



Generalscan R3521 Scan Engine User Guide

Generalscan Inc.

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- Escape Characters
- Flush Macro Buffer
- Abort Macro PDF Entry
- Postal Codes
- US Postnet
- US Planet
- Transmit US Postal Check Digit
- UK Postal
- Transmit UK Postal Check Digit
- Japan Postal
- Australia Post
- Australia Post Format
- Netherlands KIX Code
- USPS 4CB/One Code/Intelligent Mail
- UPU FICS Postal
- Mailmark
- GS1 DataBar Expanded Stacked
- 2D Symbolologies
- PDF417
- Data Matrix
- GS1 Data Matrix
- Maxicode
- QR Code
- GS1 QR
- MicroQR
- Aztec
- Grid Matrix
- Han Xin

Postal Codes
 US Postnet
 UK Postal
 Japan Postal
 Australian Post
OCR
 OCR-A
 OCR-B
 MICR E13B
 US Currency

Numeric Barcodes

Cancel
Numeric Barcodes

1. User Preferences & Miscellaneous Options

1.1 Standard User Preferences

1.1.1 Default Parameters

How to Restore Defaults

To restore defaults, select and scan the barcode below.



*Restore Defaults

1.1.2 Trigger Mode

Parameter # 138

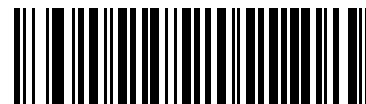
SSI # 8Ah

Scan one of the following barcodes to select a trigger mode for the decoder:

- ***Standard (Level)** - A trigger press activates decode processing. Decode processing continues until the barcode decodes, you release the trigger, or the [Decode Session Timeout](#) occurs.
- **Presentation (Blink)** - The decoder activates decode processing when it detects a barcode in its field of view. After a period of non-use, the LEDs turn off until the decoder senses motion.
- **Auto Aim** - The decoder projects the aiming pattern when the decoder senses motion. A trigger press activates decode processing. After a period of inactivity the aiming pattern shuts off.
- **Auto Aim with Illumination** - The decoder projects the aiming pattern and internal illumination LEDs when the decoder senses motion. A trigger pull activates decode processing. After 2 seconds of inactivity the aiming pattern and internal illumination LEDs automatically shut off.



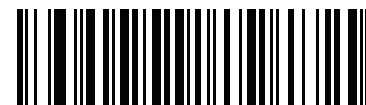
*Standard (Level)
(0)



Presentation (Blink)
(7)



Auto Aim
(9)



Auto Aim with Illumination
(10)

1.1.3 Decode Aiming Pattern

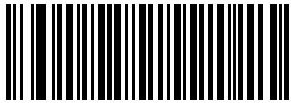
Parameter # 306

SSI # F0h 32h

NOTE: With [Picklist Mode](#) enabled, the decode aiming pattern flashes even if you disable the **Decode Aiming Pattern**.

Scan one of the following barcodes to select when to project the aiming pattern in hand-held mode:

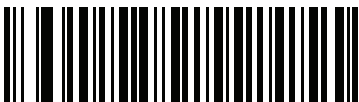
- **Enable Decode Aiming Pattern** - This projects the aiming pattern during barcode capture.
- **Disable Decode Aiming Pattern** - This turns the aiming pattern off.
- **Enable Decode Aiming Pattern on PDF** - This projects the aiming pattern when the decoder detects a PDF barcode.



***Enable Decode Aiming Pattern
(2)**



**Disable Decode Aiming Pattern
(0)**



**Enable Decode Aiming Pattern on PDF
(3)**

1.1.4 Picklist Mode

Parameter # 402

SSI # F0h 92h

Scan one of the following barcodes to select a enable or disable Picklist Mode. In this mode, you can pick out and decode a barcode from a group of barcodes that are printed close together by placing the aiming pattern on the barcode you want to decode.

NOTE: Enabling Picklist Mode overrides the Disable Decode Aiming Pattern options. You cannot disable the decode aiming pattern when Picklist Mode is enabled.

Enabling Picklist Mode can slow decode speed and hinder the ability to decode longer barcodes.

- **Enable Picklist Mode Always** - Picklist Mode is always enabled.
- **Disable Picklist Mode Always** - Picklist Mode is always disabled.



Enable Picklist Mode Always
(2)



***Disable Picklist Mode Always**
(0)

1.1.5 Continuous Barcode Read

Parameter # 649

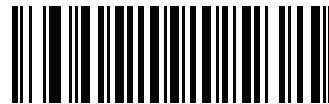
SSI # F1h 89h

Scan **Enable Continuous Barcode Read** to report every barcode while the trigger is pressed.

NOTE: We strongly recommend enabling [Picklist Mode](#) with this parameter. Disabling Picklist Mode can cause accidental decodes when more than one barcode is in the decoder's field of view.



Enable Continuous Barcode Read
(1)



***Disable Continuous Barcode Read**
(0)

1.1.6 Unique Barcode Reporting

Parameter # 723

SSI # F1h D3h

Scan **Enable Continuous Barcode Read Uniqueness** to report only unique barcodes while the trigger is pressed. This option only applies when [Continuous Barcode Read](#) is enabled.



Enable Unique Barcode Reporting
(1)



***Disable Unique Barcode Reporting**
(0)

1.1.7 Decode Session Timeout

Parameter # 136

SSI # 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. The default timeout is 9.9 seconds.

To set a Decode Session Timeout, scan the following barcode, and then scan two barcodes from [Numeric Barcodes](#) that correspond to the desired on time. Enter a leading zero for single digit numbers. For example, to set a Decode Session Timeout of 0.5 seconds, scan this barcode, and then scan the **0** and **5** barcodes. To correct an error or change the selection, scan [Cancel](#).



Decode Session Timeout

1.1.8 Timeout Between Decodes, Same Symbol

Parameter # 137

SSI # 89h

Use this option in presentation mode or [Continuous Barcode Read](#) mode to prevent the decoder from continuously decoding the same barcode when it is left in the decoder's field of view. The barcode must be out of the field of view for the timeout period before the decoder reads the same consecutive symbol. It is programmable in 0.1 second increments from 0.0 to 9.9 seconds. The default interval is 0.6 seconds.

To select the timeout between decodes for the same symbol, scan the following barcode, and then scan two barcodes from [Numeric Barcodes](#) that correspond to the desired interval, in 0.1 second increments.



Timeout Between Decodes, Same Symbol

1.1.9 Timeout Between Decodes, Different Symbols

Parameter # 144

SSI # 90h

Use this option in presentation mode or [Continuous Barcode Read](#) to control the time the decoder waits before decoding a different symbol. It is programmable in 0.1 second increments from 0.1 to 9.9 seconds. The default is 0.2 seconds.

To select the timeout between decodes for different symbols, scan the following barcode, and then scan two barcodes from [Numeric Barcodes](#) that correspond to the desired interval, in 0.1 second increments.

NOTE: Timeout Between Decodes, Different Symbols cannot be greater than or equal to the [Decode Session Timeout](#).



Timeout Between Decodes, Different Symbols

1.1.10 Triggered Timeout, Same Symbol

Parameter # 724

SSI # F1h D4h

NOTE: This feature does not apply to Timeout Between Decodes, Different Symbols.

NOTE: Timeout Between Decodes, Same Symbol cannot be greater than or equal to the Time Delay to Low Power Mode (parameter #146).

Scan **Enable Triggered Timeout, Same Symbol** below to apply **Timeout Between Decodes, Same Symbol** (parameter #137) in hand-held trigger mode. Subsequent scans of **Enable Triggered Timeout, Same Symbol** are ignored until **Timeout Between Decodes, Same Symbol** expires.



Enable Triggered Timeout, Same Symbol
(1)



* Disable Triggered Timeout, Same Symbol
(0)

1.1.11 Low Light Motion Detection Assist

Parameter # 810

SSI # F2h 2Ah

In **Presentation Mode**, this feature allows motion detection in dim to dark illumination environments by using the aiming dot or dim illumination to assist in the detection of motion by providing a low light source.

NOTE: If this parameter is enabled and [Decoding Illumination](#) is disabled, this parameter takes precedence.

The decoder does not support **Aiming Dot for Low Light Motion Detection Assist** for any scan engines with a laser aimer.



*Disable Low Light Motion Detection Assist
(00h)



Enable Aiming Dot for
Low Light Motion Detection Assist
(01h)



Enable Dim Illumination for
Low Light Motion Detection Assist
(02h)

1.1.12 Presentation Mode Field of View

Parameter # 609

SSI # F1h 61h

In **Presentation Mode**, the decoder searches for a barcode in the region around the aiming pattern's center.

To search for a barcode in a smaller region around the aiming pattern in order to speed search time, select **Small Field of View**, or to search a larger area, select **Full Field of View**.



Small Field of View
(00h)



Full Field of View
(02h)



*Medium Field of View
(01h)

1.1.13 Scene Detect Sensitivity

Parameter # 1943

SSI # F8h 97h

This parameter sets the illumination range sensitivity when motion is detected.



Low
(10)



*Medium
(128)



High
(190)

1.1.14 Mirrored Image

Parameter # 624

SSI # F1h 70h

Enable this to scan images in reverse, or mirrored, as if seen through a mirror. This mode is useful in applications requiring scanning through a mirror and using symbologies that do not decode in reverse.

Enabling this mode when using snapshot, video, or video viewfinder mode transmits images as mirrored images.



*Disable Mirrored Image
(00h)



**Enable Mirrored Image
(01h)**

1.1.15 Mobile Phone/Display Mode

Parameter # 716

SSI # F1h CCh

This mode improves barcode reading performance off mobile phones and electronic displays. Scan one of the following barcodes to select the desired mode.



***Disable Mobile Phone/Display Mode
(0)**



**Enable Mobile Phone/Display Mode
(3)**

1.1.16 Motion Tolerance

Parameter # 858

SSI # F2h 5Ah

Scan one of the following barcodes to select a motion tolerance option:

- **Less Motion Tolerance** - This provides optimal decoding performance on 1D barcodes.
- **More Motion Tolerance** - This increases motion tolerance and speeds decoding when scanning a series of 1D barcodes in rapid progression.



***Less Motion Tolerance
(0)**



**More Motion Tolerance
(1)**

1.2 Miscellaneous Decoder Parameters

1.2.1 Transmit Code ID Character

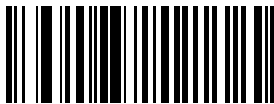
Parameter # 45

SSI # 2Dh

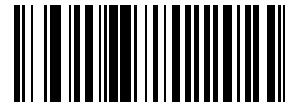
A Code ID character identifies the code type of a scanned barcode. This is useful when decoding more than one code type. In addition to any single character prefix selected, the Code ID character is inserted between the prefix and the decoded symbol.

Select no Code ID character, a Symbol Code ID character, or an AIM Code ID character. For Code ID characters, see [Symbol Code Characters](#) and [Aim Code Characters](#).

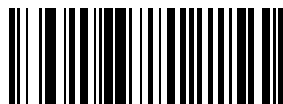
NOTE: If you enable Symbol Code ID Character or AIM Code ID Character, and enable [Transmit "No Read" Message](#), the decoder appends the code ID for Code 39 to the NR message.



Symbol Code ID Character
(2)



AIM Code ID Character
(1)



*None
(0)

1.2.2 Report Version

Scan the barcode below to report the version of software currently installed in the decoder.



Report Software Version

1.2.3 Report Scan Engine Manufacturing Information

Scan the barcode below to report the part number, serial number, and manufacture date of the decoder.



**Report Scan Engine Manufacturing
Information**

2. Symbologies

2.1 Introduction

You can program the decoder to perform various functions, or activate different features. This chapter describes symbology features and provides programming barcodes for selecting these features.

The decoder ships with the settings shown in [Table 28](#) (also see [Standard Parameter Defaults](#) for all defaults). If the default values suit requirements, programming is not necessary.

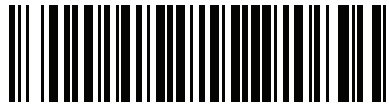
2.2 Setting Parameters

To set feature values, scan a single barcode or a short barcode sequence. The settings are stored in non-volatile memory and are preserved even when the decoder powers down.

NOTE: Most computer monitors allow scanning barcodes directly on the screen. When scanning from the screen, be sure to set the document magnification to a level where you can see the barcode clearly, and bars and/or spaces do not merge.

If not using a USB cable, select a host type (see each host chapter for specific host information) after the power-up beeps sound. This is only necessary upon the first power-up when connected to a new host.

To return all features to default values, see [Default Parameters](#). Throughout the programming barcode menus, asterisks (*) indicate default values.



* Indicates default *Enable Parameter Feature/option

2.2.1 Scanning Sequence Examples

In most cases, scanning one barcode sets the parameter value. For example, to transmit barcode data without the UPC-A check digit, scan the **Do Not Transmit UPC-A Check Digit** barcode under [Transmit UPC-A Check Digit](#). The decoder issues a fast warble beep and the LED turns green, signifying a successful parameter entry.

Other parameters require scanning several barcodes. See the parameter descriptions for this procedure.

2.2.2 Errors While Scanning

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

2.3 Symbology Parameter Defaults

Table 28 lists defaults for all symbology parameters. Change these values in one of two ways:

- Scan the appropriate barcodes in this chapter. The new value replaces the standard default value in memory. To recall the default parameter values, see [Default Parameters](#).
- Configure the decoder using the 123Scan configuration program. See [123Scan and Software Tools](#).

NOTE: See [Standard Parameter Defaults](#) for all user preference, host, symbology, and miscellaneous default parameters.

Table 28 Symbology Parameter Defaults

Parameter	Parameter Number ¹	SSI Number ²	Default	
Enable/Disable All Code Types				
1D Symbologies				
UPC/EAN/JAN				
UPC-A	1	01h	Enable	
UPC-E	2	02h	Enable	
UPC-E1	12	0Ch	Disable	
EAN-8/JAN-8	4	04h	Enable	
Transmit EAN-8 Check Digit	1881	F8 07 59	Enable	
EAN-13/JAN-13	3	03h	Enable	
Transmit EAN-13 Check Digit	1882	F8 07 5A	Enable	
Bookland EAN	83	53h	Disable	
Bookland ISBN Format	576	F1h 40h	ISBN-10	
ISSN EAN	617	F1h 69h	Disable	
Decode UPC/EAN/JAN Supplementals (2 and 5 digits)	16	10h	Ignore	

1. Parameter number decimal values are used for programming via RSM commands.

2. SSI number hex values are used for programming via SSI commands.

Table 28 Symbology Parameter Defaults (Continued)

Parameter	Parameter Number ¹	SSI Number ²	Default	
User-Programmable Supplementals			000	
Supplemental 1:	579	F1h 43h		
Supplemental 2:	580	F1h 44h		
UPC/EAN/JAN Supplemental Redundancy	80	50h	10	
Decode UPC/EAN/JAN Supplemental AIM ID	672	F1h A0h	Combined	
Transmit UPC-A Check Digit	40	28h	Enable	
Transmit UPC-E Check Digit	41	29h	Enable	
Transmit UPC-E1 Check Digit	42	2Ah	Enable	
UPC-A Preamble	34	22h	System Character	
UPC-E Preamble	35	23h	System Character	
UPC-E1 Preamble	36	24h	System Character	
Convert UPC-E to UPC-A	37	25h	Disable	
Convert UPC-E1 to UPC-A	38	26h	Disable	
EAN/JAN Zero Extend	39	27h	Disable	
UCC Coupon Extended Code	85	55h	Disable	
Coupon Report	730	F1h DAh	New Coupon Format	
UPC Reduced Quiet Zone	1289	F8h 05h 09h	Disable	
Code 128				
Code 128	8	08h	Enable	
Set Length(s) for Code 128	209, 210	D1h, D2h	Any Length	
GS1-128 (formerly UCC/EAN-128)	14	0Eh	Enable	
ISBT 128	84	54h	Enable	
ISBT Concatenation	577	F1h 41h	Disable	
Check ISBT Table	578	F1h 42h	Enable	
ISBT Concatenation Redundancy	223	DFh	10	
Code 128 <FNC4>	1254	F8h 04h E6h	Honor	
Code 128 Security Level	751	F1h EFh	Security Level 1	
Code 128 Reduced Quiet Zone	1208	F8h 04h B8h	Disable	
Code 39				
Code 39	0	00h	Enable	
Trioptic Code 39	13	0Dh	Disable	
Convert Code 39 to Code 32 (Italian Pharmacy Code)	86	56h	Disable	
Code 32 Prefix	231	E7h	Disable	

1. Parameter number decimal values are used for programming via RSM commands.

2. SSI number hex values are used for programming via SSI commands.

Table 28 Symbology Parameter Defaults (Continued)

Parameter	Parameter Number ¹	SSI Number ²	Default	
Set Length(s) for Code 39	18, 19	12h, 13h	1 to 55	
Code 39 Check Digit Verification	48	30h	Disable	
Transmit Code 39 Check Digit	43	2Bh	Disable	
Code 39 Full ASCII Conversion	17	11h	Disable	
Code 39 Security Level	750	F1h EEh	Security Level 1	
Code 39 Reduced Quiet Zone	1209	F8h 04h B9h	Disable	
Code 93				
Code 93	9	09h	Enable	
Set Length(s) for Code 93	26, 27	1Ah, 1Bh	1 to 55	
Code 11				
Code 11	10	0Ah	Disable	
Set Lengths for Code 11	28, 29	1Ch, 1Dh	4 to 55	
Code 11 Check Digit Verification	52	34h	Disable	
Transmit Code 11 Check Digit(s)	47	2Fh	Disable	
Interleaved 2 of 5 (ITF)				
Interleaved 2 of 5 (ITF)	6	06h	Enable	
Set Lengths for I 2 of 5	22, 23	16h, 17h	6 to 55	
I 2 of 5 Check Digit Verification	49	31h	Disable	
Transmit I 2 of 5 Check Digit	44	2Ch	Disable	
Convert I 2 of 5 to EAN 13	82	52h	Disable	
Febraban	1750	F8h 06h D6h	Disable	
I 2 of 5 Security Level	1121	F8h 04h 61h	Security Level 1	
I 2 of 5 Reduced Quiet Zone	1210	F8h 04h BAh	Disable	
Discrete 2 of 5 (DTF)				
Discrete 2 of 5	5	05h	Disable	
Set Length(s) for D 2 of 5	20, 21	14h 15h	1 to 55	
Codabar (NW - 7)				
Codabar	7	07h	Enable	
Set Lengths for Codabar	24, 25	18h, 19h	4 to 55	
CLSI Editing	54	36h	Disable	
NOTIS Editing	55	37h	Disable	
Codabar Security Level	1776	F8h 06h F0h	Security Level 1	
Codabar Upper or Lower Case Start/ Stop Characters Detection	855	F2h 57h	Upper Case	

1. Parameter number decimal values are used for programming via RSM commands.

2. SSI number hex values are used for programming via SSI commands.

Table 28 Symbology Parameter Defaults (Continued)

Parameter	Parameter Number ¹	SSI Number ²	Default	
Codabar Mod 16 Check Digit Verification	1784	F8h 06h F8h	Disable	
Transmit Codabar Check Digit	704	F1h C0h	Disable	
MSI				
MSI	11	0Bh	Disable	
Set Length(s) for MSI	30, 31	1Eh, 1Fh	4 to 55	
MSI Check Digits	50	32h	One MSI Check Digit	
Transmit MSI Check Digit	46	2Eh	Disable	
MSI Check Digit Algorithm	51	33h	Mod 10/Mod 10	
MSI Reduced Quiet Zone	1392	F8h 05h 70h	Disable	
Chinese 2 of 5				
Chinese 2 of 5	408	F0h 98h	Disable	
Matrix 2 of 5				
Matrix 2 of 5	618	F1h 6Ah	Disable	
Matrix 2 of 5 Lengths	619 620	F1h 6Bh F1h 6Ch	4 to 55	
Matrix 2 of 5 Check Digit	622	F1h 6Eh	Disable	
Transmit Matrix 2 of 5 Check Digit	623	F1h 6Fh	Disable	
Korean 3 of 5				
Korean 3 of 5	581	F1h 45h	Disable	
Inverse 1D				
Inverse 1D	586	F1h 4Ah	Regular	
GS1 DataBar				
GS1 DataBar Omnidirectional (formerly GS1 DataBar-14), GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional	338	F0h 52h	Enable	
GS1 DataBar Limited	339	F0h 53h	Enable	
GS1 DataBar Expanded, GS1 DataBar Expanded Stacked	340	F0h 54h	Enable	
Convert GS1 DataBar to UPC/EAN/JAN	397	F0h 8Dh	Disable	
GS1 DataBar Security Level	1706	F8h 06h AAh	Level 1	
GS1 DataBar Limited Margin Check	728	F1h D8h	Level 3	
Symbology-Specific Security Features				
Redundancy Level	78	4Eh	1	
Security Level	77	4Dh	1	
1D Quiet Zone Level	1288	F8h 05h 08h	1	

1. Parameter number decimal values are used for programming via RSM commands.

2. SSI number hex values are used for programming via SSI commands.

Table 28 Symbology Parameter Defaults (Continued)

Parameter	Parameter Number ¹	SSI Number ²	Default	
Intercharacter Gap Size	381	F0h 7Dh	Normal	
Composite Codes				
Composite CC-C	341	F0h 55h	Disable	
Composite CC-A/B	342	F0h 56h	Disable	
Composite TLC-39	371	F0h 73h	Disable	
Composite Inverse	1113	F8h 04h 59h	Regular Only	
UPC Composite Mode	344	F0h 58h	UPC Never Linked	
Composite Beep Mode	398	F0h 8Eh	Beep As Each Code Type is Decoded	
GS1-128 Emulation Mode for UCC/EAN Composite Codes	427	F0h ABh	Disable	
2D Symbologies				
PDF417	15	0Fh	Enable	
MicroPDF417	227	E3h	Disable	
Code 128 Emulation	123	7Bh	Disable	
Data Matrix	292	F0h 24h	Enable	
GS1 Data Matrix	1336	F8h 05h 38h	Disable	
Data Matrix Inverse	588	F1h 4Ch	Inverse Autodetect	
Decode Data Matrix Mirror Images	537	F1h 19h	Auto	
Maxicode	294	F0h 26h	Disable	
QR Code	293	F0h 25h	Enable	
GS1 QR	1343	F8h 05h 3Fh	Enable	
MicroQR	573	F1h 3Dh	Enable	
Linked QR Mode	1847	737h	Linked QR Only	
Aztec	574	F1h 3Eh	Enable	
Aztec Inverse	589	F1h 4Dh	Inverse Autodetect	
Han Xin	1167	F8h 04h 8Fh	Disable	
Han Xin Inverse	1168	F8h 04h 90h	Regular	
Grid Matrix	1718	F8h 06h B6h	Disable	
Grid Matrix Inverse	1719	F8h 06h B7h	Regular Only	
Grid Matrix Mirror	1736	F8h 06h C8h	Regular Only	
Macro PDF				
Macro PDF Transmit/Decode Mode Symbols	188	BCh	Passthrough Mode	
Transmit Macro PDF Control Header	184	B8h	Enable	
Escape Characters	233	E9h	None	

1. Parameter number decimal values are used for programming via RSM commands.

2. SSI number hex values are used for programming via SSI commands.

Table 28 Symbology Parameter Defaults (Continued)

Parameter	Parameter Number ¹	SSI Number ²	Default	
Flush Macro PDF Buffer	N/A	N/A	N/A	
Abort Macro PDF Entry	N/A	N/A	N/A	
Postal Codes				
US Postnet	89	59h	Disable	
US Planet	90	5Ah	Disable	
Transmit US Postal Check Digit	95	5Fh	Enable	
UK Postal	91	5Bh	Disable	
Transmit UK Postal Check Digit	96	60h	Enable	
Japan Postal	290	F0h 22h	Disable	
Australia Post	291	F0h 23h	Disable	
Australia Post Format	718	F1h CEh	Autodiscriminate	
Netherlands KIX Code	326	F0h 46h	Disable	
USPS 4CB/One Code/Intelligent Mail	592	F1h 50h	Disable	
UPU FICS Postal	611	F1h 63h	Disable	
Mailmark	1337	F8h 05h 39h	Disable	

1. Parameter number decimal values are used for programming via RSM commands.

2. SSI number hex values are used for programming via SSI commands.

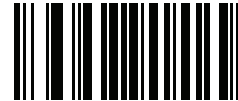
2.4 Enable/Disable All Code Types

Scan the **Disable All Code Types** barcode to disable all symbologies. This is useful when enabling only a few code types.

Scan **Enable All Code Types** to enable all symbologies. This is useful if you need to disable only a few code types.



Disable All Code Types



Enable All Code Types

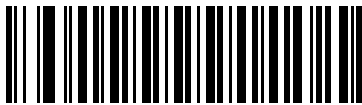
2.5 UPC/EAN/JAN

2.5.1 UPC-A

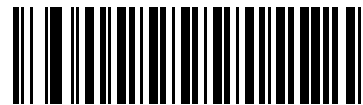
Parameter # 1

SSI # 01h

Scan one of the following barcodes to enable or disable UPC-A.



***Enable UPC-A
(1)**



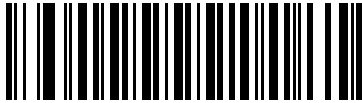
**Disable UPC-A
(0)**

2.5.2 UPC-E

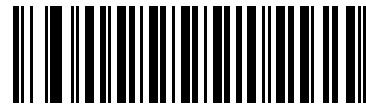
Parameter # 2

SSI # 02h

Scan one of the following barcodes to enable or disable UPC-E.



***Enable UPC-E
(1)**



**Disable UPC-E
(0)**

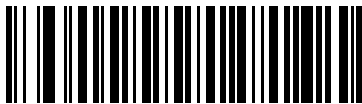
2.5.3 UPC-E1

Parameter # 12

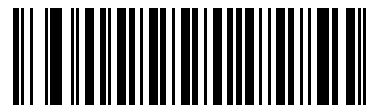
SSI # 0Ch

Scan one of the following barcodes to enable or disable UPC-E1.

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



**Enable UPC-E1
(1)**



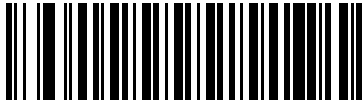
***Disable UPC-E1
(0)**

2.5.4 EAN-8/JAN-8

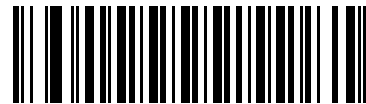
Parameter # 4 SSI

04h

Scan one of the following barcodes to enable or disable EAN-8/JAN-8.



***Enable EAN-8/JAN-8
(1)**



**Disable EAN-8/JAN-8
(0)**

2.5.5 Transmit EAN-8 Check Digit

Parameter # 1881

SSI # F8 07 59

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to transmit the barcode data with or without the EAN-8 check digit. It is always verified to guarantee the integrity of the data.



***Transmit EAN-8 Check Digit
(1)**



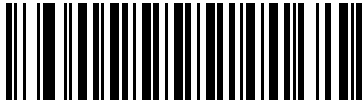
**Do Not Transmit EAN-8 Check Digit
(0)**

2.5.6 EAN-13/JAN-13

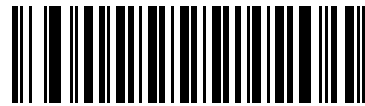
Parameter # 3 SSI

03h

Scan one of the following barcodes to enable or disable EAN-13/JAN-13.



***Enable EAN-13/JAN-13
(1)**



**Disable EAN-13/JAN-13
(0)**

2.5.7 Transmit EAN-13 Check Digit

Parameter # 1882

SSI # F8 07 5A

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to transmit the barcode data with or without the EAN-13 check digit. It is always verified to guarantee the integrity of the data.



***Transmit EAN-13 Check Digit
(1)**



**Do Not Transmit EAN-13 Check Digit
(0)**

2.5.8 Bookland EAN

Parameter # 83 SSI #

53h

NOTE: If you enable Bookland EAN, select a [Bookland ISBN Format](#). Also set [Decode UPC/EAN/JAN Supplementals](#) to either Decode UPC/EAN/JAN with Supplementals Only, Autodiscriminate UPC/EAN/JAN With Supplementals, or Enable 978/979 Supplemental Mode.

Scan one of the following barcodes to enable or disable Bookland EAN.



Enable Bookland EAN
(1)



***Disable Bookland EAN**
(0)

2.5.9 Bookland ISBN Format

Parameter # 576

SSI # F1h 40h

NOTE: For Bookland EAN to function properly, first enable Bookland EAN using [Bookland EAN](#), and then set [Decode UPC/EAN/JAN Supplementals](#) to either Decode UPC/EAN/JAN with Supplementals Only, Autodiscriminate UPC/EAN/JAN With Supplementals, or Enable 978/979 Supplemental Mode.

If you enabled Bookland EAN using [Bookland EAN](#), select one of the following formats for Bookland data:

- **Bookland ISBN-10** - The decoder 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 decoder 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
(0)



Bookland ISBN-13
(1)

2.5.10 ISSN EAN

Parameter # 617

SSI # F1h 69h

Scan one of the following barcodes to enable or disable ISSN EAN.



**Enable ISSN EAN
(1)**



***Disable ISSN EAN
(0)**

2.5.11 Decode UPC/EAN/JAN Supplementals

Parameter # 16

SSI # 10h

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

- **Decode UPC/EAN/JAN with Supplementals Only** - The decoder only decodes UPC/EAN/JAN symbols with supplemental characters, and ignores symbols without supplementals.
- **Ignore UPC/EAN/JAN Supplementals** - When presented with a UPC/EAN/JAN plus supplemental symbol, the decoder decodes UPC/EAN/JAN and ignores the supplemental characters.
- **Autodiscriminate UPC/EAN/JAN with Supplementals** - The decoder decodes UPC/EAN/JAN symbols with supplemental characters immediately. If the symbol does not have a supplemental, the decoder must decode the barcode the number of times set via [UPC/EAN/JAN Supplemental Redundancy](#) before transmitting its data to confirm that there is no supplemental. Select one of the following **Supplemental Mode** options to immediately transmit EAN-13 barcodes starting with that prefix that have supplemental characters. If the symbol does not have a supplemental, the decoder must decode the barcode the number of times set via [UPC/EAN/JAN Supplemental Redundancy](#) before transmitting the data to confirm that there is no supplemental. The decoder transmits UPC/EAN/JAN barcodes 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 barcodes, see [Bookland EAN](#) to enable Bookland EAN, and select a format using [Bookland ISBN Format](#).

- **Enable 977 Supplemental Mode**
- **Enable 414/419/434/439 Supplemental Mode**
- **Enable 491 Supplemental Mode**
- **Enable Smart Supplemental Mode** - This applies to EAN-13 barcodes starting with any prefix listed previously.
- **Supplemental User-Programmable Type 1** - This applies to EAN-13 barcodes starting with a 3-digit user-defined prefix. Set this using [User-Programmable Supplementals](#).
- **Supplemental User-Programmable Type 1 and 2** - This applies to EAN-13 barcodes starting with either of two 3-digit user-defined prefixes. Set the prefixes using [User-Programmable Supplementals](#).
- **Smart Supplemental Plus User-Programmable 1** - This applies to EAN-13 barcodes starting with any prefix listed previously or the prefix set using [User-Programmable Supplementals](#).
- **Smart Supplemental Plus User-Programmable 1 and 2** - This applies to EAN-13 barcodes starting with any prefix listed previously or one of the two user-defined prefixes set using [User-Programmable Supplementals](#).

2.5.11 Decode UPC/EAN/JAN Supplementals (continued)

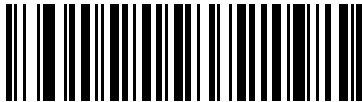
NOTE: To minimize the risk of invalid data transmission, select either to decode or ignore supplemental characters.



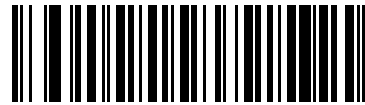
**Decode UPC/EAN/JAN With Supplementals Only
(1)**



***Ignore UPC/EAN/JAN Supplementals
(0)**



**Autodiscriminate UPC/EAN/JAN with Supplementals
(2)**



**Enable 378/379 Supplemental Mode
(4)**



**Enable 978/979 Supplemental Mode
(5)**



**Enable 977 Supplemental Mode
(7)**

2.5.11 Decode UPC/EAN/JAN Supplementals (continued)



**Enable 414/419/434/439 Supplemental Mode
(6)**



**Enable 491 Supplemental Mode
(8)**



**Enable Smart Supplemental Mode
(3)**



**Supplemental User-Programmable Type 1
(9)**



**Supplemental User-Programmable Type 1 and 2
(10)**



**Smart Supplemental Plus User-Programmable 1
(11)**



**Smart Supplemental Plus User-Programmable 1 and 2
(12)**

2.5.12 User-Programmable Supplementals

Supplemental 1: Parameter # 579

SSI # F1h 43h

Supplemental 2: Parameter # 580

SSI # F1h 44h

If you selected a Supplemental User-Programmable option from [Decode UPC/EAN/JAN Supplementals](#), scan **User-Programmable Supplemental 1**, and then scan three barcodes from [Numeric Barcodes](#) to set the 3-digit prefix. To set a second 3-digit prefix, scan **User-Programmable Supplemental 2**, and then scan three barcodes from [Numeric Barcodes](#). The default is 000 (zeroes).



User-Programmable Supplemental 1



User-Programmable Supplemental 2

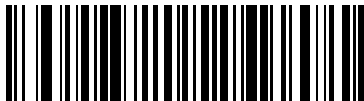
2.5.13 UPC/EAN/JAN Supplemental Redundancy

Parameter # 80

SSI # 50h

If you selected Autodiscriminate UPC/EAN/JAN Supplementals, this option adjusts the number of times to decode a symbol without supplementals before transmission. The range is from two to thirty times. Five or above is recommended when decoding a mix of UPC/EAN/JAN symbols with and without supplementals. The default is 10.

Scan the barcode below to set a decode redundancy value. Next, scan two numeric barcodes in [Numeric Barcodes](#). Enter a leading zero for single digit numbers. To correct an error or change a selection, scan [Cancel](#).



UPC/EAN/JAN Supplemental Redundancy

2.5.14 UPC/EAN/JAN Supplemental AIM ID Format

Parameter # 672

SSI # F1h A0h

If [Transmit Code ID Character](#) is set to **AIM Code ID Character**, scan one of the following barcodes to select an output format when reporting UPC/EAN/JAN barcodes with supplementals:

- **Separate** - Transmit UPC/EAN/JAN 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/JAN with supplementals with one AIM ID and one transmission, i.e.,

]E3<data+supplemental data>

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

]E<0 or 4><data>

]E<1 or 2>[supplemental data]



**Separate
(0)**



***Combined
(1)**



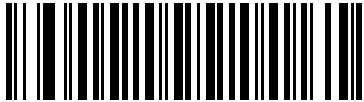
**Separate Transmissions
(2)**

2.5.15 Transmit UPC-A Check Digit

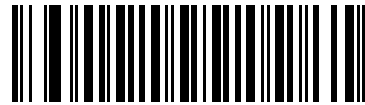
Parameter # 40

SSI # 28h

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to transmit the barcode 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
(1)**



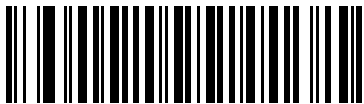
**Do Not Transmit UPC-A Check Digit
(0)**

2.5.16 Transmit UPC-E Check Digit

Parameter # 41

SSI # 29h

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to transmit the barcode 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
(1)**



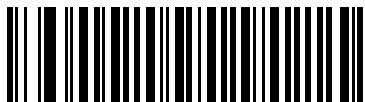
**Do Not Transmit UPC-E Check Digit
(0)**

2.5.17 Transmit UPC-E1 Check Digit

Parameter # 42

SSI # 2Ah

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to transmit the barcode 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
(1)**



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

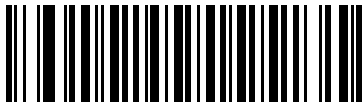
2.5.18 UPC-A Preamble

Parameter # 34

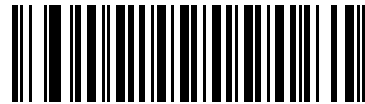
SSI # 22h

Preamble characters are part of the UPC symbol, and include Country Code and System Character. Select the appropriate option for transmitting a UPC-A preamble to match the host system:

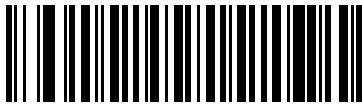
- Transmit System Character only
- Transmit System Character and Country Code ("0" for USA)
- Transmit no preamble.



No Preamble (<DATA>)
(0)



***System Character**
(<SYSTEM CHARACTER> <DATA>)
(1)



System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(2)

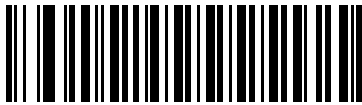
2.5.19 UPC-E Preamble

Parameter # 35

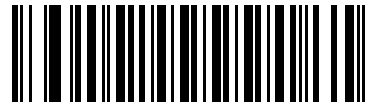
SSI # 23h

Preamble characters are part of the UPC symbol, and include Country Code and System Character. Select the appropriate option for transmitting a UPC-E preamble to match the host system:

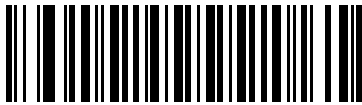
- Transmit System Character only
- Transmit System Character and Country Code ("0" for USA)
- Transmit no preamble.



No Preamble (<DATA>)
(0)



***System Character**
(<SYSTEM CHARACTER> <DATA>)
(1)



System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(2)

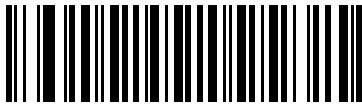
2.5.20 UPC-E1 Preamble

Parameter # 36

SSI # 24h

Preamble characters are part of the UPC symbol, and include Country Code and System Character. Select the appropriate option for transmitting a UPC-E1 preamble to match the host system:

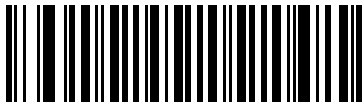
- Transmit System Character only
- Transmit System Character and Country Code ("0" for USA)
- Transmit no preamble.



No Preamble (<DATA>)
(0)



***System Character**
(<SYSTEM CHARACTER> <DATA>)
(1)



System Character & Country Code
(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(2)

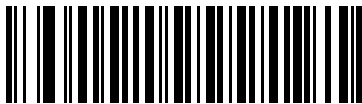
2.5.21 Convert UPC-E to UPC-A

Parameter # 37

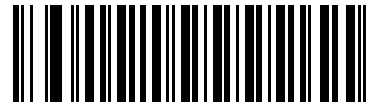
SSI # 25h

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).

Disable this to transmit UPC-E decoded data as UPC-E data, without conversion.



Convert UPC-E to UPC-A (Enable)
(1)



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

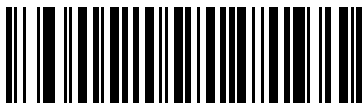
2.5.22 Convert UPC-E1 to UPC-A

Parameter # 38

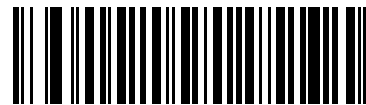
SSI # 26h

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

Scan **Do Not Convert UPC-E1 to UPC-A (Disable)** to transmit UPC-E1 decoded data as UPC-E1 data, without conversion.



Convert UPC-E1 to UPC-A (Enable)
(1)



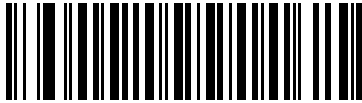
*Do Not Convert UPC-E1 to UPC-A (Disable)
(0)

2.5.23 EAN/JAN Zero Extend

Parameter # 39

SSI # 27h

Scan **Enable EAN/JAN Zero Extend** to add five leading zeros to decoded EAN-8 symbols to make them compatible in length to EAN-13 symbols. Scan **Disable EAN/JAN Zero Extend** to transmit EAN-8 symbols as is.



Enable EAN/JAN Zero Extend
(1)



*Disable EAN/JAN Zero Extend
(0)

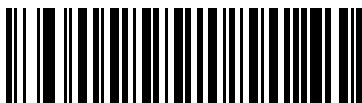
2.5.24 UCC Coupon Extended Code

Parameter # 85

SSI # 55h

Scan **Enable UCC Coupon Extended Code** to decode UPC-A barcodes starting with digit '5', EAN-13 barcodes starting with digit '99', and UPC-A/GS1-128 coupon codes. UPC-A, EAN-13, and GS1-128 must be enabled to use this feature.

NOTE: See [UPC/EAN/JAN Supplemental Redundancy](#) to control autodiscrimination of the GS1-128 portion (right half) of a coupon code.



Enable UCC Coupon Extended Code
(1)



*Disable UCC Coupon Extended Code
(0)

2.5.25 Coupon Report

Parameter # 730

SSI # F1h DAh

Scan one of the following barcodes to select the type of coupon format to support.

- **Old Coupon Format** - Support UPC-A/GS1-128 and EAN-13/GS1-128.
- **New Coupon Format** - An interim format to support UPC-A/GS1-DataBar and EAN-13/GS1-DataBar.
- **Autodiscriminate Format** - Support both **Old Coupon Format** and **New Coupon Format**.



Old Coupon Format
(0)



***New Coupon Format**
(1)



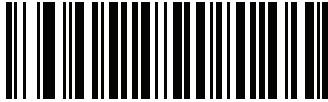
Autodiscriminate Coupon Format
(2)

2.5.26 UPC Reduced Quiet Zone

Parameter # 1289

SSI # F8h 05h 09h

Scan one of the following barcodes to enable or disable decoding UPC barcodes with reduced quiet zones (the margins on either side of the barcode). If you select **Enable**, select a [1D Quiet Zone Level](#).



Enable UPC Reduced Quiet Zone
(1)



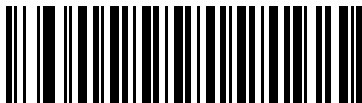
*Disable UPC Reduced Quiet Zone
(0)

2.6 Code 128

Parameter # 8

SSI # 08h

Scan one of the following barcodes to enable or disable Code 128.



*Enable Code 128
(1)



Disable Code 128
(0)

2.6.1 Set Lengths for Code 128

L1 = Parameter # 209

SSI # D1h

L2 = Parameter # 210

SSI # D2h

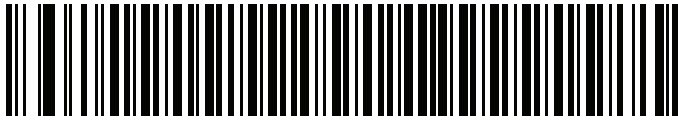
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 128 to any length, one or two discrete lengths, or lengths within a specific range. The default **Any Length**.

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

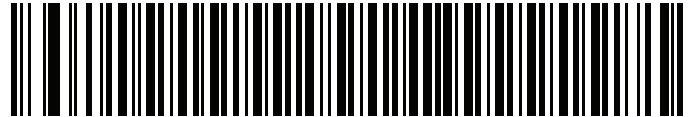
Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only Code 128 symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 128 symbols with 14 characters, scan **Code 128 - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only Code 128 symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 128 symbols containing either 2 or 14 characters, scan **Code 128 - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode Code 128 symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode Code 128 symbols containing between 4 and 12 characters, scan **Code 128 - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode Code 128 symbols containing any number of characters within the decoder's capability.

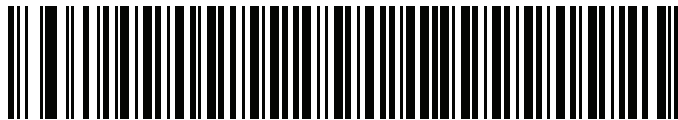
2.6.1 Set Lengths for Code 128 (continued)



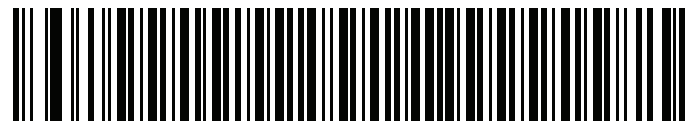
Code 128 - One Discrete Length



Code 128 - Two Discrete Lengths



Code 128 - Length Within Range



*Code 128 - Any Length

2.6.2 GS1-128 (formerly UCC/EAN-128)

Parameter # 14

SSI # 0Eh

Scan one of the following barcodes to enable or disable GS1-128.



*Enable GS1-128
(1)



Disable GS1-128
(0)

2.6.3 ISBT 128

Parameter # 84

SSI # 54h

ISBT 128 is a variant of Code 128 used in the blood bank industry. Scan one of the following barcodes to enable or disable ISBT 128.



***Enable ISBT 128**
(1)



Disable ISBT 128
(0)

2.6.4 ISBT Concatenation

Parameter # 577

SSI # F1h 41h

Select an option for concatenating pairs of ISBT code types:

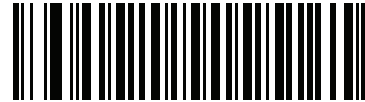
- **Enable ISBT Concatenation** - There must be two ISBT codes in order for the decoder to decode and perform concatenation. The decoder does not decode single ISBT symbols.
- **Disable ISBT Concatenation** - The decoder does not concatenate pairs of ISBT codes it encounters. This is the default.
- **Autodiscriminate ISBT Concatenation** - The decoder decodes and concatenates pairs of ISBT codes immediately. If only a single ISBT symbol is present, the decoder must decode the symbol the number of times set via [ISBT Concatenation Redundancy](#) before transmitting its data to confirm that there is no additional ISBT symbol.

NOTE: When enabling ISBT Concatenation or Autodiscriminate ISBT Concatenation set Code 128 security level to Level 2.

2.6.4 ISBT Concatenation (continued)



Enable ISBT Concatenation
(1)



*Disable ISBT Concatenation
(0)



Autodiscriminate ISBT Concatenation
(2)

2.6.5 Check ISBT Table

Parameter # 578

SSI # F1h 42h

The ISBT specification includes a table that lists several types of ISBT barcodes 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
(1)



Disable Check ISBT Table
(0)

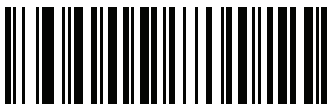
2.6.6 ISBT Concatenation Redundancy

Parameter # 223

SSI # DFh

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

Scan the following barcode, and then scan barcodes in [Numeric Barcodes](#) 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](#). The default is 10.



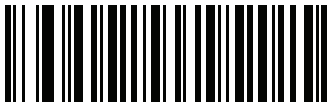
ISBT Concatenation Redundancy

2.6.7 Code 128 <FNC4>

Parameter # 1254

SSI # F8h 04h E6h

This feature applies to Code 128 barcodes with an embedded <FNC4> character. Select **Ignore Code 128 <FNC4>** to strip the <FNC4> character from the decode data. The remaining characters are sent to the host unchanged. When disabled, the <FNC4> character is processed normally as per Code 128 standard.



*Honor Code 128 <FNC4>
(0)



Ignore Code 128 <FNC4>
(1)

2.6.8 Code 128 Security Level

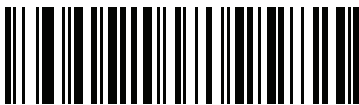
Parameter # 751

SSI # F1h EFh

Code 128 barcodes are vulnerable to misdecodes, particularly when Code 128 Lengths is set to **Any Length**. The decoder offers four levels of decode security for Code 128 barcodes. There is an inverse relationship between security and decoder aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Code 128 Security Level 0** - The decoder operates in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.
- **Code 128 Security Level 1** - This option eliminates most misdecodes while maintaining reasonable aggressiveness. This is the default.
- **Code 128 Security Level 2** - This option applies greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.
- **Code 128 Security Level 3** - If you selected **Security Level 2**, and misdecodes still occur, select this security level to apply the highest safety requirements.

NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes, and significantly impairs the decoding ability of the decoder. If this level of security is required, try to improve the quality of the barcodes.



Code 128 Security Level 0
(0)



*Code 128 Security Level 1
(1)



Code 128 Security Level 2
(2)



Code 128 Security Level 3
(3)

2.6.9 Code 128 Reduced Quiet Zone

Parameter # 1208

SSI # F8h 04h B8h

Scan one of the following barcodes to enable or disable decoding Code 128 barcodes with reduced quiet zones (the margins on either side of the barcode). If you select **Enable**, select a [1D Quiet Zone Level](#).



Enable Code 128 Reduced Quiet Zone
(1)



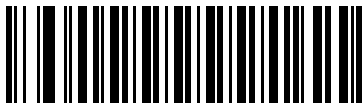
*Disable Code 128 Reduced Quiet Zone
(0)

2.7 Code 39

Parameter # 0

SSI # 00h

Scan one of the following barcodes to enable or disable Code 39.



*Enable Code 39
(1)



Disable Code 39
(0)

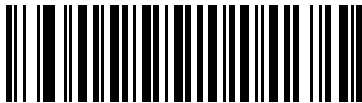
2.7.1 Trioptic Code 39

Parameter # 13

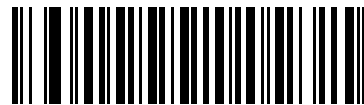
SSI # 0Dh

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. Scan one of the following barcodes to enable or disable Trioptic Code 39.

NOTE: You cannot enable Trioptic Code 39 and Code 39 Full ASCII simultaneously.



Enable Trioptic Code 39
(1)



*Disable Trioptic Code 39
(0)

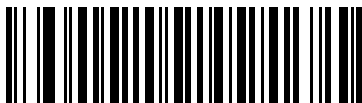
2.7.2 Convert Code 39 to Code 32

Parameter # 86

SSI # 56h

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan one of the following barcodes 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
(1)



*Disable Convert Code 39 to Code 32
(0)

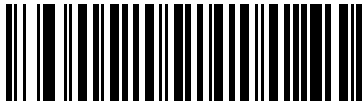
2.7.3 Code 32 Prefix

Parameter # 231

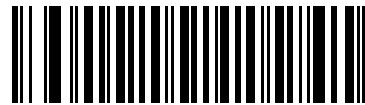
SSI # E7h

Scan one of the following barcodes to enable or disable adding the prefix character "A" to all Code 32 barcodes.

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



Enable Code 32 Prefix
(1)



*Disable Code 32 Prefix
(0)

2.7.4 Set Lengths for Code 39

L1 = Parameter # 18

SSI # 12h

L2 = Parameter # 19

SSI # 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 128 to any length, one or two discrete lengths, or lengths within a specific range. If Code 39 Full ASCII is enabled, **Length Within Range** or **Any Length** are the preferred options. The default is **Length Within Range**: 1 to 55.

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

2.7.4 Set Lengths for Code 39 (continued)

Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only Code 39 symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only Code 39 symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 39 symbols containing either 2 or 14 characters, scan **Code 39 - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode Code 39 symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode Code 39 symbols containing between 4 and 12 characters, scan **Code 39 - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode Code 39 symbols containing any number of characters within the decoder's capability.



Code 39 - One Discrete Length



Code 39 - Two Discrete Lengths



*Code 39 - Length Within Range



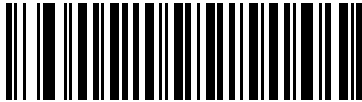
Code 39 - Any Length

2.7.5 Code 39 Check Digit Verification

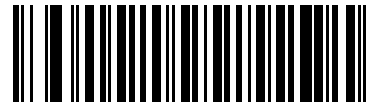
Parameter # 48

SSI # 30h

Scan **Enable Code 39 Check Digit** to check the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only Code 39 symbols which include a modulo 43 check digit are decoded. Enable this feature if the Code 39 symbols contain a Modulo 43 check digit.



Enable Code 39 Check Digit
(1)



***Disable Code 39 Check Digit**
(0)

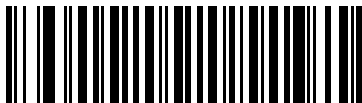
2.7.6 Transmit Code 39 Check Digit

Parameter # 43

SSI # 2Bh

Scan one of the following barcodes to transmit Code 39 data with or without the check digit.

NOTE: [Code 39 Check Digit Verification](#) must be enabled for this parameter to function.



Transmit Code 39 Check Digit (Enable)
(1)



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

2.7.7 Code 39 Full ASCII Conversion

Parameter # 17

SSI # 11h

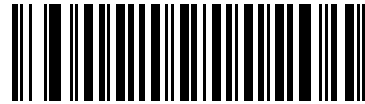
Code 39 Full ASCII is a variant of Code 39 which pairs characters to encode the full ASCII character set. Scan one of the following barcodes to enable or disable Code 39 Full ASCII.

NOTE: You cannot enable Trioptic Code 39 and Code 39 Full ASCII simultaneously.

Code 39 Full ASCII to Full ASCII Correlation is host-dependent, and is therefore described in the ASCII character set table for the appropriate interface.



**Enable Code 39 Full ASCII
(1)**



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

2.7.8 Code 39 Security Level

Parameter # 750

SSI # F1h EEh

The decoder offers four levels of decode security for Code 39 barcodes. There is an inverse relationship between security and decoder aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Code 39 Security Level 0:** The decoder operates in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.
- **Code 39 Security Level 1:** This default setting eliminates most misdecodes.
- **Code 39 Security Level 2:** This option applies greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.
- **Code 39 Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level to apply the highest safety requirements.

NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes, and significantly impairs the decoding ability of the decoder. If this level of security is required, try to improve the quality of the barcodes.



Code 39 Security Level 0
(0)



*Code 39 Security Level 1
(1)



Code 39 Security Level 2
(2)



Code 39 Security Level 3
(3)

2.7.9 Code 39 Reduced Quiet Zone

Parameter # 1209

SSI # F8h 04h B9h

Scan one of the following barcodes to enable or disable decoding Code 39 barcodes with reduced quiet zones (the margins on either side of the barcode). If you select **Enable**, select a [1D Quiet Zone Level](#).



Enable Code 39 Reduced Quiet Zone
(1)



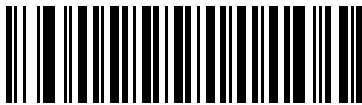
*Disable Code 39 Reduced Quiet Zone
(0)

2.8 Code 93

Parameter # 9

SSI # 09h

Scan one of the following barcodes to enable or disable Code 93.



*Enable Code 93
(1)



Disable Code 93
(0)

2.8.1 Set Lengths for Code 93

L1 = Parameter # 26

SSI # 1Ah

L2 = Parameter # 27

SSI # 1Bh

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 93 to any length, one or two discrete lengths, or lengths within a specific range. The default is **Length Within Range**: 1 to 55.

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

Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only Code 93 symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 93 symbols with 14 characters, scan **Code 93 - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only Code 93 symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 93 symbols containing either 2 or 14 characters, scan **Code 93 - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode Code 93 symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode Code 93 symbols containing between 4 and 12 characters, scan **Code 93 - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode Code 93 symbols containing any number of characters within the decoder's capability.

2.8.1 Set Lengths for Code 93 (continued)



Code 93 - One Discrete Length



Code 93 - Two Discrete Lengths



***Code 93 - Length Within Range**



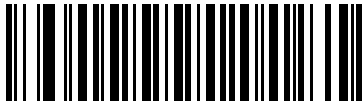
Code 93 - Any Length

2.9 Code 11

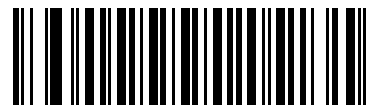
Parameter # 10

SSI # 0Ah

Scan one of the following barcodes to enable or disable Code 11



Enable Code 11
(1)



*Disable Code 11
(0)

2.9.1 Set Lengths for Code 11

L1 = Parameter # 28

SSI # 1Ch

L2 = Parameter # 29

SSI # 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. The default is **Length Within Range**: 4 to 55.

NOTE: When setting lengths, enter a leading zero for single digit numbers

Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only Code 11 symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 11 symbols with 14 characters, scan **Code 11 - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only Code 11 symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only Code 11 symbols containing either 2 or 14 characters, scan **Code 11 - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode Code 11 symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode Code 11 symbols containing between 4 and 12 characters, scan **Code 11 - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode Code 11 symbols containing any number of characters within the decoder's capability.

2.9.1 Set Lengths for Code 11 (continued)



Code 11 - One Discrete Length



Code 11 - Two Discrete Lengths



***Code 11 - Length Within Range**



Code 11 - Any Length

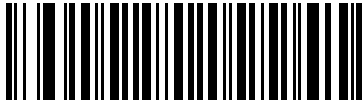
2.9.2 Code 11 Check Digit Verification

Parameter # 52

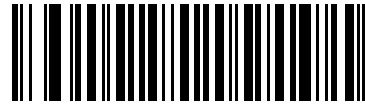
SSI # 34h

This feature allows the decoder to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm.

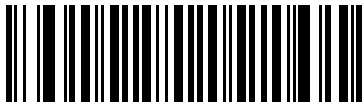
Scan one of the following barcodes to specify the number of check digits encoded in the Code 11 symbols, or to disable this feature.



***Disable**
(0)



One Check Digit
(1)



Two Check Digits
(2)

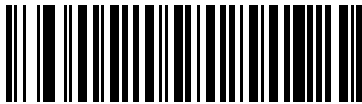
2.9.3 Transmit Code 11 Check Digits

Parameter # 47

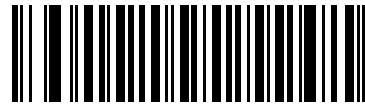
SSI # 2Fh

Scan one of the following barcodes to select whether or not to transmit the Code 11 check digit(s).

NOTE: [Code 11 Check Digit Verification](#) must be enabled for this parameter to function.



Transmit Code 11 Check Digit(s) (Enable)
(1)



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

2.10 Interleaved 2 of 5 (ITF)

Parameter # 6

SSI # 06h

Scan one of the following barcodes to enable or disable Interleaved 2 of 5.



*Enable Interleaved 2 of 5
(1)



Disable Interleaved 2 of 5
(0)

2.10.1 Set Lengths for Interleaved 2 of 5

L1 = Parameter # 22

SSI # 16h

L2 = Parameter # 23

SSI # 17h

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 I 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range. The range for Interleaved 2 of 5 lengths is 0 - 80. The default is **Length Within Range**: 6 to 55.

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

Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only I 2 of 5 symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only I 2 of 5 symbols with 14 characters, scan **I 2 of 5 - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only I 2 of 5 symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only I 2 of 5 symbols containing either 2 or 14 characters, scan **I 2 of 5 - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode I 2 of 5 symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode I 2 of 5 symbols containing between 4 and 12 characters, scan **I 2 of 5 - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode I 2 of 5 symbols containing any number of characters within the decoder's 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 transmit as a complete scan, yielding less data than is encoded in the barcode. To prevent this, select specific lengths (I 2 of 5 - One Discrete Length, Two Discrete Lengths) for I 2 of 5 applications, or increase the [I 2 of 5 Security Level](#).

2.10.1 Set Lengths for Interleaved 2 of 5 (continued)



I 2 of 5 - One Discrete Length



I 2 of 5 - Two Discrete Lengths



*I 2 of 5 - Length Within Range



I 2 of 5 - Any Length

2.10.2 I 2 of 5 Check Digit Verification

Parameter # 49

SSI # 31h

Scan one of the following barcodes to check the integrity of all I 2 of 5 symbols to verify the data complies with either the specified Uniform Symbology Specification (USS), or the Optical Product Code Council (OPCC) check digit algorithm.



*Disable
(0)



USS Check Digit
(1)



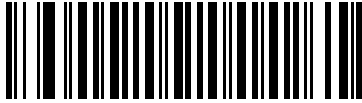
OPCC Check Digit
(2)

2.10.3 Transmit I 2 of 5 Check Digit

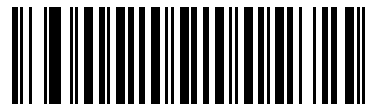
Parameter # 44

SSI # 2Ch

Scan one of the following barcodes to transmit I 2 of 5 data with or without the check digit.



Transmit I 2 of 5 Check Digit (Enable)
(1)



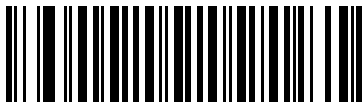
*Do Not Transmit I 2 of 5 Check Digit (Disable)
(0)

2.10.4 Convert I 2 of 5 to EAN-13

Parameter # 82

SSI # 52h

Scan **Convert I 2 of 5 to EAN-13 (Enable)** 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)
(1)



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

2.10.5 Febraban

Parameter # 1750

SSI # F8h 06h D6h

Febraban is an I 2 of 5 barcode of length 44 that requires special check characters to be inserted in the transmitted data stream. When enabled, the I 2 of 5 internal check digit calculation and transmission is disabled. When disabled, all I 2 of 5 functionality works as usual.

Recommendations for Length Setting

I 2 of 5 Length 1: Larger of the fixed length and the FEBRABAN length (==44).

I 2 of 5 Length 2: Smaller of the fixed length and the FEBRABAN length (==44).



**Enable Febraban
(1)**



***Disable Febraban
(0)**

2.10.6 I 2 of 5 Security Level

Parameter # 1121

SSI # F8h 04h 61h

Interleaved 2 of 5 barcodes are vulnerable to misdecodes, particularly when I 2 of 5 Lengths is set to **Any Length**. The decoder offers four levels of decode security for Interleaved 2 of 5 barcodes. There is an inverse relationship between security and decoder aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **I 2 of 5 Security Level 0:** The decoder operates in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.
- **I 2 of 5 Security Level 1:** A barcode must be successfully read twice, and satisfy certain safety requirements before being decoded. This default setting eliminates most misdecodes.
- **I 2 of 5 Security Level 2:** This option applies greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.
- **I 2 of 5 Security Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level. The highest safety requirements are applied. A barcode must be successfully read three times before being decoded.

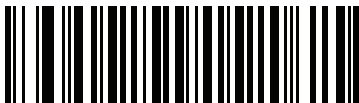
NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes, and significantly impairs the decoding ability of the decoder. If this level of security is required, try to improve the quality of the barcodes.



I 2 of 5 Security Level 0
(0)



*I 2 of 5 Security Level 1
(1)



I 2 of 5 Security Level 2
(2)



I 2 of 5 Security Level 3
(3)

2.10.7 I 2 of 5 Reduced Quiet Zone

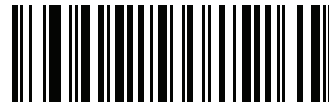
Parameter # 1210

SSI # F8h 04h BAh

Scan one of the following barcodes to enable or disable decoding I 2 of 5 barcodes with reduced quiet zones (the margins on either side of the barcode). If you select **Enable**, select a [1D Quiet Zone Level](#).



Enable I 2 of 5 Reduced Quiet Zone
(1)



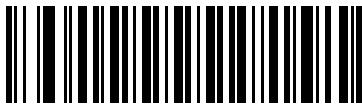
*Disable I 2 of 5 Reduced Quiet Zone
(0)

2.11 Discrete 2 of 5 (DTF)

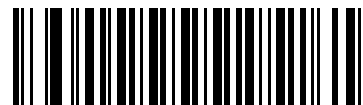
Parameter # 5

SSI # 05h

Scan one of the following barcodes to enable or disable Discrete 2 of 5.



Enable Discrete 2 of 5
(1)



*Disable Discrete 2 of 5
(0)

2.11.1 Set Lengths for Discrete 2 of 5

L1 = Parameter # 20

SSI # 14h

L2 = Parameter # 21

SSI # 15h

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 D 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range. The default is **Length Within Range**: 1 to 55.

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

Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only D 2 of 5 symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only D 2 of 5 symbols with 14 characters, scan **D 2 of 5 - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only D 2 of 5 symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only D 2 of 5 symbols containing either 2 or 14 characters, scan **D 2 of 5 - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode D 2 of 5 symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode D 2 of 5 symbols containing between 4 and 12 characters, scan **D 2 of 5 - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode D 2 of 5 symbols containing any number of characters within the decoder's capability.

2.11.1 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 transmit as a complete scan, yielding less data than is encoded in the barcode. 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



D 2 of 5 - Two Discrete Lengths



***D 2 of 5 - Length Within Range**



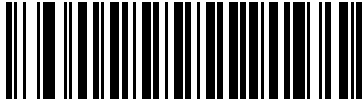
D 2 of 5 - Any Length

2.12 Codabar (NW - 7)

Parameter # 7

SSI # 07h

Scan one of the following barcodes to enable or disable Codabar.



*Enable Codabar
(1)



Disable Codabar
(0)

2.12.1 Set Lengths for Codabar

L1 = Parameter # 24

SSI # 18h

L2 = Parameter # 25

SSI # 19h

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 Codabar to any length, one or two discrete lengths, or lengths within a specific range. The default is **Length Within Range**: 4 to 55.

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

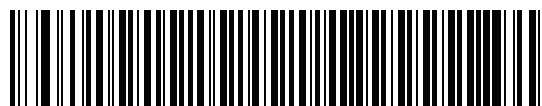
Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only Codabar symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only Codabar symbols with 14 characters, scan **Codabar - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only Codabar symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only Codabar symbols containing either 2 or 14 characters, scan **Codabar - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode Codabar symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode Codabar symbols containing between 4 and 12 characters, scan **Codabar - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode Codabar symbols containing any number of characters within the decoder's capability.

2.12.1 Set Lengths for Codabar (continued)



Codabar - One Discrete Length



Codabar - Two Discrete Lengths



***Codabar - Length Within Range**



Codabar - Any Length

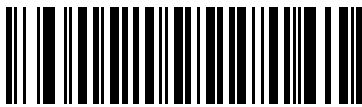
2.12.2 CLSI Editing

Parameter # 54 SSI

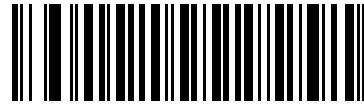
36h

Scan **Enable CLSI Editing** to strip the start and stop characters and insert a space after the first, fifth, and tenth characters of a 14-character Codabar symbol if the host system requires this data format.

NOTE: Symbol length does not include start and stop characters.



Enable CLSI Editing
(1)



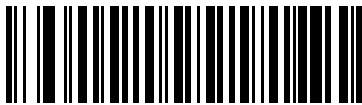
*Disable CLSI Editing
(0)

2.12.3 NOTIS Editing

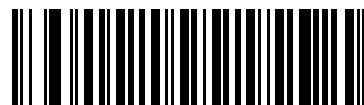
Parameter # 55

SSI # 37h

Scan **Enable NOTIS Editing** to strip the start and stop characters from a decoded Codabar symbol if the host system requires this data format.



Enable NOTIS Editing
(1)



*Disable NOTIS Editing
(0)

2.12.4 Codabar Security Level

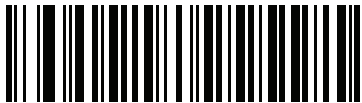
Parameter # 1776

SSI # F8h 06h F0h

The decoder offers four levels of decode security for Codabar barcodes. There is an inverse relationship between security and decoder aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary.

- **Codabar Security Level 0:** This setting allows the decoder to operate in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.
- **Codabar Security Level 1:** This default setting eliminates most misdecodes.
- **Codabar Security Level 2:** Select this option with greater barcode security requirements if **Security Level 1** fails to eliminate misdecodes.
- **Codabar Security Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level to apply the highest safety requirements.

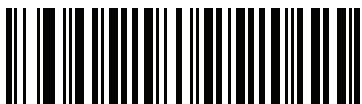
NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes, and significantly impairs the decoding ability of the decoder. If this level of security is required, try to improve the quality of the barcodes.



Codabar Security Level 0
(0)



*Codabar Security Level 1
(1)



Codabar Security Level 2
(2)



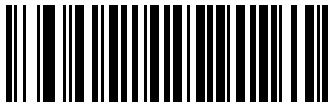
Codabar Security Level 3
(3)

2.12.5 Codabar Upper or Lower Case Start/Stop Characters

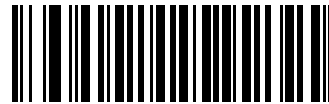
Parameter # 855

SSI # F2h 57h

Scan one of the following barcodes to select whether to transmit upper case or lower case Codabar start/stop characters.



Lower Case
(1)



*Upper Case
(0)

2.12.6 Codabar Mod 16 Check Digit Verification

Parameter # 1784

SSI # F8h 06h F8h

Enable this feature to check the Codabar Mod 16 Check Digit to verify that the data complies with the specified check digit algorithm.



Enable Codabar Mod 16 Check Digit
(1)



* Disable Codabar Mod 16 Check Digit
(0)

2.12.7 Transmit Codabar Check Digit

Parameter # 704

SSI # F1h C0h

Scan one of the following barcodes to select whether or not to transmit the Codabar check digit(s).

NOTE: [Codabar Mod 16 Check Digit Verification](#) must be enabled for this parameter to function.



Enable Codabar Check Digit Transmission
(1)



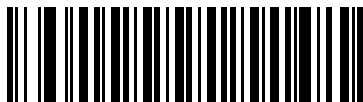
* Disable Codabar Check Digit Transmission
(0)

2.13 MSI

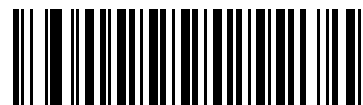
Parameter # 11

SSI # 0Bh

Scan one of the following barcodes to enable or disable MSI.



Enable MSI
(1)



*Disable MSI
(0)

2.13.1 Set Lengths for MSI

L1 = Parameter # 30

SSI # 1Eh

L2 = Parameter # 31

SSI # 1Fh

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 MSI to any length, one or two discrete lengths, or lengths within a specific range. The default is **Length Within Range: 4 to 55**.

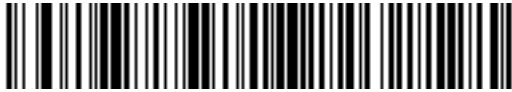
NOTE: When setting lengths, enter a leading zero for single digit numbers.

Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only MSI symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only MSI symbols with 14 characters, scan **MSI - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only MSI symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only MSI symbols containing either 2 or 14 characters, scan **MSI - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode MSI symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode MSI symbols containing between 4 and 12 characters, scan **MSI - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode MSI symbols containing any number of characters within the decoder's capability.

2.13.1 Set Lengths for MSI (continued)

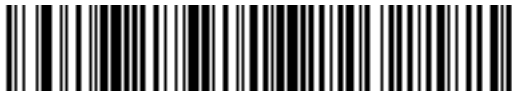
NOTE: Due to the construction of the MSI symbology, it is possible for a scan line covering only a portion of the code to transmit as a complete scan, yielding less data than is encoded in the barcode. To prevent this, select specific lengths (**MSI - One Discrete Length, Two Discrete Lengths**) for MSI applications.



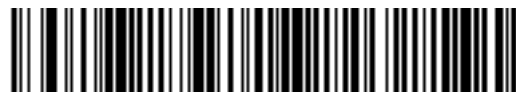
MSI - One Discrete Length



MSI - Two Discrete Lengths



***MSI - Length Within Range**



MSI - Any Length

2.13.2 MSI Check Digits

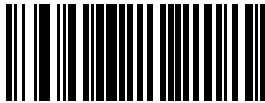
Parameter # 50

SSI # 32h

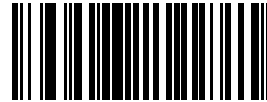
With MSI symbols, one check digit is mandatory and always verified by the reader. The second check digit is optional. If the MSI codes include two check digits, scan the **Two MSI Check Digits** barcode to enable verification of the second check digit.

- 0 - Does not check the MSI check digit; decodes MSI with no check digit.
- 1 - This is for MSI barcodes with one check digit. This is the default.
- 2 - This is for MSI barcodes with two check digits.

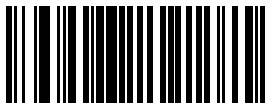
See [MSI Check Digit Algorithm](#) to select second digit algorithms.



No MSI Check Digit
(0)



*One MSI Check Digit
(1)



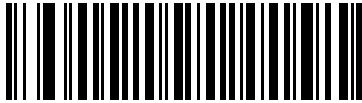
Two MSI Check Digits
(2)

2.13.3 Transmit MSI Check Digit(s)

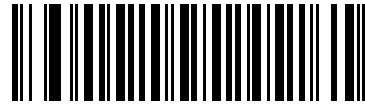
Parameter # 46

SSI # 2Eh

Scan one of the following barcodes to transmit MSI data with or without the check digit.



Transmit MSI Check Digit(s) (Enable)
(1)



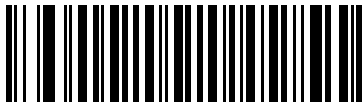
*Do Not Transmit MSI Check Digit(s) (Disable)
(0)

2.13.4 MSI Check Digit Algorithm

Parameter # 51

SSI # 33h

Two algorithms are available for verifying the second MSI check digit. Scan one of the following barcodes to select the algorithm used to encode the check digit.



MOD 11/MOD 10
(0)



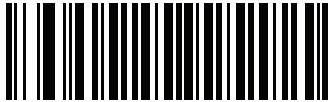
*MOD 10/MOD 10
(1)

2.13.5 MSI Reduced Quiet Zone

Parameter # 1392

SSI # F8h 05h 70h

Scan one of the following barcodes to enable or disable decoding MSI barcodes with reduced quiet zones. If you select **Enable**, select a [1D Quiet Zone Level](#).



*Disable MSI Reduced Quiet Zone
(0)



Enable MSI Reduced Quiet Zone
(1)

2.14 Chinese 2 of 5

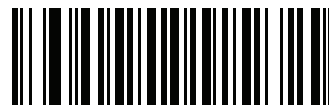
Parameter # 408

SSI # F0h 98h

Scan one of the following barcodes to enable or disable Chinese 2 of 5.



Enable Chinese 2 of 5
(1)



*Disable Chinese 2 of 5
(0)

2.15 Matrix 2 of 5

Parameter # 618

SSI # F1h 6Ah

Scan one of the following barcodes to enable or disable Matrix 2 of 5.



Enable Matrix 2 of 5
(1)



*Disable Matrix 2 of 5
(0)

2.15.1 Set Lengths for Matrix 2 of 5

L1 = Parameter # 619

SSI # F1h 6Bh

L2 = Parameter # 620

SSI # 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. The default is **Length Within Range: 4 to 55**.

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

Scan one of the following barcodes to select a length option:

- **One Discrete Length** - Decode only Matrix 2 of 5 symbols containing a selected length. Select the length using the barcodes in [Numeric Barcodes](#). For example, to decode only Matrix 2 of 5 symbols with 14 characters, scan **Matrix 2 of 5 - One Discrete Length**, and then scan **1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Two Discrete Lengths** - Decode only Matrix 2 of 5 symbols containing either of two lengths. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode only Matrix 2 of 5 symbols containing either 2 or 14 characters, scan **Matrix 2 of 5 - Two Discrete Lengths**, and then scan **0, 2, 1, 4**. To correct an error or change the selection, scan [Cancel](#).
- **Length Within Range** - Decode Matrix 2 of 5 symbols with a specific length range. Select lengths using the barcodes in [Numeric Barcodes](#). For example, to decode Matrix 2 of 5 symbols containing between 4 and 12 characters, scan **Matrix 2 of 5 - Length Within Range**, and then scan **0, 4, 1, 2**. To correct an error or change the selection, scan [Cancel](#).
- **Any Length** - Decode Matrix 2 of 5 symbols containing any number of characters within the decoder's capability.

2.15.1 Set Lengths for Matrix 2 of 5 (continued)



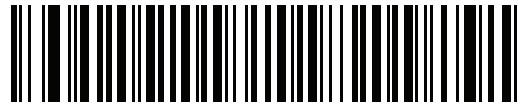
Matrix 2 of 5 - One Discrete Length



Matrix 2 of 5 - Two Discrete Lengths



***Matrix 2 of 5 - Length Within Range**



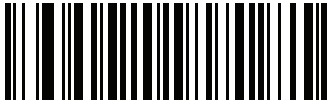
Matrix 2 of 5 - Any Length

2.15.2 Matrix 2 of 5 Check Digit

Parameter # 622

SSI # F1h 6Eh

The check digit is the last character of the symbol used to verify the integrity of the data. Scan one of the following barcodes to determine whether to include the Matrix 2 of 5 check digit with the barcode data.



Enable Matrix 2 of 5 Check Digit
(1)



*Disable Matrix 2 of 5 Check Digit
(0)

2.15.3 Transmit Matrix 2 of 5 Check Digit

Parameter # 623

SSI # F1h 6Fh

Scan one of the following barcodes to transmit Matrix 2 of 5 data with or without the check digit.



Transmit Matrix 2 of 5 Check Digit
(1)



*Do Not Transmit Matrix 2 of 5 Check Digit
(0)

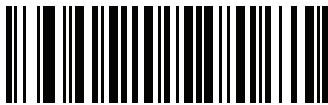
2.16 Korean 3 of 5

Parameter # 581

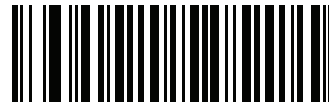
SSI # F1h 45h

Scan one of the following barcodes to enable or disable Korean 3 of 5.

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



**Enable Korean 3 of 5
(1)**



***Disable Korean 3 of 5
(0)**

2.16.1 Inverse 1D

Parameter # 586 SSI #

F1h 4Ah

NOTE: The Inverse 1D setting may impact Composite or Inverse Composite decoding. See [Composite Inverse](#).

Scan one of the following barcodes to set the 1D inverse decoder setting:

- **Regular Only** - The decoder decodes regular 1D barcodes only.
- **Inverse Only** - The decoder decodes inverse 1D barcodes only.
- **Inverse Autodetect** - The decoder decodes both regular and inverse 1D barcodes.

2.16.1 Inverse 1D (continued)



***Regular
(0)**



**Inverse Only
(1)**



**Inverse Autodetect
(2)**

2.17 GS1 DataBar

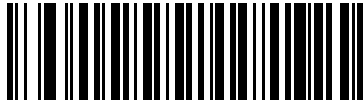
The variants of GS1 DataBar are GS1 DataBar Omnidirectional, GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional, DataBar Expanded, GS1 DataBar Expanded Stacked and DataBar Limited. The limited and expanded versions have stacked variants. Scan the appropriate barcodes to enable or disable each variant of GS1 DataBar.

2.17.1 GS1 DataBar Omnidirectional (formerly GS1 DataBar-14), GS1 DataBar Truncated, GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional

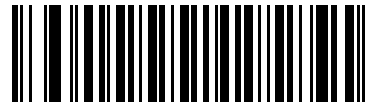
Parameter # 338

SSI # F0h 52h

NOTE: When GS1 DataBar Omnidirectional is enabled the variants are also enabled.



***Enable GS1 DataBar Omnidirectional
(1)**

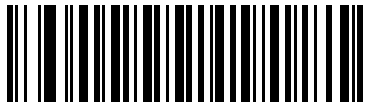


**Disable GS1 DataBar Omnidirectional
(0)**

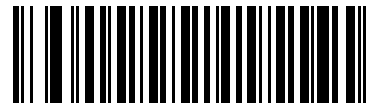
2.17.2 GS1 DataBar Limited

Parameter # 339

SSI # F0h 53h



*Enable GS1 DataBar Limited
(1)



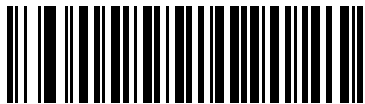
Disable GS1 DataBar Limited
(0)

2.17.3 GS1 DataBar Expanded, GS1 DataBar Expanded Stacked

Parameter # 340

SSI # F0h 54h

NOTE: When GS1 DataBar Expanded is enabled GS1 DataBar Expanded Stacked is also enabled.



*Enable GS1 DataBar Expanded
(1)



Disable GS1 DataBar Expanded
(0)

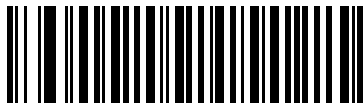
2.17.4 Convert GS1 DataBar to UPC/EAN/JAN

Parameter # 397

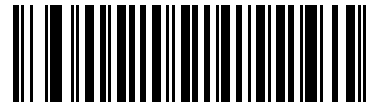
SSI # F0h, 8Dh

This parameter only applies to GS1 DataBar Omnidirectional and GS1 DataBar Limited symbols not decoded as part of a Composite symbol. Scan **Enable Convert GS1 DataBar to UPC/EAN/JAN** to strip the leading '010' from DataBar-14 and DataBar Limited symbols encoding a single zero as the first digit, and report the barcode as EAN-13.

For barcodes beginning with between two and five zeros, this strips the leading '0100' and reports the barcode as UPC-A. The [UPC-A Preamble](#) option that transmits the system character and country code applies to converted barcodes. Note that neither the system character nor the check digit can be stripped.



Enable Convert GS1 DataBar to UPC/EAN/JAN
(1)



*Disable Convert GS1 DataBar to UPC/EAN/JAN
(0)

2.17.5 GS1 DataBar Security Level

Parameter # 1706

SSI # F8h 06h AAh

The decoder offers four levels of decode security for GS1 DataBar (GS1 DataBar Omnidirectional, GS1 DataBar Limited, GS1 DataBar Expanded) barcodes.

- **Security Level 0** - The decoder operates in its most aggressive state, while providing sufficient security decoding most in-spec barcodes.
- **Security Level 1** - This setting eliminates most misdecodes while maintaining reasonable aggressiveness.
- **Security Level 2** - Select this option with greater barcode security requirements if Security Level 1 fails to eliminate misdecodes.
- **Security Level 3** - If you selected Security Level 2 and misdecodes still occur, select this security level to apply the highest safety requirements.



GS1 DataBar Security Level 0
(0)



***GS1 DataBar Security Level 1**
(1)



GS1 DataBar Security Level 2
(2)



GS1 DataBar Security Level 3
(3)

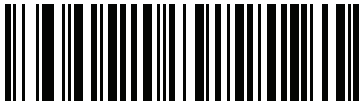
2.17.6 GS1 DataBar Limited Margin Check

Parameter # 728

SSI # F1h D8h

The decoder offers four levels of decode security for GS1 DataBar Limited barcodes. There is an inverse relationship between the level of margin check and decoder aggressiveness. Increasing the level of margin check can reduce scanning aggressiveness, so select only the level of margin check necessary.

- **Margin Check Level 1** – No clear margin required. This complies with the original GS1 standard, yet can result in erroneous decoding of a DataBar Limited barcode when scanning some UPC symbols that start with digits 9 and 7.
- **Margin Check Level 2** – Automatic risk detection. This level of margin check can result in erroneous decoding of DataBar Limited barcodes when scanning some UPC symbols. If a misdecode is detected, the decoder operates in Level 3 or Level 1.
- **Margin Check Level 3** – Margin check level reflects the newly proposed GS1 standard that requires a five times trailing clear margin.
- **Margin Check Level 4** – Security level extends beyond the standard required by GS1. This level of margin check requires a five times leading and trailing clear margin.



GS1 DataBar Limited Margin Check Level 1
(1)



GS1 DataBar Limited Margin Check Level 2
(2)



*GS1 DataBar Limited Margin Check Level 3
(3)



GS1 DataBar Limited Margin Check Level 4
(4)

2.18 Symbology-Specific Security Features

2.18.1 Redundancy Level

Parameter # 78

SSI # 4Eh

The decoder offers four levels of decode redundancy. Select higher redundancy levels for decreasing levels of barcode quality. As redundancy levels increase, the decoder's aggressiveness decreases.

Scan one of the following barcodes to select the redundancy level appropriate for the barcode quality:

- **Redundancy Level 1** - The decoder must read the following code types twice before decoding:
 - Codabar (8 characters or less)
 - MSI (4 characters or less)
 - D 2 of 5 (8 characters or less)
 - I 2 of 5 (8 characters or less)
- **Redundancy Level 2** - The decoder must read all code types twice before decoding.
- **Redundancy Level 3** - The decoder must read code types other than the following twice before decoding, but must read the following codes three times:
 - Codabar (8 characters or less)
 - MSI (4 characters or less)
 - D 2 of 5 (8 characters or less)
 - I 2 of 5 (8 characters or less)
- **Redundancy Level 4** - The decoder must read all code types three times before decoding.

2.18.1 Redundancy Level (continued)



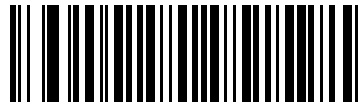
***Redundancy Level 1
(1)**



**Redundancy Level 2
(2)**



**Redundancy Level 3
(3)**



**Redundancy Level 4
(4)**

2.18.2 Security Level

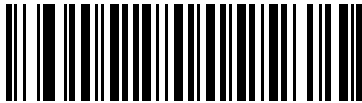
Parameter # 77

SSI # 4Dh

The decoder offers four levels of decode security for delta barcodes, which include the Code 128 family, UPC/EAN/JAN, and Code 93. Select increasing levels of security for decreasing levels of barcode quality. There is an inverse relationship between security and decoder aggressiveness, so choose only that level of security necessary for the application.

- **Security Level 0** - The decoder operates in its most aggressive state, while providing sufficient security decoding most in-spec barcodes.
- **Security Level 1** - This default setting eliminates most misdecodes.
- **Security Level 2** - Select this option if Security Level 1 fails to eliminate misdecodes.
- **Security Level 3** - If you selected Security Level 2 and misdecodes still occur, select this security level.

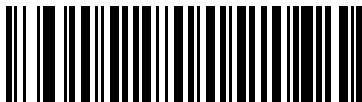
NOTE: Selecting this option is an extreme measure against mis-decoding severely out-of-spec barcodes, and significantly impairs the decoding ability of the decoder. If this level of security is required, try to improve the quality of the barcodes.



Security Level 0
(0)



*Security Level 1
(1)



Security Level 2
(2)



Security Level 3
(3)

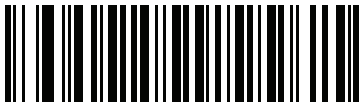
2.18.3 1D Quiet Zone Level

Parameter # 1288

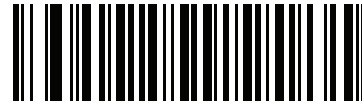
SSI # F8h 05h 08h

This feature sets the level of aggressiveness when decoding barcodes with a reduced quiet zone (the margin on either side of a barcode), and applies to symbologies enabled by a Reduced Quiet Zone parameter. Because higher levels increase the decoding time and risk of misdecodes, Zebra strongly recommends enabling only the symbologies which require higher quiet zone levels, and leaving Reduced Quiet Zone disabled for all other symbologies. Options are:

- **1D Quiet Zone Level 0** - The decoder performs normally in terms of quiet zone.
- **1D Quiet Zone Level 1** - The decoder performs more aggressively in terms of quiet zone.
- **1D Quiet Zone Level 2** - The decoder only requires a quiet zone at the end of barcode for decoding.
- **1D Quiet Zone Level 3** - The decoder decodes anything in terms of quiet zone or end of barcode.



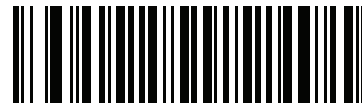
1D Quiet Zone Level 0
(0)



*1D Quiet Zone Level 1
(1)



1D Quiet Zone Level 2
(2)



1D Quiet Zone Level 3
(3)

2.18.4 Intercharacter Gap Size

Parameter # 381

SSI # F0h, 7Dh

The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the decoder from decoding the symbol. If this problem occurs, scan the **Large Intercharacter Gaps** parameter to tolerate these out-of-specification barcodes.



*Normal Intercharacter Gaps
(6)



Large Intercharacter Gaps
(10)

2.19 Composite

2.19.1 Composite CC-C

Parameter # 341

SSI # F0h 55h

Scan one of the following barcodes to enable or disable Composite barcodes of type CC-C.



Enable CC-C
(1)



* Disable CC-C
(0)

2.19.2 Composite CC-A/B

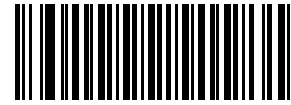
Parameter # 342

SSI # F0h 56h

Scan one of the following barcodes to enable or disable Composite barcodes of type CC-A/B.



**Enable CC-A/B
(1)**



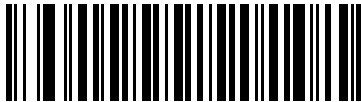
***Disable CC-A/B
(0)**

2.19.3 Composite TLC-39

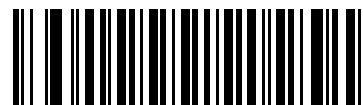
Parameter # 371

SSI # F0h 73h

Scan one of the following barcodes to enable or disable Composite barcodes of type TLC-39.



**Enable TLC39
(1)**



***Disable TLC39
(0)**

2.19.4 Composite Inverse

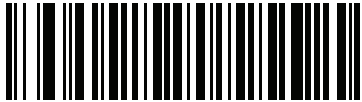
Parameter # 1113

SSI # F8h 04h 59h

Select an option to set Composite for either regular decode or inverse decode. This mode only supports Composite Inverse that includes DataBar combined with CCAB, and does not support other 1D/2D combinations.

For this parameter to function, first enable [Composite CC-A/B](#).

- **Regular Only** - The decoder decodes regular Composite barcodes only. Before selecting this, set [Inverse 1D](#) to **Regular Only** or **Inverse Autodetect**.
- **Inverse Only** - The decoder decodes inverse Composite barcodes only. Before selecting this, set [Inverse 1D](#) to **Inverse Only** or **Inverse Autodetect**.



*Regular Only
(0)



Inverse Only
(1)

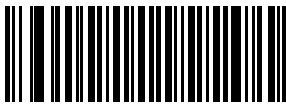
2.19.5 UPC Composite Mode

Parameter # 344

SSI # F0h 58h

Select an option for linking UPC symbols with a 2D symbol during transmission as if they were one symbol:

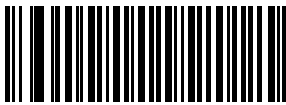
- **UPC Never Linked** - Transmit UPC barcodes regardless of whether a 2D symbol is detected.
- **UPC Always Linked** - Transmit UPC barcodes and the 2D portion. If 2D is not present, do not transmit the barcode.
- **Autodiscriminate UPC Composites** - The decoder determines if there is a 2D portion, then transmits the UPC, as well as the 2D portion if present.



***UPC Never Linked**
(0)



UPC Always Linked
(1)



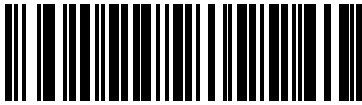
Autodiscriminate UPC Composites
(2)

2.19.6 Composite Beep Mode

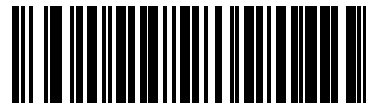
Parameter # 398

SSI # F0h, 8Eh

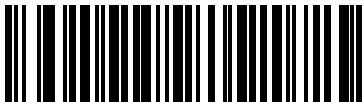
Scan one of the following barcodes to select the number of decode beeps that sound upon decoding a Composite barcode.



Single Beep After Both are Decoded
(0)



*Beep as Each Code Type is Decoded
(1)



Double Beep After Both are Decoded
(2)

2.19.7 GS1-128 Emulation Mode for UCC/EAN Composite Codes

Parameter # 427

SSI # F0h, ABh

Scan one of the following barcodes to enable or disable this mode.



Enable GS1-128 Emulation Mode for
UCC/EAN Composite Codes
(1)



*Disable GS1-128 Emulation Mode for
UCC/EAN Composite Codes
(0)

2.20 2D Symbologies

2.20.1 PDF417

Parameter # 15 SSI

0Fh

Scan one of the following barcodes to enable or disable PDF417.



***Enable PDF417**
(1)



Disable PDF417
(0)

2.20.2 MicroPDF417

Parameter # 227

SSI # E3h

Scan one of the following barcodes to enable or disable MicroPDF417.



Enable MicroPDF417
(1)



***Disable MicroPDF417**
(0)

2.20.3 Code 128 Emulation

Parameter # 123

SSI # 7Bh

Enable this parameter to transmit data from certain MicroPDF417 symbols as Code 128. You must enable [AIM Code ID Character \(1\)](#) for this parameter to work.

NOTE: Linked MicroPDF codewords 906, 907, 912, 914, and 915 are not supported. Use GS1 Composites instead.

Enable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

-]C1 if the first codeword is 903-905
-]C2 if the first codeword is 908 or 909
-]C0 if the first codeword is 910 or 911

Disable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

-]L3 if the first codeword is 903-905
-]L4 if the first codeword is 908 or 909
-]L5 if the first codeword is 910 or 911

Scan one of the following barcodes to enable or disable Code 128 Emulation.



**Enable Code 128 Emulation
(1)**



***Disable Code 128 Emulation
(0)**

2.20.4 Data Matrix

Parameter # 292

SSI # F0h, 24h

Scan one of the following barcodes to enable or disable Data Matrix.



***Enable Data Matrix
(1)**



**Disable Data Matrix
(0)**

2.20.5 GS1 Data Matrix

Parameter # 1336

SSI # F8h 05h 38h

Scan one of the following barcodes to enable or disable GS1 Data Matrix.



**Enable GS1 Data Matrix
(1)**



***Disable GS1 Data Matrix
(0)**

2.20.6 Data Matrix Inverse

Parameter # 588

SSI # F1h 4Ch

Scan one of the following barcodes to select the Data Matrix inverse decoder setting:

- **Regular Only** - The decoder decodes regular Data Matrix barcodes only.
- **Inverse Only** - The decoder decodes inverse Data Matrix barcodes only.
- **Inverse Autodetect** - The decoder decodes both regular and inverse Data Matrix barcodes.



Regular Only
(0)



Inverse Only
(1)



***Inverse Autodetect**
(2)

2.20.7 Decode Data Matrix Mirror Images

Parameter # 537

SSI # F1h 19h

Scan one of the following barcodes to select an option for decoding mirror image Data Matrix barcodes:

- **Never** - Do not decode Data Matrix barcodes that are mirror images.
- **Always** - Decode only Data Matrix barcodes that are mirror images.
- **Auto** - Decode both mirrored and unmirrored Data Matrix barcodes.



Never
(0)



Always
(1)



*** Auto**
(2)

2.20.8 Maxicode

Parameter # 294

SSI # F0h, 26h

Scan one of the following barcodes to enable or disable Maxicode.



**Enable Maxicode
(1)**



***Disable Maxicode
(0)**

2.20.9 QR Code

Parameter # 293

SSI # F0h, 25h

Scan one of the following barcodes to enable or disable QR Code.

NOTE: Inverse QR barcodes decode if QR Code is enabled.



***Enable QR Code
(1)**



**Disable QR Code
(0)**

2.20.10 GS1 QR

Parameter # 1343

SSI # F8h 05h 3Fh

Scan one of the following barcodes to enable or disable GS1 QR.



***Enable GS1 QR
(1)**



**Disable GS1 QR
(0)**

2.20.11 MicroQR

Parameter # 573

SSI # F1h 3Dh

Scan one of the following barcodes to enable or disable MicroQR.



***Enable MicroQR
(1)**



**Disable MicroQR
(0)**

2.20.12 Linked QR Mode

Parameter # 1847

SSI # 737h

Scan one of the following barcodes to select a linked QR mode.

- **Linked QR Only** - Does not decode individual QRs from a set of linked QR codes.
- **Individual QR With Headers** - Decodes individual QRs from a set of linked QR codes and keeps the header information and data.
- **Individual QR No Headers** - Decodes individual QRs from a set of linked QR codes and just transmits data without header information.



* **Linked QR Only**
(0)



Individual QR With Headers
(1)



Individual QR No Headers
(2)

2.20.13 Aztec

Parameter # 574

SSI # F1h 3Eh

Scan one of the following barcodes to enable or disable Aztec.

NOTE: Enabling Aztec also enables Linked Aztec.



***Enable Aztec**
(1)



Disable Aztec
(0)

2.20.14 Aztec Inverse

Parameter # 589

SSI # F1h 4Dh

Scan one of the following barcodes to select the Aztec inverse decoder setting:

- **Regular Only** - The decoder decodes regular Aztec barcodes only.
- **Inverse Only** - The decoder decodes inverse Aztec barcodes only.
- **Inverse Autodetect** - The decoder decodes both regular and inverse Aztec barcodes.



Regular Only
(0)



Inverse Only
(1)



***Inverse Autodetect**
(2)

2.20.15 Han Xin

Parameter # 1167

SSI # F8h 04h 8Fh

Scan one of the following barcodes to enable or disable Han Xin.



Enable Han Xin
(1)



*Disable Han Xin
(0)

2.20.16 Han Xin Inverse

Parameter # 1168

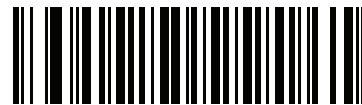
SSI # F8h 04h 90h

Scan one of the following barcodes to select a Han Xin inverse decoder setting:

- **Regular Only** - The decoder decodes Han Xin barcodes with normal reflectance only.
- **Inverse Only** - The decoder decodes Han Xin barcodes with inverse reflectance only.
- **Inverse Autodetect** - The decoder decodes both regular and inverse Han Xin barcodes.



*Regular Only
(0)



Inverse Only
(1)



Inverse Autodetect
(2)

2.20.17 Grid Matrix

Parameter # 1718

SSI # F8h 06h B6h

Scan one of the following barcodes to enable or disable Grid Matrix.



Enable
(1)



*Disable
(0)

2.20.18 Grid Matrix Inverse

Parameter # 1719

SSI # F8h 06h B7h

Scan one of the following barcodes to select a Grid Matrix inverse decoder setting:

- **Regular Only** - The decoder decodes regular Grid Matrix barcodes only.
- **Inverse Only** - The decoder decodes inverse Grid Matrix barcodes only.
- **Autodiscriminate** - The decoder decodes both regular and inverse Grid Matrix barcodes.



*Regular Only
(0)



Inverse Only
(1)



Autodiscriminate
(2)

2.20.19 Grid Matrix Mirror

Parameter # 1736 SSI # F8h

06h C8h

Scan one of the following barcodes to select a Grid Matrix mirror decoder setting:

- **Regular Only** - The decoder decodes regular Grid Matrix barcodes only.
- **Mirrored Only** - The decoder decodes mirrored Grid Matrix barcodes only.
- **Auto-discriminate** - The decoder decodes both regular and mirrored Grid Matrix barcodes.



***Regular Only**
(0)



Mirrored Only
(1)



Autodiscriminate
(2)

2.21 Macro PDF Features

Macro PDF is a special feature for concatenating multiple PDF symbols into one file. The decoder can decode symbols encoded with this feature, and can store more than 64 Kb of decoded data from up to 50 MacroPDF symbols.

CAUTION: When printing, keep each Macro PDF sequence separate, as each sequence has unique identifiers. Do not mix barcodes from several Macro PDF sequences, even if they encode the same data. When scanning a Macro PDF sequence, scan the entire sequence without interruption. When scanning a mixed sequence, two long low beeps (low/low) indicate an inconsistent file ID or inconsistent symbology error.

2.21.1 Macro PDF User Indications

In this mode the decoder provides the following feedback.

Table 29 Macro PDF User Indications

User Scans	Passthrough All Symbols		Transmit Any Symbol in Set		Buffer All Symbols	
	Beep	T	Beep	T	Beep	T
Last Macro PDF in set	Decode Beep	Y	Decode Beep	Y	Decode Beep	Y
Any Macro PDF in set except last	Decode Beep	Y	Decode Beep	Y	2 Short Low	N
Macro PDF is not in current Set	Decode Beep	Y	2 Long Low	N	2 Long Low	N
Invalid formatted Macro PDF	Decode Beep	Y	2 Long Low	N	2 Long Low	N
Macro PDF from a set has already been scanned	Decode Beep	Y	4 Long Low	N	4 Long Low	N
Out of Macro PDF memory	N/A		3 Long Low	N	3 Long Low	N
Any non-Macro PDF scanned during a set	N/A	-	4 Long Low	N	4 Long Low	N
Flush Macro PDF	Low High	N	5 Long Low	N	5 Long Low	Y
Abort Macro PDF	High Low High Low	N	High Low High Low	N	High Low High Low	N

Notes:
 1. The beep only sounds if the *BEEPER_ON signal is connected.
 2. The column marked T indicates whether the symbol is transmitted to the host.
 N = No transmission.

2.21.2 Macro PDF Transmit / Decode Mode Symbols

Parameter # 188

SSI # BCh

Select one of the following options for handling Macro PDF decoding. In **Buffer All Symbols** the decoder can handle sets of up to 50 maximum-sized Macro PDF symbols. In all other modes there is no limit to the size of the MacroPDF set.

- **Buffer All Symbols / Transmit Macro PDF When Complete:** This transmits all decode data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. Use the beeper and LED signals provided with the SE4107 when using this mode to ensure proper user feedback. If the decode data exceeds the limit of 50 symbols, there is no transmission because the entire sequence was not scanned. Use the parameter [Flush Macro Buffer](#) to purge the buffer.
- **Transmit Any Symbol in Set / No Particular Order:** This transmits data from each Macro PDF symbol as decoded, regardless of the sequence (although some error handling is performed. When selecting this mode, enable [Transmit Macro PDF Control Header](#). Also use the beeper and LED signals provided with the SE4107 to ensure proper user feedback.
- **Passthrough All Symbols:** This transmits and decodes all Macro PDF symbols and performs no processing. In this mode the host is responsible for detecting and parsing the Macro PDF sequences. Use this mode when the decoder's BEEPER_ON signal is not used to drive a beeper (see the appropriate signal descriptions tables and the appropriate Imager Engine Signal Descriptions). In the other modes, some Macro PDF scanning sequences provide audible feedback only, so if BEEPER_ON is not used no user feedback is provided. By using **Passthrough All Symbols** mode every user decode is transmitted to the host where the host software can provide the appropriate feedback.



Buffer All Symbols / Transmit Macro PDF When Complete
(00h)



Transmit Any Symbol in Set / No Particular Order
(01h)



***Passthrough All Symbols**
(04h)

2.21.3 Transmit Macro PDF Control Header

Parameter # 184

SSI # B8h

When enabled, this activates transmission of the control header, which contains the segment index and the file ID, in Macro PDF symbols. For example, the field may be: \92800000\725\120\343. The five digits after the \928 are the segment index (or block index), and \725\120\343 is the file ID.

Enable this when selecting **Transmit Any Symbol in Set / No Particular Order** for the [Macro PDF Transmit / Decode Mode Symbols](#), and disable this when selecting **Buffer All Symbols / Transmit Macro PDF When Complete**. This parameter has no effect when **Passthrough All Symbols** is selected.



*Enable Macro PDF Control Header Transmit
(01h)



Disable Macro PDF Control Header Transmit
(00h)

2.21.4 Escape Characters

Parameter # 233

SSI # E9h

This enables the backslash (\) character as an Escape character for systems that can process transmissions containing special data sequences. Scan one of the following barcodes to either format special data according to the GLI (Global Label Identifier) protocol, or to disable this parameter. This parameter only affects the data portion of a Macro PDF symbol transmission; the Macro PDF Control Header (if enabled) is always sent with GLI formatting.



GLI Protocol
(02h)



*None
(00h)

2.21.5 Flush Macro Buffer

Scan the following barcode to flush the buffer of all decoded Macro PDF data stored to that point, transmit it to the host device, and abort from Macro PDF mode.



Flush Macro PDF Buffer

2.21.6 Abort Macro PDF Entry

Scan the following barcode to clear all currently stored Macro PDF data in the buffer without transmission and abort from Macro PDF mode.



Abort Macro PDF Entry

2.22 Postal Codes

2.22.1 US Postnet

Parameter # 89

SSI # 59h

Scan one of the following barcodes to enable or disable US Postnet.



**Enable US Postnet
(1)**



***Disable US Postnet
(0)**

2.22.2 US Planet

Parameter # 90

SSI # 5Ah

Scan one of the following barcodes to enable or disable US Planet.



**Enable US Planet
(1)**



***Disable US Planet
(0)**

2.22.3 Transmit US Postal Check Digit

Parameter # 95

SSI # 5Fh

Scan one of the following barcodes to select whether to transmit US Postal data, which includes both US Postnet and US Planet, with or without the check digit.



***Transmit US Postal Check Digit
(1)**



**Do Not Transmit US Postal Check Digit
(0)**

2.22.4 UK Postal

Parameter # 91

SSI # 5Bh

Scan one of the following barcodes to enable or disable UK Postal.



**Enable UK Postal
(1)**



***Disable UK Postal
(0)**

2.22.5 Transmit UK Postal Check Digit

Parameter # 96

SSI # 60h

Scan one of the following barcodes to select whether to transmit UK Postal data with or without the check digit.



***Transmit UK Postal
Check Digit
(1)**



**Do Not Transmit UK Postal Check Digit
(0)**

2.22.6 Japan Postal

Parameter # 290

SSI # F0h, 22h

Scan one of the following barcodes to enable or disable Japan Postal.



**Enable Japan Postal
(1)**



***Disable Japan Postal
(0)**

2.22.7 Australia Post

Parameter # 291

SSI # F0h, 23h

Scan one of the following barcodes to enable or disable Australia Post.



**Enable Australia Post
(1)**



***Disable Australia Post
(0)**

2.22.8 Australia Post Format

Parameter # 718

SSI # F1h, CEh

Scan one of the following barcodes to select a format for Australia Post:

- **Autodiscriminate** (or Smart mode) - Decode the Customer Information Field using the N and C Encoding Tables.

NOTE: This option increases the risk of misdecodes because the encoded data format does not specify the Encoding Table used for encoding.

- **Raw Format** - Output raw bar patterns as a series of numbers 0 through 3.
- **Alphanumeric Encoding** - Decode the Customer Information Field using the C Encoding Table.
- **Numeric Encoding** - Decode the Customer Information Field using the N Encoding Table.

For more information on Australia Post Encoding Tables, refer to the Australia Post Customer Barcoding Technical Specifications available at auspost.com.au.



*Autodiscriminate
(0)



Raw Format
(1)



Alphanumeric Encoding
(2)



Numeric Encoding
(3)

2.22.9 Netherlands KIX Code

Parameter # 326

SSI # F0h, 46h

Scan one of the following barcodes to enable or disable Netherlands KIX Code.



**Enable Netherlands KIX Code
(1)**



***Disable Netherlands KIX Code
(0)**

2.22.10 USPS 4CB/One Code/Intelligent Mail

Parameter # 592

SSI # F1h 50h

Scan one of the following barcodes to enable or disable USPS 4CB/One Code/Intelligent Mail.



**Enable USPS 4CB/One Code/Intelligent Mail
(1)**



***Disable USPS 4CB/One Code/Intelligent Mail
(0)**

2.22.11 UPU FICS Postal

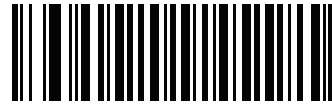
Parameter # 611

SSI # F1h 63h

Scan one of the following barcodes to enable or disable UPU FICS Postal.



**Enable UPU FICS Postal
(1)**



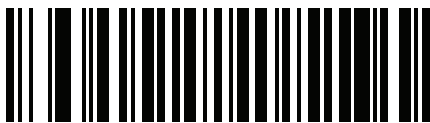
***Disable UPU FICS Postal
(0)**

2.22.12 Mailmark

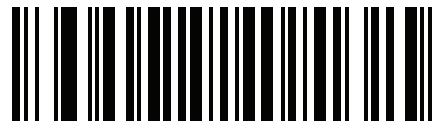
Parameter # 1337

SSI # F8h 05h 39h

Scan one of the following barcodes to enable or disable Mailmark.



***Disable Mailmark
(0)**



**Enable Mailmark
(1)**

3. Numeric Barcodes

3.1 Cancel

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



Cancel

3.2 Numeric Barcodes

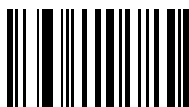
For parameters requiring specific numeric values, scan the appropriately numbered barcode(s).



0



1

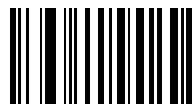


2



3

3.2 Numeric Barcodes (continued)



4



5



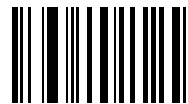
6



7



8



9