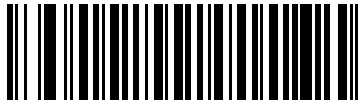
If Security Level 2 has been tried and misdecodes are still occurring, select this security level. Be advised, selecting this option is an extreme measure against mis-decoding severely out of spec bar codes. Selection of this level of security significantly impairs the decoding ability of the scanner. If this level of security is necessary, try to improve the quality of the bar codes.



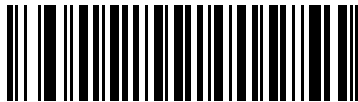
SECURITY LEVEL 3

Bi-directional Redundancy

Bi-directional Redundancy is used for added security to linear code type security levels. When enabled, a bar code must be successfully scanned in both directions (forward and reverse) before reporting a good decode.



Enable Bi-directional Redundancy



***Disable Bi-directional Redundancy**

Intercharacter Gap Size

The Code 39 and Codabar symbologies have an intercharacter gap that is customarily quite small. Due to various barcode-printing technologies, this gap may grow larger than the maximum size allowed, causing the scanner to be unable to decode the symbol. If this problem is encountered, then the "Large Intercharacter Gaps" parameter should be scanned, to tolerate these out-of-specification barcodes.



***Normal Intercharacter Gaps**



Large Intercharacter Gaps

Miscellaneous Scanner Options

This chapter includes commonly used bar codes to customize how your data is transmitted to the USB host device.

Refer to the “Symbologies” and “Advanced Data Formatting” chapters in this guide for customizing data for transmission to the USB host device.

Scanning Sequence Examples

In most cases you need only scan one bar code to set a specific parameter value.

Parameters, such as **Prefix Value**, require that you scan several bar codes in the proper sequence. Refer to each individual parameter for descriptions of this procedure.

Errors While Scanning

Unless otherwise specified, if you make an error during a scanning sequence, just re-scan the correct parameter.

Miscellaneous Default Parameters

The following table lists the defaults for miscellaneous scanner options parameters. If you wish to change any option, scan the appropriate bar code(s) provided in the Miscellaneous Scanner Parameters section.

Miscellaneous Scanner Options Default

Parameter	Default
Transmit Code ID Character	None
Prefix Value	7013 <CR><LF>
Suffix Value	7013 <CR><LF>
Scan Data Transmission Format	Data as is
FN1 Substitution Values	Set
Transmit "No Read" Message	Disable
Synapse Interface	Standard
Transmit Code ID Character	None

Miscellaneous Scanner Parameters

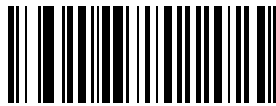
Transmit Code ID Character

A Code ID character identifies the code type of a scanned bar code. This may be useful when the scanner is decoding more than one code type. In addition to any single character prefix already selected, the Code ID character is inserted between the prefix and the decoded symbol.

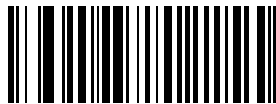
The user may select no Code ID character, a Symbol Code ID character, or an AIM Code ID character. For Code ID Characters, see “Symbol Code Identifiers” and “AIM Code Identifiers” in Chapter 6 of this guide.



Symbol Code ID Character



AIM Code ID Character



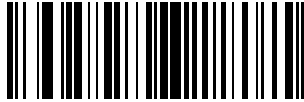
***None**

Prefix/Suffix Values

A prefix/suffix may be appended to scan data for use in data editing. These values are set by scanning a four-digit number (i.e., four bar codes) that corresponds to key codes for various terminals. Numeric codes are available in chapter 8 of this guide. If you make an error or wish to change your selection, scan Cancel.



Scan Prefix



Scan Suffix

Scan Data Transmission Format

To change the Scan Data Transmission Format, scan the Scan Options bar code below.

Then select one of four options:

- Data As Is
- <DATA> <SUFFIX>
- <PREFIX> <DATA>
- <PREFIX> <DATA> <SUFFIX>

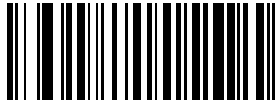
When you have made your selection, scan the Enter bar code available in this chapter. If you make a mistake, scan the Data Format Cancel bar code.

If you need to have a carriage return/enter after each bar code scanned, scan the following bar codes in order:

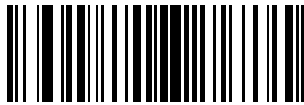
1. <SCAN OPTIONS>
2. <DATA> <SUFFIX>
3. Enter (see barcode in this chapter)



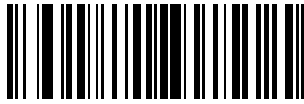
Scan Options



***Data As Is**



<DATA> <SUFFIX>



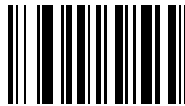
<PREFIX> <DATA>



<PREFIX> <DATA> <SUFFIX>



Enter

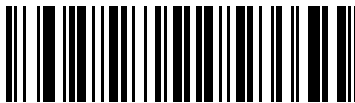


Data Format Cancel

FN1 Substitution Values

The USB HID Keyboard host support a FN1 Substitution feature. When enabled any FN1 character (0x1b) in an EAN128 barcode is substituted with a value. This value defaults to 7013 (Enter Key)

1. To select a FN1 Substitution Value, scan the bar code below.



Set FN1 Substitution Value

2. Look up the keystroke desired for FN1 Substitution in the “USB ASCII Character Set” table in chapter 3 of the *HP USB Barcode Scanner User Guide*. Enter the 4-digit “ASCII Value” by scanning each digit in the Numeric Bar Codes in chapter 8 of this guide.
3. To correct an error or change the selection, scan CANCEL.

To enable FN1 Substitution for USB HID Keyboard, scan the “Enable USB Keyboard FN1 Substitution” bar code in Chapter 3 of the *HP USB Barcode Scanner User Guide*.

Transmit “No Read” Message

Scan a bar code below to select whether or not a “No Read” message is transmitted. When enabled, the characters NR are transmitted when a bar code is not decoded. When disabled, if a symbol does not decode, nothing is sent to the host.



Enable No Read



***Disable No Read**

Synapse Interface

The auto-detection of a Synapse cable needs to vary in duration depending on the type of Synapse connection. If a scanner is connected to another scanner using a Synapse cable then the Auxiliary Synapse Port connection should be used. In all other cases, where the cable is used, the default setting is recommended.

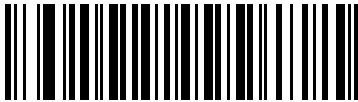
Should the user want to disconnect and reconnect the scanner from a Synapse cable that is connected to a live host via a Synapse, then the "Plug and Play" setting should be used. This setting should not be changed from the default if an on-board wedge host is enabled.



***Standard Synapse Connection**



Auxiliary Synapse Port Connection



"Plug and Play" Synapse Connection

Advance Data Formatting

Advanced Data Formatting (ADF) is a means of customizing data before transmission to your USB host device. Scan data can be edited to suit your particular requirements.

ADF can be implemented through scanning a related series of bar codes, which allows the scanner to be setup and programmed with Advanced Data Formatting (ADF) Rules.

Rules: Criteria Linked to Actions

In ADF, data is customized through rules. These rules perform detailed actions when the data meets certain criteria. One rule may consist of single or multiple criteria applied to single or multiple actions.

For instance, a data formatting rule could be the following:

Criteria: When scan data is Code 39, length 12, and data at the start position is the string “129”,

Actions: pad all sends with zeros to length 8, send all data up to X, send a space.

If a Code 39 bar code of 1299X1559828 is scanned, the following is transmitted: 00001299<space>. If a Code 39 bar code of 1299X15598 is scanned, this rule is ignored because the length criteria has not been met.

The rule specifies the editing conditions and requirements before data transmission occurs.

Using ADF Bar Codes

When you program a rule, make sure the rule is logically correct. Plan ahead before you start scanning.

To program each data formatting rule:

- **Start the Rule.** Scan the **Begin New Rule** bar code in this chapter.
- **Criteria.** Scan the bar codes for all pertinent criteria. Criteria can include code type (e.g., Code 128), code length, or data that contains a specific character string (e.g., the digits “129”). These options are described in the “Criteria” section.
- **Actions.** Scan all actions related to, or affecting, these criteria. The actions of a rule specify how to format the data for transmission. These options are described in ADF Bar Code Menu Example in this chapter.
- **Save the Rule.** Scan the Save Rule bar code in this chapter. This places the rule in the “top” position in the rule buffer.
- If you make errors during this process, some special-purpose bar codes may be useful: **Erase Criteria and Start Again, Erase Actions and Start Again, Erase Previously Saved Rule**, etc.

Criteria, actions, and entire rules may be erased by scanning the appropriate bar code.

Beeper Definitions described in chapter 4 of the *HP USB Barcode Scan User Guide* help guide you through the programming steps.

ADF Bar Code Menu Example

This section provides an example of how ADF rules are entered and used for scan data.

An auto parts distribution center wants to encode manufacturer ID, part number, and destination code into their own Code 128 bar codes. The distribution center also has products that carry UPC bar codes, placed there by the manufacturer. The Code 128 bar codes have the following format:

MMMMMPPPPDD

Where:

M = Manufacturer ID

P = Part Number

D = Destination Code

The distribution center uses a PC with dedicated control characters for manufacturer ID <CTRL M>, part number <CTRL P>, and destination code <CTRL D>. At this center the UPC data is treated as manufacturer ID code.

The following rules need to be entered:

When scanning data of code type Code 128, send the next 5 characters, send the manufacturer ID key <CTRL M>, send the next 5 characters, send the part number key <CTRL P>, send the next 2 characters, send the destination code key <CTRL D>.

When scanning data of code type UPC/EAN, send all data, send the manufacturer ID key <CTRL M>.

To enter these rules, follow the steps below:

Rule 1: The Code 128 Scanning Rule

Step	Bar Code	Beep Indication
1	Begin New Rule	High High
2	Code 128	High High
3	Send next 5 characters	High High
4	Send <CTRL M>	High High
5	Send next 5 characters	High High
6	Send <CTRL P>	High High
7	Send next 2 characters	High High
8	Send <CTRL D>	High High
9	Save Rule	High Low High Low

Rule 2: The UPC Scanning Rule

Step	Bar Code	Beep Indication
1	Begin New Rule	High High
2	UPC/EAN8	High High
3	Send all remaining data	High High
4	Send <CTRL M>	High High
5	Save Rule	High Low High Low

If you made any mistakes while entering this rule, scan the **Quit Entering Rules** bar code. If you already saved the rule, scan the **Erase Previously Saved Rule** bar code.

Alternate Rule Sets

ADF rules may be grouped into one of four alternate sets which can be turned on and off when needed. This is useful when you want to format the same message in different ways. For example, a Code 128 bar code contains the following information:

Class (2 digits), Stock Number (8) digits, Price (5 digits)

This bar code might look like this:

245671243701500

Where

Class = 24

Stock Number - 5671234

Price = 01500

Ordinarily you would send this data as follows:

24 (class key)

56712437 (stock key)

01500 (enter key)

But, when there is a sale, you may want to send only the following:

24 (class key)

56712437 (stock key)

and the cashier will key the price manually.

To implement this, you would first enter an ADF rule that applies to the normal situation. This rule may look like this:

When scanning a bar code of length 15, send the next 2 characters, send the class key, send the next 8 characters, send the stock key, send the data that remains, send the Enter key.

The “sale” rule may look like this:

When scanning a bar code of length 15, send the next 2 characters, send the class key, send the next 8 characters, send the stock key.

To switch between the two sets of rules, a “switching rule” must be programmed. This rule specifies what type of bar code must be scanned to switch between the rule sets. For example, in the case of the “sale” rule above, the rule programmer wants the cashier to scan the bar code “M” before a sale. To do this, a rule can be entered as follows:

When scanning a bar code of length 1 that begins with “M”, select rule set number 1.

Another rule could be programmed to switch back.

When scanning a bar code of length 1 that begins with “N”, turn off rule set number 1.

The switching back to normal rules can also be done in the “sale” rule. For example, the rule may look like this:

When scanning a bar code of length 15, send the next 2 characters, send the class key, send the next 8 characters, send the stock key, turn off rule set 1.

It is recommended that you scan the **Disable All Rule Sets** bar code after programming a rule belonging to an alternate rule set.

In addition to enabling and disabling rule sets within the rules, you can enable or disable them by scanning the appropriate bar codes.

Rules Hierarchy (in Bar Codes)

The order of programming individual rules is important. The most general rule should be programmed last.

All programmed rules are stored in a buffer. As they are programmed, they are stored at the “top” of a rules list. If three rules have been created, the list would be configured as follows:

Third Rule
Second Rule
First Rule

When data is scanned, the rules list is checked from top to bottom to determine if the criteria matches (and therefore, if the actions should occur). Input is modified into the data format specified by the first matching set of criteria it finds. Be sure that your most general rule is the last one programmed.

For example, if the THIRD rule states:

When scanning a bar code of any length, send all data, then send the ENTER key.

And the SECOND rule states:

When scanning a Code 128 bar code of length 12, send the first four characters, then send the ENTER key, then send all remaining data.

If a Code 128 bar code of length 12 were scanned, the THIRD rule would be in effect. The SECOND rule would appear to not function.

Note also that ADF rules are actually created when you use the standard data editing functions. Scan options are entered as ADF rules, and the hierarchy mentioned above also applies to them. For the HP USB Barcode Scanner, this applies to prefix/suffix programming in the parameter **Scan Data Transmission Format**.

These rules reside in the same “rule list” as ADF Rules, so the order of their creation is also important.

Default Rules

Every unit has a default rule to send all scan data. Units with custom software may have one or more default rules burned in. The rules hierarchy checks user programmable rules first, then the default rules. Default rules can be disabled by entering the following general rule in the user programmable buffer:

When receiving scan data, send all data.

Since this rule always applies, ADF will never go into the default rules.

Special Commands

Pause Duration

This parameter along with the **Send Pause** parameter (see **Send Pause** parameter in this chapter) allows a pause to be inserted in the data transmission. Pauses are set by scanning a two-digit number (i.e., two bar codes), and are measured in 0.1 second intervals. For example, scanning bar codes “0” and “1” inserts a 0.1 second pause; “0” and “5” gives you a 0.5 second delay. Numeric bar codes are available in chapter 8 of this chapter. If you make an error or wish to change your selection, scan **Cancel**.



Pause Duration

Begin New Rule

Scan this bar code to start entering a new rule.



Begin New Rule

Save Rule

Scan this bar code to save the rule you entered.



Save Rule

Erase

Use these bar codes to erase criteria, actions or rules.



**Erase Criteria And
Start Again**



**Erase Actions And
Start Again**



**Erase Previously
Saved Rule**



Erase All Rules

Quit Entering Rules

Scan this bar code to quit entering rules.



Quit Entering Rules

Disable Rule Set

Use these bar codes to disable rule sets.



Disable Rule Set 1



Disable Rule Set 2



Disable Rule Set 3



Disable Rule Set 4



Disable All Rule Sets

Criteria

Code Types

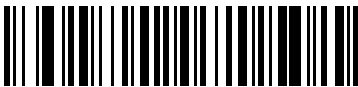
Select any number of code types to be affected. All selected codes must be scanned in succession, prior to selecting other criteria. If you don't select a code type, all code types will be affected.



Code 39



Codabar



RSS 14



RSS Limited



RSS Expanded



Code 128

Scan the bar codes for all code types desired before selecting other criteria.



D 2 OF 5



IATA 2 OF 5



I 2 OF 5



Code 93



UPC-A



UPC-E



EAN-8



EAN-13



MSI



UCC/EAN 128



UPC-E1



Bookland EAN



Trioptic Code 39



Chinese 2 of 5



Coupon Code

Code Lengths

Define the number of characters the selected code type must contain. *If you don't select a code length, selected code types of any length will be affected.*

Scan these bar codes to define the number of characters the selected code types must contain. Select one length per rule only.



1 Character



2 Characters



3 Characters



4 Characters



5 Characters



6 Characters



7 Characters



8 Characters



9 Characters



10 Characters



11 Characters



12 Characters



13 Characters



14 Characters



15 Characters



16 Characters



17 Characters



18 Characters



19 Characters



20 Characters



21 Characters



22 Characters



23 Characters



24 Characters



25 Characters



26 Characters



27 Characters



28 Characters



29 Characters



30 Characters

Message Containing A Specific Data String

Use this feature to select whether the formatting affects data that begins with a specific character or data string, or contains a specific character or data string.

There are 4 features:

- Specific String at Start
- Specific String, Any Location
- Any Message OK
- Rule Belongs to Set

Specific String at Start

Scan this bar code, then scan the bar codes representing the desired character or characters (up to a total of 8) available in the **Alphanumeric Keyboard** section of his chapter.

After scanning the following bar code:

1. Enter a string using the **Alphanumeric Keyboard** bar codes available in this chapter.
2. Scan **End Of Message** bar code available in this chapter.



Specific String At Start

Specific String, Any Location

Scan this bar code, then, using the **Numeric Keypad** section in this chapter, scan a two-digit number representing the position (use a leading “zero” if necessary). Then scan the desired character or characters (up to a total of 8) on the **Alphanumeric Keyboard** section in this chapter, followed by the **End Of Message** bar code available in this chapter.

After scanning the following bar code:

1. Enter a location using the **Numeric Keypad** bar code in this chapter.
1. Enter a string using the **Alphanumeric Keyboard** bar codes in this chapter.
2. Scan **End Of Message** bar code in this chapter.



Specific String Any Location

Any Message OK

By not scanning any bar code, all selected code types are formatted, regardless of information contained.

Numeric Keypad

Bar codes on this page should not be confused with those on the alphanumeric keyboard.



0



1



2



3



4



5



6



7



8



9



Cancel

Rule Belongs To Set

Select the set a rule belongs to. (There are four possible rule sets.) Refer to **Alternate Rule Sets** in this chapter for more information about rule sets.

Scan a bar code below to select which set a rule belongs to.



Rule Belongs To Set 1



Rule Belongs To Set 2



Rule Belongs To Set 3



Rule Belongs To Set 4

Actions

Select how to format the data for transmission.

Send Data

Send all data that remains, send all data up to a specific character selected from the **Alphanumeric Keyboard** section in this chapter, or send the next N characters. N = any number from 1 to 254, selected from the **Alphanumeric Keyboard** section.

Use these bar codes to send data:



**Send Data Up To
Character**



**Send All Data That Re-
mains**



Send Next Character



**Send Next
2 Characters**



**Send Next
3 Characters**



**Send Next
4 Characters**



**Send Next
5 Characters**



**Send Next
6 Characters**



**Send Next
7 Characters**



**Send Next
8 Characters**



**Send Next
9 Characters**



**Send Next
10 Characters**



**Send Next
11 Characters**



**Send Next
12 Characters**



**Send Next
13 Characters**



**Send Next
14 Characters**



**Send Next
15 Characters**



**Send Next
16 Characters**



**Send Next
17 Characters**



**Send Next
18 Characters**



**Send Next
19 Characters**



**Send Next
20 Characters**

Setup Field(s)

Setup Field(s) Definitions Table

Parameter	Description
Move Cursor	
Move Cursor to a Character	Scan the Move Cursor To Character bar code, then any printable ASCII character from the Alphanumeric Keyboard . When this is used, the cursor moves to the position after the matching character. If the character is not there, the rule fails and ADF tries the next rule.
Move Cursor to Start of Data	Scan this bar code to move cursor to the beginning of the data.
Move Cursor Past a Character	This parameter moves the cursor past all sequential occurrences of a selected character. For example, if the selected character is 'A', then the cursor moves past 'A', 'AA', 'AAA', etc. Scan the Move Cursor Past Character bar code, then select a character from the Alphanumeric Keyboard . If the character is not there, the cursor does not move (i.e., has no effect).
Skip Ahead "N" Characters	Scan one of these bar codes to select the number of positions ahead you wish to move the cursor.

Setup Field(s) Definitions Table

Parameter	Description
Skip Back "N" Characters	Scan one of these bar codes to select the number of positions back you wish to move the cursor.
Send Preset Value	Send Values 1 through 6 by scanning the appropriate bar code. Value 1 = Scan Suffix Value 2 = Scan Prefix Values 3-6 are not applicable

Move Cursor

Scan a bar code below to move the cursor in relation to a specified character. Then enter a character by scanning a bar code from the **Alphanumeric Keyboard**.



If there is no match when the rule is interpreted and the rule fails, the next rule is checked.



**Move Cursor To
Character**



Move Cursor To Start



**Move Cursor Past
Character**

Send Pause

Scan the bar code below to insert a pause in the transmission of data. The length of this pause is controlled by the value of the **Pause Duration** parameter.



Send Pause

Skip Ahead

Use the following bar codes to skip ahead characters.



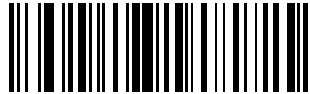
**Skip Ahead
1 Character**



**Skip Ahead
2 Characters**



**Skip Ahead
3 Characters**



**Skip Ahead
4 Characters**



**Skip Ahead
5 Characters**



**Skip Ahead
6 Characters**



**Skip Ahead
7 Characters**



**Skip Ahead
8 Characters**



**Skip Ahead
9 Characters**



**Skip Ahead
10 Characters**

Skip Back

Use the following bar codes to skip back characters.



**Skip Back
1 Characters**



**Skip Back
2 Characters**



**Skip Back
3 Characters**



**Skip Back
4 Characters**



**Skip Back
5 Characters**



**Skip Back
6 Characters**



**Skip Back
7 Characters**



**Skip Back
8 Characters**



**Skip Back
9 Characters**



**Skip Back
10 Characters**

Send Preset Value

Use these bar codes to send preset values.



Send Value 1



Send Value 2



Send Value 3



Send Value 4



Send Value 5



Send Value 6

Modify Data

Modify data in the ways listed. The following actions work for all send commands that follow it within a rule. If you program pad zeros to length 6, send next 3 characters, stop padding, send next 5 characters, three zeros are added to the first send, and the next send is unaffected by the padding. These options do not apply to the **Send Keystroke** or **Send Preset Value** options.

Remove All Spaces

To remove all spaces in the send commands that follow, scan this bar code.

Crunch All Spaces

To leave one space between words, scan this bar code. This also removes all leading and trailing spaces.

Stop Space Removal

Scan this bar code to disable space removal.

Remove Leading Zeros

Scan this bar code to remove all leading zeros.

Stop Zero Removal

Scan this bar code to disable the removal of zeros.

Use the bar codes below to modify data.



Remove All Spaces



Crunch All Spaces



Stop Space Removal



**Remove Leading
Zeros**



Stop Zero Removal

Pad Data with Spaces

To pad data to the left, scan the bar code containing the desired number of spaces. This parameter is activated by Send commands.



**Pad Spaces To
Length 1**



**Pad Spaces To
Length 2**



**Pad Spaces To
Length 3**



**Pad Spaces To
Length 4**



**Pad Spaces To
Length 5**



**Pad Spaces To
Length 6**



**Pad Spaces To
Length 7**



**Pad Spaces To
Length 8**



**Pad Spaces To
Length 9**



**Pad Spaces To
Length 10**



**Pad Spaces To
Length 11**



**Pad Spaces To
Length 12**



**Pad Spaces To
Length 13**



**Pad Spaces To
Length 14**



**Pad Spaces To
Length 15**



**Pad Spaces To
Length 16**



**Pad Spaces To
Length 17**



**Pad Spaces To
Length 18**



**Pad Spaces To
Length 19**



**Pad Spaces To
Length 20**



**Pad Spaces To
Length 21**



**Pad Spaces To
Length 22**



**Pad Spaces To
Length 23**



**Pad Spaces To
Length 24**



**Pad Spaces To
Length 25**



**Pad Spaces To
Length 26**



**Pad Spaces To
Length 27**



**Pad Spaces To
Length 28**



**Pad Spaces To
Length 29**



**Pad Spaces To
Length 30**



Stop Pad Spaces

Pad Data with Zeros

To pad data to the left, scan the bar code containing the desired number of zeros. This parameter is activated by Send commands.



**Pad Zeros To
Length 1**



**Pad Zeros To
Length 2**



**Pad Zeros To
Length 3**



**Pad Zeros To
Length 4**



**Pad Zeros To
Length 5**



**Pad Zeros To
Length 6**



**Pad Zeros To
Length 7**



**Pad Zeros To
Length 8**



**Pad Zeros To
Length 9**



**Pad Zeros To
Length 10**



**Pad Zeros To
Length 11**



**Pad Zeros To
Length 12**



**Pad Zeros To
Length 13**



**Pad Zeros To
Length 14**



**Pad Zeros To
Length 15**



**Pad Zeros To
Length 16**



**Pad Zeros To
Length 17**



**Pad Zeros To
Length 18**



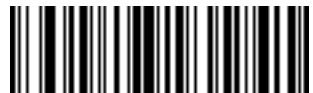
**Pad Zeros To
Length 19**



**Pad Zeros To
Length 20**



**Pad Zeros To
Length 21**



**Pad Zeros To
Length 22**



**Pad Zeros To
Length 23**



**Pad Zeros To
Length 24**



**Pad Zeros To
Length 25**



**Pad Zeros To
Length 26**



**Pad Zeros To
Length 27**



**Pad Zeros To
Length 28**



**Pad Zeros To
Length 29**



**Pad Zeros To
Length 30**



Stop Pad Zeros

Beeps

Select a beep sequence for each ADF rule.



Beep Once



Beep Twice



Beep Three Times

Send Keystroke (Control Characters and Keyboard Characters)

Control Characters

Scan the “Send ___” bar code for the keystroke you wish to send.



Send Control 2



Send Control A



Send Control B



Send Control C



Send Control D



Send Control E



Send Control F



Send Control G



Send Control H



Send Control I



Send Control J



Send Control K



Send Control L



Send Control M



Send Control N



Send Control O



Send Control P



Send Control Q



Send Control R



Send Control S



Send Control T



Send Control U



Send Control V



Send Control W



Send Control X



Send Control Y



Send Control Z



Send Control [



**Send Control **



Send Control]



Send Control 6



Send Control -

Keyboard Characters

Scan the “Send_” bar code for the keyboard characters you want to send.



Send Space



Send !



Send “



Send #



Send \$



Send %



Send &



Send ‘



Send (



Send)



Send *



Send +



Send ,



Send -



Send .



Send /



Send 0



Send 1



Send 2



Send 3



Send 4



Send 5



Send 6



Send 7



Send 8



Send 9



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Send ALT Characters



Send Alt 2



Send Alt A



Send Alt B



Send Alt C



Send Alt D



Send Alt E



Send Alt F



Send Alt G



Send Alt H



Send Alt I



Send Alt J



Send Alt K



Send Alt L



Send Alt M



Send Alt N



Send Alt O



Send Alt P



Send Alt Q



Send Alt R



Send Alt S



Send Alt T



Send Alt U



Send Alt V



Send Alt W



Send Alt X



Send Alt Y



Send Alt Z



Send Alt [



**Send Alt **



Send Alt]



Send Alt 6



Send Alt -

Send Keypad Characters



Send Keypad *



Send Keypad +



Send Keypad -



Send Keypad .



Send Keypad /



Send Keypad 0



Send Keypad 1



Send Keypad 2



Send Keypad 3



Send Keypad 4



Send Keypad 5



Send Keypad 6



Send Keypad 7



Send Keypad 8



Send Keypad 9



Send Keypad Enter



**Send Keypad Numlock-
NUM LOCK**



Send Break Key



Send Delete Key



Send Page Up Key



Send End Key



Send Page Down Key



Send Pause Key



Send Scroll Lock Key



Send Backspace Key



Send Tab Key



Send Print Screen Key



Send Insert Key



Send Home Key



Send Enter Key



Send Escape Key



Send Up Arrow Key



Send Down Arrow Key



Send Left Arrow Key



Send Right Arrow Key

Send Function Key



Send F1 Key



Send F2 Key



Send F3 Key



Send F4 Key



Send F5 Key



Send F6 Key



Send F7 Key



Send F8 Key



Send F9 Key



Send F10 Key



Send F11 Key



Send F12 Key



Send F13 Key



Send F14 Key



Send F15 Key



Send F16 Key



Send F17 Key



Send F18 Key



Send F19 Key



Send F20 Key



Send F21 Key



Send F22 Key



Send F23 Key



Send F24 Key



Send PF1 Key



Send PF2 Key



Send PF3 Key



Send PF4 Key



Send PF5 Key



Send PF6 Key



Send PF7 Key



Send PF8 Key



Send PF9 Key



Send PF10 Key



Send PF11 Key



Send PF12 Key



Send PF13 Key



Send PF14 Key



Send PF15 Key



Send PF16 Key



Send PF17 Key



Send PF18 Key



Send PF19 Key



Send PF20 Key



Send PF21 Key



Send PF22 Key



Send PF23 Key



Send PF24 Key



Send PF25 Key



Send PF26 Key



Send PF27 Key



Send PF28 Key



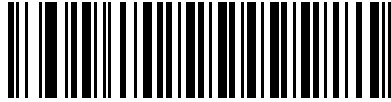
Send PF29 Key



Send PF30 Key

Send Right Control Key

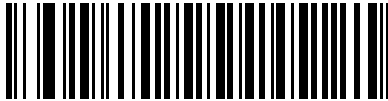
The “Send Right Control Key” action will send a tap (press and release) of the Right Control Key.



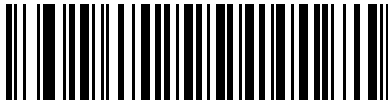
Send Right Control Key

Send Graphic User Interface (GUI) Characters

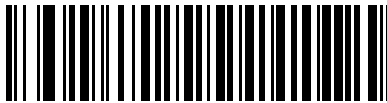
The “Send Graphic User Interface Character” actions will tap the specified key while holding the System Dependent Graphic User Interface (GUI) Key. The definition of the Graphic User Interface key is dependant upon the attached system:



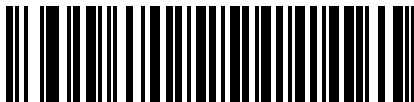
Send GUI 0



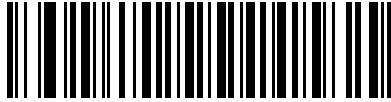
Send GUI 1



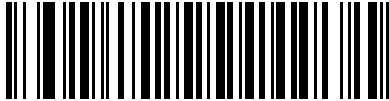
Send GUI 2



Send GUI 3



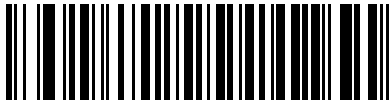
Send GUI 4



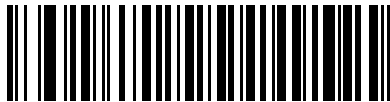
Send GUI 5



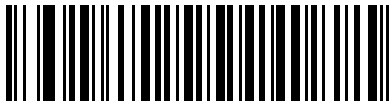
Send GUI 6



Send GUI 7



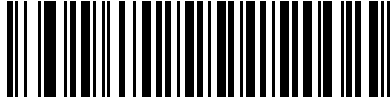
Send GUI 8



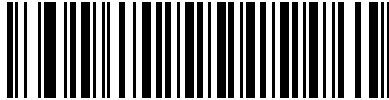
Send GUI 9



Send GUI A



Send GUI B



Send GUI C



Send GUI D



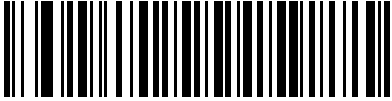
Send GUI E



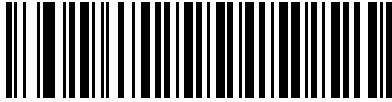
Send GUI F



Send GUI G



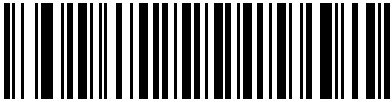
Send GUI H



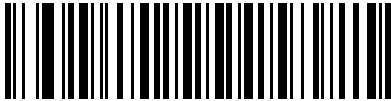
Send GUI I



Send GUI J



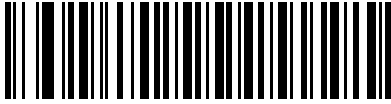
Send GUI K



Send GUI L



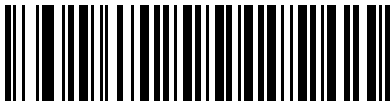
Send GUI M



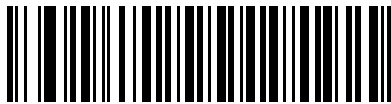
Send GUI N



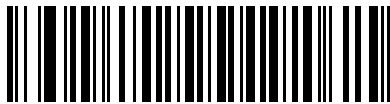
Send GUI O



Send GUI P



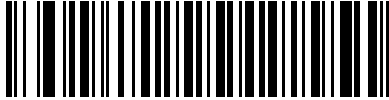
Send GUI Q



Send GUI R



Send GUI S



Send GUI T



Send GUI U



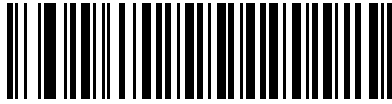
Send GUI V



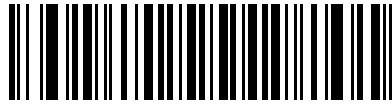
Send GUI W



Send GUI X



Send GUI Y



Send GUI Z

Turn On/Off Rule Sets

Use these bar codes to turn rule sets on and off.



Turn On Rule Set 1



Turn On Rule Set 2



Turn On Rule Set 3



Turn On Rule Set 4



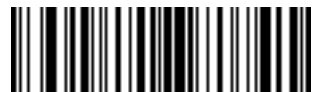
Turn Off Rule Set 1



Turn Off Rule Set 2



Turn Off Rule Set 3



Turn Off Rule Set 4

Alphanumeric Keyboard



Space



#



\$



%



*



+



-
(Dash)



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&



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^



(Underscore)



,

Bar codes on this page should not be confused with those on the numeric keypad.



0



1



2



3



4



5



6



7



8



9



A



B



C



D



E



F



G



H



I



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K



L



M



N



O



P



Q



R



S



T



U



V



W



X



Y



Z



Cancel



End Of Message



a



b



c



d



e



f



g



h



i



j



k



l



m



n



o



p



q



r



s



t



u



v



w



x



y



z



{



|



}



~

Standard Default Parameters

User Preferences Default

Parameter	Default
Set Default Parameter	All Defaults
Beeper Tone	Medium
Beeper Volume	High
Power Mode	Continuous On
Laser On Time	3.0 Sec
Beep After Good Decode	Enable

USB Host Parameters

Parameter	Default
USB	HID Keyboard Emulation
USB Country Keyboard Types (Country Codes)	North American
USB Keystroke Delay	No Delay
USB CAPS Lock Override	Disable

USB Host Parameters

Parameter	Default
USB Ignore Unknown Characters	Enable
Emulate Keypad	Disable
USB keyboard FN1 Substitution	Disable
Function Key Mapping	Disable
Simulated Caps Lock	Disable
Convert Case	No Case Conversion

Symbology Default

Parameter	Default
UPC/EAN	
UPC-A	Enable
UPC-E	Enable
UPC-E1	Disable
EAN-8/Jan 8	Enable
EAN-13/Jan 13	Enable
Bookland EAN	Disable
Decode UPC/EAN/JAN Supplementals (2 and 5 digits)	Ignore
UPC/EAN/Jan Supplemental Redundancy	7

Symbology Default

Parameter	Default
Transmit UPC-A Check Digit	Enable
Transmit UPC-E Check Digit	Enable
Transmit UPC-E1 Check Digit	Enable
UPC-A Preamble	System Character
UPC-E Preamble	System Character
Convert UPC-E to A	Disable
Convert UPC-E1 to A	Disable
EAN-8/JAN-8 Extend	Disable
UPC/EAN Security Levels	0
UCC Coupon Extended Code	Disable
Code 128	
Code 128	Enable
UCC/EAN-128	Enable
Code 39	
Code 39	Enable
Trioptic Code 39	Disable
Convert Code 39 to Code 32 (Italian Pharmacy Code)	Disable
Code 32 Prefix	Disable
Set Length(s) for Code 39	2 to 55

Symbology Default

Parameter	Default
Code 39 Check Digit Verification	Disable
Transmit Code 39 Check Digit	Disable
Code 39 Full ASCII Conversion	Disable
Buffer Code 39	Disable
Code 93	
Code 93	Disable
Set Length(s) for Code 93	4 to 55
Code 11	
Code 11	Disable
Set Lengths for Code 11	4 to 55
Code 11 Check Digit Verification	Disable
Transmit Code 11 Check Digit(s)	Disable
Interleaved 2 of 5 (ITF)	
Interleaved 2 of 5 (ITF)	Enable
Set Lengths of 12 or 5	14
12 of 5 Check Digit Verification	Disable
Transmit 12 of 5 Check Digit	Disable
Convert 12 of 5 to EAN 13	Disable
Discrete 2 of 5 (DTF)	
Discrete 2 of 5	Disable

Symbology Default

Parameter	Default
Set Length(s) for D 2 of 5	12
Chinese 2 of 5	
Enable/Disable Chinese 2 of 5	Disable
Codabar (NW-7)	
Codabar	Disable
Set Lengths for Codebar	5 to 55
CLSI Editing	Disable
NOTIS Editing	Disable
MSI	
MSI	Disable
Set Length(s) for MSI	1 to 55
MSI Check Digits	One
Transmit MSI Digit	Disable
MSI Check Digit Algorithm	Mode 10/Mod 10
RSS (Reduced Space Symbology)	
RSS 14	Disable
RSS Limited	Disable
RSS Expanded	Disable
Convert RSS to UPC/EAN	Disable

Symbology Default

Parameter	Default
Symbology - Specific Security Levels	
Redundancy Level	1

Miscellaneous Scanner Options Default

Parameter	Default
Transmit Code ID Character	None
Prefix Value	7013 <CR><LF>
Suffix Value	7013 <CR><LF>
Scan Data Transmission Format	Data as is
FN1 Substitution Values	Set
Transmit "No Read" Message	Disable
Synapse Interface	Standard
Transmit Code ID Character	None

Programming Reference

Symbol Code Identifiers

Symbol Code Characters

Code Character	Code Type
A	UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13
B	Code 39, Code 32
C	Codabar
D	Code 128
E	Code 93
F	Interleaved 2 of 5
G	Discrete 2 of 5, or Discrete 2 of 5 IATA
H	Code 11
J	MSI
K	UCC/EAN-128
L	Bookland EAN
M	Trioptic Code 39

Symbol Code Characters

Code Character	Code Type
N	Coupon Code
R	RSS Family
T	UCC Composite TLC 39

AIM Code Identifiers

Each AIM Code Identifier contains the three-character string **Jcm** where:

J = Flag Character (ASCII 93)

c = Code Character (see “AIM Code Characters” table)

m = Modifier Character (see “Modifier Characters” table)

AIM Code Characters

Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, Coupon (Code 128 portion)
E	UPC/EAN, Coupon (UPC portion)
e	RSS Family
F	Codabar
G	Code 93

AIM Code Characters

Code Character	Code Type
H	Code 11
I	Interleaved 2 of 5
M	MSI
S	D2 of 5, IATA 2 of 5
X	Code 39
X	Bookland EAN
N	Coupon Code
R	RSS Family
T	UCC Composite TLC 39

The modifier character is the sum of the applicable option values based on the “Modifier Characters” table below.

Modifier Characters

Code Type	Option Value	Option
Code 39	0	No check character of Full ASCII processing.
	1	Reader has checked one check character.
	3	Reader has checked and stripped check character

Modifier Characters

Code Type	Option Value	Option
	4	Reader has performed Full ASCII character conversion.
	5	Reader has performed Full ASCII character conversion and checked one check character.
	7	Reader has performed Full ASCII character conversion and checked and stripped check character.
	Example:A Full ASCII bar code with check character W, A+I+MI+DW , is transmitted as JA7 AIMID where 7 = (3+4).	
Trioptic Code 39	0	No option specified at this time. Always transmit 0.
	Example:A Trioptic bar code 412356 is transmitted as JX0 412356.	
	0	Standard data packet, no Function code 1 in first symbol position.
	1	Function code 1 in first symbol character position.
	2	Function code 1 in second symbol character position.
	Example:A Code (EAN) 128 bar code with Function 1 character ^{FNC1} in the first position, AIMID is transmitted as JC1 AIMID.	
1 2 of 5	0	No check digit processing
	1	Reader has validated check digit.

Modifier Characters

Code Type	Option Value	Option
	3	Reader has validated and stripped check digit.
		Example: An I 2 of 5 bar code without check digit, 4123, is transmitted as J10 4123
Codabar	0	No check digit processing.
	1	Reader has checked check digit.
	3	Reader has stripped check digit before transmission.
		Example: A Codabar bar code without check digit, 4123, is transmitted as JFO 4123.
Code 93	0	No options specified at this time. Always transmit 0.
		Example: A Code 93 bar code 012345678905 is transmitted as JGO 012345678905
MSI	0	Check digits are sent.
	1	No check digit is sent.
		Example: An MSI bar code 4123, with a single check digit checked, is transmitted as JM1 4123
D 2 of 5	0	No options specified at this time. Always transmit 0.
UPC/EAN	0	Standard packet in full EAN country code format, which is 13 digits for UPC-A and UPC-E (not including supplemental data).

Modifier Characters

Code Type	Option Value	Option
	1	Two-digits supplement data only.
	2	Five-digit supplement data only.
	4	EAN-8 data packet.
	Example:A UPC-A bar code 012345678905 is transmitted as JE 00012345678905	
Bookland EAN	0	No options specified at this time. Always transmit 0.
	Example:A Bookland EAN bar code 123456789X is transmitted as JX 0123456789X	
Code 11	0	Single check digit.
	1	Two check digits.
	3	Check characters validated but not transmitted.

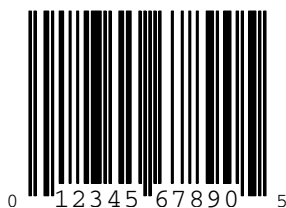
Sample Bar Codes

Code 39



UPC/EAN

UPC-A, 100%



EAN-13, 100%



CODE 128



Interleaved 2 of 5



RSS 14



RSS 14 must be enabled to read the bar code below (see “Enable RSS 14” in Chapter 2 of this guide).

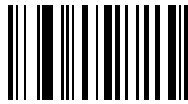


7612341562341

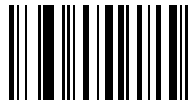
Numeric Bar Codes

0, 1

For parameters requiring specific numeric values, scan the appropriately numbered bar code(s).



0

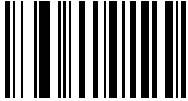


1

2, 3, 4



2

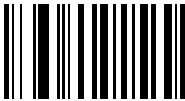


3

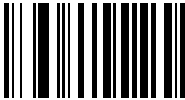


4

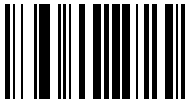
5, 6, 7



5



6

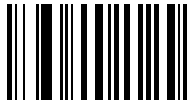


7

8, 9



8



9

Cancel

If you make an error or wish to change your selection, scan the bar code below.



Cancel