

AsReader (ASX-520R, ASR-020D, ASR-020D-V2,
ASR-020D-V3 and ASR-020D-V4)
Barcode Parameter Manual

Asterisk, Inc.

Version 2.3

※The data will be changed without a notice.

This document describes the programmable parameters, provides bar codes for programming, AsReader is shipped with the factory default settings. These factory default values are stored in non-volatile memory and are preserved even when the scan engine is powered down. Changes to the factory default values are also stored in non-volatile memory and are preserved even when the scan engine is powered down. Scan

the appropriate bar codes included in this document. The new values replace the existing memory values. The factory default parameter values can be recalled by scanning Set Factory Defaults.

Revision History

Version	Date	Item
1.0	16 March 2015	First Rivision
1.1	16 June 2016	1.Fix tipographical error at Parameter Defaults 2.Delete Decode LED Behavior 3.Delete “Host” from Trigger Mode 4.Add Decode Aiming Pattern 5.Add Decoding Illumination
2.0	9 September 2020	1.“Time Delay to Low Power Mode”: Adds “10 Seconds”, “30 Minutes”, and “45 Minutes”. 2.Adds “Triggered Timeout, Same Symbol”. 3.“Continuous Bar Code Read”: Adds notes. 4.Adds “Scene Detect Sensitivity”. 5.“PDF Prioritization”: Adds notes. 6.Adds “Motion Tolerance”. 7.Adds “Enter Key” and “Tab Key”. 8.Adds “Enable All Code Types” to “Enable/Disable All Code Types”. 9.Adds “Transmit EAN-8 Check Digit”. 10.Adds “Transmit EAN-13 Check Digit”. 11.“Enable/Disable Book and EAN”: Adds some setting barcodes for 020Dv2. 12.Changes the title to “EAN-8/JAN-8 Zero Extend”. 13.Adds “UPC Reduced Quiet Zone”. 14.Adds “Code 128 <FNC4>”, “Code 128 Security Level”. 15.Adds “Code 128 Reduced Quiet Zone”. 16.Adds “Code 39 Security Level”. 17.Adds “Code 39 Reduced Quiet Zone”. 18.Adds “Febraban”. 19.Adds “I 2 of 5 Reduced Quiet Zone”. 20.Adds “Codabar Security Level”. 21.Adds “Codabar Mod 16 Check Digit Verification”, and “Transmit Codabar Check Digit”. 22.Adds “MSI Reduced Quiet Zone”. 23.Adds “Mailmark”. 24.Adds “Convert GS1 DataBar to UPC/EAN”. 25.Adds “Composite Inverse”. 26.Adds “GS1 Data Matrix”.

		27.Adds "GS1 QR". 28.Adds "Linked QR Mode". 29.Adds "Grid Matrix", "Grid Matrix Inverse". 30.Adds "Grid Matrix Mirror". 31.Adds "DotCode", and "DotCode Inverse". 32.Adds "DotCode Mirrored". 33.Adds "DotCode Prioritize". 34.Adds "1D Quiet Zone Level". 35.Delete User Parameter Pass Through 36.Delete Report Version 37.Delete Report Decoder Manufacturing Information 38.Delete Report Scan Engine Manufacturing Information 39.Delete Macro PDF
2.1	2 December 2020	1.Delete Suppress Power-up Beeps. 2.Delete Decode Blinks. 3.Delete Decode Blink Duration.
2.2	24 January 2022	Add information of ASR-020D-V3
2.3	6 June 2022	Add information of ASR-020D-V4

To set the parameter

Charge the battery of AsReader, before setting the parameters.

Changing Default Values

AsReader ships with the settings shown in the Table on page [A-1](#). If the default values suit requirements, programming is not necessary.

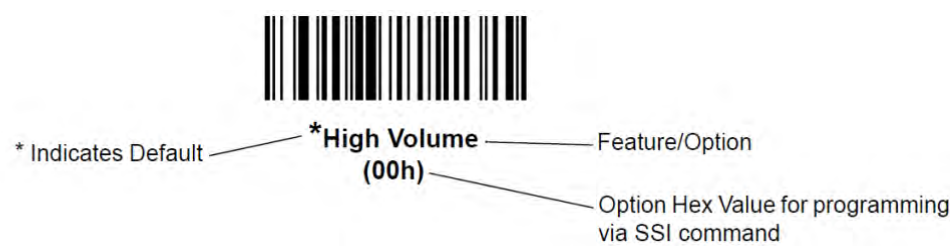
Scan the appropriate barcodes in this manual to change a parameter value.

These new values replace the standard default values in memory.

Note:

- 1, Nothing will be displayed on the screen of the mobile device connected to AsReader when the setting barcodes are scanned.
- 2, With ASX-520R, ASR-020D-V2, ASR-020D-V3 and ASR-020D-V4, a beep sounds when a setting barcode is successfully read, but with ASR-020D it does not.

To return all features to default values, scan **Restore Defaults** on page [B-1](#). Throughout the programming barcode menus, asterisks (*) indicate default values.



Parameter Default setting (factory default)

Parameter	Value	Page
User Preferences		
Default parameter	Restore Defaults	B-1
Parameter Scanning	Enable	B-2
Lock Parameter Scanning	Disable	B-3
Unlock Parameter Scanning	Disable	B-3
Beep After good Decode	Enable	B-4
Beep Tone	Medium	B-5
Beep Volume	High	B-6
Beep Duration	Medium	B-7
Aim Brightness (Aiming LED)	High	B-8
Decode Aiming Pattern	Enable	B-9
Illumination Brightness (Illumination LED)	V1: 7 ※1 V2V3V4: 10 ※2	B-10
Decoding Illumination	Enable	B-11
Trigger Modes	Level	B-12
Power Mode	Low Power	B-14
Time Delay to Low Power Mode	1.0 Sec	B-15
Picklist Mode	Disabled Always	B-17
Decode Session Timeout	9.9 Sec	B-18
Timeout Between Decodes, Same Symbol	0.6 Sec	B-19
Timeout Between Decodes Different Symbol	0.2 Sec	B-20
Triggered Timeout, Same Symbol	Disable	B-21
Continuous Barcode Read	Disable	B-22
Unique Barcode Reporting	Disable	B-23
Low Light motion Detection Assist	Disable	B-24
Presentation Mode Field of View	Medium Field of View	B-25
Fuzzy 1D Processing	Enable	B-26
Scene Detect Sensitivity	Medium	B-27
Mirrored Image	Disable	B-28
Mobile Phone/Display Mode	Disable	B-29
Validate Concatenated Parameter Bar Codes	Disable	B-30
PDF Prioritization	Disable	B-31
PDF Prioritization Timeout	200 ms	B-32

Motion Tolerance	Less Motion Tolerance	B-33
Miscellaneous Scanning Parameters		
Enter Key	N/A	B-34
Tab Key	N/A	B-34
Transmit Code ID Character	None	B-35
Prefix Values	V1: <CR> ※1 V2V3V4: 7013<CR><LF> ※2	B-36
Suffix Value 1 Suffix Value 2	V1: ※1 <CR> <CR> V2V3V4: 7013<CR><LF> ※2	B-36
Scan Data Transmission Format	Data as is	B-37
Transmit “No Read” Message	Disable	B-39

Barcode Parameter Default

Parameter	Value	Page
Disable All Code Types	N/A	C-1
Enable All Code Types	N/A	C-1
JAN (UPC/EAN)		
UPC-A	Enable	C-2
UPC-E	Enable	C-2
UPC-E1	Disable	C-3
EAN-8/JAN8	Enable	C-3
Transmit EAN-8 Check Digit	Enable	C-4
EAN-13/JAN13	Enable	C-4
Transmit EAN-13 Check Digit	Enable	C-5
Bookland EAN	Disable	C-5
Bookland ISBN Format	ISBN-10	C-7
Decode UPC/EAN/JAN Supplementals	Ignore	C-8
User-Programmable Supplementals Supplemental 1 Supplemental 2	V1: ※1 N/A F1h 43h F1h 44h V2V3V4: 000 ※2	C-12
UPC/EAN/JAN Supplemental Redundancy	10	C-13
UPC/EAN/JAN Supplemental AIM ID Format	Combined	C-14
Transmit UPC-A Check Digit	Enable	C-15
Transmit UPC-E Check Digit	Enable	C-15
Transmit UPC-E1 Check Digit	Enable	C-16
UPC-A Preamble	System Character	C-17
UPC-E Preamble	System Character	C-18
UPC-E1 Preamble	System Character	C-19
Convert UPC-E to UPC-A	Disable	C-20
Convert UPC-E1 to UPC-A	Disable	C-20
EAN-8/JAN-8 Zero Extend	Disable	C-21
UCC Coupon Extended Code	Disable	C-21
Coupon Report	New Coupon Symbols	C-22
UPC Reduced Quiet Zone	Disable	C-23
ISSN EAN	Disable	C-23

Code 128		
Code 128	Enable	C-24
Set Length(s) for Code128	Any Length	C-24
Enable/Disable GS1-128 (Formerly UCC/EAN-128)	Enable	C-26
Enable/Disable ISBT128	Enable	C-27
ISBT Concatenation	Disable	C-28
Check ISBT Table	Enable	C-29
ISBT Concatenation Redundancy	10	C-29
Code 128<FNC4>	Honor	C-30
Code 128 Security Level	Security Level 1	C-30
Code 128 Reduced Quiet Zone	Disable	C-32
Code 39		
Enable/Disable Code39	Enable	C-32
Enable/Disable Trioptic Code39	Disable	C-33
Convert Code39 to Code32	Disable	C-34
Code32 Prefix	Disable	C-34
Set Length(s) for Code39	V1: 2-55 ※1 V2V3V4: 1-55 ※2	C-35
Code39 Check Digit Verification	Disable	C-37
Transmit Code39 Check Digit	Disable	C-37
Code39 Full ASCII Conversion	Disable	C-38
Code39 Security Level	Security Level 1	C-39
Code39 Reduced Quiet Zone	Disable	C-41
Code 93		
Enable/Disable Code 93	V1: Disable ※1 V2V3V4: Enable ※2	C-41
Set Length(s) for Code93	V1: 4-55 ※1 V2V3V4: 1-55 ※2	C-42
Code 11		
Enable/Disable Code11	Disable	C-44
Set Length(s) for Code11	Length Within Range: 4 to 55	C-45
Code11 Check Digit Verification	Disable	C-47
Transmit Code11 Check Digit(s)	Disable	C-48

Interleaved 2 of 5 (ITF)		
Enable/Disable Interleaved 2 of 5 (ITF)	V1: Disable ※1 V2V3V4: Enable ※2	C-49
Set Lengths for Interleaved 2 of 5	V1: 1 Length; Length = 14 ※1 V2V3V4: 6-55 ※2	C-50
I 2 of 5 Check Digit Verification	Disable	C-52
Transmit I 2 of 5 Check Digit	Disable	C-53
Febraban	Disable	C-54
Convert I 2 of 5 to EAN-13	Disable	C-55
I 2 of 5 Security Level	1	C-56
I 2 of 5 Reduced Quiet Zone	Disable	C-57
Discrete 2 of 5 (DTF)		
Enable/Disable Discrete 2 of 5	Disable	C-58
Set Lengths for Discrete 2 of 5	V1: 1 Length; Length = 12; ※1 V2V3V4: 1-55 ※2	C-59
Codabar (NW-7)		
Enable/Disable Codabar	V1: Disable ※1 V2V3V4: Enable ※2	C-61
Set Lengths for Codabar	V1: 5-55 ※1 V2V3V4: 4-55 ※2	C-62
CLSI Editing	Disable	C-64
NOTIS Editing	Disable	C-64
Codabar Security Level	Security Level 1	C-65
Codabar Upper or Lower Case Start/Stop Characters Detection	Upper Case	C-66
Codabar Mod 16 Check Digit Verification	Disable	C-67
Transmit Codebar Check Digit	Disable	C-67
MSI		
Enable/Disable MSI	Disable	C-68
Set Lengths for MSI	V1: 6-55 ※1 V2V3V4: 4-55 ※2	C-69
MSI Check Digit	One	C-71
Transmit MSI Check Digit(s)	Disable	C-71

MSI Check Digit Algorithm	Mod 10/Mod 10	C-72
MSI Reduced Quiet Zone	Disable	C-72
Chinese 2 of 5		
Enable/Disable Chinese 2 of 5	Disable	C-73
Matrix 2 of 5		
Enable/Disable Matrix 2 of 5	Disable	C-74
Set Lengths for Matrix 2 of 5	V1: Length; Length = 14 ※1 V2V3V4: 4-55 ※2	C-75
Matrix 2 of 5 Check Digit	Disable	C-77
Transmit Matrix 2 of 5 Check Digit	Disable	C-77
Korean 3 of 5		
Enable/Disable Korean 3 of 5	Disable	C-78
Inverse 1D		
Inverse 1D	Regular	C-79
Postal Code		
US Postnet	Disable	C-80
US Planet	Disable	C-80
Transmit US Postal Check Digit	Enable	C-81
UK Postal	Disable	C-82
Transmit UK Postal Check Digit	Enable	C-82
Japan Postal	Disable	C-83
Australia Post	Disable	C-83
Australia Post Format	Autodiscriminate	C-84
Netherlands KIX Code	Disable	C-85
USPS 4CB/One Code/Intelligent Mail	Disable	C-85
UPU FICS Postal	Disable	C-86
Mailmark	Disable	C-86
GS1 DataBar		
GS1Databar (Omnidirectional/Truncated/Stacked /Stacked Omnidirectional)	Enable	C-87
GS1 Databar Limited	V1: Disable ※1 V2V3V4: Enable ※2	C-88
GS1 Databar Limited Security Level	3	C-89

GS1 Databar Expanded (Expanded/Expanded Stacked)	Enable	C-90
Convert GS1 Databar to JAN (UPC/EAN)	Disable	C-90
Convert GS1 DataBar to UPC/EAN	Disable	C-92
Composite		
Composite CC-C	Disable	C-93
Composite CC-A/B	Disable	C-93
Composite TLC-39	Disable	C-94
Composite Inverse	Regular Only	C-94
UPC Composite Mode	V1: UPC Always Linked ※1 V2V3V4: UPC Never Linked ※2	C-95
Composite Beep Mode	Beep As Each Code Type is Decoded	C-96
GS1-128 Emulation Mode for UCC/EAN Composite Codes	Disable	C-96
2D Symbolologies		
Enable/Disable PDF417	Enable	C-97
Enable/Disable MicroPDF417	Disable	C-97
Code 128 Emulation	Disable	C-98
Data Matrix	Enable	C-99
GS1 Data Matrix	Disable	C-99
Data Matrix Inverse	V1: Regular ※1 V2V3V4: Inverse Autodetect ※2	C-100
Decode Mirror Images (Data Matrix Only)	Auto	C-101
Maxicode	Disable	C-102
QR Code	Enable	C-102
GS1 QR	Enable	C-103
QR Inverse	Regular	C-104
MicroQR	Enable	C-104
Linked QR Mode	Linked QR Only	C-105
Aztec	Enable	C-106

Aztec Inverse	Inverse Autodetect	C-106
Han Xin	Disable	C-107
Han Xin Inverse	Regular	C-107
Grid Matrix	Disable	C-108
Grid Matrix Inverse	Regular Only	C-108
Grid Matrix Mirror	Regular Only	C-109
DotCode	Disable	C-110
DotCode Inverse	Autodetect	C-110
DotCode Mirrored	Autodetect	C-111
DotCode Prioritize	Enable	C-112
Redundancy Level		
Redundancy Level	1	C-113
Security Level (UPC/EAN and Code 39)	1	C-115
1D Quiet Zone Level	1	C-117
Intercharacter Gap Size	Normal	C-118
Appendix		
ASCII Character Sets		Z-1
Numeric Bar Codes		Z-6
Symbol Code Identifiers		Z-8
AIM Code Identifiers		Z-9
Modifier Characters		Z-11

※1 V1 stands for ASR-020D and ASX-520R

※2 V2V3V4 stands for ASR-020D-V2,ASR-020D-V3 and ASR-020D-V4



Set Default Parameter

You can reset the AsReader to two types of defaults: factory defaults or custom defaults. Scan the appropriate bar code below to reset the decoder to its default settings and/or set its current settings as custom defaults.

- **Restore Defaults** - Scan this barcode to reset all default parameters as follows.
 - If you previously set custom defaults by scanning **Write to Custom Defaults**, scan **Restore Defaults** to retrieve and restore the decoder's custom default settings.
 - If you did not set custom defaults, scan **Restore Defaults** to restore the factory default values listed in the table in page [A-1](#).



***Restore Defaults**

- **Set Factory Defaults** - Scan this bar code to restore the factory default values listed in the table in page [A-1](#). This  deletes any custom defaults set. 



Set Factory Defaults

- **Write to Custom Defaults** - Scan this bar code to set the current decoder settings as custom defaults.

Once set, you can recover custom default settings by scanning **Restore Defaults**.



Write to Custom Defaults

IMPORTANT: Be sure to restart AsReader after setting these parameters. (Restart method: Re-plug the AsReader into the smart device; Or restart the AsReader by the Active switch on the “AsReader Scan” demo app.

Parameter Scanning

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



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



**Disable Parameter Scanning
(00h)**

Lock/Unlock Parameter Scanning

This feature locks parameter settings with a 4-digit code to prevent the user from changing parameter values by scanning parameter bar codes. This provides an added level of security not offered via **Disable Parameter Scanning**.

After locking parameter settings, the only parameter bar code that is accepted is Unlock with the correct code.

NOTE Parameter Scanning must be enabled in order to scan the Lock parameter bar code. Once parameter scanning is locked, scanning the Enable or Disable Parameter Scanning bar code results in a parameter error beep.

To lock parameter scanning:

1. Scan the **Lock** bar code.
2. Scan four bar codes from [Appendix Numeric Bar Codes](#) that represent the desired code. Enter leading zeros for numbers below 1000, e.g., to program a code of 29, enter **0, 0, 2, 9**. A "lock" beep sounds (two long high beeps) in addition to the parameter entry beep.



To unlock parameter scanning:

1. Scan the **Unlock** bar code.
2. Scan four bar codes from [Appendix Numeric Bar Codes](#) that represent the correct code. An "unlock" beep sounds (two long low beeps) in addition to the parameter entry beep. Entering an incorrect code results in a parameter error beep.



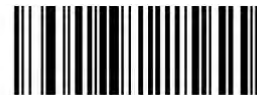
Beep After Good Decode

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

NOTE This feature is invalid in ASR-020D. When using ASR-020D, please set On / Off the beep sound in the application.



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



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

Beep Tone

Scan one of the following barcodes to select a beep tone for audible feedback indicating a good decode.

Scan **Disable Beep Tone** to disable all tones.

NOTE This feature is invalid in ASR-020D.



Low Frequency
(02h)



*Medium Frequency
(Optimum Setting)
(01h)



High Frequency
(00h)

Beep Volume

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

NOTE This feature is invalid in ASR-020D.



Low Volume
(02h)



Medium Volume
(01h)



***High Volume**
(00h)

Beep Duration

To select the duration for the beeper, scan one of the following barcodes.

NOTE This feature is invalid in ASR-020D.



Short
(00h)



* Medium
(01h)



Long
(02h)

Aim Brightness

This feature sets the brightness, or power of the aim pattern for AsReader. AsReader has three settings: low (0), medium (1), and high (2). The default is high.

To program the Aim Brightness for the AsReader, scan one of the following bar codes.



**Aim Brightness - Low
(00h)**



**Aim Brightness - Medium
(01h)**



***Aim Brightness - High
(02h)**

Decode Aiming Pattern

Select **Enable Decode Aiming Pattern** to project the aiming pattern during barcode capture, **Disable Decode Aiming Pattern** to turn the aiming pattern off, or **Enable Decode Aiming Pattern on PDF** to project the aiming pattern when the decoder detects a 2D bar code.

NOTE With *Picklist Mode on page B-17* enabled, the decode aiming pattern flashes even when the Decode Aiming Pattern is disabled.

NOTE When the Decode Aiming Pattern of the ASR-020D-V2 or ASR-020D-V3 or ASR-020D-V4 is set to disabled, the aiming laser point is automatically closed when the Trigger button is pressed for bar code scanning, and the aiming laser point is automatically turned on when the Trigger button is released to stop the scanning.



* **Enable Decode Aiming Pattern**
(02h)



Disable Decode Aiming Pattern
(00h)

Illumination Brightness

This feature sets the brightness of the illumination by altering LED power. The default is 10, which is maximum LED brightness. For values from 1 to 10, LED brightness varies from lowest to highest level of brightness.

To program Illumination Brightness, scan this bar code followed by two numeric bar codes in [Appendix Numeric Bar Codes](#) that correspond to the value of desired illumination brightness. For example, to set Illumination Brightness to 6, scan the bar code below followed by the 0 and 6 bar codes.

NOTE This feature sets the brightness of the illumination by altering LED power. The allowed range is from 1 to 27; LED brightness varies from lowest to highest level of brightness. The default is 7. Using a brightness above 7 is not recommended, unless all thermal issues are considered.



Illumination Brightness

Decoding Illumination

Selecting **Enable Decoding Illumination** causes the decoder to turn on illumination every image capture to aid decoding. Select **Disable Decoding Illumination** to prevent the decoder from using decoding illumination.

Enabling illumination usually results in superior images. The effectiveness of illumination decreases as the distance to the target increases.

NOTE Changing this parameter while using **Presentation Mode**, with or without **Motion Enhancement**, is not recommended.



***Enable Decoding Illumination
(01h)**



**Disable Decoding Illumination
(00h)**

Trigger Modes

- **Level** - A trigger event activates decode processing, which continues until the trigger event ends, a valid decode, or the *Decode Session Timeout on page B-18* occurs.



- **Presentation Mode** - When the decoder detects an object in its field of view, it triggers and attempt to decode. The range of object detection does not vary under normal lighting conditions. This applies to decode mode only. In this mode the unit does not enter Low Power mode.



- **Auto Aim** - This trigger mode turns on the aiming pattern when the decoder senses motion. A trigger pull activates decode processing. After 2 seconds of inactivity the aiming pattern automatically shuts off.



- **Auto Aim with Illumination** - This trigger mode turns on 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.



Auto Aim with Illumination
(0Ah)

Power Mode

Select whether or not the decoder enters Low Power consumption mode after a decode attempt. In Continuous On mode, the decoder does not enter this low power state.



**Continuous On
(00h)**



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

Time Delay to Low Power Mode

This parameter sets the time the decoder remains active after decoding. After a scan session, the decoder waits this amount of time before entering Low Power Mode.

NOTE This parameter only applies when **Power Mode** is set to Low.



***1 Second**
(11h)



5 Seconds
(15h)



10 Seconds
(26)



1 Minute
(21h)



5 Minutes
(25h)



15 Minutes
(2Bh)



30 Minutes
(45)



45 Minutes
(46)



1 Hour
(31h)

Picklist Mode

Picklist mode enables the decoder to decode only bar codes aligned under the center of the aiming pattern. Select one of the following picklist modes:

- **Disabled Always** - Picklist mode is always disabled.
- **Enabled Always** - Picklist mode is always enabled.

NOTE With Picklist Mode enabled, the decode aiming pattern turns on even when the Decode Aiming Pattern is disabled.



***Disabled Always**
(00h)



Enabled Always
(02h)

Decode Session Timeout

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 bar code below. Next, scan two numeric bar codes from [Appendix Numeric Bar Codes](#) that correspond to the desired on time. Provide a leading zero for single digit numbers. For example, to set a **Decode Session Timeout** of 0.5 seconds, scan the bar code below, then scan the **0** and **5** bar codes. To correct an error or change the selection, scan [Cancel on page Z-7](#).



Decode Session Timeout

Timeout Between Decodes, Same Symbol

Use this option in **Presentation Mode** to prevent multiple reads of a symbol left in the decoder's field of view.

The timeout begins when you remove the symbol from the field of view.

To select the timeout between decodes for the same symbol, available in 0.1 second increments from 0.0 to 9.9 seconds, scan the bar code below, then scan two numeric bar codes from [Appendix Numeric Bar Codes](#) that correspond to the desired interval. The default interval is 0.6 seconds.

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



Timeout Between Decodes, Same Symbol

Timeout Between Decodes, Different Symbols

Use this option in **Presentation Mode** or **Continuous Bar Code Read** to control the time the decoder is inactive between decoding different symbols. 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 bar code below, then scan two numeric bar codes from [Appendix Numeric Bar Codes](#) that correspond to the desired interval, in 0.1 second increments.

NOTE The **Timeout Between Decodes, Different Symbols** value cannot be greater than or equal to the **Timeout Between Decodes, Same Symbol** or the [Decode Session Timeout on page B-18](#) value.



Timeout Between Decodes, Different Symbols

Triggered Timeout, Same Symbol (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

Scan **Enable Triggered Timeout, Same Symbol** below to apply [Timeout Between Decodes, Same Symbol on page B-19](#) in hand-held trigger mode. Subsequent scans of **Enable Triggered Timeout, Same Symbol** are ignored until **Timeout Between Decodes, Same Symbol** expires.

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 on page B-15](#).



Enable Triggered Timeout, Same Symbol

(1)



*** Disable Triggered Timeout, Same Symbol**

(0)

Continuous Bar Code Read

Select **Enable** to allow decode processing to continue until the trigger event ends or the [Decode Session Timeout on page B-18](#) occurs. User indications occur upon decoding each bar code. Select **Disable** to end decode processing upon a valid decode as well. This mode does not apply to **Presentation Mode**.

NOTE We strongly recommends enabling [Picklist Mode on page B-17](#) with this feature. Disabling Picklist Mode can cause accidental decodes when more than one bar code is in the decoder's field of view.

NOTE For ASX-520R and ASR-020D, this feature is not allowed to use parameters “illumination” and “vibration” simultaneously, they are set from method “setBeep” in SDK. If you use this feature, disable either “illumination” or “vibration”.



*Disable Continuous Bar Code Read
(00h)



Enable Continuous Bar Code Read
(01h)

Unique Barcode Reporting

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



* Disable Continuous Bar Code Read Uniqueness
(00h)



Enable Continuous Bar Code Read Uniqueness
(01h)

Low Light Motion Detection Assist

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.

NOTE If this parameter is enabled and [Decoding Illumination on page B-11](#) is disabled, this parameter takes precedence.



*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)

Presentation Mode Field of View

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)



***Medium Field of View**
(01h)



Full Field of View
(02h)

Fuzzy 1D Processing (ASX-520R and ASR-020D Only)

This option is enabled by default to optimize decode performance on 1D bar codes, including damaged and poor quality symbols. Disable this only if you experience time delays when decoding 2D bar codes, or in detecting a no decode.



***Enable Fuzzy 1D Processing
(01h)**



**Disable Fuzzy 1D Processing
(00h)**

Scene Detect Sensitivity (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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



Low
(10)



***Medium**
(128)



High
(190)

Mirrored Image

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.



***Disable Mirrored Image
(00h)**



**Enable Mirrored Image
(01h)**

Mobile Phone/Display Mode

This mode improves bar code reading performance with target bar codes displayed on mobile phones and electronic displays.



***Disable Mobile Phone/Display Mode
(00h)**



**Enable Mobile Phone/Display Mode
(03h)**

Validate Concatenated Parameter Bar Codes

The decoder can encounter invalid parameters when using concatenated parameter bar codes intended for different scanner models or different versions of a scanner. This parameter determines how to process concatenated parameter bar codes when the decoder encounters an invalid parameter setting in the bar code.

Disable this to ignore invalid parameters and configure valid parameters. Enable this to ignore all parameters if one or more are invalid.



***Disable Validate Concatenated Parameter Bar Codes
(00h)**



**Enable Validate Concatenated Parameter Bar Codes
(01h)**

PDF Prioritization

Enable this feature to delay decoding certain 1D barcodes (see Note below) by the value specified in *PDF Prioritization Timeout*. During that time the decoder attempts to decode a PDF417 symbol (e.g., on a US driver's license), and if successful reports this only. If it does not decode (can not find) a PDF417 symbol, it reports the 1D symbol after the timeout. The 1D symbol must be in the device's field of view for the decoder to report it.

This parameter does not affect decoding other symbologies.

Note:

The 1D Code 128 barcode lengths include the following:

- 7 to 10 characters
- 14 to 22 characters
- 27 to 28 characters

In addition, a Code 39 barcode with the following lengths are considered to potentially be part of a US driver's license:

- 8 characters
- 12 characters



***Disable PDF Prioritization
(00h)**



**Enable PDF Prioritization
(01h)**

PDF Prioritization Timeout

When *PDF Prioritization* is enabled, this timeout specifies how long the decoder attempts to decode a PDF417 symbol before reporting the 1D bar code in the field of view.

Scan the following bar code, then scan four digits from *Appendix Numeric Bar Codes* that specify the timeout in milliseconds. For example, to enter 400 ms, scan the following bar code, then scan 0400. The range is 0 to 5000 ms, and the default is 200 ms.



Motion Tolerance (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)



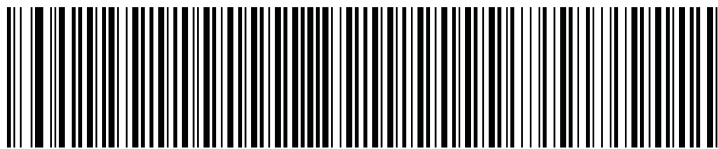
More Motion Tolerance

(1)

Miscellaneous Scanning Parameters

Enter Key (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

Scan the following barcode to add an Enter key (carriage return/line feed) after scanned data. To program other prefixes and/or suffixes, see [Prefix/Suffix Values on page B-36](#)



Add Enter Key (Carriage Return/Line Feed)

Tab Key (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

Scan the following barcode to add a Tab key after scanned data.



Tab Key

Transmit Code ID Character

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

Select no Code ID character, a Symbol Code ID character, or an AIM Code ID character. For Code ID Characters, see [Symbol Code Identifiers on page Z-8](#) and [AIM Code Identifiers on page Z-9](#).

NOTE If you enable Symbol Code ID Character or AIM Code ID Character, and enable [Transmit “No Read” Message on page B-39](#), the decoder appends the code ID for Code 39 to the NR message.



Symbol Code ID Character
(02h)



AIM Code ID Character
(01h)



*None
(00h)

Prefix/Suffix Values

You can append a prefix and/or one or two suffixes to scan data for use in data editing. To set a value for a prefix or suffix, scan the prefix or suffix bar code below, then scan a four-digit number (i.e., four bar codes from [Appendix Numeric Bar Codes](#)) that corresponds to that value. See [ASCII Character Sets table in Appendix on page Z-1](#) for the four-digit codes.

When using host commands to set the prefix or suffix, set the key category parameter to 1, then set the 3-digit decimal value. See [ASCII Character Sets table in Appendix on page Z-1](#) for the four-digit codes.

To correct an error or change a selection, scan [Cancel on page Z-7](#).

NOTE To use Prefix/Suffix values, set the [Scan Data Transmission Format on page B-37](#).



Scan Prefix
(07h)



Scan Suffix 1
(06h)



Scan Suffix 2
(08h)

Scan Data Transmission Format

To change the scan data format, scan one of the following eight bar codes corresponding to the desired format.

NOTE If using this parameter do not use ADF rules to set the prefix/suffix.

To set values for the prefix and/or suffix, see [Prefix/Suffix Values](#).



*Data As Is
(00h)



<DATA> <SUFFIX 1>
(01h)



<DATA> <SUFFIX 2>
(02h)



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



<PREFIX> <DATA>
(04h)



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

Scan Data Transmission Format (continued)



Transmit “No Read” Message

Scan a bar code below to select whether or not to transmit a No Read message. Enable this to transmit the characters NR when a successful decode does not occur before trigger release or the [Decode Session Timeout on page B-18](#) expires. Disable this to send nothing to the host if a symbol does not decode.

- NOTE**
- If you enable Transmit No Read, and also enable Symbol Code ID Character or AIM Code ID Character for [Transmit Code ID Character on page B-35](#), the decoder appends the code ID for Code 39 to the NR message.
 - This does not apply in presentation mode.



Enable No Read
(01h)



*Disable No Read
(00h)

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.



UPC/EAN/JAN

Enable/Disable UPC-A

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



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



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

Enable/Disable UPC-E

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



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



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

Enable/Disable UPC-E1

UPC-E1 is disabled by default.^[1]^[2]To enable or disable UPC-E1, scan the appropriate bar code below.

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



Enable UPC-E1
(01h)



*Disable UPC-E1
(00h)

Enable/Disable EAN-8/JAN-8

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



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



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

Transmit EAN-8 Check Digit (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)**

Enable/Disable EAN-13/JAN-13

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



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



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

Transmit EAN-13 Check Digit (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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-8 Check Digit
(0)

Enable/Disable Bookland EAN

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

NOTE If Bookland EAN is enabled, select a Bookland ISBN Format. Also select either **Decode UPC/EAN Supplementals**, **Autodiscriminate UPC/EAN Supplementals**, or **Enable 978/979 Supplemental Mode** in [Decode UPC/EAN/JAN Supplementals](#).

Parameters for ASX-520R and ASR-020D

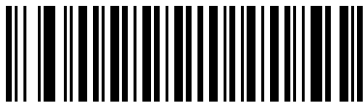


*Enable Bookland EAN
(01h)



Disable Bookland EAN
(00h)

Parameters for ASR-020D-V2,ASR-020D-V3 and ASR-020D-V4



Enable Bookland EAN

(1)



***Disable Bookland EAN**

(0)

Bookland ISBN Format

If Bookland EAN is enabled, 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. 








NOTE For Bookland EAN to function properly, ensure Bookland EAN is enabled (see [Enable/Disable Bookland EAN on page C-5](#)), then select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in [Decode UPC/EAN/JAN Supplementals on page C-8](#).

Decode UPC/EAN/JAN Supplementals

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

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

NOTE If you select 978/979 Supplemental Mode and are scanning Bookland EAN bar codes, see [Enable/Disable Bookland EAN](#) 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 - applies to EAN-13 bar codes starting with any prefix listed previously. 
- Supplemental User-Programmable Type 1 - applies to EAN-13 bar codes starting with a 3-digit user-defined prefix. Set this 3-digit prefix using [User-Programmable Supplementals on page C-12](#). 

- Supplemental User-Programmable Type 1 and 2 - applies to EAN-13 bar codes starting with either of two 3-digit user-defined prefixes. Set the 3-digit prefixes using [User-Programmable Supplementals on page C-12](#).^[SEP]
- Smart Supplemental Plus User-Programmable 1 - applies to EAN-13 bar codes starting with any prefix listed previously or the user-defined prefix set using [User-Programmable Supplementals on page C-12](#).^[SEP]
- Smart Supplemental Plus User-Programmable 1 and 2 - applies to EAN-13 bar codes starting with any prefix listed previously or one of the two user-defined prefixes set using [User-Programmable Supplementals on page C-12](#).^[SEP]

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



*Ignore Supplementals
(00h)



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



Autodiscriminate UPC/EAN/JAN Supplementals
(02h)



Enable 378/379 Supplemental Mode
(04h)

Decode UPC/EAN/JAN Supplementals (continued)



Enable 978/979 Supplemental Mode
(05h)



Enable 977 Supplemental Mode
(07h)



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



Enable 491 Supplemental Mode
(08h)



Enable Smart Supplemental Mode
(03h)



Supplemental User-Programmable Type 1
(09h)

Decode UPC/EAN/JAN Supplementals (continued)



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



Smart Supplemental Plus User-Programmable 1
(0Bh)



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

User-Programmable Supplementals

If you selected a Supplemental User-Programmable option from *Decode UPC/EAN/JAN Supplementals on page C-8*, select **User-Programmable Supplemental 1** to set the 3-digit prefix. Then select the 3 digits using the numeric bar codes beginning on the appendix. Select **User-Programmable Supplemental 2** to set a second 3-digit prefix. Then select the 3 digits using the *Numeric Bar Codes* beginning on the appendix.



UPC/EAN/JAN Supplemental Redundancy

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 bar code below to set a decode redundancy value. Next, scan two numeric bar codes in [Appendix Numeric Bar Codes](#). Enter a leading zero for single digit numbers. To correct an error or change a selection, scan [Cancel](#).



UPC/EAN/JAN Supplemental Redundancy

UPC/EAN/JAN Supplemental AIM ID Format

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

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

$$]E<0 \text{ or } 4><\text{data}>]E<1 \text{ or } 2>[\text{supplemental data}] \overset{\text{[SEP]}}{\text{[SEP]}}$$
- Combined – transmit UPC/EAN with supplementals with one AIM ID and one transmission, i.e.:

$$]E3<\text{data}+\text{supplemental data}> \overset{\text{[SEP]}}{\text{[SEP]}}$$
- Separate Transmissions - transmit UPC/EAN with supplementals with separate AIM IDs and separate transmissions, i.e.: $\overset{\text{[SEP]}}{\text{[SEP]}}$

$$]E<0 \text{ or } 4><\text{data}> \overset{\text{[SEP]}}{\text{[SEP]}}]E<1 \text{ or } 2>[\text{supplemental data}]$$



Separate
(00h)



*Combined
(01h)



Separate Transmissions
(02h)

Transmit UPC-A Check Digit

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



*Transmit UPC-A Check Digit
(01h)



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

Transmit UPC-E Check Digit

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



*Transmit UPC-E Check Digit
(01h)



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

Transmit UPC-E1 Check Digit

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



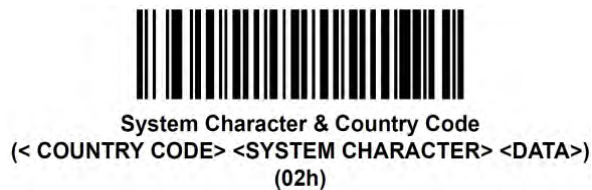
***Transmit UPC-E1 Check Digit
(01h)**



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

UPC-A Preamble

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



UPC-E Preamble

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



No Preamble (<DATA>)
(00h)



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



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

UPC-E1 Preamble

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



No Preamble (<DATA>)
(00h)



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



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

Convert UPC-E to UPC-A

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)
(01h)



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

Convert UPC-E1 to UPC-A

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

Disable this to transmit UPC-E1 decoded data as UPC-E1 data, without conversion.



Convert UPC-E1 to UPC-A (Enable)
(01h)



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

EAN-8/JAN-8 Zero Extend

Enable this parameter to add five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols.

Disable this to transmit EAN-8 symbols as is.



Enable EAN/JAN Zero Extend
(01h)



*Disable EAN/JAN Zero Extend
(00h)

UCC Coupon Extended Code

Enable this parameter to decode UPC-A bar codes starting with digit '5', EAN-13 bar codes starting with digit '99', and UPC-A/GS1-128 Coupon Codes. UPC-A, EAN-13, and GS1-128 must be enabled to scan all types of Coupon Codes.



Enable UCC Coupon Extended Code
(01h)



*Disable UCC Coupon Extended Code
(00h)

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




Coupon Report

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

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

NOTE The behavior described above applies when *UCC Coupon Extended Code* is enabled. If disabled (default) then new coupons (GS1 Databar Expanded starting with 8110) decodes as a normal GS1 Expanded (RSS) bar code.

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

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



Old Coupon Symbols
(00h)



*New Coupon Symbols
(01h)



Both Coupon Formats
(02h)

UPC Reduced Quiet Zone (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

ISSN EAN

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



Enable ISSN EAN
(01h)



Code 128

Enable/Disable Code 128


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






Set Lengths for Code 128

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

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

- **One Discrete Length** - Select this option to decode only Code 128 symbols containing a selected length. Select the length using the numeric bar codes in Appendix Numeric Bar Codes. For example, to decode only Code 128 symbols with 14 characters, scan **Code 128** - **One Discrete Length**, then scan 1 followed by 4. To correct an error or change the selection, scan Cancel. 

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



Code 128 - One Discrete Length



Code 128 - Two Discrete Lengths



Code 128 - Length Within Range



*Code 128 - Any Length

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

To enable or disable GS1-128, scan the appropriate bar code below.



*Enable GS1-128
(01h)



Disable GS1-128
(00h)

Enable/Disable ISBT 128

ISBT 128 is a variant of Code 128 used in the blood bank industry. Scan a bar code below to enable or disable ISBT 128. If necessary, the host must perform concatenation of the ISBT data.





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



Disable ISBT 128
(00h)

ISBT Concatenation

Select an option for concatenating pairs of ISBT code types:

- If you select **Disable ISBT Concatenation**, the decoder does not concatenate pairs of ISBT codes it encounters.
- If you select **Enable ISBT Concatenation**, there must be two ISBT codes in order for the decoder to decode and perform concatenation. The decoder does not decode single ISBT symbols. 
- If you select **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. 



*Disable ISBT Concatenation
(00h)



Enable ISBT Concatenation
(01h)



Autodiscriminate ISBT Concatenation
(02h)

Check ISBT Table

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



*Enable Check ISBT Table
(01h)



Disable Check ISBT Table
(00h)

ISBT Concatenation Redundancy

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 bar code below, then scan two numeric bar codes in [Appendix Numeric Bar Codes](#) 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

Code 128 <FNC4> (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Code 128 Security Level (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Code 128 Reduced Quiet Zone (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Enable/Disable Code 39

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



*Enable Code 39
(01h)



Disable Code 39
(00h)

Enable/Disable Trioptic Code 39

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



Enable Trioptic Code 39
(01h)



*Disable Trioptic Code 39
(00h)

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

Convert Code 39 to Code 32

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

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



Enable Convert Code 39 to Code 32
(01h)



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

Code 32 Prefix

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

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



Enable Code 32 Prefix
(01h)




*Disable Code 32 Prefix
(00h)

Set Lengths for Code 39


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

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

- **One Discrete Length** - Select this option to decode only Code 39 symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, then scan 1 followed by 4. To correct an error or change the selection, scan *Cancel*. 



Code 39 - One Discrete Length

- **Two Discrete Lengths** - Select this option to decode only Code 39 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Code 39 symbols containing either 2 or 14 characters, select **Code 39 - Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or change the selection, scan *Cancel*. 



Code 39 - Two Discrete Lengths

- **Length Within Range** - Select this option to decode a Code 39 symbol with a specific length range. Select lengths using numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode Code 39 symbols containing between 4 and 12 characters, first scan **Code 39 - Length Within Range**. Then scan **0, 4, 1, and 2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan [Cancel](#)..



*Code 39 - Length Within Range

- - Select this option to decode Code 39 symbols containing any number of characters within the decoder's capability. ^[1]_{SEP}



Code 39 - Any Length

Code 39 Check Digit Verification

Enable this feature 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
(01h)



*Disable Code 39 Check Digit
(00h)

Transmit Code 39 Check Digit

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



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



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

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

Code 39 Full ASCII Conversion

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



Enable Code 39 Full ASCII
(01h)



*Disable Code 39 Full ASCII
(00h)

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. See the ASCII Character Set for USB or the ASCII Character Set for Serial Hosts.

Code 39 Security Level (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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.

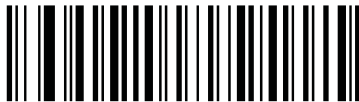
- **Code 39 Security Level 0:** The decoder operates in its most aggressive state, while providing sufficient security in decoding most in-spec barcodes.



Code 39 Security Level 0

(0)

- **Code 39 Security Level 1:** This default setting eliminates most misdecodes.



*Code 39 Security Level 1

(1)

- **Code 39 Security Level 2:** This option applies greater barcode security requirements if Security Level 1 fails to eliminate misdecodes.



Code 39 Security Level 2

(2)

· **Code 39 Security Level 3:** If you selected Security Level 2, and misdecodes still occur, select this security level to apply the highest safety requirements.



Code 39 Security Level 3

(3)

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 Reduced Quiet Zone (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Code 93

Enable/Disable Code 93

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



Enable Code 93
(01h)



Note : For ASR-020D-V2, ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **Enable**.

Set Lengths for Code 93

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

- **One Discrete Length** – Select this option to decode only Code 93 symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Code 93 symbols with 14 characters, scan **Code 93 – One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan *Cancel*. [F1] [SEP]



- **Two Discrete Lengths** – Select this option to decode only Code 93 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Code 93 symbols containing either 2 or 14 characters, select Code 93 – Two Discrete Lengths, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan *Cancel*. [F1] [SEP]



- **Length Within Range** – Select this option to decode a Code 93 symbol with a specific length range. Select lengths using the numeric bar codes in [Appendix Numeric Bar](#)

Codes. For example, to decode Code 93 symbols containing between 4 and 12 characters, first scan Code 93 – Length Within Range. Then scan **0**, **4**, **1**, and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan *Cancel*. []
[SEP]



***Code 93 - Length Within Range**

- **Any Length** – Scan this option to decode Code 93 symbols containing any number of characters within the decoder's capability. []
[SEP]



Code 93 - Any Length

Code 11

Enable/Disable Code 11

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




**Enable Code 11
(01h)**



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

Set Lengths for Code 11

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

- **One Discrete Length** – Select this option to decode only Code 11 symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Code 11 symbols with 14 characters, scan **Code 11 – One Discrete Length**, then scan 1 followed by 4. To correct an error or to change the selection, scan *Cancel*. 



Code 11 - One Discrete Length

- **Two Discrete Lengths** – Select this option to decode only Code 11 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Code 11 symbols containing either 2 or 14 characters, select **Code 11 – Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or to change the selection, scan *Cancel*.




Code 11 - Two Discrete Lengths

- **Length Within Range** – Select this option to decode a Code 11 symbol with a specific length range. Select lengths using numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode Code 11 symbols containing between 4 and 12 characters, first scan **Code 11 – Length Within Range**. Then scan 0, 4, 1, and 2 (enter a leading zero for single digit numbers). To correct an error or change the selection, scan *Cancel*.



*Code 11 - Length Within Range

- **Any Length** – Scan this option to decode Code 11 symbols containing any number of characters within the decoder's capability. 



Code 11 Check Digit Verification

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. This selects the check digit mechanism for the decoded Code 11 bar code. The options are to check for one check digit, check for two check digits, or disable the feature.

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



***Disable
(00h)**



**One Check Digit
(01h)**



**Two Check Digits
(02h)**

Transmit Code 11 Check Digits

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



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



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

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

Interleaved 2 of 5 (ITF)

Enable/Disable Interleaved 2 of 5

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



Enable Interleaved 2 of 5
(01h)



*Disable Interleaved 2 of 5
(00h)

Note : For ASR-020D-V2,ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **Enable**.

Set Lengths for Interleaved 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. 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 – 55.

- **One Discrete Length** – Select this option to decode only I 2 of 5 symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only I 2 of 5 symbols with 14 characters, scan **I 2 of 5 – One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan Cancel.



- **Two Discrete Lengths** – Select this option to decode only I 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only I 2 of 5 symbols containing either 2 or 14 characters, select **I 2 of 5 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan Cancel.



- **Length Within Range** – Select this option to decode an I 2 of 5 symbol with a specific length range. Select lengths using numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode I 2 of 5 symbols containing between 4 and 12 characters, first scan **I 2 of 5 – Length Within Range**. Then scan **0**, **4**, **1**, and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan Cancel.



- **Any Length** – Scan this option to 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 bar code. 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](#).

Note : For ASR-020D-V2, ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **I 2 of 5 – Length Within Range**.

Interleaved 2 of 5 Check Digit Verification

Enable this feature 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
(00h)**



**USS Check Digit
(01h)**



**OPCC Check Digit
(02h)**

Transmit I 2 of 5 Check Digit

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



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



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

Febraban (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Convert I 2 of 5 to EAN-13

Enable this parameter to convert 14-character I 2 of 5 codes to EAN-13, and transmit to the host as EAN-13. To accomplish this, the I 2 of 5 code must be enabled, and the code must have a leading zero and a valid EAN-13 check digit.



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



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

Interleaved 2 of 5 Security Level

Interleaved 2 of 5 bar codes are vulnerable to misdecodes by the nature of the symbol, especially when **Any Length** is set for Interleaved 2 of 5 bar codes. The decoder offers four levels of decode security for Interleaved 2 of 5 bar codes. There is an inverse relationship between security and decoder aggressiveness. Increasing the level of security may result in reduced aggressiveness in scanning, so select only the level of security necessary.

- **I 2 of 5 Security Level 0:** This setting allows the decoder to operate in its most aggressive state, while providing sufficient security in decoding the most in-spec bar codes.



I 2 of 5 Security Level 0
(00h)

- **I 2 of 5 Security Level 1:** A bar code 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 1**
(01h)

- **I 2 of 5 Security Level 2:** Select this option with higher safety requirements to the bar codes if **Security Level 1** fails to eliminate misdecodes.



I 2 of 5 Security Level 2
(02h)

- **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 bar code must be successfully read three times before being decoded.



**I 2 of 5 Security Level 3
(03h)**

NOTE Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes. Selecting this level of security significantly impairs the decoding ability of the decoder. If this level of security is required, it is recommended that you try to improve the quality of the bar codes.

I 2 of 5 Reduced Quiet Zone (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)**

Discrete 2 of 5 (DTF)

Enable/Disable Discrete 2 of 5

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



Enable Discrete 2 of 5
(01h)



*Disable Discrete 2 of 5
(00h)

Set Lengths for Discrete 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for D 2 of 5 to any length, one or two discrete lengths, or lengths within a specific range. The range for Discrete 2 of 5 lengths is 0 – 55.

- **One Discrete Length** – Select this option to decode only D 2 of 5 symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only D 2 of 5 symbols with 14 characters, scan **D 2 of 5 – One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan [Cancel](#).



*D 2 of 5 - One Discrete Length

- **Two Discrete Lengths** – Select this option to decode only D 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only D 2 of 5 symbols containing either 2 or 14 characters, select **D 2 of 5 – Two Discrete Lengths**, then scan **0, 2, 1**, and then **4**. To correct an error or to change the selection, scan [Cancel](#).



D 2 of 5 - Two Discrete Lengths

- **Length Within Range** – Select this option to decode a D 2 of 5 symbol with a specific length range. Select lengths using numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode D 2 of 5 symbols containing between 4 and 12 characters, first scan **D 2 of 5 – Length Within Range**. Then scan **0, 4, 1**, and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan [Cancel](#).



D 2 of 5 - Length Within Range

- **Any Length** – Scan this option to decode D 2 of 5 symbols containing any number of characters within the decoder’s capability.



D 2 of 5 - Any Length

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 bar code. To prevent this, select specific lengths (D 2 of 5 – One Discrete Length, Two Discrete Lengths) for D 2 of 5 applications.

NOTE For ASR-020D-V2, ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **D 2 of 5 – Length Within Range**.

Codabar (NW – 7)

Enable/Disable Codabar

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



Enable Codabar
(01h)



*Disable Codabar
(00h)

NOTE For ASR-020D-V2, ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **Enable**.

Set Lengths for Codabar

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

- **One Discrete Length** – Select this option to decode only Codabar symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Codabar symbols with 14 characters, scan **Codabar** – **One Discrete Length**, then scan 1 followed by 4. To correct an error or to change the selection, scan [Cancel](#).



Codabar - One Discrete Length

- **Two Discrete Lengths** – Select this option to decode only Codabar symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Codabar symbols containing either 2 or 14 characters, select **Codabar** – **Two Discrete Lengths**, then scan 0, 2, 1, and then 4. To correct an error or to change the selection, scan [Cancel](#).



Codabar - Two Discrete Lengths

- **Length Within Range** – Select this option to decode a Codabar symbol with a specific length range. Select lengths using numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode Codabar symbols containing between 4 and 12 characters, first scan **Codabar** – **Length Within Range**. Then scan 0, 4, 1, and 2 (enter a leading zero for single digit numbers). To correct an error or change the selection, scan [Cancel](#).



*Codabar - Length Within Range

- **Any Length** – Scan this option to decode Codabar symbols containing any number of characters within the decoder's capability.



CLSI Editing

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

NOTE Symbol length does not include start and stop characters.



NOTIS Editing

Enable this parameter to strip the start and stop characters from a decoded Codabar symbol. Enable this feature if the host system requires this data format.



Codabar Security Level (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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 0

(0)

· **Codabar Security Level 1:** This default setting eliminates most misdecodes.



*Codabar Security Level 1

(1)

· **Codabar Security Level 2:** Select this option with greater barcode security requirements if Security Level 1 fails to eliminate misdecodes.



Codabar Security Level 2

(2)

· **Codabar Security Level 3:** If you selected Security Level 2, and misdecodes still occur, select this security level to apply the highest safety requirements.



Codabar Security Level 3
(3)

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 Upper or Lower Case Start/Stop Characters

Detection

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



*Upper Case
(00h)



Lower Case
(01h)

Codabar Mod 16 Check Digit Verification (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Transmit Codabar Check Digit (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)**

MSI

Enable/Disable MSI

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



**Enable MSI
(01h)**



***Disable MSI
(00h)**

Set Lengths for MSI

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

- **One Discrete Length** – Select this option to decode only MSI symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only MSI symbols with 14 characters, scan **MSI – One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan [Cancel](#).



MSI - One Discrete Length

- **Two Discrete Lengths** – Select this option to decode only MSI symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only MSI symbols containing either 2 or 14 characters, select **MSI – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan [Cancel](#).



MSI - Two Discrete Lengths

- **Length Within Range** – Select this option to decode a MSI symbol with a specific length range. Select lengths using numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode MSI symbols containing between 4 and 12 characters, first scan **MSI – Length Within Range**. Then scan **0**, **4**, **1**, and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan [Cancel](#).



*MSI - Length Within Range

- **Any Length** – Scan this option to decode MSI symbols containing any number of characters within the decoder's capability.



MSI - Any Length

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 bar code. To prevent this, select specific lengths (**MSI – One Discrete Length, Two Discrete Lengths**) for MSI applications.

MSI Check Digits

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** bar code to enable verification of the second check digit.

See [MSI Check Digit Algorithm](#) on next page for the selection of second digit algorithms.



* One MSI Check Digit
(00h)



Two MSI Check Digits
(01h)

Transmit MSI Check Digit(s)

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



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



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

MSI Check Digit Algorithm

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



MOD 10/MOD 11
(00h)



*MOD 10/MOD 10
(01h)

MSI Reduced Quiet Zone (ASR-020D Only)

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)

Chinese 2 of 5

Enable/Disable Chinese 2 of 5

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



Enable Chinese 2 of 5
(01h)



*Disable Chinese 2 of 5
(00h)

Matrix 2 of 5

Enable/Disable Matrix 2 of 5

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



Enable Matrix 2 of 5
(01h)



* Disable Matrix 2 of 5
(00h)

Set Lengths for Matrix 2 of 5

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

- **One Discrete Length** – Select this option to decode only Matrix 2 of 5 symbols containing a selected length. Select the length using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Matrix 2 of 5 symbols with 14 characters, scan **Matrix 2 of 5 – One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan [Cancel](#).



*Matrix 2 of 5 - One Discrete Length

- **Two Discrete Lengths** – Select this option to decode only Matrix 2 of 5 symbols containing either of two selected lengths. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode only Matrix 2 of 5 symbols containing either 2 or 14 characters, select **Matrix 2 of 5 – Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan [Cancel](#).



Matrix 2 of 5 - Two Discrete Lengths

- **Length Within Range** – Select this option to decode a Matrix 2 of 5 symbol with a specific length range. Select lengths using the numeric bar codes in [Appendix Numeric Bar Codes](#). For example, to decode Matrix 2 of 5 symbols containing between 4 and 12 characters, first scan **Matrix 2 of 5 – Length Within Range**. Then scan **0**, **4**, **1**, and **2** (enter a leading zero for single digit numbers). To correct an error or change the selection, scan [Cancel](#).



Matrix 2 of 5 - Length Within Range

- **Any Length** – Scan this option to decode Matrix 2 of 5 symbols containing any number of characters within the decoder's capability.



Matrix 2 of 5 - Any Length

Note : For ASR-020D-V2,ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **Matrix 2 of 5 – Length Within Range**.

Matrix 2 of 5 Check Digit

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the Matrix 2 of 5 check digit.



Enable Matrix 2 of 5 Check Digit
(01h)



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

Transmit Matrix 2 of 5 Check Digit

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



Transmit Matrix 2 of 5 Check Digit
(01h)



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

Korean 3 of 5

Enable/Disable Korean 3 of 5

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

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



Enable Korean 3 of 5
(01h)



*Disable Korean 3 of 5
(00h)

Inverse 1D

This parameter sets the 1D inverse decoder setting. Options are:

- **Regular Only** – the decoder decodes regular 1D bar codes only.
- **Inverse Only** – the decoder decodes inverse 1D bar codes only.
- **Inverse Autodetect** – the decoder decodes both regular and inverse 1D bar codes.



*Regular
(00h)



Inverse Only
(01h)



Inverse Autodetect
(02h)

Postal Codes

US Postnet

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



**Enable US Postnet
(01h)**



***Disable US Postnet
(00h)**

US Planet

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



**Enable US Planet
(01h)**



***Disable US Planet
(00h)**

Transmit US Postal Check Digit

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
(01h)**



**Do Not Transmit US Postal Check Digit
(00h)**

UK Postal

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



Enable UK Postal
(01h)



*Disable UK Postal
(00h)

Transmit UK Postal Check Digit

Select whether to transmit UK Postal data with or without the check digit.



*Transmit UK Postal
Check Digit
(01h)



Do Not Transmit UK Postal Check Digit
(00h)

Japan Postal

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



Enable Japan Postal
(01h)



*Disable Japan Postal
(00h)

Australia Post

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



Enable Australia Post
(01h)

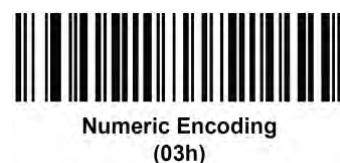


*Disable Australia Post
(00h)

Australia Post Format

To select one of the following formats for Australia Post, scan the appropriate bar code below:

- **Autodiscriminate** (or Smart mode) – Attempt to 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 <http://www.auspost.com.au>.



Netherlands KIX Code

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



Enable Netherlands KIX Code
(01h)



* Disable Netherlands KIX Code
(00h)

USPS 4CB/One Code/Intelligent Mail

To enable or disable USPS 4CB/One Code/Intelligent Mail, scan the appropriate bar code below.



Enable USPS 4CB/One Code/Intelligent Mail
(01h)



* Disable USPS 4CB/One Code/Intelligent Mail
(00h)

UPU FICS Postal

To enable or disable UPU FICS Postal, scan the appropriate bar code below.



Enable UPU FICS Postal
(01h)



***Disable UPU FICS Postal**
(00h)

Mailmark (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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



***Disable Mailmark**
(0)



Enable Mailmark
(1)

GS1 DataBar

GS1 DataBar types are:

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

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

GS1 DataBar

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

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



GS1 DataBar Limited



Enable GS1 DataBar Limited
(01h)



*Disable GS1 DataBar Limited
(00h)

Note : For ASR-020D-V2,ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **Enable**.

GS1 DataBar Limited Security Level

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

- Level 1 – No clear margin required. This complies with the original GS1 standard, yet might result in erroneous¹ decoding of the DataBar Limited bar code when scanning some UPC symbols that start with the digits “9” and “7”.
- Level 2 – Automatic risk detection. This level of security may result in erroneous decoding of DataBar Limited bar codes when scanning some UPC symbols. If a misdecode is detected, the decoder operates in Level 3 or Level 1.
- Level 3 – Security level reflects newly proposed GS1 standard that requires a 5X trailing clear margin.
- Level 4 – Security level extends beyond the standard required by GS1. This level of security requires a 5X leading and trailing clear margin.



Security Level 1
(01h)



Security Level 2
(02h)



*Security Level 3
(03h)



Security Level 4
(04h)

GS1 DataBar Expanded

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

- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked.



*Enable GS1 DataBar Expanded
(01h)



Disable GS1 DataBar Expanded
(00h)

Convert GS1 DataBar to UPC/EAN

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

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



Enable Convert GS1 DataBar to UPC/EAN
(01h)



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

Convert GS1 DataBar to UPC/EAN (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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.



GS1 DataBar Security Level 0

(0)

Security Level 1 – This setting eliminates most misdecodes while maintaining reasonable aggressiveness.



*GS1 DataBar Security Level 1

(1)

Security Level 2 – Select this option with greater barcode security requirements if Security Level 1 fails to eliminate misdecodes.



GS1 DataBar Security Level 2

(2)

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 3
(3)

Composite

Composite CC-C

Scan a bar code below to enable or disable Composite bar codes of type CC-C.



Enable CC-C
(01h)



*Disable CC-C
(00h)

Composite CC-A/B

Scan a bar code below to enable or disable Composite bar codes of type CC-A/B.

NOTE If you enable this code type, also see UPC Composite Mode on next page.



Enable CC-A/B
(01h)



*Disable CC-A/B
(00h)

Composite TLC-39

Scan a bar code below to enable or disable Composite bar codes of type TLC-39.



Enable TLC39
(01h)



*Disable TLC39
(00h)

Composite Inverse (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

UPC Composite Mode

If you enable *Composite CC-A/B* on previous page, select an option for linking UPC symbols with a 2D symbol during transmission as if they were one symbol:

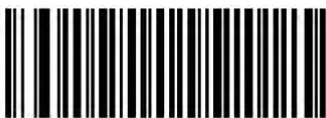
- Select **UPC Never Linked** to transmit UPC bar codes regardless of whether a 2D symbol is detected.
- Select **UPC Always Linked** to transmit UPC bar codes and the 2D portion. ^[1]_{SEP} If 2D is not present, the UPC bar code does not transmit.
- If you select **Autodiscriminate UPC Composites**, the decoder determines if there is a 2D portion, then transmits the UPC, as well as the 2D portion if present.



UPC Never Linked
(00h)



*UPC Always Linked
(01h)



Autodiscriminate UPC Composites
(02h)

Note : For ASR-020D-V2,ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **UPC Never Linked**.

Composite Beep Mode

To select the number of decode beeps when a composite bar code is decoded, scan the appropriate bar code.



Single Beep After Both are Decoded
(00h)



*Beep as Each Code Type is Decoded
(01h)



Double Beep After Both are Decoded
(02h)

GS1-128 Emulation Mode for UCC/EAN Composite Codes

Select whether to enable or disable this mode.



Enable GS1-128 Emulation Mode for
UCC/EAN Composite Codes
(01h)



*Disable GS1-128 Emulation Mode for
UCC/EAN Composite Codes
(00h)

2D Symbologies

Enable/Disable PDF417

To enable or disable PDF417, scan the appropriate bar code below.



***Enable PDF417
(01h)**



**Disable PDF417
(00h)**

Enable/Disable MicroPDF417

To enable or disable MicroPDF417, scan the appropriate bar code below.



**Enable MicroPDF417
(01h)**



***Disable MicroPDF417
(00h)**

Code 128 Emulation

Enable this parameter to transmit data from certain MicroPDF417 symbols as Code 128.

AIM Code ID Character must be enabled for this parameter to work.

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 a bar code below to enable or disable Code 128 Emulation.

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



Enable Code 128 Emulation
(01h)



***Disable Code 128 Emulation**
(00h)

Data Matrix

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



***Enable Data Matrix
(01h)**



**Disable Data Matrix
(00h)**

GS1 Data Matrix (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

To enable or disable GS1 Data Matrix, scan the appropriate bar code below.




**Enable GS1 Data Matrix
(1)**



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

Data Matrix Inverse

This parameter sets the Data Matrix inverse decoder setting. Options are:

- **Regular Only** - the decoder decodes regular Data Matrix bar codes only.
- **Inverse Only** - the decoder decodes inverse Data Matrix bar codes only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse Data Matrix bar codes. 



*Regular
(00h)



Inverse Only
(01h)



Inverse Autodetect
(02h)

Note : For ASR-020D-V2, ASR-020D-V3 and ASR-020D-V4, the default parameter is set to **Inverse Autodetect**.

Decode Mirror Images (Data Matrix Only)

Select an option for decoding mirror image Data Matrix bar codes:

- **Always** - decode only Data Matrix bar codes that are mirror images
- **Never** - do not decode Data Matrix bar codes that are mirror images
- **Auto** - decode both mirrored and unmirrored Data Matrix bar codes.



Always
(01h)



Never
(00h)



*** Auto**
(02h)

Maxicode

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



**Enable Maxicode
(01h)**



***Disable Maxicode
(00h)**

QR Code

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



***Enable QR Code
(01h)**



**Disable QR Code
(00h)**

GS1 QR (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

To enable or disable GS1 QR, scan the appropriate bar code below.



***Enable GS1 QR**

(1)



Disable GS1 QR

(0)

QR Inverse (ASX-520R & ASR-020D Only)

This parameter sets the QR inverse decoder setting. Options are:

- **Regular Only** - the decoder decodes regular QR bar codes only.
- **Inverse Only** - the decoder decodes inverse QR bar codes only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse QR bar codes.



MicroQR

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



Linked QR Mode (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Aztec

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



***Enable Aztec
(01h)**



**Disable Aztec
(00h)**

Aztec Inverse

This parameter sets the Aztec inverse decoder setting. Options are:

- **Regular Only** - the decoder decodes regular Aztec bar codes only.
- **Inverse Only** - the decoder decodes inverse Aztec bar codes only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse Aztec bar codes.



**Regular
(00h)**



**Inverse Only
(01h)**



***Inverse Autodetect
(02h)**

Han Xin

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





Enable Han Xin
(01h)



*Disable Han Xin
(00h)

Han Xin Inverse

Select a Han Xin inverse decoder setting:

- **Regular Only** - the decoder decodes Han Xin bar codes with normal reflectance only. 
- **Inverse Only** - the decoder decodes Han Xin bar codes with inverse reflectance only. 
- **Inverse Autodetect** - the decoder decodes both regular and inverse Han Xin bar codes.



*Regular
(00h)



Inverse Only
(01h)



Inverse Autodetect
(02h)

Grid Matrix (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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



Enable

(1)



***Disable**

(0)

Grid Matrix Inverse (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

Grid Matrix Mirror (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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)

DotCode (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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



* Disable DotCode

(0)



Enable DotCode

(1)

DotCode Inverse (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

Scan one of the following barcodes to select a DotCode Inverse decoder setting. Setting options are:

- **Regular Only** - Decoder decodes DotCode barcodes with normal reflectance only.
- **Inverse Only** - Decoder decodes DotCode barcodes with inverse reflectance only.
- **Inverse Autodetect** - Decoder decodes both regular and inverse DotCode barcodes.



Regular

(0)



Inverse Only

(1)



* Autodetect

(2)

DotCode Mirrored (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

Scan one of the following barcodes to select a DotCode Mirror decoder setting:

- **Non-Mirrored Only** - Digital decoder decodes non-mirrored DotCode barcodes only.
- **Mirrored Only** - Digital decoder decodes mirrored DotCode barcodes only.
- **Autodetect** - Digital decoder decodes both mirrored and non-mirrored DotCode barcodes.



Never

(0)



Always

(1)



* Autodetect

(2)

DotCode Prioritize (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

Enable DotCode Prioritize to give priority to DotCode decoding as compared to other symbologies.



Disable



* Enable

Symbology-Specific Security Features

Redundancy Level

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

Select the redundancy level appropriate for the bar code quality.

Redundancy Level 1

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

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

Redundancy Level 2

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

Code Type	Code Length
All	All

Redundancy Level 3

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

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

Redundancy Level 4

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

Code Type	Code Length
All	All



Security Level

The decoder offers four levels of decode security for delta bar codes, which include UPC/EAN/JAN and Code 93. Select increasing levels of security for decreasing levels of bar code quality. There is an inverse relationship between security and decoder aggressiveness, so choose only that level of security necessary for any given application.

- **Security Level 0:** This setting allows the decoder to operate in its most aggressive state, while providing sufficient security in decoding most “in-spec” bar codes.



- **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. Be advised, selecting this option is an extreme measure against misdecoding severely out of spec bar codes. Selecting this level of security significantly impairs the decoding ability of the decoder. If you need this level of security, try to improve the quality of the bar codes. ^[1]_[SEP]



Security Level 3
(03h)

1D Quiet Zone Level (ASR-020D-V2/ASR-020D-V3/ASR-020D-V4)

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, It is strongly recommended 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)

Intercharacter Gap Size

The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various bar code-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 bar codes.



*Normal Intercharacter Gaps
(06h)



Large Intercharacter Gaps
(0Ah)

Appendix

ASCII Character Sets

Code Type	Full ASCII Code 39 Encode Char.	Keystroke
1000	%U	CTRL 2
1001	\$A	CTRL A
1002	\$B	CTRL B
1003	\$C	CTRL C
1004	\$D	CTRL D
1005	\$E	CTRL E
1006	\$F	CTRL F
1007	\$G	CTRL G
1008	\$H	CTRL H / BACKSPACE
1009	\$I	CTRL I / HORIZONTAL TAB
1010	\$J	CTRL J
1011	\$K	CTRL K
1012	\$L	CTRL L
1013	\$M	CTRL M / ENTER
1014	\$N	CTRL N
1015	\$O	CTRL O
1016	\$P	CTRL P
1017	\$Q	CTRL Q
1018	\$R	CTRL R
1019	\$S	CTRL S
1020	\$T	CTRL T
1021	\$U	CTRL U
1022	\$V	CTRL V
1023	\$W	CTRL W
1024	\$X	CTRL X

※The keystroke in bold transmits only if your enabled Function Key Mapping. Otherwise, the unbold keystroke transmits.

読取值	Full ASCII Code 39 Encode Char.	Keystroke
1025	\$Y	CTRL Y
1026	\$Z	CTRL Z
1027	%A	CTRL [
1028	%B	CTRL \ (※¥)
1029	%C	CTRL]
1030	%D	CTRL 6
1031	%E	CTRL -
1032	Space	Space
1033	/A	!
1034	/B	‘
1035	/C	#
1036	/D	\$
1037	/E	%
1038	/F	&
1039	/G	‘
1040	/H	(
1041	/I)
1042	/J	*
1043	/K	+
1044	/L	,
1045	-	-
1046	.	.
1047	/o	/
1048	0	0
1049	1	1
1050	2	2
1051	3	3
1052	4	4
1053	5	5
1054	6	6

ASCII Value	Full ASCII Code 39 Encode Char.	Keystroke
1055	7	7
1056	8	8
1057	9	9
1058	/Z	:
1059	%F	;
1060	%G	<
1061	%H	=
1062	%I	>
1063	%J	?
1064	%V	@
1065	A	A
1066	B	B
1067	C	C
1068	D	D
1069	E	E
1070	F	F
1071	G	G
1072	H	H
1073	I	I
1074	J	J
1075	K	K
1076	L	L
1077	M	M
1078	N	N
1079	O	O
1080	P	P
1081	Q	Q
1082	R	R
1083	S	S
1084	T	T

ASCII Value	Full ASCII Code 39 Encode Char.	Keystroke
1085	U	U
1086	V	V
1087	W	W
1088	X	X
1089	Y	Y
1090	Z	Z
1091	%K	[
1092	%L	\ (※¥)
1093	%M]
1094	%N	^
1095	%O	_
1096	%W	`
1097	+A	a
1098	+B	b
1099	+C	c
1100	+D	d
1101	+E	e
1102	+F	f
1103	+G	g
1104	+H	h
1105	+I	i
1106	+J	j
1107	+K	k
1108	+L	l
1109	+M	m
1110	+N	n
1111	+O	o
1112	+P	p
1113	+Q	q
1114	+R	r

ASCII Value	Full ASCII Code 39 Encode Char.	Keystroke
1115	+S	s
1116	+T	t
1117	+U	u
1118	+V	v
1119	+W	w
1120	+X	x
1121	+Y	y
1122	+Z	z
1123	%P	{
1124	%Q	
1125	%R	}
1126	%S	~

Numeric Bar codes



0



1



2



3



4



5



6



7



8



9

Cansel

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



Cansel

Symbol Code Identifiers

Code Character	Code Type
A	JAN(UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13)
B	Code 39, Code 32
C	NW7(Codabar)
D	Code 128, ISBT 128, ISBT 128 Concatenated
E	Code 93
F	Interleaved 2 of 5
G	Discrete 2 of 5, or Discrete 2 of 5 IATA
H	Code 11
J	MSI
K	GS1-128
L	Bookland EAN
M	Trioptic Code 39
N	Coupon Code
R	G1 DataBar Family
S	Matrix 2 of 5
T	UCC Composite, TLC 39
U	Chinese 2 of 5
V	Korean 3 of 5
X	ISSN EAN, PDF417, Macro PDF417, Micro PDF417
z	Aztec, Aztec Rune
P00	Data Matrix
P01	QR Code, MicroQR
P02	Maxicode
P03	US Postnet
P04	US Planet
P05	Japan Postal
P06	UK Postal
P08	Netherlands KIX Code
P09	Australia Post
P0A	USPS 4CB/One Code/Intelligent Mail
P0B	UPU FICS Postal

P0D	Grid Matrix, Grid Matrix Inverse, Grid Matrix Mirror
P0G	GS1 Data Matrix
P0H	Han Xin
P0Q	GS1 QR
P0X	Signature Capture

AIM Code Identifiers

Each AIM Code Identifier contains the three-character string]cm where:

] = Flag Character (ASCII 93)

c = Code Character (See table below)

m = Modifier Character (See table at next page)




Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, ISBT 128, ISBT 128 Concatenated, GS1-128, Coupon (Code 128 portion)
d	Data Matrix
E	JAN(UPC/EAN), Coupon (UPC portion)
e	GS1 DataBar Family
F	NW7(Codabar)
G	Code 93
H	Code 11
I	Interleaved 2 of 5
L	PDF417, Macro PDF417, Micro PDF417
L2	TLC 39
M	MSI
Q	QR Code, MicroQR
S	Discrete 2 of 5, IATA 2 of 5
U	Maxicode
z	Aztec, Aztec Rune
X	Bookland EAN, ISSN EAN, Trioptic Code 39, Chinese 2 of 5, Matrix 2 of 5, Korean 3 of 5, US Postnet, US Planet, UK Postal, Japan Postal, Australia Post, Netherlands KIX Code, USPS 4CB/One Code/

	Intelligent Mail, UPU FICS Postal, Mailmark, Signature Capture
lg	Grid Matrix, Grid Matrix Inverse, Grid Matrix Mirror

Modifier Character

The modifier character is the sum of the applicable option values based on the table below.

Code Type	Option Value	Option
Code 39		
	0	No check character or Full ASCII processing.
	1	Reader has checked one check character.
	3	Reader has checked and stripped check character.
	4	Reader has performed Full ASCII character conversion.
	5	Reader has performed Full ASCII character conversion and checked one check character.
	7	Reader has performed Full ASCII character conversion and checked and stripped check character.
	Example: A Full ASCII bar code with check character W, A+I+MI+DW, is transmitted as]A7AIMID where 7 = (3+4).	
Trioptic Code 39		
	0	No option specified at this time. Always transmit 0.
	Example: A Trioptic bar code 412356 is transmitted as]X0412356	
Code 128		
	0	Standard data packet, no Function code 1 in first symbol position.
	1	Function code 1 in first symbol character position. ^[1] _{SEP}
	2	Function code 1 in second symbol character position.
	Example: A Code (EAN) 128 bar code with Function 1 character ^{FNC1} in the first position, AIMID is transmitted as]C1AIMID	
I 2 of 5		
	0	No check digit processing. ^[1] _{SEP}
	1	Reader has validated check digit. ^[1] _{SEP}
	3	Reader has validated and stripped check digit.
	Example: An I 2 of 5 bar code without check digit, 4123, is transmitted as]I04123	

Code Type	Option Value	Option
Codabar		
	0	No check digit processing.
	1	Reader has checked check digit.
	3	Reader has stripped check digit before transmission.
	Example: A Codabar bar code without check digit, 4123, is transmitted as]F04123	
Code 93		
	0	No options specified at this time. Always transmit 0. 
	Example: A Code 93 bar code 012345678905 is transmitted as]G0012345678905	
MSI		
	0	Check digits are sent.
	1	No check digit is sent.
	Example: An MSI bar code 4123, with a single check digit checked, is transmitted as]M14123	
D 2 of 5		
	0	No options specified at this time. Always transmit 0.
	Example: A D 2 of 5 bar code 4123, is transmitted as]S04123	
JAN(UPC/EAN)		
	0	Standard data packet in full EAN format, i.e. 13 digits for UPC-A, UPC-E, and EAN-13 (not including supplemental data).
	1	Two digit supplemental data only.
	2	Five digit supplemental data only.
	3	Combined data packet comprising 13 digits from EAN-13, UPC-A or UPC-E symbol and 2 or 5 digits from supplemental symbol.
	4	EAN-8 data packet. 
	Example: A UPC-A bar code 012345678905 is transmitted as]E00012345678905	
Bookland EAN		
	0	No options specified at this time. Always transmit 0. 

	Example: A Bookland EAN bar code 123456789X is transmitted as]X0123456789X	
ISSN EAN		
	0	No options specified at this time. Always transmit 0.
	Example: An ISSN EAN bar code 123456789X is transmitted as]X0123456789X	
Code 11		
	0	Single check digit ^[1] _{SEP}
	1	Two check digits ^[1] _{SEP}
	3	Check characters validated but not transmitted.
GS1 DataBar Family		
		No option specified at this time. Always transmit 0. GS1 DataBar and GS1 DataBar Limited transmit with an Application Identifier “01” ^[1] _{SEP} Note: In GS1-128 emulation mode, GS1 DataBar is transmitted using Code 128 rules (i.e.,)C1).
		Example: A GS1 DataBar bar code 0110012345678902 is transmitted as e00110012345678902.
EAN.UCC Composites (GS1 DataBar, GS1-128, 2D portion of UPC composite)		
		Native mode transmission ^[1] _{SEP} Note: UPC portion of composite is transmitted using UPC rules.
	0	Standard data packet.
	1	Data packet containing the data following an encoded symbol separator character.
	2	Data packet containing the data following an escape mechanism character. The data packet does not support the ECI protocol.
	3	Data packet containing the data following an escape mechanism character. The data packet supports the ECI protocol.
		GS1-128 emulation ^[1] _{SEP} Note: UPC portion of composite is transmitted using UPC rules.

	1	Data packet is a GS1-128 symbol (i.e., data is preceded with)JC1).
PDF417, Micro PDF417		
	0	Reader set to conform to protocol defined in 1994 PDF417 symbology specifications. Note: When this option is transmitted, the receiver cannot reliably determine whether ECIs have been invoked or whether data byte 92 _{DEC} has been doubled in transmission.
	1	Reader set to follow the ECI protocol (Extended Channel Interpretation). All data characters 92 _{DEC} are doubled.
	2	Reader set for Basic Channel operation (no escape character transmission protocol). Data characters 92 _{DEC} are not doubled. Note: When decoders are set to this mode, unbuffered Macro symbols and symbols requiring the decoder to convey ECI escape sequences cannot be transmitted.
	3	The bar code contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915.
	4	The bar code contains a GS1-128 symbol, and the first codeword is in the range 908-909.
	5	The bar code contains a GS1-128 symbol, and the first codeword is in the range 910-911.
	Example: A PDF417 bar code ABCD, with no transmission protocol enabled, is transmitted as]L2ABCD.	
Data Matrix		
	0	ECC 000-140, not supported.
	1	ECC 200.
	2	ECC 200, FNC1 in first or fifth position.
	3	ECC 200, FNC1 in second or sixth position.
	4	ECC 200, ECI protocol implemented.
	5	ECC 200, FNC1 in first or fifth position, ECI protocol implemented.
	6	ECC 200, FNC1 in second or sixth position, ECI protocol implemented.

GS1 Data Matrix		
	2	ECC 200, FNC1 in first or fifth position. MaxiCode
MaxiCode		
	0	Symbol in Mode 4 or 5. ^[1] _{SEP}
	1	Symbol in Mode 2 or 3. ^[1] _{SEP}
	2	Symbol in Mode 4 or 5, ECI protocol implemented.
	3	Symbol in Mode 2 or 3, ECI protocol implemented in secondary message.
QR Code		
	0	Model 1 symbol.
	1	Model 2 / MicroQR symbol, ECI protocol not implemented.
	2	Model 2 symbol, ECI protocol implemented.
	3	Model 2 symbol, ECI protocol not implemented, FNC1 implied in first position.
	4	Model 2 symbol, ECI protocol implemented, FNC1 implied in first position.
	5	Model 2 symbol, ECI protocol not implemented, FNC1 implied in second position.
	6	Model 2 symbol, ECI protocol implemented, FNC1 implied in second position.
GS1 QR		
	3	Model 2 symbol, ECI protocol not implemented, FNC1 implied in first position.
Aztec		
	0	Aztec Symbol
	C	Aztec Rune Symbol