CHAPTER 7 PARAMETER MENUS

Introduction

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

Operational Parameters

The SE965HP is shipped with the factory default settings shown in *Table 7-1 on page 7-2.* 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 7-8*.

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 9, Simple Serial Interface*.

Parameter Programming Recommendations

When setting parameters via bar code or via SSI with the permanent flag set, the following conditions must be met:

- The system must have stable power applied to the engine.
- The engine and host must be operating and communicating with no interference.
- Power must be maintained for at least two seconds after sending the command or scanning the parameter bar code.

If sending parameters upon every power up, ensure they are temporary. Motorola does not recommend sending permanent parameters or **Set Defaults** upon every power up. Motorola also recommends not using a hard power switch on the power supply.

Failure to meet these conditions can corrupt the scan engine's memory.

Parameter Defaults

Table 7-1 lists the factory defaults for all parameters. To change any option, scan the appropriate bar code(s).

Table 7-1 *Factory Default Table*

Parameter	Parameter Number (Hex)	Factory Default	Page Number
Set Factory Default		All Defaults	*7-8*
Beeper Volume	8Ch	Medium	*7-9*
Beeper Tone	91h	Medium Frequency	*7-10*
Beep After Good Decode	38h	Enable	*7-11*
Suppress Power-up Beeps	F1h D1h	Suppress	*7-11*
Decode Session Timeout	88h	3.0 sec	*7-12*
Aim Duration	EDh	0.0 sec	*7-12*
Scan Angle	BFh	Wide (47°)	*7-13*
Adaptive Scanning	F2h 51h	Enable	*7-13*
Trigger Mode	8Ah	Level	*7-14*
Enhanced Aim Timeouts Aim Timeout Scan Timeout	 F2h 55h F2h 56h	 2.0 sec 1.0 sec	*7-16*
Timeout Between Decodes, Same Symbol	89h	1.0 sec	*7-17*
Timeout Between Decodes, Different Symbols	90h	0.2 sec	*7-17*
Continuous Bar Code Read	F1h 89h	Disable	*7-18*
Unique Bar Code Reporting	F1h D3h	Disable	*7-18*
Transmit “No Read” Message	5Eh	Disable	*7-19*

***Refer to the *Simple Serial Interface (SSI) Programmer's Guide* for formatting of any parameter whose number is 0x100 or greater.**

Table 7-1 *Factory Default Table (Continued)*

Parameter	Parameter Number (Hex)	Factory Default	Page Number
Power Mode	80h	Low Power	7-20
Time Delay to Low Power Mode	92h	1 second	7-21
Parameter Scanning	ECh	Enable	7-23
Parameter Pass Through	F1h 71h	Disable	7-23
Disable All Symbologies	N/A	N/A	7-24
Linear Code Type Security Levels	4Eh	1	7-24
Bi-directional Redundancy	43h	Disable	7-26
UPC/EAN			
UPC-A	01h	Enable	7-26
UPC-E	02h	Enable	7-27
UPC-E1	0Ch	Disable	7-27
EAN-8/JAN-8	04h	Enable	7-28
EAN-13/JAN-13	03h	Enable	7-28
Bookland EAN	53h	Disable	7-29
Decode UPC/EAN Supplementals	10h	Ignore	7-30
User-Programmable Supplementals Supplemental 1: Supplemental 2:	 F1h 43h F1h 44h		7-33
Decode UPC/EAN Supplemental Redundancy	50h	7	7-33
Decode UPC/EAN/JAN Supplemental AIM ID Format	F1h A0h	Combined	7-34
Transmit UPC-A Check Digit	28h	Enable	7-35
Transmit UPC-E Check Digit	29h	Enable	7-35
Transmit UPC-E1 Check Digit	2Ah	Enable	7-36
UPC-A Preamble	22h	System Character	7-37
UPC-E Preamble	23h	System Character	7-38
UPC-E1 Preamble	24h	System Character	7-39
Convert UPC-E to A	25h	Disable	7-40
Convert UPC-E1 to A	26h	Disable	7-40
EAN-8 Zero Extend	27h	Disable	7-41

***Refer to the *Simple Serial Interface (SSI) Programmer's Guide* for formatting of any parameter whose number is 0x100 or greater.**

Table 7-1 *Factory Default Table (Continued)*

Parameter	Parameter Number (Hex)	Factory Default	Page Number
Bookland ISBN Format	F1h 40h	ISBN-10	*7-42*
UPC/EAN Security Level	4Dh	1	*7-43*
UCC Coupon Extended Code	55h	Disable	*7-44*
Coupon Report	F1h DAh	New Coupon Symbols	*7-45*
ISSN EAN	F1h 69h	Enable	*7-46*
Code 128			
Code 128	08h	Enable	*7-47*
Set Lengths for Code 128	D1h D2h	Any Length	*7-47*
GS1-128 (formerly UCC/EAN-128)	0Eh	Enable	*7-49*
ISBT 128	54h	Enable	*7-49*
ISBT Concatenation	F1h 41h	Disable	*7-50*
Check ISBT Table	F1h 42h	Enable	*7-51*
ISBT Concatenation Redundancy	DFh	10	*7-51*
Code 39			
Code 39	00h	Enable	*7-52*
Trioptic Code 39	0Dh	Disable	*7-52*
Convert Code 39 to Code 32	56h	Disable	*7-53*
Code 32 Prefix	E7h	Disable	*7-53*
Set Length(s) for Code 39	12h 13h	Length within Range: 2 - 55	*7-54*
Code 39 Check Digit Verification	30h	Disable	*7-56*
Transmit Code 39 Check Digit	2Bh	Disable	*7-56*
Code 39 Full ASCII Conversion	11h	Disable	*7-57*
Code 93			
Code 93	09h	Disable	*7-58*
Set Length(s) for Code 93	1Ah 1Bh	Length within Range: 4 - 55	*7-58*

***Refer to the *Simple Serial Interface (SSI) Programmer's Guide* for formatting of any parameter whose number is 0x100 or greater.**

Table 7-1 *Factory Default Table (Continued)*

Parameter	Parameter Number (Hex)	Factory Default	Page Number
Code 11			
Code 11	0Ah	Disable	*7-60*
Set Lengths for Code 11	1Ch 1Dh	Length within Range: 4 - 55	*7-60*
Code 11 Check Digit Verification	34h	Disable	*7-62*
Transmit Code 11 Check Digit(s)	2Fh	Disable	*7-63*
Interleaved 2 of 5			
Interleaved 2 of 5	06h	Enable	*7-63*
Set Length(s) for I 2 of 5	16h 17h	One Length: 14	*7-64*
I 2 of 5 Check Digit Verification	31h	Disable	*7-65*
Transmit I 2 of 5 Check Digit	2Ch	Disable	*7-66*
Convert I 2 of 5 to EAN 13	52h	Disable	*7-66*
Discrete 2 of 5			
Discrete 2 of 5	05h	Disable	*7-67*
Set Length(s) for D 2 of 5	14h 15h	One Length: 12	*7-67*
Chinese 2 of 5			
Chinese 2 of 5	F0h 98h	Disable	*7-69*
Matrix 2 of 5			
Matrix 2 of 5	F1h 6Ah	Disable	*7-70*
Matrix 2 of 5 Lengths	F1h 6Bh F1h 6Ch	One Length: 14	*7-70*
Matrix 2 of 5 Check Digit	F1h 6Eh	Disable	*7-72*
Transmit Matrix 2 of 5 Check Digit	F1h 6Fh	Disable	*7-72*
Korean 3 of 5			
Korean 3 of 5	F1h 45h	Disable	*7-73*

***Refer to the *Simple Serial Interface (SSI) Programmer's Guide* for formatting of any parameter whose number is 0x100 or greater.**

Table 7-1 *Factory Default Table (Continued)*

Parameter	Parameter Number (Hex)	Factory Default	Page Number
Codabar			
Codabar	07h	Disable	7-74
Set Lengths for Codabar	18h 19h	Length within Range: 5 - 55	7-74
CLSI Editing	36h	Disable	7-76
NOTIS Editing	37h	Disable	7-76
Codabar Upper or Lower Case Start/Stop Characters Detection	F2h 57h	Lower Case	7-77
MSI			
MSI	0Bh	Disable	7-78
Set Length(s) for MSI	1Eh 1Fh	Length within Range: 6 - 55	7-78
MSI Check Digits	32h	One	7-80
Transmit MSI Check Digit	2Eh	Disable	7-80
MSI Check Digit Algorithm	33h	Mod 10/Mod 10	7-81
GS1 DataBar			
GS1 DataBar (GS1 DataBar Omnidirectional, GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional)	F0h 52h	Enable	7-82
GS1 DataBar Limited	F0h 53h	Enable	7-83
GS1 DataBar Limited Security Level	F1h D8h	3	7-84
GS1 DataBar Expanded (GS1 DataBar Expanded, GS1 DataBar Expanded Stacked)	F0h 54h	Enable	7-85
Convert GS1 DataBar to UPC/EAN	F0h 8Dh	Disable	7-85
Data Options			
Transmit Code ID Character	2Dh	None	7-86
Prefix/Suffix Values Prefix Suffix 1 Suffix 2	 69h 68h 6Ah	 NULL LF CR	7-87
Scan Data Transmission Format	EBh	Data as is	7-88

***Refer to the *Simple Serial Interface (SSI) Programmer's Guide* for formatting of any parameter whose number is 0x100 or greater.**

Table 7-1 *Factory Default Table (Continued)*

Parameter	Parameter Number (Hex)	Factory Default	Page Number
Serial Interface			
Baud Rate	9Ch	9600	*7-90*
Parity	9Eh	None	*7-92*
Check Parity	97h	Disable	*7-93*
Software Handshaking	9Fh	Enable	*7-94*
Host RTS Line State	9Ah	RTS Low	*7-95*
Decode Data Packet Format	EEh	Unpacketed	*7-95*
Stop Bits	9Dh	1	*7-96*
Host Serial Response Timeout	9Bh	2 sec	*7-97*
Host Character Timeout	EFh	200 msec	*7-98*
Event Reporting*			
Decode Event	F0h, 00h	Disable	*7-99*
Boot Up Event	F0h, 02h	Disable	*7-100*
Parameter Event	F0h, 03h	Disable	*7-100*

***Refer to the *Simple Serial Interface (SSI) Programmer's Guide* for formatting of any parameter whose number is 0x100 or greater.**

Set Default Parameter

The SE965HP can be reset to two types of defaults: factory defaults or custom defaults. Scan the appropriate bar code below to reset the SE965HP 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 7-1 on page 7-2*.
- **Set Factory Defaults** - Scan this bar code to restore the factory default values listed in *Table 7-1 on page 7-2.* 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 # 8Ch

To select a beeper volume, scan the **Low Volume, Medium Volume**, or **High Volume** bar code.

Low Volume
(02h)

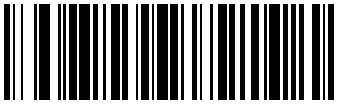
***Medium Volume**
(01h)

High Volume
(00h)

Beeper Tone

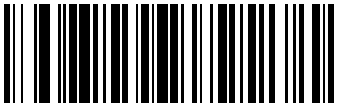
Parameter # 91h

To select a decode beep frequency (tone), scan the **Low Frequency, Medium Frequency**, or **High Frequency** bar code.



Low Frequency
(02h)

***Medium Frequency**
(Optimum Setting)
(01h)



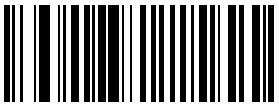
High Frequency
(00h)

Beep After Good Decode

Parameter # 38h

Scan a bar code below to select whether or not the engine issues a beep signal after a good decode. If selecting **Do Not Beep After Good Decode**, beeper signals still occur during parameter menu scanning and to indicate error conditions.

***Beep After Good Decode**
(Enable)
(01h)



Do Not Beep After Good Decode
(Disable)
(00h)

Suppress Power-up Beeps

Parameter # F1h D1h

Select whether or not to suppress the engine's power-up beeps.

***Suppress Power-up Beeps**
(01h)

Do Not Suppress Power-up Beeps
(00h)

Decode Session Timeout

Parameter # 88h

This parameter sets the maximum time decode processing continues during a scan attempt. It is programmable in 0.1 second increments from 0.5 to 9.9 seconds.

To set a Decode Session Timeout, scan the bar code below. Next scan two numeric bar codes beginning on *page 7-101* that correspond to the desired on time. Include a leading zero for single digit numbers. For example, to set a timeout of 0.5 seconds, scan the bar code below, then scan the **0** and **5** bar codes; to set a timeout of 9.5 seconds, scan the bar code below, then scan the **9** and **5** bar codes. To change the selection or cancel an incorrect entry, scan *Cancel on page 7-102*.

Decode Session Timeout
(Default: 3.0 sec.)

Aim Duration

Parameter # EDh

When a scan engine with an aim mode is triggered either by a trigger pull, or a START_DECODE command, this parameter sets the duration the aiming pattern is seen before a 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, refer to the *Simple Serial Interface (SSI) Programmer's Guide*.

To set an aim duration, scan the bar code below. Next scan two numeric bar codes beginning on *page 7-101* 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 *Cancel on page 7-102*.

Aim Duration
(Default: 0.0 sec.)

Scan Angle

Parameter # BFh

This parameter sets the scan angle to narrow, medium, or wide.

Narrow Angle (10°)
(00h)

Medium Angle (35°)
(01h)

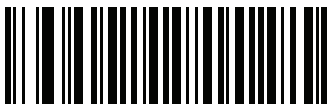
***Wide Angle (47°)**
(02h)

Adaptive Scanning

Parameter # F2h 51h

Enable Adaptive Scanning to improve decode range and optimize decode performance on certain bar codes. See *Adaptive Scanning on page 1-3* for a detailed explanation.

***Enable Adaptive Scanning**
(00h)



Disable Adaptive Scanning
(01h)

Triggering Modes

Parameter # 8Ah

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 Timeout 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 Timeout is reached.
- **Continuous** - This trigger mode is used for triggerless operation. The laser is always on and decoding.
- **Blink** - This trigger mode is used for triggerless operation. While blinking, the scan angle is fixed at wide. Scanning range is reduced in this mode.
- **Host** - A host command issues the triggering signal. The scan engine interprets an actual trigger pull as a Level triggering option.
- **Enhanced Aim** - The engine alternates between aiming and scanning until a decode occurs or the decode session times out. This facilitates aiming at a targeted bar code while the scan line is not easily visible, e.g., from a distance or for outdoor scanning through a car windshield. If you set the *Aim Duration on page 7-12*, the engine begins in aim mode for that duration; otherwise it begins in scan mode. The engine remains in scan mode for the **Scan Timeout** set in *Enhanced Aim Timeouts on page 7-16*. When that time expires it switches back to aim mode for the **Aim Timeout** set in *Enhanced Aim Timeouts*. The engine continues to alternate between the two modes until a decode occurs or the decode session times out. Setting the *Decode Session Timeout on page 7-12* to 9.9 seconds is recommended.

Triggering Modes (continued)

*Level
(00h)

Pulse
(02h)

Continuous
(04h)

Blink
(07h)

Host
(08h)

Enhanced Aim
(0Bh)

Enhanced Aim Timeouts

Aim Timeout: Parameter # F2h 55h

Scan Timeout: Parameter # F2h 56h

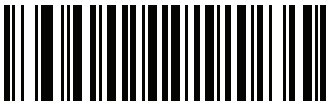
If you selected **Enhanced Aim** as the trigger mode, select an aim timeout and a scan timeout:

1. Scan the **Aim Timeout** or **Scan Timeout** bar code below.
2. Scan two numeric bar codes beginning on *page 7-101* that correspond to the desired timeout. Single digit values must have a leading zero. For example, to set a timeout 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 *Cancel on page 7-102*.

The **Aim Timeout** value must be in the range of 0.0 - 9.9, and the default is 2.0 seconds.

The **Scan Timeout** value must be in the range of 0.5 - 9.9, and the default is 1.0 second.

Aim Timeout



Scan Timeout

Timeout Between Decodes, Same Symbol

Parameter # 89h

In **Continuous** and **Blink** triggering modes and when **Contiuous Bar Code Read** is enabled, 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 accidently scanning the same symbol twice. It is programmable in 0.1 second increments from 0.0 to 9.9 seconds.

To set this timeout, scan the bar code below. Next scan two numeric bar codes beginning on *page 7-101* that correspond to the desired timeout. Single digit values must have a leading zero. For example, to set a timeout 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 *Cancel on page 7-102*.

✓ ***NOTE*** The Timeout between Decodes, Same Symbol **must be** greater than the *Timeout Between Decodes, Different Symbols*.

Timeout Between Same Symbol
(Default: 1.0 sec)

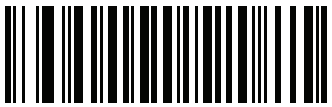
Timeout Between Decodes, Different Symbols

Parameter # 90h

In **Continuous** and **Blink** triggering modes and when **Contiuous Bar Code Read** is enabled, this parameter sets the minimum time that must elapse before the scan engine decodes a second bar code different from the one just decoded. It is programmable in 0.1 second increments from 0.1 to 9.9 seconds.

To set this timeout, scan the bar code below. Next scan two numeric bar codes beginning on *page 7-101* that correspond to the desired timeout. Single digit values must have a leading zero. For example, to set a timeout 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 *Cancel on page 7-102*.

✓ ***NOTE*** The Timeout between Decodes, Different Symbols **cannot** be greater than or equal to the *Timeout Between Decodes, Same Symbol*.



Timeout Between Decodes, Different Symbols
(Default: 0.2 sec)

Continuous Bar Code Read

Parameter # F1h 89h

In **Level** and **Host** triggering modes, enable this to report every bar code while the trigger is pressed.

***Disable Continuous Bar Code Read**
(00h)

Enable Continuous Bar Code Read
(01h)

Unique Bar Code Reporting

Parameter # F1h D3h

Enable this to report only unique bar codes while the trigger is pressed. This option only applies when **Continuous Bar Code Read** is enabled.

***Disable Unique Bar Code Reporting**
(00h)

Enable Unique Bar Code Reporting
(01h)

Transmit “No Read” Message

Parameter # 5Eh

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.

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

Enable No Read
(01h)

***Disable No Read**
(00h)

Power Mode

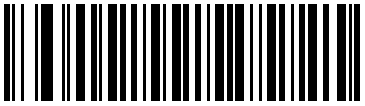
Parameter # 80h

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 (refer to the *Simple Serial Interface (SSI) Programmer's Guide*) can be used to change the power state in either **Low Power** mode or **Continuous Power** mode.



Continuous Power
(00h)

***Low Power Mode**
(01h)

Time Delay to Low Power Mode

Parameter # 92h

In **Low Power** mode, this parameter sets the time the engine remains active before entering **Low Power** mode. The engine wakes upon trigger pull or when the host attempts to communicate with the engine.

***1 Second**
(11h)

10 Seconds
(1Ah)

1 Minute
(21h)

5 Minutes
(25h)

15 Minutes
(2Bh)

Time Delay to Low Power Mode (continued)

30 Minutes
(2Dh)

45 Minutes
(2Eh)

1 Hour
(31h)

3 Hours
(33h)

6 Hours
(36h)

9 Hours
(39h)

Parameter Scanning

Parameter # ECh

To disable decoding of parameter bar codes, scan the **Disable Parameter Scanning** bar code. To enable decoding of parameter bar codes, scan **Enable Parameter Scanning**.

***Enable Parameter Scanning**
(01h)

Disable Parameter Scanning
(00h)

Parameter Pass Through

Parameter # F1h 71h

Enable **Parameter Pass Through** to transmit bar codes in the following format, in Code 128, to the host:

<FNC3>L<any length data>

<FNC3>B<12 characters of data>

Note that the special Code 128 character <FNC3> must appear at the beginning of this data. However, if the appropriate data does not follow this as shown above, it does not transmit to the host device.

Enable User Parameter Pass Through
(01h)

***Disable User Parameter Pass Through**
(00h)

Disable All Symbologies

Scan the bar code below to disable the decoding of all symbologies. Use this to simplify selecting a single symbology to decode by scanning this, then scanning the desired enable code type bar code. Note that the engine can still decode parameter bar codes.

Disable All Symbologies

Linear Code Type Security Level

Parameter # 4Eh

The SE965HP 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 (01h)**

Linear Security Level 2

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

Linear Security Level 2 (02h)

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 (03h)

Linear Security Level 4

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

Linear Security Level 4 (04h)

Bi-directional Redundancy

Parameter # 43h

This parameter is only valid when a *Linear Code Type Security Level on page 7-24* is enabled. 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
(01h)

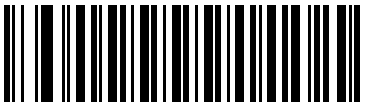
***Disable Bi-directional Redundancy**
(00h)

UPC/EAN

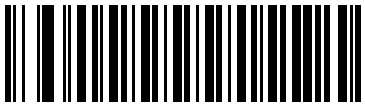
Enable/Disable UPC-A

Parameter # 01h

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



***Enable UPC-A**
(01h)

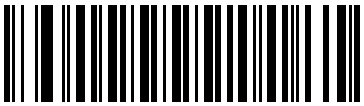


Disable UPC-A
(00h)

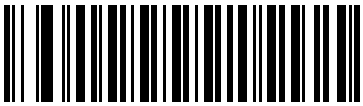
Enable/Disable UPC-E

Parameter # 02h

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



***Enable UPC-E**
(01h)



Disable UPC-E
(00h)

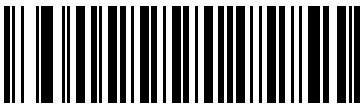
Enable/Disable UPC-E1

Parameter # 0Ch

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

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

Enable UPC-E1
(01h)

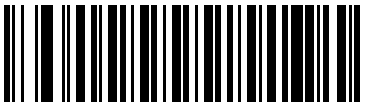


***Disable UPC-E1**
(00h)

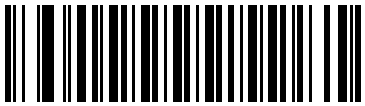
Enable/Disable EAN-8/JAN-8

Parameter # 04h

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



***Enable EAN-8/JAN-8**
(01h)

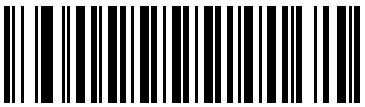


Disable EAN-8/JAN-8
(00h)

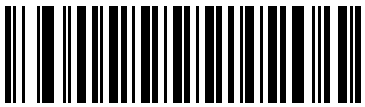
Enable/Disable EAN-13/JAN-13

Parameter # 03h

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



***Enable EAN-13/JAN-13**
(01h)



Disable EAN-13/JAN-13
(00h)

Enable/Disable Bookland EAN

Parameter # 53h

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

Enable Bookland EAN
(01h)

***Disable Bookland EAN**
(00h)

✓ ***NOTE*** If you enable Bookland EAN, select a *Bookland ISBN Format on page 7-42*. Also select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in *Decode UPC/EAN/JAN Supplementals on page 7-30*.

Decode UPC/EAN/JAN Supplementals

Parameter # 10h

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

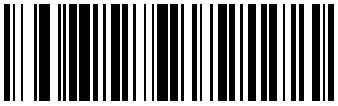
- If you select **Decode UPC/EAN/JAN with Supplementals**, the engine only decodes UPC/EAN symbols with supplemental characters, and ignores symbols without supplementals.
- If you select **Ignore UPC/EAN/JAN Supplementals**, and the engine is presented with a UPC/EAN plus supplemental symbol, the engine decodes UPC/EAN and ignores the supplemental characters.
- If you select **Autodiscriminate UPC/EAN/JAN Supplementals**, the engine decodes UPC/EAN symbols with supplemental characters immediately. If the symbol does not have a supplemental, the engine must decode the bar code the number of times set via *Decode UPC/EAN Supplemental Redundancy on page 7-33* before transmitting its data to confirm that there is no supplemental.
- If you select one of the following **Supplemental Mode** options, the engine immediately transmits EAN-13 bar codes starting with that prefix that have supplemental characters. If the symbol does not have a supplemental, the engine must decode the bar code the number of times set via *Decode UPC/EAN Supplemental Redundancy on page 7-33* before transmitting its data to confirm that there is no supplemental. The engine transmits UPC/EAN bar codes that do not have that prefix immediately.
  - **Enable 378/379 Supplemental Mode.**
  - **Enable 978/979 Supplemental Mode.**

> ***NOTE*** If you select 978/979 Supplemental Mode and are scanning Bookland EAN bar codes, see *Enable/Disable Bookland EAN on page 7-29* to enable Bookland EAN, and select a format using *Bookland ISBN Format on page 7-42*.

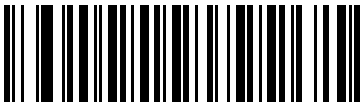
  - **Enable 977 Supplemental Mode.**
  - **Enable 414/419/434/439 Supplemental Mode.**
  - **Enable 491 Supplemental Mode.**
  - **Enable Smart Supplemental Mode** - applies to EAN-13 bar codes starting with any prefix listed previously.
  - **Supplemental User-Programmable Type 1** - applies to EAN-13 bar codes starting with a 3-digit user-defined prefix. Set this 3-digit prefix using *User-Programmable Supplementals on page 7-33*.
  - **Supplemental User-Programmable Type 1 and 2 -** applies to EAN-13 bar codes starting with either of two 3-digit user-defined prefixes. Set the 3-digit prefixes using *User-Programmable Supplementals on page 7-33***.**
  - **Smart Supplemental Plus User-Programmable 1** - applies to EAN-13 bar codes starting with any prefix listed previously or the user-defined prefix set using *User-Programmable Supplementals on page 7-33*.
  - **Smart Supplemental Plus User-Programmable 1 and 2 -** applies to EAN-13 bar codes starting with any prefix listed previously or one of the two user-defined prefixes set using *User-Programmable Supplementals on page 7-33*.

> ***NOTE*** To minimize the risk of invalid data transmission, select either to decode or ignore supplemental characters.

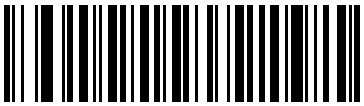
Decode UPC/EAN/JAN Supplementals (continued)



Decode UPC/EAN/JAN Only With Supplementals (01h)



***Ignore Supplementals (00h)**



Autodiscriminate UPC/EAN/JAN Supplementals (02h)

Enable 378/379 Supplemental Mode (04h)

Enable 978/979 Supplemental Mode (05h)

Enable 977 Supplemental Mode (07h)

Decode UPC/EAN/JAN Supplementals (continued)

Enable 414/419/434/439 Supplemental Mode (06h)

Enable 491 Supplemental Mode (08h)

Enable Smart Supplemental Mode (03h)

Supplemental User-Programmable Type 1 (09h)

Supplemental User-Programmable Type 1 and 2 (0Ah)

Smart Supplemental Plus User-Programmable 1 (0Bh)

Smart Supplemental Plus User-Programmable 1 and 2 (0Ch)

User-Programmable Supplementals

Supplemental 1: Parameter # F1h 43h

Supplemental 2: Parameter # F1h 44h

If you selected a Supplemental User-Programmable option from *Decode UPC/EAN/JAN Supplementals on page 7-30*, select **User-Programmable Supplemental 1** to set the 3-digit prefix. Then select the 3 digits using the numeric bar codes beginning on *page 7-101*. Select **User-Programmable Supplemental 2** to set a second 3-digit prefix. Then select the 3 digits using the numeric bar codes beginning on *page 7-101*.

User-Programmable Supplemental 1

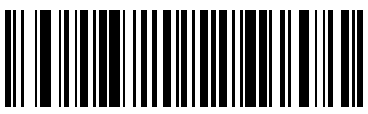
User-Programmable Supplemental 2

Decode UPC/EAN Supplemental Redundancy

Parameter # 50h

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 7-101*. Single digit numbers must have a leading zero. To change the selection or cancel an incorrect entry, scan *Cancel on page 7-102*.



UPC/EAN/JAN Supplemental Redundancy

UPC/EAN/JAN Supplemental AIM ID Format

Parameter # F1h A0h

Select an output format when reporting UPC/EAN/JAN bar codes with Supplementals with *Transmit Code ID Character on page 7-86* set to **AIM Code ID Character**:

- **Separate** - transmit UPC/EAN with supplementals with separate AIM IDs but one transmission, i.e.:

  ]E<0 or 4><data>]E<1 or 2>[supplemental data]

- **Combined** – transmit UPC/EAN with supplementals with one AIM ID and one transmission, i.e.:

  ]E3<data+supplemental data>

- **Separate Transmissions** - transmit UPC/EAN with supplementals with separate AIM IDs and separate transmissions, i.e.:

  ]E<0 or 4><data>
  ]E<1 or 2>[supplemental data]

Separate
(00h)

***Combined**
(01h)

Separate Transmissions
(02h)

Transmit UPC-A Check Digit

Parameter # 28h

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 UPC-A check digit. It is always verified to guarantee the integrity of the data.

***Transmit UPC-A Check Digit (01h)**

Do Not Transmit UPC-A Check Digit (00h)

Transmit UPC-E Check Digit

Parameter # 29h

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 UPC-E check digit. It is always verified to guarantee the integrity of the data.

***Transmit UPC-E Check Digit (01h)**

Do Not Transmit UPC-E Check Digit (00h)

Transmit UPC-E1 Check Digit

Parameter # 2Ah

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 UPC-E1 check digit. It is always verified to guarantee the integrity of the data.

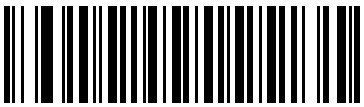
***Transmit UPC-E1 Check Digit (01h)**

Do Not Transmit UPC-E1 Check Digit (00h)

UPC-A Preamble

Parameter # 22h

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



No Preamble (<DATA>)
(00h)

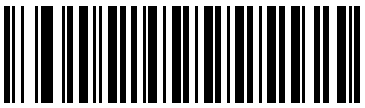
***System Character (<SYSTEM CHARACTER> <DATA>)**
(01h)

System Character & Country Code (< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(02h)

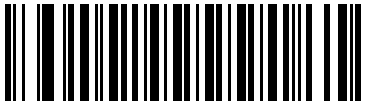
UPC-E Preamble

Parameter # 23h

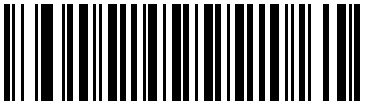
Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E preamble to the host device: transmit System Character only, transmit System Character and Country Code (“0” for USA), and transmit no preamble. Select the appropriate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



No Preamble (<DATA>)
(00h)



***System Character (<SYSTEM CHARACTER> <DATA>)**
(01h)



System Character & Country Code (< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(02h)

UPC-E1 Preamble

Parameter # 24h

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

No Preamble (<DATA>)
(00h)

***System Character (<SYSTEM CHARACTER> <DATA>)**
(01h)

System Character & Country Code (< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(02h)

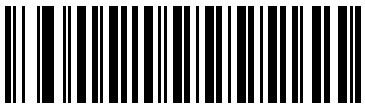
Convert UPC-E to UPC-A

Parameter # 25h

Enable this to convert UPC-E (zero suppressed) decoded data 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)
(01h)



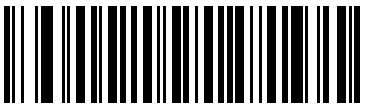
***Do Not Convert UPC-E to UPC-A (Disable)**
(00h)

Convert UPC-E1 to UPC-A

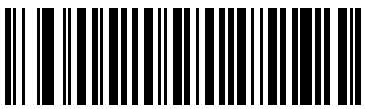
Parameter # 26h

Enable this to convert UPC-E1 decoded data 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)
(01h)



***Do Not Convert UPC-E1 to UPC-A (Disable)**
(00h)

EAN-8/JAN-8 Extend

Parameter # 27h

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 (01h)

***Disable EAN/JAN Zero Extend (00h)**

Bookland ISBN Format

Parameter # F1h 40h

If you enabled Bookland EAN using *Enable/Disable Bookland EAN on page 7-29*, select one of the following formats for Bookland data:

- **Bookland ISBN-10** - The engine reports Bookland data starting with 978 in traditional 10-digit format with the special Bookland check digit for backward-compatibility. Data starting with 979 is not considered Bookland in this mode.
- **Bookland ISBN-13** - The engine reports Bookland data (starting with either 978 or 979) as EAN-13 in 13-digit format to meet the 2007 ISBN-13 protocol.

***Bookland ISBN-10**
(00h)

Bookland ISBN-13
(01h)

c

NOTE For Bookland EAN to function properly, first enable Bookland EAN using *Enable/Disable Bookland EAN on page 7-29*, then select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in *Decode UPC/EAN/JAN Supplementals on page 7-30*.

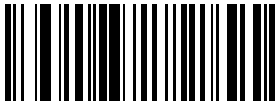
UPC/EAN Security Level

Parameter # 4Dh

The SE965HP 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 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
(00h)

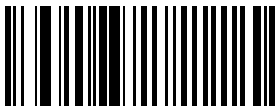
UPC/EAN Security Level 1

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

***UPC/EAN Security Level 1**
(01h)

UPC/EAN Security Level 2

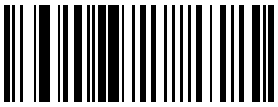
If misdecodes of poorly printed bar codes occur, and the misdecodes are not limited to characters 1, 2, 7, and 8, select this security level.



UPC/EAN Security Level 2
(02h)

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.

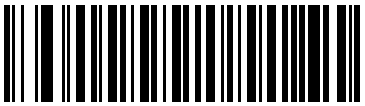


UPC/EAN Security Level 3
(03h)

UCC Coupon Extended Code

Parameter # 55h

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
(01h)

***Disable UCC Coupon Extended Code**
(00h)

Coupon Report

Parameter # F1h DAh

Traditional coupon symbols (old coupon symbols) are composed of two bar codes: UPC/EAN and Code128. A new coupon symbol is composed of a single Databar Expanded bar code. The new coupon format offers more options for purchase values (up to $999.99) and supports complex discount offers such as a second purchase requirement.

An interim coupon symbol also exists that contains both types of bar codes: UPC/EAN and Databar Expanded. This format accommodates both retailers that do not recognize or use the additional information included in the new coupon symbol, as well as those who can process new coupon symbols.

Scan a bar code below to select one of the following options for decoding coupon symbols:

- **Old Coupon Symbols** - Scanning an old coupon symbol reports both UPC and Code 128, scanning an interim coupon symbol reports UPC, and scanning a new coupon symbol reports nothing (no decode).
- **New Coupon Symbols** - Scanning an old coupon symbol reports either UPC or Code 128, and scanning an interim coupon symbol or a new coupon symbol reports Databar Expanded.
- **Both Coupon Formats** - Scanning an old coupon symbol reports both UPC and Code 128, and scanning an interim coupon symbol or a new coupon symbol reports Databar Expanded.

Old Coupon Symbols
(00h)

***New Coupon Symbols**
(01h)

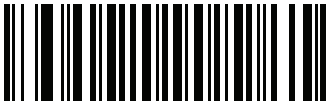
Both Coupon Formats
(02h)

ISSN EAN

Parameter # F1h 69h

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

***Enable ISSN EAN**
(01h)



Disable ISSN EAN
(00h)

Code 128

Enable/Disable Code 128

Parameter # 08h

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

***Enable Code 128**
(01h)

Disable Code 128
(00h)

Set Lengths for Code 128

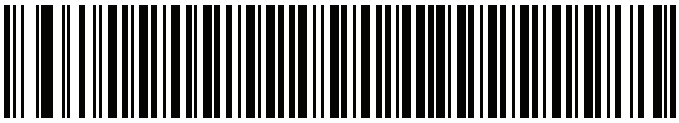
Parameter # L1 = D1h, L2 = D2h

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 128 to any length, one or two discrete lengths, or lengths within a specific range.

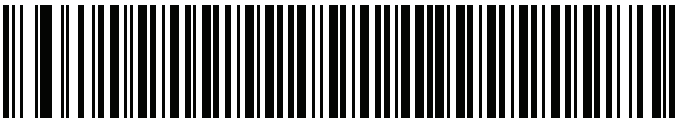
NOTE When setting lengths for different bar code types, enter a leading zero for single digit numbers.

- **One Discrete Length** - Select this option to decode only Code 128 symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. For example, to decode only Code 128 symbols with 14 characters, scan **Code 128 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Two Discrete Lengths** - Select this option to decode only Code 128 symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. For example, to decode only Code 128 symbols containing either 2 or 14 characters, select **Code 128 - Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode a Code 128 symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. For example, to decode Code 128 symbols containing between 4 and 12 characters, first scan **Code 128 - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Any Length** - Select this option to decode Code 128 symbols containing any number of characters within the engine's capability.

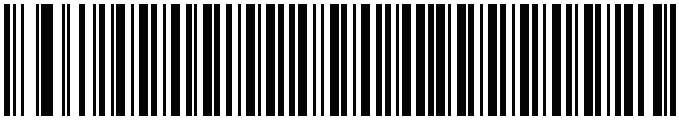
Set Lengths for Code 128 (continued)



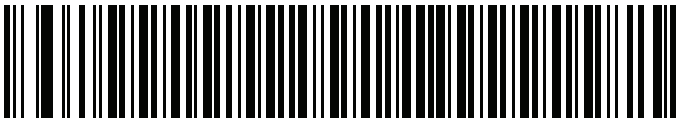
Code 128 - One Discrete Length



Code 128 - Two Discrete Lengths



Code 128 - Length Within Range

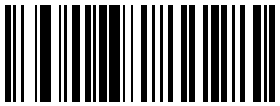


***Code 128 - Any Length**

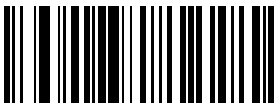
Enable/Disable GS1-128 (formerly UCC/EAN-128)

Parameter # 0Eh

To enable or disable GS1-128, scan the appropriate bar code below. See *Appendix B, Miscellaneous Code Information* for details on *GS1-128 (formerly UCC/EAN-128)*.



***Enable GS1-128**
(01h)



Disable GS1-128
(00h)

Enable/Disable ISBT 128

Parameter # 54h

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

***Enable ISBT 128**
(01h)

Disable ISBT 128
(00h)

ISBT Concatenation

Parameter # F1h 41h

Select an option for concatenating pairs of ISBT code types:

- If you select **Disable ISBT Concatenation**, the engine does not concatenate pairs of ISBT codes it encounters.
- If you select **Enable ISBT Concatenation**, there must be two ISBT codes in order for the engine to decode and perform concatenation. The engine does not decode single ISBT symbols.
- If you select **Autodiscriminate ISBT Concatenation**, the engine decodes and concatenates pairs of ISBT codes immediately. If only a single ISBT symbol is present, the engine must decode the symbol the number of times set via *ISBT Concatenation Redundancy on page 7-51* before transmitting its data to confirm that there is no additional ISBT symbol.

***Disable ISBT Concatenation (00h)**

Enable ISBT Concatenation (01h)

Autodiscriminate ISBT Concatenation (02h)

Check ISBT Table

Parameter # F1h 42h

The ISBT specification includes a table that lists several types of ISBT bar codes that are commonly used in pairs. If you set **ISBT Concatenation** to **Enable**, enable **Check ISBT Table** to concatenate only those pairs found in this table. Other types of ISBT codes are not concatenated.

***Enable Check ISBT Table (01h)**

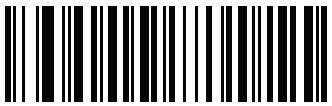
Disable Check ISBT Table (00h)

ISBT Concatenation Redundancy

Parameter # DFh

If you set **ISBT Concatenation** to **Autodiscriminate,** use this parameter to set the number of times the engine must decode an ISBT symbol before determining that there is no additional symbol.

Scan the bar code below, then scan two *Numeric Bar Codes on page 7-101* to set a value between 2 and 20. Enter a leading zero for single digit numbers. To correct an error or change a selection, scan *Cancel on page 7-102*. The default is 10.



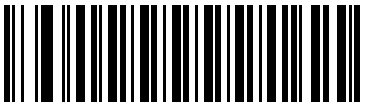
ISBT Concatenation Redundancy

Code 39

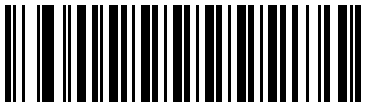
Enable/Disable Code 39

Parameter # 00h

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



***Enable Code 39**
(01h)

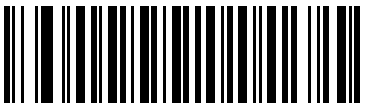


Disable Code 39
(00h)

Enable/Disable Trioptic Code 39

Parameter # 0Dh

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
(01h)

***Disable Trioptic Code 39**
(00h)

✓ ***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 # 56h

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.

NOTE Code 39 must be enabled for this parameter to function.

Enable Convert Code 39 to Code 32 (01h)

***Disable Convert Code 39 to Code 32 (00h)**

Code 32 Prefix

Parameter # E7h

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 (01h)

***Disable Code 32 Prefix (00h)**

Set Lengths for Code 39

Parameter # L1 = 12h, L2 = 13h

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 39 to 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.

NOTE 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** - Select this option to decode only Code 39 symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Two Discrete Lengths** - Select this option to decode only Code 39 symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. 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 correct an error or change the selection, scan *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode a Code 39 symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. 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). To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Any Length** - Select this option to decode Code 39 symbols containing any number of characters within the decoder capability.

Set Lengths for Code 39 (continued)

Code 39 - One Discrete Length

Code 39 - Two Discrete Lengths

***Code 39 - Length Within Range**
(Default: 2 - 55)

Code 39 - Any Length

Code 39 Check Digit Verification

Parameter # 30h

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 module 43 check digit.

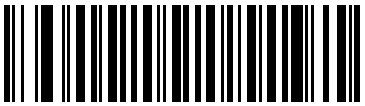
Enable Code 39 Check Digit
(01h)

***Disable Code 39 Check Digit**
(00h)

Transmit Code 39 Check Digit

Parameter # 2Bh

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



Transmit Code 39 Check Digit (Enable)
(01h)

***Do Not Transmit Code 39 Check Digit (Disable)**
(00h)

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

Code 39 Full ASCII Conversion

Parameter # 11h

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.

See *Table B-5 on page B-7* for the mapping of Code 39 characters to ASCII values.

Enable Code 39 Full ASCII (01h)

***Disable Code 39 Full ASCII (00h)**

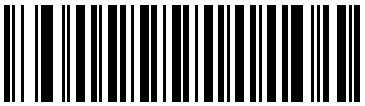
✓ ***NOTE*** Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If you get an error beep when enabling Code 39 Full ASCII, disable Trioptic Code 39 and try again.

Code 93

Enable/Disable Code 93

Parameter # 09h

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



Enable Code 93
(01h)

***Disable Code 93**
(00h)

Set Lengths for Code 93

Parameter # L1 = 1Ah, L2 = 1Bh

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 Code 93 symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. For example, to decode only Code 93 symbols with 14 characters, scan **Code 93 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Two Discrete Lengths** - Select this option to decode only Code 93 symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. 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**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode a Code 93 symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. 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). To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Any Length** - Scan this option to decode Code 93 symbols containing any number of characters within the decoder's capability.

Set Lengths for Code 93 (continued)

Code 93 - One Discrete Length

Code 93 - Two Discrete Lengths

***Code 93 - Length Within Range**
(Default: 4 - 55)

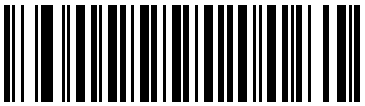
Code 93 - Any Length

Code 11

Enable/Disable Code 11

Parameter # 0Ah

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



Enable Code 11
(01h)

***Disable Code 11**
(00h)

Set Lengths for Code 11

Parameter # L1 = 1Ch, L2 = 1Dh

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 on page 7-101*. 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 *Cancel on page 7-102*.
- **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 on page 7-101*. 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 *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode a Code 11 symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. 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 *Cancel on page 7-102*.
- **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 (Default: 4 - 55)**

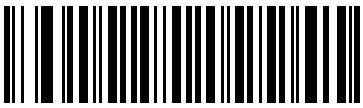
Code 11 - Any Length

Code 11 Check Digit Verification

Parameter # 34h

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 the Code 11 symbols.



***Disable**
(00h)

One Check Digit
(01h)

Two Check Digits
(02h)

Transmit Code 11 Check Digits

Parameter # 2Fh

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

Transmit Code 11 Check Digit(s) (Enable)
(01h)

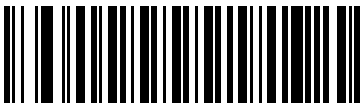
***Do Not Transmit Code 11 Check Digit(s) (Disable)**
(00h)

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

Interleaved 2 of 5

Parameter # 06h

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**
(01h)

Disable Interleaved 2 of 5
(00h)

Set Lengths for Interleaved 2 of 5

Parameter # L1 = 16h, L2 = 17h

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.

NOTE When setting lengths, include a leading zero for single digit numbers.

- **One Discrete Length** - Select this option to decode only I 2 of 5 symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. 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**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Two Discrete Lengths** - Select this option to decode only I 2 of 5 symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. 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**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode an I 2 of 5 symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. 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). To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Any Length** - Scan this option to decode I 2 of 5 symbols containing any number of characters within the decoder capability.

NOTE 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 encoded in the bar code. To prevent this, select specific lengths (I 2 of 5 - One Discrete Length - Two Discrete Lengths) for I 2 of 5 applications.

***I 2 of 5 - One Discrete Length (Default: 14)**

I 2 of 5 - Two Discrete Lengths

Set Lengths for Interleaved 2 of 5 (continued)

I 2 of 5 - Length Within Range

I 2 of 5 - Any Length

I 2 of 5 Check Digit Verification

Parameter # 31h

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

***Disable**
(00h)

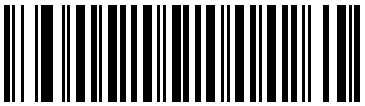
USS Check Digit
(01h)

OPCC Check Digit
(02h)

Transmit I 2 of 5 Check Digit

Parameter # 2Ch

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



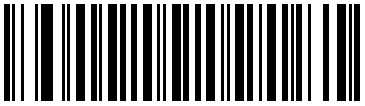
Transmit I 2 of 5 Check Digit (Enable)
(01h)

***Do Not Transmit I 2 of 5 Check Digit (Disable)**
(00h)

Convert I 2 of 5 to EAN-13

Parameter # 52h

Enable this parameter to convert 14-character I 2 of 5 codes to EAN-13, and transmit to the host as EAN-13. 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.



Convert I 2 of 5 to EAN-13 (Enable)
(01h)

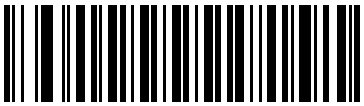
***Do Not Convert I 2 of 5 to EAN-13 (Disable)**
(00h)

Discrete 2 of 5

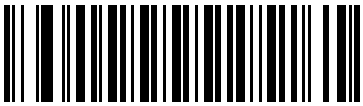
Enable/Disable Discrete 2 of 5

Parameter # 05h

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



Enable Discrete 2 of 5 (01h)



***Disable Discrete 2 of 5 (00h)**

Set Lengths for Discrete 2 of 5

Parameter # L1 = 14h, L2 = 15h

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-6*.

- **One Discrete Length** - Select this option to decode only D 2 of 5 symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. 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**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Two Discrete Lengths** - Select this option to decode only D 2 of 5 symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. 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**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode a D 2 of 5 symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. 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). To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Any Length** - Scan this option to decode D 2 of 5 symbols containing any number of characters within the decoder capability.

Set Lengths for Discrete 2 of 5 (continued)

NOTE 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 encoded in the bar code. To prevent this, select specific lengths (D 2 of 5 - One Discrete Length - Two Discrete Lengths) for D 2 of 5 applications.

***D 2 of 5 - One Discrete Length (Default: 12)**

D 2 of 5 - Two Discrete Lengths

D 2 of 5 - Length Within Range

D 2 of 5 - Any Length

Chinese 2 of 5

Enable/Disable Chinese 2 of 5

Parameter # F0h 98h

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

Enable Chinese 2 of 5
(01h)

***Disable Chinese 2 of 5**
(00h)

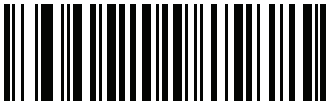
Matrix 2 of 5

Enable/Disable Matrix 2 of 5

Parameter # F1h 6Ah

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

Enable Matrix 2 of 5 (01h)



***Disable Matrix 2 of 5 (00h)**

Set Lengths for Matrix 2 of 5

Parameter # L1 = F1h 6Bh, L2 = F1h 6Ch

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 Matrix 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range.

- One Discrete Length - Select this option to decode only Matrix 2 of 5 symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. For example, to decode only Matrix 2 of 5 symbols with 14 characters, scan **Matrix 2 of 5 - One Discrete Length**, then scan 1 followed by 4. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- Two Discrete Lengths - Select this option to decode only Matrix 2 of 5 symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. For example, to decode only Matrix 2 of 5 symbols containing either 2 or 14 characters, select **Matrix 2 of 5 -Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- Length Within Range - Select this option to decode a Matrix 2 of 5 symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. For example, to decode Matrix 2 of 5 symbols containing between 4 and 12 characters, first scan **Matrix 2 of 5 - Length Within Range**. Then scan 0, 4, 1, and 2 (enter a leading zero for single digit numbers). To correct an error or change the selection, scan *Cancel on page 7-102*.
- Any Length - Scan this option to decode Matrix 2 of 5 symbols containing any number of characters within the decoder’s capability.

Set Lengths for Matrix 2 of 5 (continued)

*Matrix 2 of 5 - One Discrete Length
(Default: 14)

Matrix 2 of 5 - Two Discrete Lengths

Matrix 2 of 5 - Length Within Range

Matrix 2 of 5 - Any Length

Matrix 2 of 5 Check Digit

Parameter # F1h 6Eh

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 Matrix 2 of 5 check digit.

Enable Matrix 2 of 5 Check Digit (01h)

***Disable Matrix 2 of 5 Check Digit (00h)**

Transmit Matrix 2 of 5 Check Digit

Parameter # F1h 6Fh

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

Transmit Matrix 2 of 5 Check Digit (01h)

***Do Not Transmit Matrix 2 of 5 Check Digit (00h)**

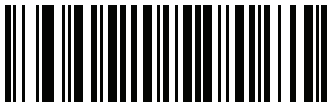
Korean 3 of 5

Enable/Disable Korean 3 of 5

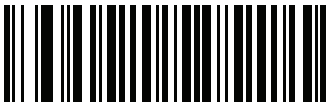
Parameter # F1h 45h

To enable or disable Korean 3 of 5, scan the appropriate bar code below.

✓ ***NOTE*** The length for Korean 3 of 5 is fixed at 6.



Enable Korean 3 of 5 (01h)



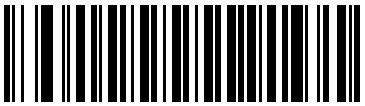
***Disable Korean 3 of 5 (00h)**

Codabar

Enable/Disable Codabar

Parameter # 07h

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



Enable Codabar
(01h)

***Disable Codabar**
(00h)

Set Lengths for Codabar

Parameter # L1 = 18h, L2 = 19h

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-6*.

- **One Discrete Length** - Select this option to decode only Codabar symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. For example, to decode only Codabar symbols with 14 characters, scan **Codabar - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Two Discrete Lengths** - Select this option to decode only Codabar symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. For example, to decode only Codabar symbols containing either 2 or 14 characters, select **Codabar - Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode a Codabar symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. 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). To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Any Length** - Scan this option to decode Codabar symbols containing any number of characters within the decoder capability.

Set Lengths for Codabar (continued)

Codabar - One Discrete Length

Codabar - Two Discrete Lengths

***Codabar - Length Within Range (Default: 5 - 55)**

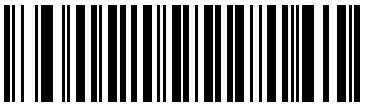
Codabar - Any Length

CLSI Editing

Parameter # 36h

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.

NOTE Symbol length does not include start and stop characters.



Enable CLSI Editing
(01h)

***Disable CLSI Editing**
(00h)

NOTIS Editing

Parameter # 37h

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

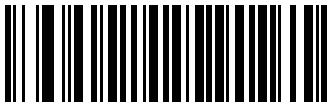
Enable NOTIS Editing
(01h)

***Disable NOTIS Editing**
(00h)

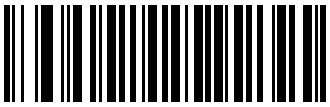
Codabar Upper or Lower Case Start/Stop Characters Detection

Parameter # F2h 57h

Select whether to detect upper case or lower case Codabar start/stop characters.



***Lower Case**
(01h)



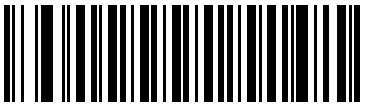
Upper Case
(00h)

MSI

Enable/Disable MSI

Parameter # 0Bh

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



Enable MSI
(01h)

***Disable MSI**
(00h)

Set Lengths for MSI

Parameter # L1 = 1Eh, L2 = 1Fh

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-7* for ASCII equivalents. 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 MSI symbols containing a selected length. Select the length using the *Numeric Bar Codes on page 7-101*. For example, to decode only MSI symbols with 14 characters, scan **MSI - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Two Discrete Lengths** - Select this option to decode only MSI symbols containing either of two selected lengths. Select lengths using the *Numeric Bar Codes on page 7-101*. For example, to decode only MSI symbols containing either 2 or 14 characters, select **MSI - Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan *Cancel on page 7-102*.
- **Length Within Range** - Select this option to decode a MSI symbol with a specific length range. Select lengths using the *Numeric Bar Codes on page 7-101*. 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). To correct an error or change the selection, scan *Cancel on page 7-102*.
- **Any Length** - Scan this option to decode MSI symbols containing any number of characters within the decoder capability.

Set Lengths for MSI (continued)

NOTE 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 encoded in the bar code. To prevent this, select specific lengths (MSI - One Discrete Length - Two Discrete Lengths) for MSI applications.

MSI - One Discrete Length

MSI - Two Discrete Lengths

***MSI - Length Within Range (Default: 6 - 55)**

MSI - Any Length

MSI Check Digits

Parameter # 32h

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. If two check digits are selected, also select an *MSI Check Digit Algorithm on page 7-81*.

***One MSI Check Digit**
(00h)

Two MSI Check Digits
(01h)

Transmit MSI Check Digit

Parameter # 2Eh

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

Transmit MSI Check Digit(s) (Enable)
(01h

***Do Not Transmit MSI Check Digit(s) (Disable)**
(00h)

MSI Check Digit Algorithm

Parameter # 33h

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 the check digit.

MOD 10/MOD 11
(00h)

***MOD 10/MOD 10**
(01h)

GS1 DataBar

GS1 DataBar types are:

- GS1 DataBar Omnidirectional
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional
- GS1 DataBar Limited
- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked

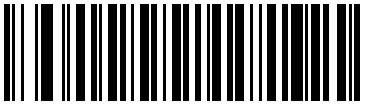
Scan the appropriate bar codes to enable or disable each type of GS1 DataBar.

GS1 DataBar

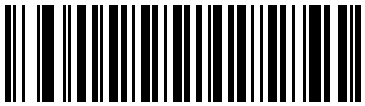
Parameter # F0h 52h

Scan the appropriate bar code below to enable or disable the following code types:

- GS1 DataBar Omnidirectional
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional,



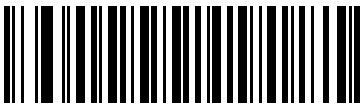
***Enable GS1 DataBar**
(01h)



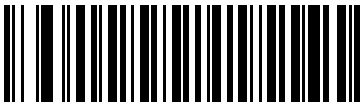
Disable GS1 DataBar
(00h)

GS1 DataBar Limited

Parameter # F0h 53h



*Enable GS1 DataBar Limited (01h)



Disable GS1 DataBar Limited (00h)

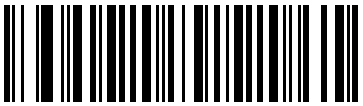
GS1 DataBar Limited Security Level

Parameter # F1h D8h

The engine offers four levels of decode security for GS1 DataBar Limited bar codes. There is an inverse relationship between security and engine aggressiveness. Increasing the level of security may result in reduced aggressiveness in scanning, so only choose the level of security necessary.

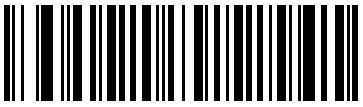
- Level 1 – No clear margin required. This complies with the original GS1 standard, yet might result in erroneous decoding of the DataBar Limited bar code when scanning some UPC symbols that start with the digits “9” and “7”.
- Level 2 – Automatic risk detection. This level of security may result in erroneous decoding of DataBar Limited bar codes when scanning some UPC symbols. If a misdecode is detected, the engine operates in Level 3 or Level 1.
- Level 3 – Security level reflects newly proposed GS1 standard that requires a 5X trailing clear margin.
- Level 4 – Security level extends beyond the standard required by GS1. This level of security requires a 5X leading and trailing clear margin.

Security Level 1
(01h)



Security Level 2
(02h)

***Security Level 3**
(03h)



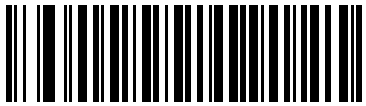
Security Level 4
(04h)

GS1 DataBar Expanded

Parameter # F0h 54h

Scan the appropriate bar code below to enable or disable the following code types:

- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked.



***Enable GS1 DataBar Expanded (01h)**

Disable GS1 DataBar Expanded (00h)

Convert GS1 DataBar to UPC/EAN

Parameter # F0h, 8Dh

This parameter only applies to GS1 DataBar and GS1 DataBar Limited symbols not decoded as part of a Composite symbol. Enable this to strip the leading '010' from DataBar and DataBar Limited symbols encoding a single zero as the first digit, and report the bar code as EAN-13.

For bar codes beginning with two or more zeros but not six zeros, this parameter strips the leading '0100' and reports the bar code as UPC-A. The UPC-A Preamble parameter that transmits 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 GS1 DataBar to UPC/EAN (01h)

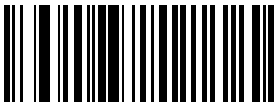
***Disable Convert GS1 DataBar to UPC/EAN (00h)**

Transmit Code ID Character

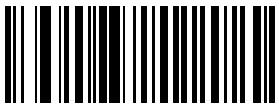
Parameter # 2Dh

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.

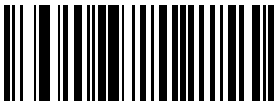
Select no code ID character, a Symbol Code ID character, or an AIM Code ID character. For Symbol and AIM code ID characters, see*Code Identifiers on page B-3*.



Symbol Code ID Character
(02h)



AIM Code ID Character
(01h)



***None**
(00h)

Prefix/Suffix Values

Parameter # Prefix = 69h, Suffix1 = 68h, Suffix2 = 6Ah

A prefix and/or one or two suffixes can be appended to scan data for use in data editing. To set a value for a prefix or suffix, scan the prefix or suffix bar code below, then scan a four-digit number (i.e., four bar codes from *Numeric Bar Codes on page 7-101*) that corresponds to that value. See *Table B-5 on page B-7* for the four-digit code values. To change the selection or cancel an incorrect entry, scan *Cancel on page 7-102*. To set the Prefix/Suffix values via serial commands, see *Setting Prefixes and Suffixes Via Serial Commands on page B-7*.

✓ ***NOTE*** To send a Prefix or Suffix with bar code data, first enable the format in which they are sent by setting the *Scan Data Transmission Format on page 7-88*.

Scan Prefix
(07h)

Scan Suffix 1
(06h)

Scan Suffix 2
(08h)

Data Format Cancel

Scan Data Transmission Format

Parameter # EBh

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

To set values for the prefix and/or suffix, see *Prefix/Suffix Values on page 7-87*.

***Data As Is**
(00h)

<DATA> <SUFFIX 1>
(01h)

<DATA> <SUFFIX 2>
(02h)

<DATA> <SUFFIX 1> <SUFFIX 2>
(03h)

<PREFIX> <DATA >
(04h)

Scan Data Transmission Format (continued)

<PREFIX> <DATA> <SUFFIX 1>
(05h)

<PREFIX> <DATA> <SUFFIX 2>
(06h)

<PREFIX> <DATA> <SUFFIX 1> <SUFFIX 2>
(07h)

Serial Parameters

Baud Rate

Parameter # 9Ch

Baud rate is the number of bits of data transmitted per second. Set the engine's baud rate to match the data rate setting of the host device. Otherwise, data may not reach the host.

Scan the appropriate baud rate bar code that matches the baud rate setting of the host device.

Baud Rate 1200
(03h)

Baud Rate 2400
(04h)

Baud Rate 4800
(05h)

***Baud Rate 9600**
(06h)

Baud Rate 19,200
(07h)

Baud Rate (continued)

Baud Rate 38,400
(08h)

Baud Rate 57,600
(0Ah)

Baud Rate 115,200
(0Bh)

Parity

Parameter # 9Eh

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

- Select **Odd** parity to set the parity bit to a value 0 or 1, based on data, to ensure that the coded character contains an odd number of 1 bits.
- Select **Even** parity to set the parity bit to a value 0 or 1, based on data, to ensure that the coded character contains an even number of 1 bits.
- If no parity is required, select **None**.

Odd
(00h)

Even
(01h)

***None**
(04h)

Check Parity

Parameter # 97h

Select whether or not to check the parity of received characters. Use the Parity parameter to select the type of parity.

***Do Not Check Parity**
(00h)

Check Parity
(01h)

Software Handshaking

Parameter # 9Fh

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**: If you select this option, the engine neither generates nor expects ACK/NAK handshaking packets.
- **Enable ACK/NAK Handshaking**: If you select this option, after transmitting data, the engine expects either an ACK or NAK response from the host. The engine also ACKs or NAKs messages from the host.

  The engine waits up to the programmable Host Serial Response Timeout to receive an ACK or NAK. If the 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.

Disable ACK/NAK
(00h)

***Enable ACK/NAK**
(01h)

Host RTS Line State

Parameter # 9Ah

This parameter sets the expected idle state of the Serial Host RTS line.

Use the SSI interface with host applications which also implement the SSI protocol. You can also use the engine in a "scan-and-transmit" mode to communicate with any standard serial communication software on a host PC (see *Decode Data Packet Format on page 7-95*). If transmission errors occur in this mode, the host PC may be asserting hardware handshaking lines which interfere with the SSI protocol. Scan the **Host: RTS High** bar code to address this problem.

***Host: RTS Low**
(00h)

Host: RTS High
(01h)

Decode Data Packet Format

Parameter # EEh

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

Selecting the raw format disables ACK/NAK handshaking for decode data.

***Send Raw Decode Data**
(00h)

Send Packeted Decode Data
(01h)

Stop Bits

Parameter # 9Dh

The stop bit(s) at the end of each transmitted character marks the end of transmission of one character and prepares the receiving (host) 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**
(01h)

2 Stop Bits
(02h)

Host Serial Response Timeout

Parameter # 9Bh

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

To set the delay period (options are 2, 5, 7.5, or 9,9 seconds), scan one of the following bar codes.

NOTE Other values are available via SSI command.

***Low - 2 Seconds**
(14h)

Medium - 5 Seconds
(32h)

High - 7.5 Seconds
(4Bh)

Maximum - 9.9 Seconds
(63h)

Host Character Timeout

Parameter # EFh

This parameter determines the maximum time the engine waits between characters transmitted by the host before discarding the received data and declaring an error.

To set the delay period (options are 200, 500, 750, or 990 ms), scan one of the following bar codes.

NOTE Other values are available via SSI command.

***Low - 200 ms**
(14h)

Medium - 500 ms
(32h)

High - 750 ms
(4Bh)

Maximum - 990 ms
(63h)

Event Reporting

The host can request the engine to provide certain information (events) relative to the engine's behavior. Enable or disable the events listed in *Table 7-2* and on the following pages by scanning the appropriate bar codes.

Table 7-2 *Event Codes*

Event Class	Event	Code Reported
Decode Event	Non parameter decode	01h
Boot Up Event	System power-up	03h
Parameter Event	Parameter entry error Parameter stored Defaults set (and parameter event is enabled by default) Number expected	07h 08h 0Ah 0Fh

Decode Event

Parameter # F0h, 00h

If you enable this, the engine generates a message to the host whenever it successfully decodes a bar code. Disable this to send no notification.

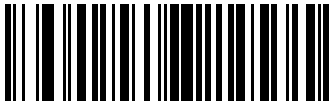
Enable Decode Event (01h)

***Disable Decode Event (00h)**

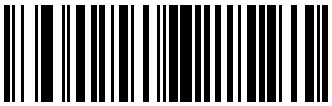
Boot Up Event

Parameter # F0h, 02h

If you enable this, the engine generates a message to the host whenever power is applied. Disable this to send no notification.



Enable Boot Up Event
(01h)

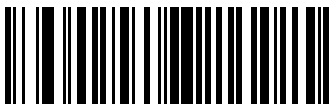


***Disable Boot Up Event**
(00h)

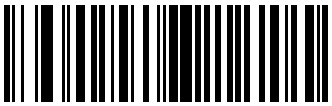
Parameter Event

Parameter # F0h, 03h

If you enable this, the engine generates a message to the host when one of the events specified in *Table 7-2* occurs. Disable this to send no notification.



Enable Parameter Event
(01h)



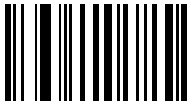
***Disable Parameter Event**
(00h)

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)

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

6

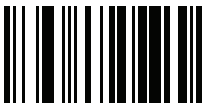
7

8

9

Cancel

To correct an error or change a selection, scan the bar code below.



Cancel