

Introduction

This chapter describes the programmable parameters, provides bar codes for programming, and hexadecimal equivalents for host parameter programming through SSI.

Operational Parameters

The SE-955 is shipped with the factory default settings shown in [Table 8-1 on page 8-2](#). These factory default values are stored in non-volatile memory and are preserved even when the scan engine is powered down. Changes to the factory default values can be stored as custom defaults. These values are also stored in non-volatile memory and are preserved even when the scan engine is powered down.

To change the parameter values:

- Scan the appropriate bar codes included in this chapter. The new values replace the existing memory values. To set the new values as custom defaults, scan the **Write to Custom Defaults** bar code. The factory default or custom default parameter values can be recalled by scanning the **Set Factory Defaults** bar code or the **Restore Defaults** bar code on [page 8-7](#).

or

- Send the parameter through the scan engine's serial port using the SSI command PARAM_SEND. Hexadecimal parameter numbers are shown in this chapter below the parameter title, and options appear in parenthesis beneath the accompanying bar codes. Instructions for changing parameters using this method are found in [Chapter 10, Simple Serial Interface](#).

Table 8-1 lists the factory defaults for all parameters. To change any option, scan the appropriate bar code(s).

Table 8-1. Factory Default Table

| Parameter | Parameter Number (Hex) | Factory Default | Page Number |
|---|------------------------|------------------|----------------------|
| Set Factory Default | | All Defaults | 8-7 |
| Beeper Volume | 0x8C | Medium | 8-8 |
| Beeper Tone | 0x91 | Medium Frequency | 8-9 |
| Beeper Frequency Adjustment | 0xF0 0x91 | 2500 Hz | 8-10 |
| Laser On Time | 0x88 | 3.0 sec | 8-10 |
| Aim Duration | 0xED | 0.0 sec | 8-11 |
| Scan Angle | 0xBF | Wide (47°) | 8-11 |
| Power Mode | 0x80 | Low Power | 8-12 |
| Trigger Mode | 0x8A | Level | 8-13 |
| Time-out Between Same Symbol | 0x89 | 1.0 sec | 8-14 |
| Beep After Good Decode | 0x38 | Enable | 8-14 |
| Transmit "No Read" Message | 0x5E | Disable | 8-15 |
| Parameter Scanning | 0xEC | Enable | 8-15 |
| Linear Code Type Security Levels | 0x4E | 1 | 8-16 |
| Bi-directional Redundancy | 0x43 | Disable | 8-17 |
| UPC/EAN | | | |
| UPC-A | 0x01 | Enable | 8-18 |
| UPC-E | 0x02 | Enable | 8-18 |
| UPC-E1 | 0x0C | Disable | 8-19 |
| EAN-8 | 0x04 | Enable | 8-19 |
| EAN-13 | 0x03 | Enable | 8-20 |
| Bookland EAN | 0x53 | Disable | 8-20 |
| Decode UPC/EAN Supplementals | 0x10 | Ignore | 8-21 |
| Decode UPC/EAN Supplemental Redundancy | 0x50 | 7 | 8-22 |
| Transmit UPC-A Check Digit | 0x28 | Enable | 8-23 |
| Transmit UPC-E Check Digit | 0x29 | Enable | 8-23 |
| *See Table 10-9 on page 10-17 for formatting of any parameter whose number is 0x100 or greater. | | | |

Table 8-1. Factory Default Table (Continued)

| Parameter | Parameter Number (Hex) | Factory Default | Page Number |
|---|------------------------|------------------|----------------------|
| Transmit UPC-E1 Check Digit | 0x2A | Enable | 8-24 |
| UPC-A Preamble | 0x22 | System Character | 8-25 |
| UPC-E Preamble | 0x23 | System Character | 8-26 |
| UPC-E1 Preamble | 0x24 | System Character | 8-27 |
| Convert UPC-E to A | 0x25 | Disable | 8-28 |
| Convert UPC-E1 to A | 0x26 | Disable | 8-28 |
| EAN-8 Zero Extend | 0x27 | Disable | 8-29 |
| Convert EAN-8 to EAN-13 Type | 0xE0 | Type is EAN-13 | 8-29 |
| UPC/EAN Security Level | 0x4D | 0 | 8-30 |
| UCC Coupon Extended Code | 0x55 | Disable | 8-31 |
| Code 128 | | | |
| Code-128 | 0x08 | Enable | 8-32 |
| UCC/EAN-128 | 0x0E | Enable | 8-32 |
| ISBT 128 | 0x54 | Enable | 8-33 |
| Code 39 | | | |
| Code 39 | 0x00 | Enable | 8-34 |
| Trioptic Code 39 | 0x0D | Disable | 8-34 |
| Convert Code 39 to Code 32 | 0x56 | Disable | 8-35 |
| Code 32 Prefix | 0xE7 | Disable | 8-35 |
| Set Length(s) for Code 39 | 0x12 0x13 | 2-55 | 8-36 |
| Code 39 Check Digit Verification | 0x30 | Disable | 8-37 |
| Transmit Code 39 Check Digit | 0x2B | Disable | 8-37 |
| Code 39 Full ASCII Conversion | 0x11 | Disable | 8-38 |
| Code 93 | | | |
| Code 93 | 0x09 | Disable | 8-39 |
| Set Length(s) for Code 93 | 0x1A 0x1B | 4-55 | 8-40 |
| *See Table 10-9 on page 10-17 for formatting of any parameter whose number is 0x100 or greater. | | | |

Table 8-1. Factory Default Table (Continued)

| Parameter | Parameter Number (Hex) | Factory Default | Page Number |
|---|------------------------|-----------------|----------------------|
| Code 11 | | | |
| Code 11 | 0x0A | Disable | 8-41 |
| Set Lengths for Code 11 | 0x1C 0x1D | 4 to 55 | 8-41 |
| Code 11 Check Digit Verification | 0x34 | Disable | 8-43 |
| Transmit Code 11 Check Digit(s) | 0x2F | Disable | 8-43 |
| Interleaved 2 of 5 | | | |
| Interleaved 2 of 5 | 0x06 | Enable | 8-44 |
| Set Length(s) for I 2 of 5 | 0x16 0x17 | 14 | 8-45 |
| I 2 of 5 Check Digit Verification | 0x31 | Disable | 8-47 |
| Transmit I 2 of 5 Check Digit | 0x2C | Disable | 8-48 |
| Convert I 2 of 5 to EAN 13 | 0x52 | Disable | 8-48 |
| Discrete 2 of 5 | | | |
| Discrete 2 of 5 | 0x05 | Disable | 8-49 |
| Set Length(s) for D 2 of 5 | 0x14 0x15 | 12 | 8-50 |
| Chinese 2 of 5 | | | |
| Chinese 2 of 5 | 0xF0 0x98 | Disable | 8-51 |
| Codabar | | | |
| Codabar | 0x07 | Disable | 8-52 |
| Set Lengths for Codabar | 0x18 0x19 | 5-55 | 8-53 |
| CLSI Editing | 0x36 | Disable | 8-54 |
| NOTIS Editing | 0x37 | Disable | 8-54 |
| MSI | | | |
| MSI | 0x0B | Disable | 8-55 |
| Set Length(s) for MSI | 0x1E 0x1F | 6-55 | 8-56 |
| *See Table 10-9 on page 10-17 for formatting of any parameter whose number is 0x100 or greater. | | | |

Table 8-1. Factory Default Table (Continued)

| Parameter | Parameter Number (Hex) | Factory Default | Page Number |
|---|------------------------|------------------|----------------------|
| MSI Check Digits | 0x32 | One | 8-57 |
| Transmit MSI Check Digit | 0x2E | Disable | 8-57 |
| MSI Check Digit Algorithm | 0x33 | Mod 10/Mod 10 | 8-58 |
| RSS | | | |
| RSS-14 | 0xF0 0x52 | Disable | 8-59 |
| RSS-Limited | 0xF0 0x53 | Disable | 8-59 |
| RSS-Expanded | 0xF0 0x54 | Disable | 8-60 |
| Convert RSS to UPC/EAN | 0xF0 0x8D | Disable | 8-60 |
| Data Options | | | |
| Transmit Code ID Character | 0x2D | None | 8-61 |
| Prefix/Suffix Values Prefix Suffix 1 Suffix 2 | 0x69 0x68 0x6A | NULL LF CR | 8-62 |
| Scan Data Transmission Format | 0xEB | Data as is | 8-63 |
| Serial Interface | | | |
| Baud Rate | 0x9C | 9600 | 8-65 |
| Parity | 0x9E | None | 8-67 |
| Software Handshaking | 0x9F | Enable | 8-68 |
| Decode Data Packet Format | 0xEE | Unpacketed | 8-69 |
| Host Serial Response Time-out | 0x9B | 2 sec | 8-69 |
| Stop Bit Select | 0x9D | 1 | 8-70 |
| Intercharacter Delay | 0x6E | 0 | 8-70 |
| Host Character Time-out | 0xEF | 200 msec | 8-70 |
| Event Reporting* | | | |
| Decode Event | 0xF0 0x00 | Disable | 8-71 |
| *See Table 10-9 on page 10-17 for formatting of any parameter whose number is 0x100 or greater. | | | |

Table 8-1. Factory Default Table (Continued)

| Parameter | Parameter Number (Hex) | Factory Default | Page Number |
|---|------------------------|-----------------|----------------------|
| Boot Up Event | 0xF0 0x02 | Disable | 8-72 |
| Parameter Event | 0xF0 0x03 | Disable | 8-72 |
| *See Table 10-9 on page 10-17 for formatting of any parameter whose number is 0x100 or greater. | | | |

Set Default Parameter

The SE-955 can be reset to two types of defaults: factory defaults or custom defaults. Scan the appropriate bar code below to reset the SE-955 to its default settings and/or set the scan engine's current settings as the custom default.

- **Restore Defaults** - Scan this bar code to reset all default parameters as follows.
 - If custom defaults were set by scanning **Write to Custom Defaults**, scan **Restore Defaults** to retrieve and restore the scan engine's custom default settings.
 - If no custom defaults were set, scan **Restore Defaults** to restore the factory default values listed in [Table 8-1 on page 8-2](#).
- **Set Factory Defaults** - Scan this bar code to restore the factory default values listed in [Table 8-1 on page 8-2](#) If custom defaults were set, they are eliminated.
- **Write to Custom Defaults** - Scan this bar code to store the current scan engine settings as custom defaults. Once custom default settings are stored, they can be recovered at any time by scanning **Restore Defaults**.



*** Restore Defaults**



Set Factory Defaults



Write to Custom Defaults

Beeper Volume

Parameter # 0x8C

To select a decode beep volume, scan the appropriate bar code.



Low
(0x02)



***Medium**
(0x01)



High
(0x00)

Beeper Tone

Parameter # 0x91

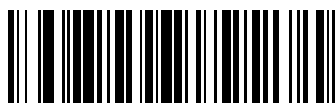
To select a decode beep frequency (tone), scan the appropriate bar code.



**Low Frequency
(0x02)**



***Medium Frequency
(0x01)**



**High Frequency
(0x00)**

Beeper Frequency Adjustment

Parameter # 0xF0 0x91

This parameter adjusts the frequency of the high beeper tone from the nominal 2500 Hz to another frequency matching the resonances of the installation. It is programmable in 10 Hz increments from 1220 Hz to 3770 Hz.

To increase the frequency, scan the bar code below, then scan three numeric bar codes beginning on [page 8-73](#) that correspond to the desired frequency adjustment divided by 10. For example, to set the frequency to 3000 Hz (an increase of 500 Hz), scan numeric bar codes 0, 5, 0, corresponding to 50, or (500/10).

To decrease the frequency, scan the bar code below, then scan three numeric bar codes beginning on [page 8-73](#) that correspond to the value (256 - desired adjustment/10). For example, to set the frequency to 2000 Hz (a decrease of 500 Hz), scan numeric bar codes 2, 0, 6, corresponding to 206, or (256 - 500/10).

To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



Beeper Frequency Adjustment
(Default: 2500 Hz)

Laser On Time

Parameter # 0x88

This parameter sets the maximum time decode processing continues during a scan attempt. It is programmable in 0.1 second increments from 0.50 to 25.5 seconds.

To set a Laser On Time, scan the bar code below. Next scan two numeric bar codes beginning on [page 8-73](#) that correspond to the desired on time. Single digit numbers must have a leading zero. For example, to set an on time of 0.5 seconds, scan the bar code below, then scan the "0", "5" and "0" bar codes; to set an on time of 10.5 seconds, scan the bar code below, then scan the "1", "0" and "5" bar codes. To change the selection or cancel an incorrect entry, scan [Cancel](#) on [page 8-74](#).



Laser On Time
(Default: 3.0 sec.)

Aim Duration

Parameter # 0xED

When a scan engine with an aim mode (see [Table 10-10 on page 10-19](#)) is triggered either by a trigger pull, or a [START_DECODE](#) command, this parameter sets the duration the aiming pattern is seen before a scan attempt begins. It does not apply to the aim signal or the [AIM_ON](#) command. It is programmable in 0.1 second increments from 0.0 to 9.9 seconds. No aim pattern is visible when the value is 0.0. For more information on the use of this parameter, see the [AIM_ON](#) command on [page 10-5](#).

To set an aim duration, scan the bar code below. Next scan two numeric bar codes beginning on [page 8-73](#) that correspond to the desired aim duration. Single digit numbers must have a leading zero. For example, to set an aim duration of 0.5 seconds, scan the bar code below, then scan the "0" and "5" bar codes. To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



Aim Duration
(Default: 0.0 sec.)

Scan Angle

Parameter # 0xBF

This parameter sets the scan angle to narrow or wide.



Narrow Angle (35°)
(0x05)



***Wide Angle (47°)**
(0x06)



Note

The allowed values for this setting are different for some legacy models of scan engines. These old values can still be used and are interpreted by the scan engine as follows.

| 0x00 - 0x05 | 0x06 - 0x2C | 0x2D - 0x4A | 0x4B - 0xFF |
|---------------|-------------|---------------|-------------|
| Narrow (0x05) | Wide (0x06) | Narrow (0x05) | Wide (0x06) |

Power Mode

Parameter # 0x80

This parameter determines the power mode of the engine.

In Low Power mode, the scan engine enters into a low power consumption Sleep power state whenever possible (provided all WAKEUP commands were released). See [Power Management on page 1-4](#).

In Continuous Power mode, the scan engine remains in the Awake state after each decode attempt (see [Power Management on page 1-4](#)).

The Sleep and Awake commands (see [SLEEP on page 10-22](#) and [WAKEUP on page 10-25](#)) can be used to change the power state in either the Low Power mode or the Continuous Power mode.



Continuous Power
(0x00)



Low Power
(0x01)

Triggering Modes

Parameter # 0x8A

Choose one of the options below to trigger the scan engine. Bar codes and option numbers are on the following page.

- **Scan (Level)** - A trigger pull activates the laser and decode processing. The laser remains on and decode processing continues until a trigger release, a valid decode, or the Laser On Time-out is reached.
- **Scan (Pulse)** - A trigger pull activates the laser and decode processing. The laser remains on and decode processing continues until a valid decode or the Laser On Time-out is reached.
- **Continuous** - The laser is always on and decoding.
- **Blink** - This trigger mode is used for triggerless operation. Scanning range is reduced in this mode. This mode cannot be used with engines that support an aim mode (see [Table 10-10 on page 10-19](#)).
- **Host** - A host command issues the triggering signal. The scan engine interprets an actual trigger pull as a Level triggering option.



***Level**
(0X00)



Pulse
(0X02)



Continuous
(0X04)



Blinking
(0X07)



Host
(0X08)

Time-out Between Same Symbol

Parameter # 0x89

When in Continuous triggering mode, this parameter sets the minimum time that must elapse before the scan engine decodes a second bar code identical to one just decoded. This reduces the risk of accidentally scanning the same symbol twice. It is programmable in 0.1 second increments from 0.0 to 9.9 seconds.

To set a time-out between same symbol, scan the bar code below. Next scan two numeric bar codes beginning on [page 8-73](#) that correspond to the desired time-out. Single digit values must have a leading zero. For example, to set a time-out of 0.5 seconds, scan the bar code below, then scan the "0" and "5" bar codes. To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).

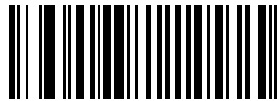


Time-out Between Same Symbol
(Default: 1.0 sec.)

Beep After Good Decode

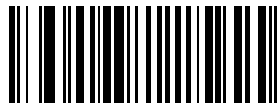
Parameter # 0x38

Scan this symbol to set the scan engine to beep after a good decode.



***Beep After Good Decode**
(0x01)

Scan this symbol to set the scan engine not to beep after a good decode. The beeper still operates during parameter menu scanning and indicates error conditions.



Do Not Beep After Good Decode
(0x00)

Transmit “No Read” Message

Parameter # 0x5E

Enable this option to transmit “NR” if a symbol does not decode during the timeout period or before the trigger is released. Any enabled prefix or suffixes are appended around this message.



**Enable No Read
(0x01)**

When disabled, and a symbol cannot be decoded, no message is sent to the host.



***Disable No Read
(0x00)**

Parameter Scanning

Parameter # 0xEC

To disable decoding of parameter bar codes, scan the bar code below. The **Set Defaults** parameter bar code can still be decoded. To enable decoding of parameter bar codes, either scan **Enable Parameter Scanning** below, **Set Factory Defaults** on [page 8-7](#) or set this parameter to 0x01 via a serial command.



***Enable Parameter Scanning
(0x01)**



**Disable Parameter Scanning
(0x00)**

Linear Code Type Security Level

Parameter # 0x4E

The SE-955 offers four levels of decode security for linear code types (e.g. Code 39, Interleaved 2 of 5). Select higher security levels for decreasing levels of bar code quality. As security levels increase, the scan engine's aggressiveness decreases.

Select the security level appropriate for your bar code quality.

Linear Security Level 1

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

| Code Type | Length |
|-----------|-----------|
| Codabar | All |
| MSI | 4 or less |
| D 2 of 5 | 8 or less |
| I 2 of 5 | 8 or less |



***Linear Security Level 1
(0x01)**

Linear Security Level 2

All code types must be successfully read twice before being decoded.



**Linear Security Level 2
(0x02)**

Linear Security Level 3

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

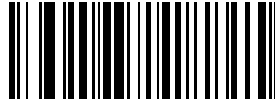
| Code Type | Length |
|-----------|-----------|
| MSI | 4 or less |
| D 2 of 5 | 8 or less |
| I 2 of 5 | 8 or less |



**Linear Security Level 3
(0x03)**

Linear Security Level 4

All code types must be successfully read three times before being decoded.



Linear Security Level 4
(0x04)

Bi-directional Redundancy

Parameter # 0x43

This parameter is only valid when a [Linear Code Type Security Level](#) is enabled (see [page 8-16](#)). When this parameter is enabled, a bar code must be successfully scanned in both directions (forward and reverse) before being decoded.



Enable Bi-directional Redundancy
(0x01)



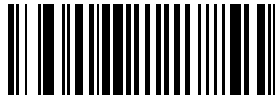
***Disable Bi-directional Redundancy**
(0x00)

UPC/EAN

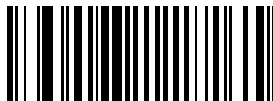
Enable/Disable UPC-A

Parameter # 0x01

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



***Enable UPC-A
(0x01)**

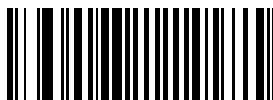


**Disable UPC-A
(0x00)**

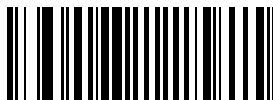
Enable/Disable UPC-E

Parameter # 0x02

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



***Enable UPC-E
(0x01)**



**Disable UPC-E
(0x00)**

Enable/Disable UPC-E1

Parameter # 0x0C

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
(0x01)**

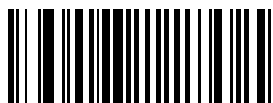


***Disable UPC-E1
(0x00)**

Enable/Disable EAN-8

Parameter # 0x04

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



***Enable EAN-8
(0x01)**

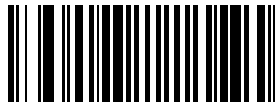


**Disable EAN-8
(0x00)**

Enable/Disable EAN-13

Parameter # 0x03

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



***Enable EAN-13
(0x01)**



**Disable EAN-13
(0x00)**

Enable/Disable Bookland EAN

Parameter # 0x53

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



**Enable Bookland EAN
(0x01)**



***Disable Bookland EAN
(0x00)**

Decode UPC/EAN Supplementals

Parameter # 0x10

Supplementals are appended characters (2 or 5) according to specific code format conventions (e.g., UPC A+2, UPC E+2). Several options are available:

- If **Decode UPC/EAN with Supplemental** characters is selected, the scan engine does not decode UPC/EAN symbols without supplemental characters.
- If **Ignore UPC/EAN with Supplemental** characters is selected, and the SE-955 is presented with a UPC/EAN symbol with a supplemental, the scan engine decodes the UPC/EAN and ignores the supplemental characters.
- If **Autodiscriminate UPC/EAN Supplementals** is selected, scan [Decode UPC/EAN Supplemental Redundancy on page 8-22](#), then select a value from the numeric bar codes beginning on [page 8-73](#). A value of 5 or more is recommended.
- Select **Enable 378/379 Supplemental Mode** to enable the SE-955 to identify supplementals for EAN-13 bar codes starting with a '378' or '379' prefix only. All other UPC/EAN bar codes are decoded immediately and the supplemental characters ignored.
- Select **Enable 978 Supplemental Mode** to enable the SE-955 to identify supplementals for EAN-13 bar codes starting with a '978' prefix only. All other UPC/EAN bar codes are decoded immediately and the supplemental characters ignored.
- Select **Enable Smart Supplemental Mode** to enable the SE-955 to identify supplementals for EAN-13 bar codes starting with a '378', '379', or '978' prefix only. All other UPC/EAN bar codes are decoded immediately and the supplemental characters ignored.

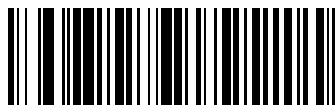


To minimize the risk of invalid data transmission, we recommend selecting whether to read or ignore supplemental characters.

Select the desired option by scanning one of the following bar codes.



Decode UPC/EAN With Supplementals
(0x01)

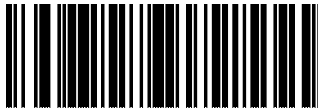


***Ignore UPC/EAN With Supplementals**
(0x00)

Decode UPC/EAN Supplementals (continued)



**Autodiscriminate UPC/EAN Supplementals
(0x02)**



**Enable 378/379 Supplemental Mode
(0x04)**



**Enable 978 Supplemental Mode
(0x05)**



**Enable Smart Supplemental Mode
(0x03)**

Decode UPC/EAN Supplemental Redundancy

Parameter # 0x50

With *Autodiscriminate UPC/EAN Supplementals* selected, this option adjusts the number of times a symbol without supplementals are decoded before transmission. The range is from 2 to 30 times. Five or above is recommended when decoding a mix of UPC/EAN symbols with and without supplementals, and the autodiscriminate option is selected.

Scan the bar code below to select a decode redundancy value. Next scan two numeric bar codes beginning on [page 8-73](#). Single digit numbers must have a leading zero. To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



**Decode UPC/EAN
Supplemental Redundancy
(Default: 7)**

Transmit UPC-A Check Digit

Parameter # 0x28

Scan the appropriate bar code below to transmit the symbol with or without the UPC-A check digit.



***Transmit UPC-A Check Digit
(0x01)**



**Do Not Transmit UPC-A Check Digit
(0x00)**

Transmit UPC-E Check Digit

Parameter # 0x29

Scan the appropriate bar code below to transmit the symbol with or without the UPC-E check digit.



***Transmit UPC-E Check Digit
(0x01)**



**Do Not Transmit UPC-E Check Digit
(0x00)**

Transmit UPC-E1 Check Digit

Parameter # 0x2A

Scan the appropriate bar code below to transmit the symbol with or without the UPC-E1 check digit.



***Transmit UPC-E1 Check Digit
(0x01)**

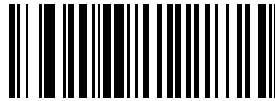


**Do Not Transmit UPC-E1 Check Digit
(0x00)**

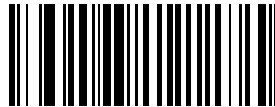
UPC-A Preamble

Parameter # 0x22

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-A symbol. Select one of the following options for transmitting UPC-A preamble to the host device: transmit system character only, transmit system character and country code ("0" for USA), or transmit no preamble.



No Preamble
(<DATA>)
(0x00)



***System Character**
(<SYSTEM CHARACTER> <DATA>)
(0x01)

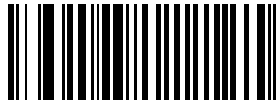


System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(0x02)

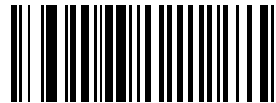
UPC-E Preamble

Parameter # 0x23

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-E symbol. Select one of the following options for transmitting UPC-E preamble to the host device: transmit system character only, transmit system character and country code ("0" for USA), or transmit no preamble.



No Preamble
(<DATA>)
(0x00)



***System Character**
(<SYSTEM CHARACTER> <DATA>)
(0x01)



System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(0x02)

UPC-E1 Preamble

Parameter # 0x24

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-E1 symbol. Select one of the following options for transmitting UPC-E1 preamble to the host device: transmit system character only, transmit system character and country code ("0" for USA), or transmit no preamble.



No Preamble
(<DATA>)
(0x00)



***System Character**
(<SYSTEM CHARACTER> <DATA>)
(0x01)



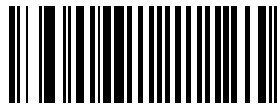
System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(0x02)

Convert UPC-E to UPC-A

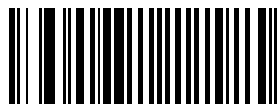
Parameter # 0x25

Enable this parameter to convert UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Scan **DO NOT CONVERT UPC-E TO UPC-A** to transmit UPC-E (zero suppressed) decoded data.



Convert UPC-E to UPC-A (Enable)
(0x01)



***Do Not Convert UPC-E to UPC-A (Disable)**
(0x00)

Convert UPC-E1 to UPC-A

Parameter # 0x26

Enable this parameter to convert UPC-E1 (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Scan **DO NOT CONVERT UPC-E TO UPC-A** to transmit UPC-E1 (zero suppressed) decoded data.



Convert UPC-E1 to UPC-A (Enable)
(0x01)



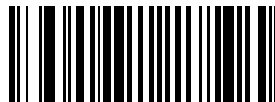
***Do Not Convert UPC-E1 to UPC-A (Disable)**
(0x00)

EAN Zero Extend

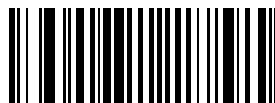
Parameter # 0x27

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

Disable this parameter to transmit EAN-8 symbols as is.



**Enable EAN Zero Extend
(0x01)**



***Disable EAN Zero Extend
(0x00)**

Convert EAN-8 to EAN-13 Type

Parameter # 0xE0

When EAN Zero Extend is enabled, you can label the extended symbol as either an EAN-13 bar code, or an EAN-8 bar code. This affects [Transmit Code ID Character](#) and [DECODE_DATA](#) message.

When EAN Zero Extend is disabled, this parameter has no effect on bar code data.



***Type Is EAN-13
(0x00)**



**Type Is EAN-8
(0x01)**

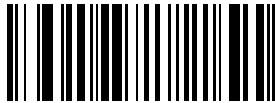
UPC/EAN Security Level

Parameter # 0x4D

The SE-955 offers four levels of decode security for UPC/EAN bar codes. Increasing levels of security are provided for decreasing levels of bar code quality. Select higher levels of security for decreasing levels of bar code quality. Increasing security decreases the scan engine's aggressiveness, so choose only that level of security necessary for the application.

UPC/EAN Security Level 0

This default setting allows the scan engine to operate in its most aggressive state, while providing sufficient security in decoding most "in-spec" UPC/EAN bar codes.



***UPC/EAN Security Level 0**
(0x00)

UPC/EAN Security Level 1

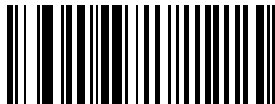
As bar code quality levels diminish, certain characters become prone to mis-decodes before others (i.e., 1, 2, 7, 8). If mis-decodes of poorly printed bar codes occur, and the mis-decodes are limited to these characters, select this security level.



UPC/EAN Security Level 1
(0x01)

UPC/EAN Security Level 2

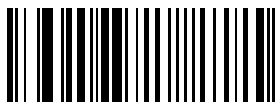
If mis-decodes of poorly printed bar codes occur, and the mis-decodes are not limited to characters 1, 2, 7, and 8, select this security level.



UPC/EAN Security Level 2
(0x02)

UPC/EAN Security Level 3

If misdecodes still occur after selecting Security Level 2, 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 scan engine. If this level of security is necessary, try to improve the quality of the bar codes.



UPC/EAN Security Level 3
(0x03)

UCC Coupon Extended Code

Parameter # 0x55

The UCC Coupon Extended Code is an additional bar code adjacent to a UCC Coupon Code. To enable or disable UCC Coupon Extended Code, scan the appropriate bar code below.



**Enable UCC Coupon Extended Code
(0x01)**



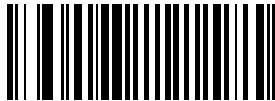
***Disable UCC Coupon Extended Code
(0x00)**

Code 128

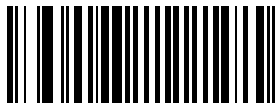
Enable/Disable Code 128

Parameter # 0x08

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



***Enable Code 128
(0x01)**



**Disable Code 128
(0x00)**

Enable/Disable UCC/EAN-128

Parameter # 0x0E

To enable or disable UCC/EAN-128, scan the appropriate bar code below. (See [Appendix B, Miscellaneous Code Information](#) for details on [UCC/EAN-128](#).)



***Enable UCC/EAN-128
(0x01)**



**Disable UCC/EAN-128
(0x00)**

Enable/Disable ISBT 128

Parameter # 0x54

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



***Enable ISBT 128
(0x01)**



**Disable ISBT 128
(0x00)**

Lengths for Code 128

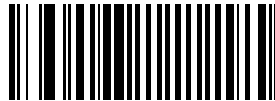
No length setting is required for Code 128.

Code 39

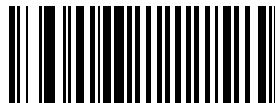
Enable/Disable Code 39

Parameter # 0x00

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



***Enable Code 39
(0x01)**



**Disable Code 39
(0x00)**

Enable/Disable Trioptic Code 39

Parameter # 0x0D

Trioptic Code 39 is a variant of Code 39 used in marking 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
(0x01)**



***Disable Trioptic Code 39
(0x00)**



Note

Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If an error beep sounds when enabling Trioptic Code 39, disable Code 39 Full ASCII and try again.

Convert Code 39 to Code 32 (Italian Pharma Code)

Parameter # 0x56

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
(0x01)**



***Disable Convert Code 39 to Code 32
(0x00)**

Code 32 Prefix

Parameter # 0xE7

Enable this parameter to add the prefix character "A" to all Code 32 bar codes. Convert Code 39 to Code 32 (Italian Pharma Code) must be enabled for this parameter to function.



**Enable Code 32 Prefix
(0x01)**



***Disable Code 32 Prefix
(0x00)**

Set Lengths for Code 39

Parameter # L1 = 0x12, L2 = 0x13

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. To set lengths via serial commands, see [Setting Code Lengths Via Serial Commands](#) on page B-6.



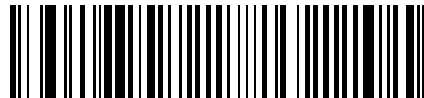
When setting lengths, single digit numbers must always be preceded by a leading zero.

One Discrete Length - This option limits decodes to only those Code 39 symbols containing a selected length. Lengths are selected from the numeric bar codes beginning on [page 8-73](#). For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, then scan **1** followed by **4**. To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



Code 39 - One Discrete Length

Two Discrete Lengths - This option limits decodes to only those Code 39 symbols containing either of two selected lengths. Lengths are selected from the numeric bar codes beginning on [page 8-73](#). 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**. To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



Code 39 - Two Discrete Lengths

Length Within Range - This option limits decodes to only those Code 39 symbols within a specified range. 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**. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



Code 39 - Length Within Range

Any Length - Scan this option to decode Code 39 symbols containing any number of characters.

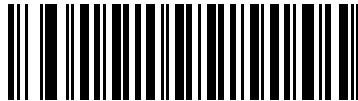


Code 39 - Any Length

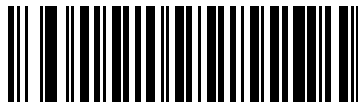
Code 39 Check Digit Verification

Parameter # 0x30

When this feature is enabled, the scan engine 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. Only enable this feature if your Code 39 symbols contain a modulo 43 check digit.



**Verify Code 39 Check Digit
(0x01)**

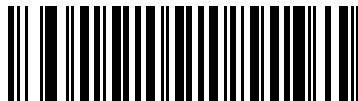


***Do Not Verify Code 39 Check Digit
(0x00)**

Transmit Code 39 Check Digit

Parameter # 0x2B

Scan this symbol to transmit the check digit with the data.



**Transmit Code 39 Check Digit (Enable)
(0x01)**

Scan this symbol to transmit data without the check digit.



***Do Not Transmit Code 39 Check Digit (Disable)
(0x00)**

Enable/Disable Code 39 Full ASCII

Parameter # 0x11

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 appropriate bar code below.

Refer to Table B-3 on page B-5 for the mapping of Code 39 characters to ASCII values.



**Enable Code 39 Full ASCII
(0x00)**



***Disable Code 39 Full ASCII
(0x00)**



Note

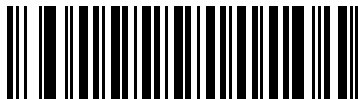
Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If you get an error beep when enabling Code 39 Full ASCII, disable Trioptic Code 39 and try again.

Code 93

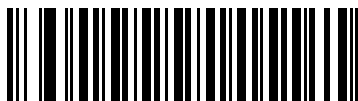
Enable/Disable Code 93

Parameter # 0x09

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



Enable Code 93
(0x01)



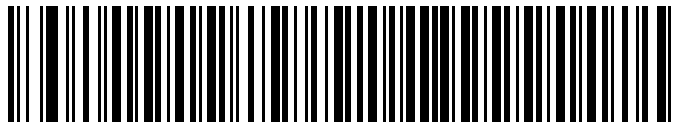
***Disable Code 93**
(0x00)

Set Lengths for Code 93

Parameter # L1 = 0x1A, L2 = 0x1B

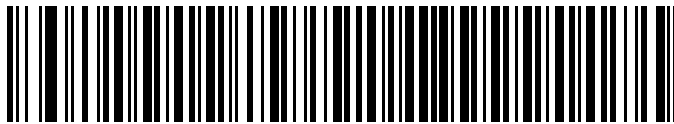
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Code 93 may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see [Setting Code Lengths Via Serial Commands](#) on page B-6.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **Code 93 One Discrete Length**, then scan **1, 4**, to limit the decoding to only Code 93 symbols containing 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



Code 93 - One Discrete Length

Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **Code 93 Two Discrete Lengths**, then scan **0, 2, 1, 4**, to limit the decoding to only Code 93 symbols containing 2 or 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



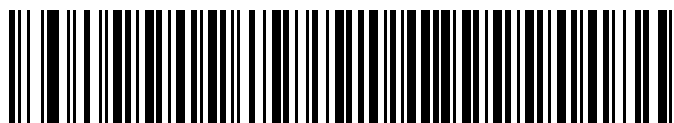
Code 93 - Two Discrete Lengths

Length Within Range - This option sets the unit to decode a code type within a specified range. 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). Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



Code 93 - Length Within Range

Any Length - Scan this option to decode Code 93 symbols containing any number of characters.



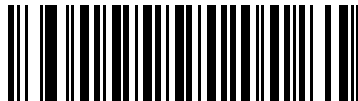
Code 93 - Any Length

Code 11

Enable/Disable Code 11

Parameter # 0x0A

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



Enable Code 11
(0x01)



*Disable Code 11
(0x00)

Set Lengths for Code 11

Parameter # L1 = 0x1C, L2 = 0x1D

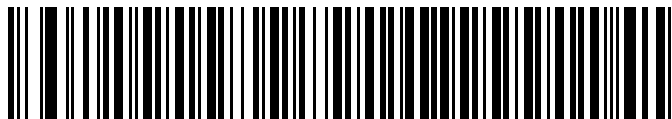
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 11 to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only Code 11 symbols containing a selected length. Select the length using the numeric bar codes beginning on [page 8-73](#). For example, to decode only Code 11 symbols with 14 characters, scan **Code 11 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan the [Cancel](#) bar code on [page 8-74](#).
- **Two Discrete Lengths** - Select this option to decode only Code 11 symbols containing either of two selected lengths. Select lengths using the numeric bar codes beginning on [page 8-73](#). 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**. To correct an error or to change the selection, scan the [Cancel](#) bar code on [page 8-74](#).
- **Length Within Range** - Select this option to decode a Code 11 symbol with a specific length range. Select lengths using numeric bar codes beginning on [page 8-73](#). 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). To correct an error or change the selection, scan the [Cancel](#) bar code on [page 8-74](#).
- **Any Length** - Scan this option to decode Code 11 symbols containing any number of characters within the scan engine capability.

Set Lengths for Code 11 (continued)



Code 11 - One Discrete Length



Code 11 - Two Discrete Lengths



Code 11 - Length Within Range



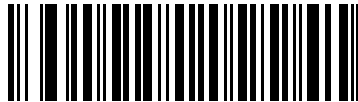
Code 11 - Any Length

Code 11 Check Digit Verification

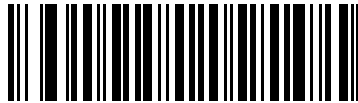
Parameter # 0x34

This feature allows the scan engine 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.

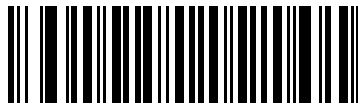
To enable this feature, scan the bar code below corresponding to the number of check digits encoded in your Code 11 symbols.



***Disable**
(0x00)



One Check Digit
(0x01)

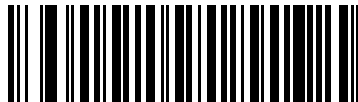


Two Check Digits
(0x02)

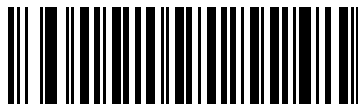
Transmit Code 11 Check Digits

Parameter # 0x2F

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



Transmit Code 11 Check Digit(s) (Enable)
(0x01)



***Do Not Transmit Code 11 Check Digit(s) (Disable)**
(0x00)



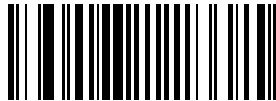
Code 11 Check Digit Verification must be enabled for this parameter to function.

Interleaved 2 of 5

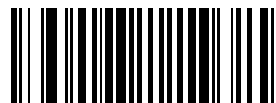
Enable/Disable Interleaved 2 of 5

Parameter # 0x06

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



***Enable Interleaved 2 of 5
(0x01)**



**Disable Interleaved 2 of 5
(0x00)**

Set Lengths for Interleaved 2 of 5

Parameter # L1 = 0x16, L2 = 0x17

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. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands* on page B-8.



When setting lengths, single digit numbers must always be preceded by a leading zero.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **I 2 of 5 One Discrete Length**, then scan **1, 4**, to decode only I 2 of 5 symbols containing 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



I 2 of 5 - One Discrete Length

Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **I 2 of 5 Two Discrete Lengths**, then scan **0, 6, 1, 4**, to decode only I 2 of 5 symbols containing 6 or 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



I 2 of 5 - Two Discrete Lengths

Set Lengths for Interleaved 2 of 5 (continued)

Length Within Range - Select this option to decode only codes within a specified range. 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). Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).



I 2 of 5 - Length Within Range

Any Length - Scan this option to decode I 2 of 5 symbols containing any number of characters.



Note

Selecting this option may lead to misdecodes for I 2 of 5 codes.



I 2 of 5 - Any Length

1 2 of 5 Check Digit Verification

Parameter # 0x31

When enabled, this parameter checks the integrity of an 1 2 of 5 symbol to ensure it complies with a specified algorithm, either USS (Uniform Symbology Specification), or OPCC (Optical Product Code Council).



***Disable
(0x00)**



**USS Check Digit
(0x01)**



**OPCC Check Digit
(0x02)**

Transmit I 2 of 5 Check Digit

Parameter # 0x2C

Scan this symbol to transmit the check digit with the data.



**Transmit I 2 of 5 Check Digit (Enable)
(0x01)**

Scan this symbol to transmit data without the check digit.



***Do Not Transmit I 2 of 5 Check Digit (Disable)
(0x00)**

Convert I 2 of 5 to EAN-13

Parameter # 0x52

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



**Convert I 2 of 5 to EAN-13 (Enable)
(0x01)**



***Do Not Convert I 2 of 5 to EAN-13 (Disable)
(0x00)**

Discrete 2 of 5

Enable/Disable Discrete 2 of 5

Parameter # 0x05

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



**Enable Discrete 2 of 5
(0x01)**



***Disable Discrete 2 of 5
(0x00)**

Set Lengths for Discrete 2 of 5

Parameter # L1 = 0x14, L2 = 0x15

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. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands* on page B-8.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **D 2 of 5 One Discrete Length**, then scan **1, 4**, to decode only D 2 of 5 symbols containing 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



D 2 of 5 - One Discrete Length

Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **D 2 of 5 Two Discrete Lengths**, then scan **0, 2, 1, 4**, to decode only D 2 of 5 symbols containing 2 or 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



D 2 of 5 - Two Discrete Lengths

Length Within Range - Select this option to decode codes within a specified range. 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 be preceded by a leading zero). Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



D 2 of 5 - Length Within Range

Any Length - Scan this option to decode D 2 of 5 symbols containing any number of characters.



Selecting this option may lead to misdecodes for D 2 of 5 codes.



D 2 of 5 - Any Length

Chinese 2 of 5

Enable/Disable Chinese 2 of 5

Parameter # 0xF0 0x98

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



**Enable Chinese 2 of 5
(0x01)**



***Disable Chinese 2 of 5
(0x00)**

Codabar

Enable/Disable Codabar

Parameter # 0x07

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



Enable Codabar
(0x01)



***Disable Codabar**
(0x00)

Set Lengths for Codabar

Parameter # L1 = 0x18, L2 = 0x19

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. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands* on page B-8.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **Codabar One Discrete Length**, then scan **1, 4**, to decode only Codabar symbols containing 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



Codabar - One Discrete Length

Two Discrete Lengths - This option sets the unit to decode only those codes containing two selected lengths. For example, select **Codabar Two Discrete Lengths**, then scan **0, 2, 1, 4**, to decode only Codabar symbols containing 6 or 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



Codabar - Two Discrete Lengths

Length Within Range - Select this option to decode a code within a specified range. 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). Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



Codabar - Length Within Range

Any Length - Scan this option to decode Codabar symbols containing any number of characters.



Codabar - Any Length

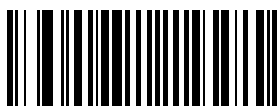
CLSI Editing

Parameter # 0x36

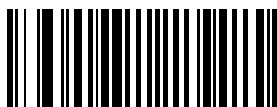
When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol.



Symbol length does not include start and stop characters.



**Enable CLSI Editing
(0x01)**

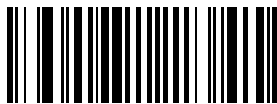


***Disable CLSI Editing
(0x00)**

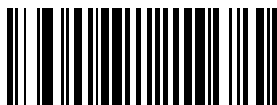
NOTIS Editing

Parameter # 0x37

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol.



**Enable NOTIS Editing
(0x01)**



***Disable NOTIS Editing
(0x00)**

MSI

Enable/Disable MSI

Parameter # 0x0B

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



Enable MSI
(0x01)



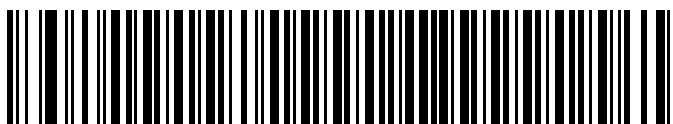
***Disable MSI**
(0x00)

Set Lengths for MSI

Parameter # L1 = 0x1E, L2 = 0x1F

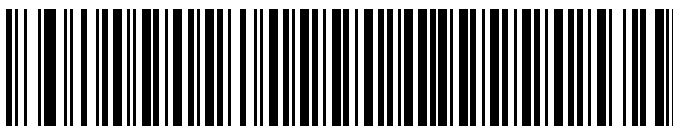
The length of a code refers to the number of characters (i.e., human readable characters) the code contains, and includes check digits. Lengths for MSI can be set for any length, one or two discrete lengths, or lengths within a specific range. See Table B-5 on page B-9 for ASCII equivalents. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands* on page B-8.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **MSI Plessey One Discrete Length**, then scan **1, 4**, to decode only MSI Plessey symbols containing 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



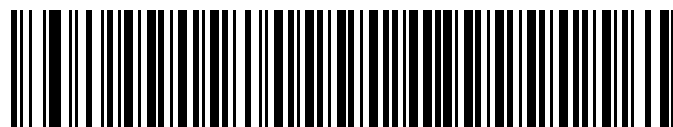
MSI - One Discrete Length

Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **MSI Plessey Two Discrete Lengths**, then scan **0, 6, 1, 4**, to decode only MSI Plessey symbols containing 6 or 14 characters. Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



MSI - Two Discrete Lengths

Length Within Range - Select this option to decode codes within a specified range. 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). Numeric bar codes begin on [page 8-73](#). To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).

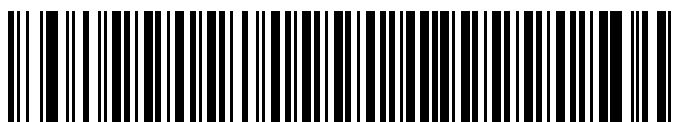


MSI - Length Within Range

Any Length - Scan this option to decode MSI Plessey symbols containing any number of characters.



Selecting this option may lead to misdecodes for MSI codes.



MSI - Any Length

MSI Check Digits

Parameter # 0x32

These check digits at the end of the bar code verify the integrity of the data. At least one check digit is always required. Check digits are not automatically transmitted with the data.



***One MSI Check Digit
(0x00)**

If two check digits are selected, also select an [MSI Check Digit Algorithm on page 8-58](#).



**Two MSI Check Digit
(0x01)**

Transmit MSI Check Digit

Parameter # 0x2E

Scan this symbol to transmit the check digit with the data.



**Transmit MSI Check Digit (Enable)
(0x01)**

Scan this symbol to transmit data without the check digit.



***Do Not Transmit MSI Check Digit (Disable)
(0x00)**

MSI Check Digit Algorithm

Parameter # 0x33

When the Two MSI check digits option is selected, an additional verification is required to ensure integrity. Select one of the following algorithms.



MOD 10/ MOD 11
(0x00)



***MOD 10/ MOD 10**
(0x01)

RSS

Enable/Disable RSS-14

Parameter # 0xF0 0x52

To enable or disable RSS-14, scan the appropriate bar code below.



**Enable RSS-14
(0x01)**



***Disable RSS-14
(0x00)**

Enable/Disable RSS-Limited

Parameter # 0xF0 0x53

To enable or disable RSS-Limited, scan the appropriate bar code below.



**Enable RSS-Limited
(0x01)**

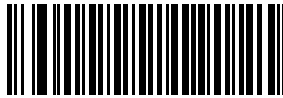


***Disable RSS-Limited
(0x00)**

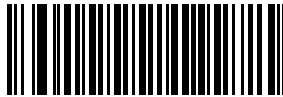
Enable/Disable RSS-Expanded

Parameter # 0xF0 0x54

To enable or disable RSS-Expanded, scan the appropriate bar code below.



**Enable RSS-Expanded
(0x01)**



***Disable RSS-Expanded
(0x00)**

Convert RSS to UPC/EAN

Parameter # 0xF0 0x8D

This parameter only applies to RSS-14 and RSS Limited symbols. 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 Convert RSS to UPC/EAN



***Disable Convert RSS to UPC/EAN**

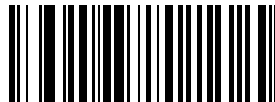
Transmit Code ID Character

Parameter # 0x2D

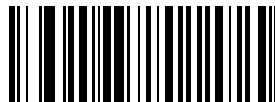
A code ID character identifies the code type of a scanned bar code. This can be useful when decoding more than one code type. The code ID character is inserted between the prefix character (if selected) and the decoded symbol.

Select no code ID character, a Symbol Code ID character, or an AIM Code ID character. The Symbol Code ID characters are listed below; see [Appendix B, Miscellaneous Code Information](#) for [AIM Code Identifiers](#).

- A = UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13
- B = Code 39, Code 32
- C = Codabar
- D = Code 128, ISBT 128
- E = Code 93
- F = Interleaved 2 of 5
- G = Discrete 2 of 5
- J = MSI
- K = UCC/EAN-128
- L = Bookland EAN
- M = Trioptic Code 39
- N = Coupon Code
- R = RSS-14, RSS-Limited, RSS-Expanded



Symbol Code ID Character
(0x02)



Aim Code ID Character
(0x01)



***None**
(0x00)

Prefix/Suffix Values

Parameter # $P = 0x69$, $S1 = 0x68$, $S2 = 0x6A$

A prefix and/or one or two suffixes can be appended to scan data for use in data editing. To set these values, scan a four-digit number (i.e. four bar codes) that corresponds to ASCII values. See the [Table B-5 on page B-7](#) and [Numeric Bar Codes on page 8-73](#). To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#). To set the Prefix/Suffix values via serial commands, see [Setting Prefixes and Suffixes Via Serial Commands on page B-7](#).



In order to use Prefix/Suffix values, the [Scan Data Transmission Format on page 8-63](#) must be set. See [page 8-62](#).



Scan Prefix



Scan Suffix 1



Scan Suffix 2



Data Format Cancel

Scan Data Transmission Format

Parameter # 0xEB

To change the Scan Data Transmission Format, scan one of the eight bar codes corresponding to the desired format.



***Data As Is
(0x00)**



**<DATA> <SUFFIX 1>
(0x01)**



**<DATA> <SUFFIX 2>
(0x02)**



**<DATA> <SUFFIX 1> <SUFFIX 2>
(0x03)**



**<PREFIX> <DATA> <
(0x04)**

Scan Data Transmission Format (continued)



<PREFIX> <DATA> <SUFFIX 1>
(0x05)



<PREFIX> <DATA> <SUFFIX 2>
(0x06)



<PREFIX> <DATA> <SUFFIX 1> <SUFFIX 2>
(0x07)

Serial Parameters

Baud Rate

Parameter # 0x9C

Baud rate is the number of bits of data transmitted per second. The scan engine's baud rate setting should match the data rate setting of the host device. If not, data may not reach the host device or may reach it in distorted form.



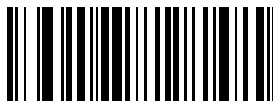
**Baud Rate 300
(0x01)**



**Baud Rate 600
(0x02)**



**Baud Rate 1200
(0x03)**



**Baud Rate 2400
(0x04)**



**Baud Rate 4800
(0x05)**

Baud Rate (continued)



***Baud Rate 9600**
(0x06)



Baud Rate 19,200
(0x07)



Baud Rate 38,400
(0x08)

Parity

Parameter # 0x9E

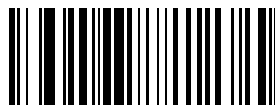
A parity check bit is the most significant bit of each ASCII coded character. Select the parity type according to host device requirements.

If you select **ODD** parity, the parity bit has a value 0 or 1, based on data, to ensure than an odd number of 1 bits is contained in the coded character.



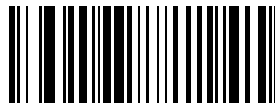
Odd
(0x00)

If you select **EVEN** parity, the parity bit has a value 0 or 1, based on data, to ensure than an even number of 1 bits is contained in the coded character.



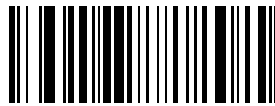
Even
(0x01)

Select **MARK** parity and the parity bit is always 1.



Mark
(0x02)

Select **SPACE** parity and the parity bit is always 0.



Space
(0x03)

If no parity is required, select **NONE**.



***None**
(0x04)

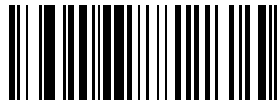
Software Handshaking

Parameter # 0x9F

This parameter offers control of the data transmission process in addition to that offered by hardware handshaking. Hardware handshaking is always enabled and cannot be disabled by the user.

Disable ACK/NAK Handshaking

When this option is selected, the decoder neither generates nor expects ACK/NAK handshaking packets.

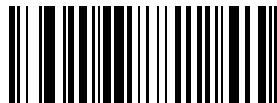


Disable ACK/NAK
(0x00)

Enable ACK/NAK Handshaking

When this option is selected, after transmitting data, the scan engine expects either an ACK or NAK response from the host. The scan engine also ACKs or NAKs messages from the host.

The scan engine waits up to the programmable Host Serial Response Time-out to receive an ACK or NAK. If the scan engine does not get a response in this time, it resends its data up to two times before discarding the data and declaring a transmit error.



***Enable ACK/NAK**
(0x01)

Decode Data Packet Format

Parameter # 0xEE

This parameter selects whether decoded data is transmitted in raw format (unpacketed), or transmitted with the packet format as defined by the serial protocol.

If the raw format is selected, ACK/NAK handshaking is disabled for decode data.



***Send Raw Decode Data
(0x00)**



**Send Packeted Decode Data
(0x01)**

Host Serial Response Time-out

Parameter # 0x9B

This parameter specifies how long the decoder waits for an ACK or NAK before resending. Also, if the decoder wants to send, and the host has already been granted permission to send, the decoder waits for the designated time-out before declaring an error.

The delay period can range from 0.0 to 9.9 seconds in 0.1 second increments. After scanning the bar code below, scan two numeric bar codes beginning on [page 8-73](#). Values less than 10 require a leading zero. To change the selection or cancel an incorrect entry, scan the [Cancel](#) bar code on [page 8-74](#).

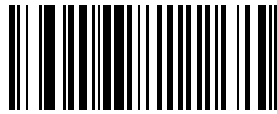


**Host Serial Response Time-out
(Default: 2.0 sec.)**

Stop Bit Select

Parameter # 0x9D

The stop bit(s) at the end of each transmitted character marks the end of transmission of one character and prepares the receiving device for the next character in the serial data stream. Set the number of stop bits (one or two) to match host device requirements.



***1 Stop Bit
(0x01)**



**2 Stop Bits
(0x02)**

Intercharacter Delay

Parameter # 0x6E

The intercharacter delay gives the host system time to service its receiver and perform other tasks between characters. Select the intercharacter delay option matching host requirements. The delay period can range from no delay to 99 msec in 1 msec increments. After scanning the bar code below, scan two bar codes beginning on [page 8-71](#) to set the desired time-out. To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



**Intercharacter Delay
(Default: 0 sec.)**

Host Character Time-out

Parameter # 0xEF

This parameter determines the maximum time the decoder waits between characters transmitted by the host before discarding the received data and declaring an error. The time-out is set in 0.01 second increments from 0.01 seconds to 0.99 seconds. After scanning the bar code below, scan two bar codes beginning on [page 8-71](#) to set the desired time-out. To change the selection or cancel an incorrect entry, scan the *Cancel* bar code on [page 8-74](#).



**Host Character Time-out
(Default: 200 msec.)**

Event Reporting

The host can request the decoder to furnish certain information (events) relative to the decoder's behavior. Enable or disable the events listed in [Table 8-2](#) by scanning the appropriate bar codes on the pages that follow. Parameter number format for these parameters follow those shown in [Table 10-9 on page 10-17](#) for parameters numbered 256 or higher.

Table 8-2. Event Codes

| Event Class | Event | Code Reported |
|------------------------|--|---------------|
| Decode Event | Non parameter decode | 0x01 |
| Boot Up Event | System power-up | 0x03 |
| Parameter Event | Parameter entry error | 0x07 |
| | Parameter stored | 0x08 |
| | Defaults set (and parameter event is enabled by default) | 0x0A |
| | Number expected | 0x0F |

Decode Event

Parameter # 0xF0 0x00

When enabled, the decoder generates a message to the host whenever a bar code is successfully decoded. When disabled, no notification is sent.



**Enable
(0x01)**



***Disable
(0x00)**

Boot Up Event

Parameter # 0xF0 0x02

When enabled, the decoder sends a message to the host whenever power is applied. When disabled, no message is sent.



Enable
(0x01)



***Disable**
(0x00)

Parameter Event

Parameter # 0xF0 0x03

When enabled, the decoder sends a message to the host when one of the events specified in [Table 8-2 on page 8-71](#) occurs. When disabled, no message is sent.



Enable
(0x01)



***Disable**
(0x00)

Numeric Bar Codes

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



0



1



2



3



4

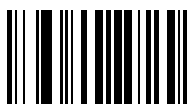


5

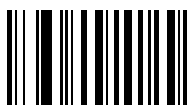
Numeric Bar Codes (continued)



6



7



8



9

Cancel

To change the selection or cancel an incorrect entry, scan the bar code below.



Cancel