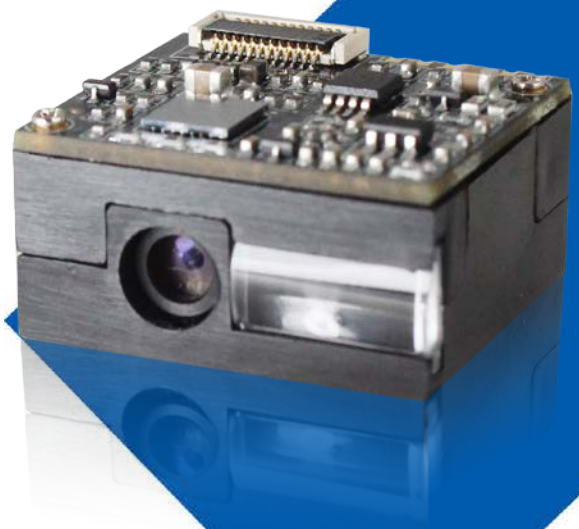
NLS-EM1395

OEM Scan Engine

User Guide



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Revision History

Version	Description	Date
V1.0.0	Initial release.	January 13, 2014

Table of Contents

99900031
**** Enter Setup**

Chapter 1 Getting Started

Introduction

The EM1395 embedded 1D barcode scan engine, armed with the linear imager and Newland patented UIMG® image recognition system, can read barcodes on a variety of mediums like paper and magnetic cards and is suitable to be integrated into various OEM devices including handheld barcode engines, PDA, kiosks, etc.

About This Guide

This guide provides programming instructions for the EM1395. Users can configure the EM1395 by scanning the programming barcodes included in this manual.

The EM1395 has been properly configured for most applications and can be put into use without further configuration. Users may check the ***Factory Defaults Table*** in Appendix for reference. Throughout the manual, programming barcodes marked with asterisks (**) are factory default values.

99900032
Exit Setup

99900031

**** Enter Setup**

Barcode Scanning

When scanning a barcode, simply center the aiming beam projected by the EM1395 on the barcode.

Right

Wrong

99900032

Exit Setup

**** Enter Setup**

Enable/Disable Barcode Programming

Parameter# 0xEC

Scanning the **Enter Setup** barcode can enable the engine to enter the setup mode. Then you can scan a number of programming barcodes to configure your engine. To exit the setup mode, scan the **Exit Setup** barcode.

If the engine has exited the setup mode, only some special programming barcodes, such as the **Enter Setup** barcode and **Restore All Factory Defaults** barcode, can be read.

**** Enter Setup**

(0x01)

Exit Setup

(0x00)

Transmit Programming Barcode Data

Programming barcode data (e.g. 99900060) can be transmitted to the Host. To enable/disable this feature, scan the appropriate barcode below.

When the engine is powered down or rebooted, this feature will be automatically disabled (i.e. the engine does not transmit programming barcode data).

Transmit Programming Barcode Data

**** Do Not Transmit Programming Barcode Data**

Exit Setup


99900031

**** Enter Setup**

User Parameter Pass Through

Parameter# 0xF1 0x71

Enable **User Parameter Pass Through** to transmit barcodes in the following format, in Code 128, to the Host:

<FNC3>L<any length data>

<FNC3>B<12 characters of data>

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


99900062

Enable User Parameter Pass Through

(0x01)


99900063

**** Disable User Parameter Pass Through**

(0x00)


99900032

Exit Setup

99900031

**** Enter Setup**

Restore Defaults

The engine can be reset to the defaults as follows.

1. If custom defaults were set by scanning the **Write to Custom Defaults** barcode, scanning the **Restore Defaults** barcode can retrieve and restore the engine's custom default settings.

2. If no custom defaults were set, scanning the **Restore Defaults** barcode can restore the factory default values listed in the ***Factory Defaults Table*** in Appendix.

99900060

Restore Defaults

Restore Factory Defaults

Scanning the following barcode can restore the engine to the factory default settings. This action will not remove custom defaults stored on the engine.

See the ***Factory Defaults Table*** in Appendix for more information.

99900030

Restore Factory Defaults

Write to Custom Defaults

This feature allows the user to store the current engine settings as custom defaults. Once custom default settings are stored, they can be recovered at any time by scanning the **Restore Defaults** barcode.

99900061

Write to Custom Defaults

99900032

Exit Setup

99900031

**** Enter Setup**

Modes of Operation

99900100

Power Off Mode[1]

99900101

Sleep Mode[2]

Note:

1. The engine can be woken up from Power Off mode by receiving a wakeup signal at the WAKE pin.
2. The engine can be woken up from Sleep mode by receiving a serial command from the host or a wakeup signal at the WAKE pin or a trigger signal at the TRIG pin.


99900031

**** Enter Setup**

Obtain Product Information

The user can obtain product information, firmware version and product ID by scanning the appropriate barcode below.


99900300

Product Info


99900301

Firmware Version


99900302

Product ID


99900032

Exit Setup

**** Enter Setup**

Software Handshaking

Parameter# 0x9F

This parameter offers control of the data transmission process between the engine and the host to assure reliability of the process.

**** Enable ACK/NAK Handshaking**

(0x01)

Disable ACK/NAK Handshaking

(0x00)

Host Serial Response Timeout

Parameter# 0x9B

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

The timeout can range from 0.0 to 9.9 seconds in 0.1 second increments.

Host Serial Response Timeout

(Default: 2.0s)

Example: Set the host serial response timeout to 5s

1. Scan the **Enter Setup** barcode.
2. Scan the **Host Serial Response Timeout** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

Exit Setup

99900031

**** Enter Setup**

Host Character Timeout

Parameter# 0xEF

The intercharacter delay gives the host system time to service its receiver and perform other tasks between characters. The timeout is set in 0.01 second increments from 0.01 seconds to 0.99 seconds.

Host Character Timeout

(Default: 0.2s)

Example: Set the host character timeout to 0.05s

1. Scan the **Enter Setup** barcode.
2. Scan the **Host Character Timeout** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup


99900031
** Enter Setup

Chapter 2 Communication Interfaces

The EM1395 scan engine provides a TTL-232 interface to communicate with the host device. The host device can receive scanned data and send commands to control the engine or to access/alter the configuration information of the engine via the interface.

TTL-232 Interface

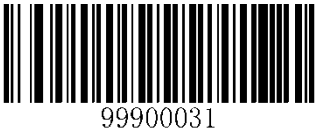
Serial communication interface is usually used when connecting the engine to a host device (like PC, POS). However, to ensure smooth communication and accuracy of data, you need to set communication parameters (including baud rate, parity check, data bit and stop bit) to match the host device.

The serial communication interface provided by the engine is based on TTL-level signals. TTL-232 can be used for most application architectures. For those requiring RS-232, an external conversion circuit is needed.

Default serial communication parameters are listed below. Make sure all parameters match the host requirements.

Parameter	Factory Default
Serial Communication	Standard TTL-232/RS-232
Baud Rate	9600
Parity Check	None
Number of Data Bits	8
Number of Stop Bits	1
Hardware Flow Control	Supported
Software Flow Control	Not supported
Intercharacter Delay	0s


99900032
Exit Setup


99900031

**** Enter Setup**

Baud Rate

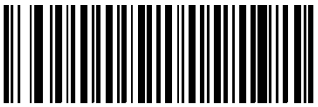
Parameter# 0x9C

Baud rate is the number of bits of data transmitted per second. Set the baud rate to match the Host requirements.


99902104

**** Baud Rate 9600**

(0x06)


99902101

Baud Rate 1200

(0x03)


99902106

Baud Rate 19200

(0x07)


99902102

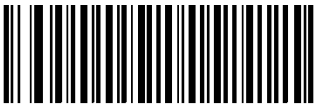
Baud Rate 2400

(0x04)


99902107

Baud Rate 38400

(0x08)


99902103

Baud Rate 4800

(0x05)


99902110

Baud Rate 57600

(0x0a)


99902105

Baud Rate 14400


99902111

Baud Rate 115200

(0x0b)


99900032

Exit Setup

99900031

**** Enter Setup**

Parity Check

Parameter# 0x9C

99902120

**** None**

(0x04)

99902122

Even

(0x01)

99902121

Odd

(0x00)

Data Bit

99902151

7 Data Bits

99902150

**** 8 Data Bits**

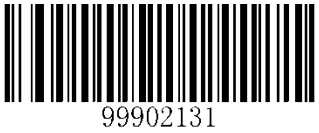
99900032

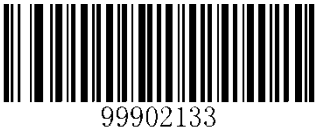
Exit Setup

99900031
**** Enter Setup**

Stop Bit

Parameter# 0x9D


99902131
**** 1 Stop Bit**


99902133
2 Stop Bits


99900032
Exit Setup

99900031

**** Enter Setup**

Parity/Data Bit/Stop Bit

99902160

8 Data Bits, No Parity, 1 Stop Bit

99902161

8 Data Bits, Even Parity, 1 Stop Bit

99902162

8 Data Bits, Odd Parity, 1 Stop Bit

99902163

8 Data Bits, No Parity, 2 Stop Bits

99902164

8 Data Bits, Even Parity , 2 Stop Bits

99902165

8 Data Bits, Odd Parity, 2 Stop Bits

99902166

7 Data Bits, Even Parity, 1 Stop Bit

99902167

7 Data Bits, Odd Parity, 1 Stop Bit

99902170

7 Data Bits, Even Parity, 2 Stop Bits

99902171

7 Data Bits, Odd Parity, 2 Stop Bits

99900032

Exit Setup

99900031

**** Enter Setup**

Intercharacter Delay

Parameter# 0x6E

The intercharacter delay gives the host system time to service its receiver and perform other tasks between characters. The delay period can be set to 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70 or 75 milliseconds.

99902153

Intercharacter Delay

(Default: 0s)

Example: Set the intercharacter delay to 5 milliseconds

1. Scan the **Enter Setup** barcode.
2. Scan the **Intercharacter Delay** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup

99900031
**** Enter Setup**

Chapter 3 Scan Mode

Level Mode

Parameter# 0x8A

A trigger pull activates a decode session. The decode session continues until a trigger release, a valid decode, or the decode session timeout is reached (default: 3 seconds; programmable).

99900110
**** Level Mode**

(0x00)

Decode Session Timeout

Parameter# 0x88

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1 second increments from 1 to 15 seconds. When it is set to 0, the timeout is infinite.

99900150
Decode Session Timeout

(Default: 3s)

Example: Set the decode session timeout to 5 seconds

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032
Exit Setup


99900031

**** Enter Setup**

Auto Sleep

Parameter# 0x80

Auto Sleep allows the engine in the Level mode to enter a low power consumption Sleep state after staying idle for two seconds. The engine can be woken up from Sleep mode by receiving a serial command from the host or a wakeup signal at the WAKE pin or a trigger signal at the TRIG pin.


99900162

**** Enable Auto Sleep (Low Power)**

(0x01)


99900163

Disable Auto Sleep (Continuous Power)

(0x00)

Transmit “NR” Message

Parameter# 0x5E

This parameter determines whether the engine transmits “NR” when it fails to decode a barcode during the timeout period or before the trigger is released.


99904201

Transmit “NR” Message

(0x01)


99904202

**** Do Not Transmit “NR” Message**

(0x00)


99900032

Exit Setup

99900031

**** Enter Setup**

Pulse Mode

Parameter# 0x80

A trigger pull activates a decode session. The decode session continues until a valid decode or the decode session timeout is reached (default: 3 seconds; programmable).

99900111

Pulse Mode

(0x02)

Decode Session Timeout

Parameter# 0x88

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1 second increments from 1 to 15 seconds. When it is set to 0, the timeout is infinite.

99900150

Decode Session Timeout

(Default: 3s)

Example: Set the decode session timeout to 5 seconds

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup

99900031
**** Enter Setup**

Transmit “NR” Message

Parameter# 0x5E

This parameter determines whether the engine transmits “NR” when it fails to decode a barcode during the timeout period or before the trigger is released.


99904201

Transmit “NR” Message

(0x01)


99904202

**** Do Not Transmit “NR” Message**

(0x00)


99900032

Exit Setup

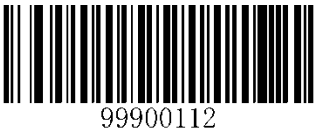
99900031

**** Enter Setup**

Blink Mode

Parameter# 0x8A

This scan mode is used for triggerless operation. Decode sessions are activated at a fixed interval of 100 milliseconds with an exception that same barcode cannot be reread until the timeout between decodes (same barcode) is reached (1 second; non-programmable). Each decode session lasts until a valid decode or the decode session timeout is reached (100 milliseconds; non-programmable). If no barcode is presented to the engine within 180 seconds, then the decode interval and decode session timeout are changed to 500 milliseconds.



99900112

Blink Mode

(0x07)

99900032

Exit Setup

99900031
**** Enter Setup**

Sense Mode

The engine activates a decode session every time when it detects a change in ambient illumination and waits for the image stabilization timeout (default: 1 second; programmable) to expire. Decode session continues until a valid decode or the decode session timeout is reached (default: 3 seconds; programmable). Same barcode cannot be reread until the timeout between decodes (same barcode) is reached (1 second; programmable).

The engine interprets an actual trigger pull as a Level triggering option.


99900113
Sense Mode

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1 second increments from 1 to 15 seconds. When it is set to 0, the timeout is infinite.


99900150
Decode Session Timeout
(Default: 3s)

Example: Set the decode session timeout to 5 seconds

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900031

**** Enter Setup**

Timeout between Decodes (Same Barcode)

Parameter# 0x89

This parameter is used to avoid undesired rereading of same barcode in a given period of time. It is programmable in 0.1 second increments from 0 to 12.0 seconds. If the parameter is set to 12.7, the timeout is infinite.

99900167

Timeout between Decodes (Same Barcode)

(Default: 1.0s)

Example: Set the timeout between decodes (same barcode) to 0.5 second

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes (Same Barcode)** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup

99900031

**** Enter Setup**

Image Stabilization Timeout

The engine waits for the image stabilization timeout to expire before activating a decode session every time it detects a change in ambient illumination. This parameter is programmable in 0.5 second increments from 0.5 to 7.5 seconds.

99900151

Image Stabilization Timeout

(Default: 1.0s)

Example: Set the image stabilization timeout to 3 seconds

1. Scan the **Enter Setup** barcode.
2. Scan the **Image Stabilization Timeout** barcode.
3. Scan the numeric barcode “6”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup

99900031

**** Enter Setup**

Sensitivity

Sensitivity specifies the degree of acuteness of the engine's response to changes in ambient illumination. The higher the sensitivity, the lower requirement in illumination change to trigger the engine. You can select an appropriate degree of sensitivity that fits the ambient environment.

99900152

**** High Sensitivity**

99900153

Medium Sensitivity

99900154

Low Sensitivity

Sensitivity levels range from 0 to F. The smaller the number, the higher the sensitivity.

99900161

Custom Sensitivity

Example: Set the sensitivity to Level 5

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Sensitivity** barcode.
3. Scan the numeric barcode "5".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup

99900031
**** Enter Setup**

Delayed Sense Mode

The engine activates a decode session every time when it detects a change in ambient illumination and waits for the image stabilization timeout (200 milliseconds; non-programmable) to expire. Decode session continues until a valid decode or the decode session timeout is reached (default: 6 seconds; programmable). Same barcode cannot be reread until the timeout between decodes (same barcode) is reached (1 second; programmable).

The engine interprets an actual trigger pull as a Level triggering option.


99900115

Delayed Sense Mode

Decode Session Timeout

Parameter# 0x88

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 2 second increments from 2 to 30 seconds. When it is set to 0, the timeout is infinite.


99900150

Decode Session Timeout

(Default: 6s)

Example: Set the decode session timeout to 8 seconds

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcode “4”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.


99900032

Exit Setup

99900031

**** Enter Setup**

Timeout between Decodes (Same Barcode)

This parameter is used to avoid undesired rereading of same barcode in a given period of time. It is programmable in 0.2 second increments from 0 to 3.0 seconds.

99900151

Timeout between Decodes (Same Barcode)

(Default: 1.0s)

Example: Set the timeout between decodes (same barcode) to 0.8 second

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes (Same Barcode)** barcode.
3. Scan the numeric barcode “4”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup


99900031

**** Enter Setup**

Sensitivity

Sensitivity specifies the degree of acuteness of the engine's response to changes in ambient illumination. The higher the sensitivity, the lower requirement in illumination change to trigger the engine. You can select an appropriate degree of sensitivity that fits the ambient environment.


99900152

**** High Sensitivity**


99900153

Medium Sensitivity


99900154

Low Sensitivity

Sensitivity levels range from 0 to F. The smaller the number, the higher the sensitivity.


99900161

Custom Sensitivity

Example: Set the sensitivity to Level 5

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Sensitivity** barcode.
3. Scan the numeric barcode "5".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.


99900032

Exit Setup

99900031

**** Enter Setup**

Continuous Mode

Parameter# 0x8A

The engine automatically activates one decode session after another. Same barcode cannot be reread until the timeout between decodes (same barcode) is reached (1 second; programmable).

99900114

Continuous Mode

(0x04)

Timeout between Decodes (Same Barcode)

Parameter# 0x89

This parameter is used to avoid undesired rereading of same barcode in a given period of time. It is programmable in 0.1 second increments from 0 to 12.0 seconds. If the parameter is set to 12.7, the timeout is infinite.

99900167

Timeout between Decodes (Same Barcode)

(Default: 1.0s)

Example: Set the timeout between decodes (same barcode) to 0.5 second

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes (Same Barcode)** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.

99900032

Exit Setup

99900031

**** Enter Setup**

Security Level

Parameter# 0x4E

99900120

**** Security Level 1**

(0x01)

99900121

Security Level 2

(0x02)

99900122

Security Level 3

(0x03)

99900123

Security Level 4

(0x04)

99900032

Exit Setup

99900031
**** Enter Setup**

Command Trigger Mode

Parameter# 0x8A

Decode session is activated by a host command. The decode session continues until a valid decode, or a Stop command is received, or the decode session timeout is reached (default: 3 seconds; programmable).

The engine interprets an actual trigger pull as a Level triggering option.


99900116

Command Trigger Mode

(0x08)

Decode Session Timeout

Parameter# 0x88

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1 second increments from 1 to 15 seconds. When it is set to 0, the timeout is infinite.


99900150

Decode Session Timeout

(Default: 3s)

Example: Set the decode session timeout to 5 seconds

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcode “5”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.


99900032

Exit Setup

99900031

**** Enter Setup**

Transmit “NR” Message

Parameter# 0x5E

This parameter determines whether the engine transmits “NR” when it fails to decode a barcode during the timeout period or before the trigger is released.

99904201

Transmit “NR” Message

(0x01)

99904202

**** Do Not Transmit “NR” Message**

(0x00)

99900032

Exit Setup

**** Enter Setup**

Chapter 4 Notification

Good Read Beep

Parameter# 0x38

The engine can be configured to beep after good decode. Beep frequency, volume and duration are also user programmable.

**** Good Read Beep On**

(0x01)

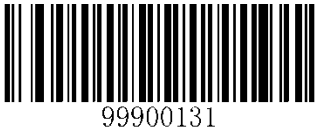
Good Read Beep Off

(0x00)

Exit Setup

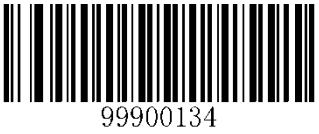
99900031
**** Enter Setup**

Beep Frequency & Volume


99900131
High Frequency, Loud

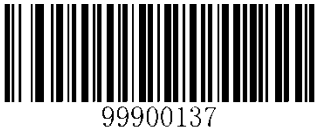

99900132
High Frequency, Medium-loud


99900133
High Frequency, Low


99900134
**** Medium Frequency, Loud**


99900135
Medium Frequency, Medium-loud


99900136
Medium Frequency, Low


99900137
Low Frequency, Loud


99900140
Low Frequency, Medium-loud


99900141
Low Frequency, Low


99900032
Exit Setup

99900031

**** Enter Setup**

Beep Duration

99900142

****150ms**

99900143

100ms

99900144

50ms


99900031
**** Enter Setup**

Chapter 5 Data Formatting

In many applications, barcode data needs to be edited and distinguished from one another.

Usually AIM ID and Code ID can be used as identifiers, but in some special cases terminating character suffix like Carriage Return or Line Feed can also be the alternative.

Data formatting may include appending prefix/suffix and sending data in the packet format.


99900032
Exit Setup

99900031
**** Enter Setup**

Prefix Sequences

99904010
**** Code ID+ Prefix+AIM ID**

99904011
Prefix+Code ID+AIM ID

99900032
Exit Setup


99900031

**** Enter Setup**

Prefix

Enable/Disable Prefix

If prefix is enabled, you are allowed to append to decoded data a user-defined prefix that can only contain one character.


99904021

Enable Prefix


99904020

**** Disable Prefix**

Set Prefix

Parameter# 0x69

To set a prefix, scan the **Set Prefix** barcode and the numeric barcodes that correspond to the hexadecimal values of a desired prefix and then scan the **Save** barcode. Refer to the ***ASCII Table*** in Appendix for hexadecimal values of characters.

Note: A prefix can only contain one character.


99904022

Set Prefix

Example: Set the custom prefix to “C”

1. Check the hex value of “C” in the ASCII Table. (“C”: 43)
2. Scan the **Enter Setup** barcode.
3. Scan the **Set Prefix** barcode.
4. Scan the numeric barcodes “4” and “3”.
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode.


99900032

Exit Setup

99900031
**** Enter Setup**

AIM ID

AIM (Automatic Identification Manufacturers) IDs and ISO/IEC 15424 standards define symbology identifiers and data carrier identifiers. (For the details, see the ***AIM ID Table*** in Appendix). If AIM ID is enabled, the engine will add the symbology identifier before the data after decoding.

99904031
Enable AIM ID

99904030
**** Disable AIM ID**

99900032
Exit Setup

99900031

**** Enter Setup**

Code ID

Code ID can also be used to identify barcode type. Unlike AIM ID, Code ID is user programmable. Code ID can only consist of one or two English letters.

99904041

Enable Code ID

99904040

**** Disable Code ID**

Restore All Default Code IDs

For the information of default Code IDs, see the ***Code ID Table*** in Appendix.

99904042

Restore All Default Code IDs

Set Code ID

Code ID of each symbology can be programmed separately. See the following example to learn how to set a Code ID.

Example: Set the Code ID of Code 128 to "p"

1. Check the hex value of "p" in the ASCII Table. ("p": 70)
2. Scan the **Enter Setup** barcode.
3. Scan the **Set Code 128 Code ID** barcode.
4. Scan the numeric barcodes "7" and "0".
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode.

99900032

Exit Setup

99900031
**** Enter Setup**

Set Code ID Barcodes


99910005
Set Code 128 Code ID


99910105
Set UCC/EAN-128 Code ID


99910205
Set AIM 128 Code ID


99910416
Set EAN-8 Code ID


99910513
Set EAN-13 Code ID


99910603
Set ISSN Code ID


99910705
Set ISBN Code ID


99911020
Set UPC-E Code ID


99911115
Set UPC-A Code ID


99911210
Set Interleaved 2 of 5 Code ID


99900032
Exit Setup

99900031
**** Enter Setup**

Set Code ID Barcodes (continued)


99911304
Set ITF-6 Code ID


99911404
Set ITF-14 Code ID


99911504
Set Deutsche 14 Code ID


99911604
Set Deutsche 12 Code ID


99911710
Set Coop 25 Code ID


99912010
Set Matrix 25 Code ID


99912110
Set Industrial 25 Code ID


99912210
Set Standard 25 Code ID


99912414
Set Code 39 Code ID


99912516
Set Codabar Code ID


99900032
Exit Setup

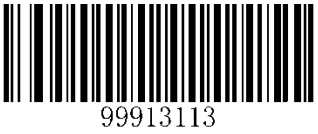
99900031
**** Enter Setup**

Set Code ID Barcodes (continued)


99912610
Set Code 93 Code ID


99912715
Set Code 11 Code ID


99913010
Set Plessey Code ID


99913113
Set MSI-Plessey Code ID


99913203
Set GS1 Databar Code ID


99910303
Set ISBT 128 Code ID


99900032
Exit Setup

**** Enter Setup**

Suffix 1

Enable/Disable Suffix 1

If suffix 1 is enabled, you are allowed to append to the data a user-defined suffix that can only contain one character.

Enable Suffix 1

**** Disable Suffix 1**

Set Suffix 1

Parameter# 0x68

To set suffix 1, scan the **Set Suffix 1** barcode, the numeric barcodes corresponding to the hexadecimal value of a desired suffix and the **Save** barcode. Refer to the ***ASCII Table*** in Appendix for hexadecimal values of characters.

Note: Suffix 1 can only contain one character.

Set Suffix 1

Example: Set suffix 1 to “C”

1. Check the hex value of “C” in the ASCII Table. (“C”: 43)
2. Scan the **Enter Setup** barcode.
3. Scan the **Set Suffix 1** barcode.
4. Scan the numeric barcodes “4” and “3”.
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode.

Exit Setup


99900031
**** Enter Setup**

Suffix 2

Enable/Disable Suffix 2

The user can scan the appropriate barcode below to determine whether to append suffix 2 to decoded data.


99904111
Enable Suffix 2


99904110
**** Disable Suffix 2**

Set Suffix 2

Parameter# 0x6A

To set suffix 2, scan the **Set Suffix 2** barcode, the numeric barcodes corresponding to the hexadecimal value of a desired suffix and the **Save** barcode. Refer to the ***ASCII Table*** in Appendix for hexadecimal values of characters.

Note: Suffix 2 can only contain one character.


99904112
Set Suffix 2

Example: Set suffix 2 to Carriage Return (0x0D)

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Suffix 2** barcode.
3. Scan the numeric barcodes “0” and “D”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.


99900032
Exit Setup

99900031
**** Enter Setup**

Decoded Data Packet Format

Parameter# 0xEE

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

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

99904276

Send Packeted Decoded Data

(0x01)

99904277

**** Send Raw Decoded Data**

(0x00)

99900032

Exit Setup

99900031
**** Enter Setup**

Chapter 6 Symbologies

Global Settings

Enable/Disable All Symbologies

If all symbologies are disabled, the engine can only identify programming barcodes.

99900042
Enable All Symbologies

99900043
Disable All Symbologies

99900032
Exit Setup

**** Enter Setup**

Decode UPC/EAN Add-On Codes

Parameter# 0x10

Add-on codes are appended characters (2 or 5) according to specific code format conventions. Several options are available:

Decode UPC/EAN with Add-On Code: The engine does not decode UPC/EAN barcodes without add-on codes.

Ignore UPC/EAN with Add-On Code: When presented with a UPC/EAN barcode with an add-on code, the engine decodes the UPC/EAN and ignores the add-on code.

Autodiscriminate UPC/EAN Add-On Codes: The engine decodes a mix of UPC/EAN barcodes with and without add-on codes.

Enable 378/379 Supplemental Mode: The engine identifies add-on codes for EAN-13 barcodes starting with a ‘378’ or ‘379’ prefix only. All other UPC/EAN barcodes are decoded immediately and the add-on codes ignored.

Enable 978 Supplemental Mode: The engine identifies add-on codes for EAN-13 barcodes starting with a ‘978’ prefix only. All other UPC/EAN barcodes are decoded immediately and the add-on codes ignored.

Enable Smart Supplemental Mode: The engine identifies add-on codes for EAN-13 barcodes starting with a ‘378’, ‘379’, or ‘978’ prefix only. All other UPC/EAN barcodes are decoded immediately and the add-on codes ignored.

Exit Setup

99900031

**** Enter Setup**

99910514

Decode UPC/EAN with Add-On Code

(0x01)

99910515

**** Ignore UPC/EAN with Add-On Code**

(0x00)

99910516

Autodiscriminate UPC/EAN Add-On Codes

(0x02)

99910517

Enable 378/379 Supplemental Mode

(0x04)

99910520

Enable 978 Supplemental Mode

(0x05)

99910521

Enable Smart Supplemental Mode

(0x03)

99900032

Exit Setup

**** Enter Setup**

Parameter Programming Examples

The engine can be configured to only decode barcodes with lengths that fall between (inclusive) the minimum and maximum lengths.

For 1D barcodes, the supported maximum length is 255 characters. If minimum length is set to be greater than maximum length, the engine only decodes barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only barcodes with that length are to be decoded.

Example: Set the engine to decode Code 128 barcodes containing between 8 and 12 characters

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8”.
4. Scan the **Save** barcode.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcodes “1” and “2”.
7. Scan the **Save** barcode.
8. Scan the **Exit Setup** barcode.

Exit Setup

99900031

**** Enter Setup**

Code 128

Restore Factory Defaults

Restore the Factory Defaults of Code 128

Enable/Disable Code 128

Parameter# 0x08

**** Enable Code 128**

(0x01)

Disable Code 128

(0x00)

Set Length Range for Code 128

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.

Set the Minimum Length

Set the Maximum Length

Exit Setup

99900031

**** Enter Setup**

FNC1 Character

99910010

**** FNC1 Character Sent as GS (ASCII value: 29)**

99910011

FNC1 Character Sent as “~” (ASCII value: 126)

99900032

Exit Setup

99900031

**** Enter Setup**

GS1-128（UCC/EAN-128）

Restore Factory Defaults

99910100

Restore the Factory Defaults of GS1-128

Enable/Disable GS1-128

Parameter# 0x0E

99910102

**** Enable GS1-128**

(0x01)

99910101

Disable GS1-128

(0x00)

Set Length Range for GS1-128

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.

99910103

Set the Minimum Length

99910104

Set the Maximum Length

99900032

Exit Setup

99900031

**** Enter Setup**

ISBT 128

Restore Factory Defaults

Restore the Factory Defaults of ISBT 128

Enable/Disable ISBT 128

Parameter# 0x54

**** Enable ISBT 128**

(0x01)

Disable ISBT 128

(0x00)

99900032

Exit Setup

99900031
**** Enter Setup**

AIM-128

Restore Factory Defaults


99910200

Restore the Factory Defaults of AIM-128

Enable/Disable AIM-128


99910202

Enable AIM-128


99910201

**** Disable AIM-128**

Set Length Range for AIM-128

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99910203

Set the Minimum Length


99910204

Set the Maximum Length


99900032

Exit Setup

99900031

**** Enter Setup**

FNC1 Character

99910210

**** FNC1 Character Sent as GS (ASCII value: 29)**

99910211

FNC1 Character Sent as “~” (ASCII value: 126)

99900032

Exit Setup

99900031

**** Enter Setup**

EAN-8

Restore Factory Defaults

99910400

Restore the Factory Defaults of EAN-8

Enable/Disable EAN-8

Parameter# 0x04

99910402

**** Enable EAN-8**

(0x01)

99910401

Disable EAN-8

(0x00)

Transmit Check Digit

EAN-8 is 8 digits in length with the last one as its check digit used to verify the integrity of the data.

99910404

**** Transmit EAN-8 Check Digit**

99910403

Do Not Transmit EAN-8 Check Digit

99900032

Exit Setup

99900031
**** Enter Setup**

Add-On Code

An EAN-8 barcode can be augmented with a two-digit or five-digit add-on code to form a new one. In the examples below, the part surrounded by blue dotted line is an EAN-8 barcode while the part circled by red dotted line is add-on code.

Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The engine decodes a mix of EAN-8 barcodes with and without 2-digit/5-digit add-on codes.

Disable 2-Digit Add-On Code/ Disable 5-Digit Add-On Code: The engine decodes EAN-8 and ignores the add-on code when presented with an EAN-8 plus add-on barcode. It can also decode EAN-8 barcodes without add-on codes.

99910406
Enable 2-Digit Add-On Code

99910405
**** Disable 2-Digit Add-On Code**

99910411
Enable 5-Digit Add-On Code

99910410
**** Disable 5-Digit Add-On Code**

99900032
Exit Setup

99900031
**** Enter Setup**

Add-On Code Required

99910407
2-Digit Add-On Code Required

99910412
5-Digit Add-On Code Required

EAN-8 Extension

Disable EAN-8 Zero Extend: Transmit EAN-8 barcodes as is.

Enable EAN-8 Zero Extend: Add five leading zeros to decoded EAN-8 barcodes to extend to13 digits.

Convert EAN-8 to EAN-13: Add five leading zeros to decoded EAN-8 barcodes to make them compatible in format to EAN-13 barcodes.

99910413
**** Disable EAN-8 Zero Extend**

99910414
Enable EAN-8 Zero Extend

99910415
Convert EAN-8 to EAN-13

99900032
Exit Setup

99900031
**** Enter Setup**

EAN-13

Restore Factory Defaults


99910500

Restore the Factory Defaults of EAN-13

Enable/Disable EAN-13

Parameter# 0x03


99910502

**** Enable EAN-13**

(0x01)


99910501

Disable EAN-13

(0x00)

Transmit Check Digit

EAN-13 is 13 digits in length with the last one as its check digit used to verify the integrity of the data.


99910504

**** Transmit EAN-13 Check Digit**


99910503

Do Not Transmit EAN-13 Check Digit


99900032

Exit Setup

99900031

**** Enter Setup**

Add-On Code

An EAN-13 barcode can be augmented with a two-digit or five-digit add-on code to form a new one.

Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The engine decodes a mix of EAN-13 barcodes with and without 2-digit/5-digit add-on codes.

Disable 2-Digit Add-On Code/ Disable 5-Digit Add-On Code: The engine decodes EAN-13 and ignores the add-on code when presented with an EAN-13 plus add-on barcode. It can also decode EAN-13 barcodes without add-on codes.

99910506

Enable 2-Digit Add-On Code

99910505

**** Disable 2-Digit Add-On Code**

99910511

Enable 5-Digit Add-On Code

99910510

**** Disable 5-Digit Add-On Code**

Add-On Code Required

99910507

2-Digit Add-On Code Required

99910512

5-Digit Add-On Code Required

99900032

Exit Setup

99900031
**** Enter Setup**

UPC-E

Restore Factory Defaults


99911000

Restore the Factory Defaults of UPC-E

Enable/Disable UPC-E

Parameter# 0x02


99911002

**** Enable UPC-E**

(0x01)


99911001

Disable UPC-E

(0x00)

Transmit Check Digit

Parameter# 0x29

UPC-E is 8 digits in length with the last one as its check digit used to verify the integrity of the data.


99911004

**** Transmit UPC-E Check Digit**

(0x01)


99911003

Do Not Transmit UPC-E Check Digit

(0x00)

99900032
Exit Setup


99900031

**** Enter Setup**

Add-On Code

A UPC-E barcode can be augmented with a two-digit or five-digit add-on code to form a new one.

Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The engine decodes a mix of UPC-E barcodes with and without 2-digit/5-digit add-on codes.

Disable 2-Digit Add-On Code/ Disable 5-Digit Add-On Code: The engine decodes UPC-E and ignores the add-on code when presented with a UPC-E plus add-on barcode. It can also decode UPC-E barcodes without add-on codes.


99911006

Enable 2-Digit Add-On Code


99911005

**** Disable 2-Digit Add-On Code**


99911011

Enable 5-Digit Add-On Code


99911010

**** Disable 5-Digit Add-On Code**

Add-On Code Required


99911007

2-Digit Add-On Code Required


99911012

5-Digit Add-On Code Required


99900032

Exit Setup

99900031

**** Enter Setup**

Transmit Preamble Character

Parameter# 0x23

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

No Preamble

(0x00)

**** System Character**

(0x01)

System Character & Country Code

(0x02)

99900031
**** Enter Setup**

UPC-E Extension

Disable UPC-E Extend: Transmit UPC-E barcodes as is.

Enable UPC-E Extend: Extend UPC-E barcodes to make them compatible in length to UPC-A.

Convert UPC-E to UPC-A: Extend UPC-E barcodes to make them compatible in format to UPC-A.

99911015
**** Disable UPC-E Extend**

99911016
Enable UPC-E Extend

99911017
Convert UPC-E to UPC-A

99900031
**** Enter Setup**

UPC-A

Restore Factory Defaults


99911100

Restore the Factory Defaults of UPC-A

Enable/Disable UPC-A

Parameter# 0x01


99911102

**** Enable UPC-A**

(0x01)


99911101

Disable UPC-A

(0x00)

Transmit Check Digit

Parameter# 0x28

UPC-A is 13 digits in length with the last one as its check digit used to verify the integrity of the data.


99911104

**** Transmit UPC-A Check Digit**

(0x01)


99911103

Do Not Transmit UPC-A Check Digit

(0x00)


99900032

Exit Setup

99900031
**** Enter Setup**

Add-On Code

A UPC-A barcode can be augmented with a two-digit or five-digit add-on code to form a new one.

Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The engine decodes a mix of UPC-A barcodes with and without 2-digit/5-digit add-on codes.

Disable 2-Digit Add-On Code/ Disable 5-Digit Add-On Code: The engine decodes UPC-A and ignores the add-on code when presented with a UPC-A plus add-on barcode. It can also decode UPC-A barcodes without add-on codes.

99911106
Enable 2-Digit Add-On Code

99911105
**** Disable 2-Digit Add-On Code**

99911111
Enable 5-Digit Add-On Code

99911110
**** Disable 5-Digit Add-On Code**

Add-On Code Required

99911107
2-Digit Add-On Code Required

99911112
5-Digit Add-On Code Required

99900032
Exit Setup

99900031

**** Enter Setup**

Transmit Preamble Character

Parameter# 0x22

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

No Preamble

(0x00)

**** System Character**

(0x01)

System Character & Country Code

(0x02)

99900032

Exit Setup

99900031
**** Enter Setup**

ISBN (Bookland EAN)

Restore Factory Defaults


99910700

Restore the Factory Defaults of ISBN

Enable/Disable ISBN

Parameter# 0x53


99910702

Enable ISBN

(0x01)


99910701

**** Disable ISBN**

(0x00)

Set ISBN Format


99910704

**** ISBN-13**


99910703

ISBN-10

99900032
Exit Setup

99900031
**** Enter Setup**

ISSN

Restore Factory Defaults


99910600

Restore the Factory Defaults of ISSN

Enable/Disable ISSN


99910602

Enable ISSN


99910601

**** Disable ISSN**


99900032

Exit Setup

99900031

**** Enter Setup**

Interleaved 2 of 5

Restore Factory Defaults

99911200

Restore the Factory Defaults of Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5

Parameter# 0x06

99911202

**** Enable Interleaved 2 of 5**

(0x01)

99911201

Disable Interleaved 2 of 5

(0x00)

Set Length Range for Interleaved 2 of 5

Parameter# 0x16 0x17

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.

99911206

Set the Minimum Length

(0x16)

99911207

Set the Maximum Length

(0x17)

99900032

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

A check digit is optional for Interleaved 2 o 5 and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The engine transmits Interleaved 2 of 5 barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Interleaved 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Interleaved 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

99911203
**** Disable**

99911204
Do Not Transmit Check Digit After Verification

99911205
Transmit Check Digit After Verification

Note: If the **Do Not Transmit Check Digit After Verification** option is enabled, Interleaved 2 of 5 barcodes with a length that is less than the configured minimum length after having the check digit excluded will not be decoded. (For example, when the **Do Not Transmit Check Digit After Verification** option is enabled and the minimum length is set to 4, Interleaved 2 of 5 barcodes with a total length of 4 characters including the check digit cannot be read.)

99900032
Exit Setup


99900031

**** Enter Setup**

ITF-14

ITF-14 is a special kind of Interleaved 2 of 5 with a length of 14 characters and the last character as the check character.


99911400

Restore the Factory Defaults of ITF-14


99911401

**** Disable ITF-14**


99911402

Enable ITF-14 But Do Not Transmit Check Digit


99911403

Enable ITF-14 and Transmit Check Digit

Note: It is advised not to enable ITF-14 and Interleaved 2 of 5 at the same time.


99900032

Exit Setup

99900031
**** Enter Setup**

ITF-6

ITF-6 is a special kind of Interleaved 2 of 5 with a length of 6 characters and the last character as the check character.

99911300
Restore the Factory Defaults of ITF-6

99911301
**** Disable ITF-6**

99911302
Enable ITF-6 But Do Not Transmit Check Digit

99911303
Enable ITF-6 and Transmit Check Digit

Note: It is advised not to enable ITF-6 and Interleaved 2 of 5 at the same time.

99900031

**** Enter Setup**

Deutsche-14

Restore the Factory Defaults of Deutsche 14

**** Disable Deutsche 14**

Enable Deutsche 14 But Do Not Transmit Check Digit

Enable Deutsche 14 and Transmit Check Digit

99900032

Exit Setup

99900031

**** Enter Setup**

Deutsche-12

Restore the Factory Defaults of Deutsche 12

**** Disable Deutsche 12**

Enable Deutsche 12 But Do Not Transmit Check Digit

Enable Deutsche 12 and Transmit Check Digit

99900032

Exit Setup

99900031
**** Enter Setup**

COOP 2 of 5

Restore Factory Defaults


99911700

Restore the Factory Defaults of COOP 2 of 5

Enable/Disable COOP 2 of 5


99911702

Enable COOP 2 of 5


99911701

**** Disable COOP 2 of 5**

Set Length Range for COOP 2 of 5

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99911706

Set the Minimum Length


99911707

Set the Maximum Length


99900032

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

A check digit is optional for COOP 2 of 5 and can be added as the last digit. It is a calculated value used to verify the integrity of the data. By default, check digit verification is disabled.

Disable: The engine transmits COOP 2 of 5 barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all COOP 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all COOP 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

99911703
**** Disable**

99911704
Transmit Check Digit After Verification

99911705
Do Not Transmit Check Digit After Verification

99900032
Exit Setup

99900031
**** Enter Setup**

Matrix 2 of 5

Restore Factory Defaults


99912000

Restore the Factory Defaults of Matrix 2 of 5

Enable/Disable Matrix 2 of 5


99912002

Enable Matrix 2 of 5


99912001

**** Disable Matrix 2 of 5**

Set Length Range for Matrix 2 of 5

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99912006

Set the Minimum Length


99912007

Set the Maximum Length


99900032

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

A check digit is optional for Matrix 2 of 5 and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The engine transmits Matrix 2 of 5 barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Matrix 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Matrix 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

99912003
**** Disable**

99912004
Transmit Check Digit After Verification

99912005
Do Not Transmit Check Digit After Verification

99900032
Exit Setup

99900031
**** Enter Setup**

Industrial 2 of 5

Restore Factory Defaults


99912100

Restore the Factory Defaults of Industrial 2 of 5

Enable/Disable Industrial 2 of 5


99912102

Enable Industrial 2 of 5


99912101

**** Disable Industrial 2 of 5**

Set Length Range for Industrial 2 of 5

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99912106

Set the Minimum Length


99912107

Set the Maximum Length


99900032

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

A check digit is optional for Industrial 2 of 5 and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The engine transmits Industrial 2 of 5 barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Industrial 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Industrial 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

99912103
**** Disable**

99912104
Transmit Check Digit After Verification

99912105
Do Not Transmit Check Digit After Verification

99900032
Exit Setup

99900031

**** Enter Setup**

Standard 2 of 5（Discrete 2 of 5）

Restore Factory Defaults

99912200

Restore the Factory Defaults of Standard 2 of 5

Enable/Disable Standard 2 of 5

Parameter# 0x05

99912202

Enable Standard 2 of 5

(0x01)

99912201

**** Disable Standard 2 of 5**

(0x00)

Set Length Range for Standard 2 of 5

Parameter# 0x14 0x15

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.

99912206

Set the Minimum Length

(0x14)

99912207

Set the Maximum Length

(0x15)

99900032

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

A check digit is optional for Standard 2 of 5 and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The engine transmits Standard 2 of 5 barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Standard 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Standard 2 of 5 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

99912203
**** Disable**

99912204
Transmit Check Digit After Verification

99912205
Do Not Transmit Check Digit After Verification

99900032
Exit Setup

99900031

**** Enter Setup**

Code 39

Restore Factory Defaults

99912400

Restore the Factory Defaults of Code 39

Enable/Disable Code 39

Parameter# 0x00

99912402

**** Enable Code 39**

(0x01)

99912401

Disable Code 39

(0x00)

Transmit Start/Stop Character

99912407

Transmit Start/Stop Character

99912406

**** Do Not Transmit Start/Stop Character**

99900032

Exit Setup

**** Enter Setup**

Set Length Range for Code 39

Parameter# 0x12 0x13

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.

Set the Minimum Length

(0x12)

Set the Maximum Length

(0x13)

Enable/Disable Code 39 Full ASCII

Parameter# 0x11

The engine can be configured to identify all ASCII characters by scanning the appropriate barcode below.

Enable Code 39 Full ASCII

(0x01)

**** Disable Code 39 Full ASCII**

(0x00)

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

A check digit is optional for Code 39 and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The engine transmits Code 39 barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Code 39 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Code 39 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

99912403
**** Disable**

99912404
Do Not Transmit Check Digit After Verification

99912405
Transmit Check Digit After Verification

99900032
Exit Setup

99900031
**** Enter Setup**

Codabar

Restore Factory Defaults


99912500

Restore the Factory Defaults of Codabar

Enable/Disable Codabar

Parameter# 0x07


99912502

Enable Codabar

(0x01)


99912501

**** Disable Codabar**

(0x00)

Set Length Range for Codabar

Parameter# 0x18 0x19

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99912514

Set the Minimum Length

(0x18)


99912515

Set the Maximum Length

(0x19)


99900032

Exit Setup

99900031

**** Enter Setup**

Check Digit Verification

A check digit is optional for Codabar and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The engine transmits Codabar barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Codabar barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Codabar barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

99912503

**** Disable**

99912504

Transmit Check Digit After Verification

99912505

Do Not Transmit Check Digit After Verification

99900031

**** Enter Setup**

Transmit Start/Stop Character (NOTIS Editing)

Parameter# 0x37

You can choose whether or not to transmit the start and stop characters by scanning the appropriate barcode below.

99912507

**** Transmit Start/Stop Character (Disable NOTIS)**

(0x00)

99912506

Do Not Transmit Start/Stop Character (Enable NOTIS)

(0x01)

CLSI Editing

Parameter# 0x36

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

Note: Barcode length does not include start and stop characters.

99912517

Enable CLSI Editing

(0x01)

99912520

**** Disable CLSI Editing**

(0x00)

99900032

Exit Setup

99900031
**** Enter Setup**

Start/Stop Character Format

You can choose your desired start/stop characters format by scanning the appropriate barcode below.

99912510
****ABCD/ABCD**

99912511
ABCD/TN*E

99912512
abcd/abcd

99912513
abcd/tn*e

99900032
Exit Setup

99900031
**** Enter Setup**

Code 93

Restore Factory Defaults


99912600

Restore the Factory Defaults of Code 93

Enable/Disable Code 93

Parameter# 0x09


99912602

Enable Code 93

(0x01)


99912601

**** Disable Code 93**

(0x00)

Set Length Range for Code 93

Parameter# 0x1A 0x1B

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99912606

Set the Minimum Length

(0x1A)


99912607

Set the Maximum Length

(0x1B)


99900032

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

Check digits are optional for Code 93 and can be added as the last two digits, which are calculated values used to verify the integrity of the data.

Disable: The engine transmits Code 93 barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Code 93 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the checks will be transmitted except the last two digits, whereas those failing them will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Code 93 barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the checks will be transmitted, whereas those failing them will not be transmitted.

99912603
Disable

99912604
**** Do Not Transmit Check Digit After Verification**

99912605
Transmit Check Digit After Verification

99900032
Exit Setup

99900031
**** Enter Setup**

GS1-Databar (RSS)

Restore Factory Defaults


99913200

Restore the Factory Defaults of GS1 Databar

99900032
Exit Setup

99900031

**** Enter Setup**

Enable/Disable GS1 Databar


99913202

Enable GS1 Databar


99913201

**** Disable GS1 Databar**

Parameter# 0xF0 0x52


99913204

Enable GS1-Databar 14 (RSS-14)

(0x01)


99913205

**** Disable GS1-Databar 14 (RSS-14)**

(0x00)

Parameter# 0xF0 0x53


99913206

Enable GS1-Databar Limited (RSS-Limited)

(0x01)


99913207

**** Disable GS1-Databar Limited (RSS-Limited)**

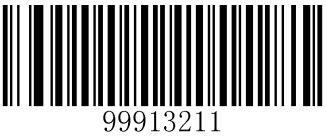
(0x00)

Parameter# 0xF0 0x54


99913210

Enable GS1-Databar Expanded (RSS-Expanded)

(0x01)


99913211

**** Disable GS1-Databar Expanded (RSS-Expanded)**

(0x00)


99900032

Exit Setup

99900031
**** Enter Setup**

Code 11

Restore Factory Defaults


99912700

Restore the Factory Defaults of Code 11

Enable/Disable Code 11

Parameter# 0x0A


99912702

Enable Code 11

(0x01)


99912701

**** Disable Code 11**

(0x00)

Set Length Range for Code 11

Parameter# 0x1C 0x1D

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99912713

Set the Minimum Length

(0x1C)


99912714

Set the Maximum Length

(0x1D)


99900032

Exit Setup

99900031

**** Enter Setup**

Check Digit Verification

Check digits are optional for Code 11 and can be added as the last one or two digits, which are calculated values used to verify the integrity of the data.

If the **Disable** option is enabled, the engine transmits Code 11 barcodes as is.

Parameter# 0x34

99912703

**** Disable**

(0x00)

99912704

**** One Check Digit, MOD11**

(0x01)

99912705

Two Check Digits, MOD11/MOD11

(0x02)

99912706

Two Check Digits, MOD11/MOD9

99912707

One Check Digit, MOD11 (Len <= 10)

Two Check Digits, MOD11/MOD11 (Len > 10)

99912710

One Check Digit, MOD11 (Len <= 10)

Two Check Digits, MOD11/MOD9 (Len > 10)

Parameter# 0x2F

99912712

Transmit Check Digit

(0x01)

99912711

**** Do Not Transmit Check Digit**

(0x00)

99900032

Exit Setup

99900031
**** Enter Setup**

Plessey

Restore Factory Defaults


99913000

Restore the Factory Defaults of Plessey

Enable/Disable Plessey


99913002

Enable Plessey


99913001

**** Disable Plessey**

Set Length Range for Plessey

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99913006

Set the Minimum Length


99913007

Set the Maximum Length


99900032

Exit Setup

99900031
**** Enter Setup**

Check Digit Verification

Check digits are optional for Plessey and can be added as the last one or two digits, which are calculated values used to verify the integrity of the data.

Disable: The engine transmits Plessey barcodes as is.

Do Not Transmit Check Digit After Verification: The engine checks the integrity of all Plessey barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the checks will be transmitted except the last two digits, whereas those failing them will not be transmitted.

Transmit Check Digit After Verification: The engine checks the integrity of all Plessey barcodes to verify that the data complies with the check digit algorithm. Barcodes passing the checks will be transmitted, whereas those failing them will not be transmitted.

99913003
Disable

99913004
Transmit Check Digit After Verification

99913005
**** Do Not Transmit Check Digit After Verification**

99900032
Exit Setup

99900031
**** Enter Setup**

MSI-Plessey

Restore Factory Defaults


99913100

Restore the Factory Defaults of MSI-Plessey

Enable/Disable MSI-Plessey

Parameter# 0x0B


99913102

Enable MSI-Plessey

(0x01)


99913101

**** Disable MSI-Plessey**

(0x00)

Set Length Range for MSI-Plessey

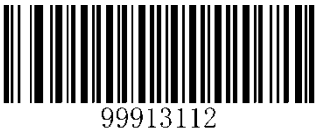
Parameter# 0x1E 0x1F

To learn how to program the following parameters, see the ***Parameter Programming Examples*** section.


99913111

Set the Minimum Length

(0x1E)


99913112

Set the Maximum Length

(0x1F)


99900032

Exit Setup

99900031

**** Enter Setup**

Check Digit Verification

Check digits are optional for MSI-Plessey and can be added as the last one or two digits, which are calculated values used to verify the integrity of the data.

If the **Disable** option is enabled, the engine transmits MSI-Plessey barcodes as is.

99913103

Disable

99913104

**** One Check Digit, MOD10**

99913105

Two Check Digits, MOD10/MOD10

99913106

Two Check Digits, MOD10/MOD11

Parameter# 0x2E

99913110

Transmit Check Digit

(0x01)

99913107

**** Do Not Transmit Check Digit**

(0x00)

99900032

Exit Setup

Chapter 7 SSI Commands

Parameter	Options
Good Read Beep Volume (0x8C)	
0x02	Low
0x01	Medium
0x00	Loud
Good Read Beep Frequency (0x91)	
0x02	Low
0x01	Medium
0x00	High
Decode Session Timeout (0x88)	
0~15 (unit: 1 second)	The maximum time decode session continues during a scan attempt. 0: infinite time.
Power Mode (0x80)	
0x00	Continuous Power (The engine remains in the Awake state after each decode attempt.
0x01	Low Power (The engine enters a low power consumption Sleep state after staying idle for 2 seconds.)
Scan Mode (0x8A)	
0x00	Manual Mode
0x02	Auto Mode
0x04	Continuous Mode
0x07	Blink Mode
0x08	Command Trigger Mode

Timeout between Decodes, Same Barcode (0x89)	
0~120 (unit: 0.1 second)	The timeout between decodes for same barcode.
Good Read Beep (0x38)	
0x01	Turn on
0x00	Turn off
Transmit “NR” Message (0x5E)	
0x01	Enable
0x00	Disable
Barcode Programming (0xEC)	
0x01	Enable
0x00	Disable
User Parameter Pass Through (0xF1 0x71)	
0x01	Enable
0x00	Disable
Security Level (0x4E)	
0x01	Level 1
0x02	Level 2
0x03	Level 3
0x04	Level 4
UPC/EAN	
Enable/Disable UPC-A (0x01)	
0x01	Enable
0x00	Disable
Enable/Disable UPC-E (0x02)	
0x01	Enable
0x00	Disable
Enable/Disable EAN-8 (0x04)	
0x01	Enable
0x00	Disable

Enable/Disable EAN-13 (0x03)	
0x01	Enable
0x00	Disable
Enable/Disable ISBN (0x53)	
0x01	Enable
0x00	Disable
Decode UPC/EAN Add-On Codes (0x10)	
0x01	Decode UPC/EAN with Add-On Code: The engine does not decode UPC/EAN barcodes without add-on codes.
0x00	Ignore UPC/EAN with Add-On Code: When presented with a UPC/EAN barcode with an add-on code, the engine decodes the UPC/EAN and ignores the add-on code.
0x02	Autodiscriminate UPC/EAN Add-On Codes: The engine decodes a mix of UPC/EAN barcodes with and without add-on codes.
0x04	Enable 378/379 Supplemental Mode: The engine identifies add-on codes for EAN-13 barcodes starting with a '378' or '379' prefix only. All other UPC/EAN barcodes are decoded immediately and the add-on codes ignored.
0x05	Enable 978 Supplemental Mode: The engine identifies add-on codes for EAN-13 barcodes starting with a '978' prefix only. All other UPC/EAN barcodes are decoded immediately and the add-on codes ignored.
0x03	Enable Smart Supplemental Mode: The engine identifies add-on codes for EAN-13 barcodes starting with a '378', '379', or '978' prefix only. All other UPC/EAN barcodes are decoded immediately and the add-on codes ignored.
Transmit UPC-A Check Digit (0x28)	
0x01	Enable

0x00	Disable
Transmit UPC-E Check Digit (0x29)	
0x01	Enable
0x00	Disable
Transmit UPC-A Preamble Character (0x22)	
0x00	No Preamble
0x01	System Character
0x02	System Character & Country Code
Transmit UPC-E Preamble Character (0x23)	
0x00	No Preamble
0x01	System Character
0x02	System Character & Country Code
Convert UPC-E to UPC-A (0x25)	
0x01	Enable
0x00	Disable
EAN-8 Zero Extend (0x27)	
0x01	Enable
0x00	Disable
Convert EAN-8 to EAN-13 (0xE0)	
0x01	Enable (valid only when the **EAN-8 Zero Extend** is enabled.)
0x00	Disable
Code 128	
Enable/Disable Code 128 (0x08)	
0x01	Enable
0x00	Disable
Enable/Disable UCC/EAN-128 (0x0E)	
0x01	Enable
0x00	Disable

Enable/Disable ISBT 128 (0x54)	
0x01	Enable
0x00	Disable
Enable/Disable Code 39 (0x00)	
0x01	Enable
0x00	Disable
Set Minimum Length for Code 39 (0x12)	
0~255	Note that values failing to meet Code 39 minimum length requirement are invalid.
Set Maximum Length for Code 39 (0x13)	
0~255	Note that values failing to meet Code 39 maximum length requirement are invalid.
Code 39 Check Digit Verification (0x30)	
0x01	Enable
0x00	Disable
Transmit Code 39 Check Digit (0x2B)	
0x01	Enable
0x00	Disable
Code 39 Full ASCII (0x11)	
0x01	Enable
0x00	Disable
Enable/Disable Code 93 (0x09)	
0x01	Enable
0x00	Disable
Set Minimum Length for Code 93 (0x1A)	
0~255	Note that values failing to meet Code 93 minimum length requirement are invalid.
Set Maximum Length for Code 93 (0x1B)	
0~255	Note that values failing to meet Code 93 maximum length

	requirement are invalid.
Enable/Disable Code 11 (0x0A)	
0x01	Enable
0x00	Disable
Set Minimum Length for Code 11 (0x1C)	
0~255	Note that values failing to meet Code 11 minimum length requirement are invalid.
Set Maximum Length for Code 11 (0x1D)	
0~255	Note that values failing to meet Code 11 maximum length requirement are invalid.
Code 11 Check Digit Verification (0x34)	
0x00	Disable
0x01	One check digit
0x02	Two check digit (MOD11/MOD11)
Transmit Code 11 Check Digit (0x2F)	
0x01	Enable
0x00	Disable
Enable/Disable Interleaved 2 of 5 (0x06)	
0x01	Enable
0x00	Disable
Set Minimum Length for Interleaved 2 of 5 (0x16)	
0~255	Note that values failing to meet Interleaved 2 of 5 minimum length requirement are invalid.
Set Maximum Length for Interleaved 2 of 5 (0x17)	
0~255	Note that values failing to meet Interleaved 2 of 5 maximum length requirement are invalid.
Interleaved 2 of 5 Check Digit Verification (0x31)	
0x00	Disable
0x01	Enable

Transmit Interleaved 2of 5 Check Digit (0x2C)	
0x01	Enable
0x00	Disable
Enable/Disable Standard 25 (Discrete 2of 5) (0x05)	
0x01	Enable
0x00	Disable
Set Minimum Length for Standard 25 (0x14)	
0~255	Note that values failing to meet Standard 25 minimum length requirement are invalid.
Set Maximum Length for Standard 25 (0x15)	
0~255	Note that values failing to meet Standard 25 maximum length requirement are invalid.
Enable/Disable Codabar (0x07)	
0x01	Enable
0x00	Disable
Set Minimum Length for Codabar (0x18)	
0~255	Note that values failing to meet Codabar minimum length requirement are invalid.
Set Maximum Length for Codabar (0x19)	
0~255	Note that values failing to meet Codabar maximum length requirement are invalid.
Codabar NOTIS (0x37)	
0x01	Enable: Do not transmit start/stop characters
0x00	Disable: Transmit start/stop characters
Codabar CLSI (0x36)	
0x01	Enable
0x00	Disable
Enable/Disable MSI Plessey (0x0B)	
0x01	Enable

0x00	Disable
Set Minimum Length for MSI-Plessey (0x1E)	
0~255	Note that values failing to meet MSI-Plessey minimum length requirement are invalid.
Set Maximum Length for MSI-Plessey (0x1F)	
0~255	Note that values failing to meet MSI-Plessey maximum length requirement are invalid.
MSI-Plessey Check Digits (0x32)	
0x00	One check digit, MOD10
0x01	Two check digits, MOD10/MOD10
Transmit MSI-Plessey Check Digit (0x2E)	
0x01	Enable
0x00	Disable
MSI-Plessey Check Digit Algorithm (0x33)	
0x00	MOD10/MOD11
0x01	MOD10/MOD10
RSS	
Enable/Disable RSS-14 (0xF0 0x52)	
0x01	Enable
0x00	Disable
Enable/Disable RSS-Limited (0xF0 0x53)	
0x01	Enable
0x00	Disable
Enable/Disable RSS-Expanded (0xF0 0x54)	
0x01	Enable
0x00	Disable
Transmit Code ID Character (0x2D)	
0x00	None
0x01	AIM ID

0x02	Code ID
Set Prefix (0x69)	
0x00~0x7F	ASCII value of one character
Set Suffix 1 (0x68)	
0x00~0x7F	ASCII value of one character
Set Suffix 2 (0x6A)	
0x00~0x7F	ASCII value of one character
Scan Data Transmission Format (0xEB)	
0x00	Data As Is
0x01	<Data><Suffix1>
0x02	<Data><Suffix2>
0x03	<Data><Suffix1><Suffix2>
0x04	<Prefix><Data>
0x05	<Prefix><Data><Suffix1>
0x06	<Prefix><Data><Suffix2>
0x07	<Prefix><Data><Suffix1><Suffix2>
Set Baud Rate (0x9C)	
0x03	1200
0x04	2400
0x05	4800
0x06	9600
0x07	19200
0x08	38400
0x0a	57600
0x0b	115200
Parity Check (0x9E)	
0x00	Odd
0x01	Even
0x04	None

Stop Digit (0x9D)	
0x01	1 stop digit
0x02	2 stop digit
Software Handshaking (0x9F)	
0x01	Enable ACK/NAK handshaking
0x00	Disable ACK/NAK handshaking
Decoded Data Packet Format (0xEE)	
0x01	Send packeted decoded data
0x00	Send raw decoded data (ACK/NAK handshaking is disabled for decoded data.)
Host Serial Response Timeout (0x9B)	
0~99 (unit: 0.1 second)	This parameter specifies how long the engine waits for an ACK or NAK before resending. Also, if the engine wants to send, and the host has already been granted permission to send, the engine waits for the designated time-out before declaring an error.
Intercharacter Delay (0x6E)	
0,5,10,15,20,25,30,35,40,45,50,55,60,65,70,75 (unit: 1 millisecond)	The intercharacter delay gives the host system time to service its receiver and perform other tasks between characters.
Host Character Timeout (0xEF)	
0~99 (unit: 0.01 second)	This parameter determines the maximum time the engine waits between characters transmitted by the host before acknowledging the end of transmission.

Appendix

Factory Defaults Table

Parameter	Factory Default	Remark
General Settings		
Barcode Programming	Enabled	
Programming Barcode Data	Do not send	
User Parameter Pass Through	Disabled	
Good Read Beep	Enabled	
Good Read Beep Duration	150ms	
Good Read Beep Volume	Loud	
Good Read Beep Frequency	Medium	
Scan Mode	Level mode	
Decode Session Timeout	3s	0~15s, 0: infinite time.
Timeout between Decodes (Same Barcode)	1.0s	0~12s
Image Stabilization Timeout	1.0s	Applicable to the Sense mode. 0~7.5s
Sensitivity	High	
Security Level	1	
Auto Sleep (Power Mode)	Low power	The engine enters a low power consumption Sleep state after staying idle for 2 seconds.
Transmit “NR” Message	Disabled	
Communication Interfaces		
Baud Rate	9600	
Parity Check	None	
Data Bits	8	
Stop Bits	1	
ACK/NAK Handshaking	Enabled	
Host Serial Response Timeout	2.0s	
Intercharacter Delay	0s	
Host Character Timeout	0.2s	

Data Formatting		
Prefix Sequence	Code ID+Prefix+AIM ID	CodeID+Prefix+AIMID+Data+Suffix1+Suffix2
AIM ID	Disabled	
Code ID	Disabled	
Prefix	Disabled	
Prefix Value	Null	
Suffix 1	Disabled	
Suffix 1 Value	LF	
Suffix 2	Disabled	
Suffix 2 Value	CR	
Decoded Data Packet Format	Send raw decoded data	
Symbologies		
Global Settings		
Decode UPC/EAN Add-On Codes	Ignore UPC/EAN with add-on code	
Code 128		
Code 128	Enabled	
Minimum Length	1	
Maximum Length	255	
GS1-128（UCC/EAN128）		
GS1-128	Enabled	
Minimum Length	1	
Maximum Length	255	
ISBT 128		
ISBT 128	Enabled	
AIM-128		
AIM-128	Disabled	
Minimum Length	1	
Maximum Length	255	
EAN-8		
EAN-8	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
EAN-8 Extension	Disable EAN-8 zero extend	
EAN-13		

EAN-13	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
UPC-E		
UPC-E	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
UPC-E Extension	Disable UPC-E extend	
Transmit Preamble Character	System character	
UPC-A		
UPC-A	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Transmit Preamble Character	System character	
ISBN (Bookland EAN)		
ISBN	Disabled	
ISBN Format	ISBN-13	
ISSN		
ISSN	Disabled	
Interleaved 2 of 5		
Interleaved 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Minimum Length	14	
Maximum Length	14	
ITF-6		
ITF-6	Disabled	
ITF-14		
ITF-14	Disabled	
Deutsche 14		
Deutsche 14	Disabled	
Check Digit	Do not transmit	
Deutsche 12		

Deutsche 12	Disabled	
Check Digit	Do not transmit	
Code 39		
Code 39	Enabled	
Check Digit Verification	Disabled	
Start/Stop Characters	Do not transmit	
Code 39 Full ASCII	Disabled	
Minimum Length	2	
Maximum Length	55	
Codabar		
Codabar	Disabled	
Check Digit Verification	Disabled	
NOTIS Editing	Disabled	Transmit the start and stop characters
CLSI Editing	Disabled	
Start/Stop Character Format	ABCD/ABCD	
Minimum Length	5	
Maximum Length	55	
Code 93		
Code 93	Disabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Minimum Length	4	
Maximum Length	55	
MSI-Plessey		
MSI-Plessey	Disabled	
Check Digit Verification	One check digit, MOD10	
Check Digit Algorithm	MOD10/MOD10	Valid when two check digits are enabled.
Check Digit	Do not transmit	
Minimum Length	6	
Maximum Length	55	
Plessey		
Plessey	Disabled	
Check Digit Verification	Enabled, MOD10	
Check Digit	Do not transmit	
Minimum Length	6	
Maximum Length	55	

COOP 2 of 5		
COOP 2 of 5	Disabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Minimum Length	4	
Maximum Length	55	
Industrial 2 of 5		
Industrial 2 of 5	Disabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Minimum Length	4	
Maximum Length	55	
Matrix 2 of 5		
Matrix 2 of 5	Disabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Minimum Length	4	
Maximum Length	55	
Standard 2 of 5（Discrete 2 of 5）		
Standard 2 of 5	Disabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Minimum Length	12	
Maximum Length	12	
Code 11		
Code 11	Disabled	
Minimum Length	4	
Maximum Length	55	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
GS1 Databar (RSS)		
RSS-14	Disabled	
RSS-Limited	Disabled	
RSS-Expanded	Disabled	

AIM ID Table

Symbology	AIM ID	Possible AIM ID Modifiers (m)
Code 128	]C0	
GS1-128（UCC/EAN-128）	]C1	
EAN-8	]E4	
EAN-13	]E0	
EAN-13 with Add-on	]E3	
UPC-E	]E0	
UPC-E with Add-on	]E3	
UPC-A	]E0	
UPC-A with Add-on	]E3	
Interleaved 2 of 5	]Im	0,1,3
ITF-6	]Im	1,3
ITF-14	]Im	1,3
Matrix 2 of 5	]X0	
Code 39	]Am	0,1,3,4,5,7
Codabar	]Fm	0,2,4
Code 93	]G0	
Code 11	]Hm	0,1,3
ISBN（Bookland EAN）	]X0	
Industrial 2 of 5	]S0	
Standard 2 of 5（Discrete 2 of 5）	]R0	
Plessey	]P0	
MSI-Plessey	]Mm	0,1
GS1 Databar（RSS）	]e0	

Note: “m” represents the AIM modifier character. Refer to ISO/IEC 15424:2008 Information technology – Automatic identification and data capture techniques – Data Carrier Identifiers (including Symbology Identifiers) for AIM modifier character details.

Code ID Table

Symbology	Code ID
Code 128	D
ISBT 128	D
GS1-128（UCC/EAN-128）	K
EAN-8	A
EAN-13	A
UPC-E	A
UPC-A	A
Interleaved 2 of 5	F
Standard 2 of 5（Discrete 2 of 5）	G
ISBN（Bookland EAN）	L
ITF-6	F
ITF-14	F
Matrix 2 of 5	S
Code 39	B
Code 32	B
Codabar	C
Code 93	E
MSI-Plessey	J
RSS-14, RSS-Limited, RSS-Expanded	R
Code 11	H
Industrial 2 of 5	U
Plessey	V
COOP 2 of 5	W
AIM -28	X
ISSN	A
Deutsche-14	F
Deutsche-12	F

Symbology ID Number

Symbology	ID Number
Other barcode types	0x00
Code 39	0x01
Codabar	0x02
Code 128	0x03
Standard 2 of 5 (Discrete 2 of 5)	0x05
Interleaved 2 of 5	0x06
Code 93	0x07
UPC-A	0x08
UPC-A with 2-Digit Add-On Code	0x48
UPC-A with 5-Digit Add-On Code	0x88
UPC-E	0x09
UPC-E with 2-Digit Add-On Code	0x49
UPC-E with 5-Digit Add-On Code	0x89
EAN-8	0x0A
EAN-13 with 5-Digit Add-On Code	0x8B
EAN-13 with 2-Digit Add-On Code	0x4B
EAN-13	0x0B
MSI-Plessey	0x0E
GS1-128 (UCC/EAN-128)	0x0F
ISBN (Bookland EAN)	0x16
RSS-Limited	0x23
RSS-14	0x24
RSS-Expanded	0x25

ASCII Table

Hex	Dec	Char
00	0	NUL (Null char.)
01	1	SOH (Start of Header)
02	2	STX (Start of Text)
03	3	ETX (End of Text)
04	4	EOT (End of Transmission)
05	5	ENQ (Enquiry)
06	6	ACK (Acknowledgment)
07	7	BEL (Bell)
08	8	BS (Backspace)
09	9	HT (Horizontal Tab)
0a	10	LF (Line Feed)
0b	11	VT (Vertical Tab)
0c	12	FF (Form Feed)
0d	13	CR (Carriage Return)
0e	14	SO (Shift Out)
0f	15	SI (Shift In)
10	16	DLE (Data Link Escape)
11	17	DC1 (XON) (Device Control 1)
12	18	DC2 (Device Control 2)
13	19	DC3 (XOFF) (Device Control 3)
14	20	DC4 (Device Control 4)
15	21	NAK (Negative Acknowledgment)
16	22	SYN (Synchronous Idle)
17	23	ETB (End of Trans. Block)
18	24	CAN (Cancel)
19	25	EM (End of Medium)
1a	26	SUB (Substitute)
1b	27	ESC (Escape)
1c	28	FS (File Separator)
1d	29	GS (Group Separator)
1e	30	RS (Request to Send)
1f	31	US (Unit Separator)

20	32	SP	(Space)
21	33	!	(Exclamation Mark)
22	34	"	(Double Quote)
23	35	#	(Number Sign)
24	36	$	(Dollar Sign)
25	37	%	(Percent)
26	38	&	(Ampersand)
27	39	`	(Single Quote)
28	40	(	(Right / Closing Parenthesis)
29	41	)	(Right / Closing Parenthesis)
2a	42	*	(Asterisk)
2b	43	+	(Plus)
2c	44	,	(Comma)
2d	45	-	(Minus / Dash)
2e	46	.	(Dot)
2f	47	/	(Forward Slash)
30	48	0	
31	49	1	
32	50	2	
33	51	3	
34	52	4	
35	53	5	
36	54	6	
37	55	7	
38	56	8	
39	57	9	
3a	58	:	(Colon)
3b	59	;	(Semi-colon)
3c	60	<	(Less Than)
3d	61	=	(Equal Sign)
3e	62	>	(Greater Than)
3f	63	?	(Question Mark)
40	64	@	(AT Symbol)
41	65	A	
42	66	B	
43	67	C	

44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[(Left / Opening Bracket)
5c	92	\ (Back Slash)
5d	93	] (Right / Closing Bracket)
5e	94	^ (Caret / Circumflex)
5f	95	_ (Underscore)
60	96	' (Grave Accent)
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g

68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q
72	114	r
73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7a	122	z
7b	123	{ (Left/ Opening Brace)
7c	124	| (Vertical Bar)
7d	125	} (Right/Closing Brace)
7e	126	~ (Tilde)
7f	127	DEL (Delete)

Digit Barcodes

0~9

0

5

1

6

2

7

3

8

4

9

A~F

A

B

C

D

E

F

Save/Cancel Barcodes

After reading numeric barcode(s), you need to scan the **Save** barcode to save the data. If you scan the wrong digit(s), you can either scan the **Cancel** barcode and then start the configuration all over again, or scan the **Delete the Last Digit** barcode and then the correct digit, or scan the **Delete All Digits** barcode and then the digits you want.

For instance, after reading the **Maximum Length** barcode and numeric barcodes “1”, “2” and “3”, you scan:

- **Delete the Last Digit:** The last digit “3” will be removed.
- **Delete All Digits:** All digits “123” will be removed.
- **Cancel:** The maximum length configuration will be cancelled. And the engine is still in the setup mode.

Save

Delete the Last Digit

Delete All Digits

Cancel

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