



Newland

SCANNING MADE SIMPLE



HR3290 CS Marlin

Wireless 2D barcode scanner

user guide

Disclaimer

© 2016-2017 Fujian Newland Auto-ID Tech. Co., Ltd. All rights reserved.

Please read through the manual carefully before using the product and operate it according to the manual. It is advised that you should keep this manual for future reference.

Do not disassemble the device or remove the seal label from the device, doing so will void the product warranty provided by Fujian Newland Auto-ID Tech. Co., Ltd.

All pictures in this manual are for reference only and actual product may differ. Regarding to the product modification and update, Fujian Newland Auto-ID Tech. Co., Ltd. reserves the right to make changes to any software or hardware to improve reliability, function, or design at any time without notice. The information contained herein is subject to change without prior notice.

The products depicted in this manual may include software copyrighted by Fujian Newland Auto-ID Tech. Co., Ltd or third party. The user, corporation or individual, shall not duplicate, in whole or in part, distribute, modify, decompile, disassemble, decode, reverse engineer, rent, transfer or sublicense such software without prior written consent from the copyright holders.

This manual is copyrighted. No part of this publication may be reproduced, distributed or used in any form without written permission from Newland.

Fujian Newland Auto-ID Tech. Co., Ltd. reserves the right to make final interpretation of the statement above.

Fujian Newland Auto-ID Tech. Co., Ltd.

3F, Building A, No.1, Rujiang West Rd., Mawei, Fuzhou, Fujian, China 350015

<http://www.newlandaidc.com>

Revision History

Version	Description	Date
V1.0.0	Initial release.	September 1, 2016
V1.0.1	<ol style="list-style-type: none"> 1. Changed the range of Decode Session Timeout to 100ms - 3,600,000ms in Chapter 2. 2. Added the Host Acknowledgment and Keep/Delete Stored Data after Batch Transmission features in Chapter 4. 3. Added the EAN-13 Beginning with 290 Add-On Code Required, EAN-13 Beginning with 378/379 Add-On Code Required, EAN-13 Beginning with 414/419 Add-On Code Required, EAN-13 Beginning with 434/439 Add-On Code Required, EAN-13 Beginning with 977 Add-On Code Required, EAN-13 Beginning with 978 Add-On Code Required, EAN-13 Beginning with 979 Add-On Code Required, Code 32 (Italian Pharma Code), Code 32 Prefix, Transmit Code 32 Check Digit and Transmit Code 32 Start/Stop Character features in Chapter 5. <p>Note: Firmware version V1.3.3 or later is required for the new features above.</p>	January 4, 2017
V1.0.2	<ol style="list-style-type: none"> 1. Maximum barcode length supported by the scanner is 3K bytes. 2. Added the BA command (Replace a string with another) in Chapter 8. <p>Note: Firmware version V1.3.6 or later is required for the new features above.</p>	March 23, 2017
V1.0.3	Added the Specify Decoding Area (Top, Bottom, Left, Right) feature in Chapter 2.	April 27, 2017
V1.0.4	Updated the “ Dimensions of Scanner (unit: mm) ” section in Chapter 1.	October 31, 2017

Table of Contents

Revision History	- 3 -
Preface	1
Introduction	1
Chapter Description	1
Explanation of Icons	2
Chapter 1 Getting Started	3
Introduction	3
Features of the HR32	3
Unpacking	3
Scanner	4
CD32 Cradle	5
Communication Mode	6
CD32 Data Port	6
USB/RS-232 Port	7
Connecting Cradle to a Host	7
Using USB Cable	8
Using RS-232 Cable	9
Power On, Sleep, Power Off, Reboot	10
Maintenance	10
Dimensions of Scanner (unit: mm)	11
Side View	11
Front View	11
Top View	11
Dimensions of CD32 Cradle (unit: mm)	12
Scanning Instructions	13
Chapter 2 System Settings	15
Introduction	15
Barcode Programming	15
Command Programming	15
Programming Barcode/Command/Function	16
Use of Programming Barcodes	17
Factory Defaults	18

Pairing Settings	19
Pair Scanner with Cradle	19
Pair Cradle with Zigbee Router	19
Search Paired Scanners	19
Operating Mode Options	20
Power-Off Timeout	21
Illumination	22
Aiming	23
Beep	24
Good Read Beep	24
Good Read Beep Type	24
Good Read Beep Volume	25
Startup Beep	25
Transmit NGR Message	26
Edit NGR Message	26
Scan Mode	27
Manual Mode	27
Decode Session Timeout	27
Level Trigger/Pulse Trigger	28
Auto Sleep	28
Timeout between Decodes (Same Barcode)	30
Sense Mode	31
Decode Session Timeout	31
Image Stabilization Timeout	32
Continue after Good Read	32
Timeout between Decodes (Same Barcode)	33
Sensitivity	34
Continuous Mode	35
Decode Session Timeout	35
Timeout between Decodes	36
Timeout between Decodes (Same Barcode)	37
Decode Area	38
Whole Area Decoding	38
Specific Area Decoding	38
Specify Decoding Area	38
Chapter 3 Inquiry Commands	41
Introduction	41

Obtain Scanner Information	41
Obtain Cradle Information	41
Obtain FLASH Information	42
Chapter 4 Communication Settings.....	43
Introduction	43
Wireless Communication	43
Host Acknowledgment.....	44
Keep/Delete Stored Data after Batch Transmission	44
RS-232 Interface	45
Baud Rate	45
Parity Check.....	46
Stop Bit	46
Hardware Flow Control	47
Data Bit	47
USB Interface.....	48
USB HID-KBW	48
Examine KBW Connection.....	48
USB Country Keyboard Types	49
Inter-Keystroke Delay	51
Convert Case	52
Emulate ALT+Keypad	53
Function Key Mapping.....	54
Emulate Numeric Keypad	55
USB COM Port Emulation.....	56
USB HID-POS.....	56
Introduction	56
Access the Scanner with Your Program.....	56
Acquire Scanned Data	57
Send Data to the Scanner.....	57
VID/PID	57
Chapter 5 Symbolologies.....	58
Introduction	58
General Settings	58
Disable All Symbolologies.....	58
Enable All Symbolologies	58
Enable 1D Symbolologies.....	59
Disable 1D Symbolologies	59

Enable 2D Symbolologies.....	59
Disable 2D Symbolologies.....	59
Video Reverse	60
Code 128	61
Restore Factory Defaults	61
Enable/Disable Code 128	61
Set Length Range for Code 128	62
EAN-8	63
Restore Factory Defaults	63
Enable/Disable EAN-8	63
Transmit Check Digit.....	63
Add-On Code	64
Add-On Code Required	65
EAN-8 Extension.....	65
EAN-13	66
Restore Factory Defaults	66
Enable/Disable EAN-13	66
Transmit Check Digit.....	66
Add-On Code	67
Add-On Code Required	68
EAN-13 Beginning with 290 Add-On Code Required	69
EAN-13 Beginning with 378/379 Add-On Code Required	69
EAN-13 Beginning with 414/419 Add-On Code Required	70
EAN-13 Beginning with 434/439 Add-On Code Required	70
EAN-13 Beginning with 977 Add-On Code Required	71
EAN-13 Beginning with 978 Add-On Code Required	71
EAN-13 Beginning with 979 Add-On Code Required	72
UPC-E.....	73
Restore Factory Defaults	73
Enable/Disable UPC-E.....	73
Transmit Check Digit.....	73
Add-On Code	74
Add-On Code Required	75
Transmit System Character “0”	75
UPC-E Extension	76
UPC-A.....	77
Restore Factory Defaults	77
Enable/Disable UPC-A.....	77

Transmit Check Digit	77
Add-On Code	78
Add-On Code Required	79
Transmit Preamble Character	79
Interleaved 2 of 5	80
Restore Factory Defaults	80
Enable/Disable Interleaved 2 of 5	80
Set Length Range for Interleaved 2 of 5	81
Check Digit Verification	82
Febraban.....	83
Disable/Enable Febraban.....	83
ITF-14	84
ITF-6	85
Matrix 2 of 5	86
Restore Factory Defaults	86
Enable/Disable Matrix 2 of 5	86
Set Length Range for Matrix 2 of 5	87
Check Digit Verification	88
Code 39	89
Restore Factory Defaults	89
Enable/Disable Code 39	89
Transmit Start/Stop Character	89
Set Length Range for Code 39	90
Check Digit Verification	91
Enable/Disable Code 39 Full ASCII	92
Enable/Disable Code 32	92
Code 32 Prefix	92
Transmit Code 32 Check Digit	93
Transmit Code 32 Start/Stop Character	93
Codabar	94
Restore Factory Defaults	94
Enable/Disable Codabar	94
Set Length Range for Codabar	95
Check Digit Verification	96
Start/Stop Character.....	97
Code 93	98
Restore Factory Defaults	98
Enable/Disable Code 93	98

Set Length Range for Code 93	99
Check Digit Verification	100
UCC/EAN-128.....	101
Restore Factory Defaults	101
Enable/Disable UCC/EAN-128.....	101
Set Length Range for UCC/EAN-128.....	102
GS1 Databar	103
Restore Factory Defaults	103
Enable/Disable GS1 Databar	103
Transmit Application Identifier “01”	103
Code 11.....	104
Restore Factory Defaults	104
Enable/Disable Code 11.....	104
Set Length Range for Code 11.....	105
Check Digit Verification	106
ISBN.....	107
Restore Factory Defaults	107
Enable/Disable ISBN	107
Set ISBN Format.....	107
Add-On Code	108
Add-On Code Required	109
ISSN.....	110
Restore Factory Defaults	110
Enable/Disable ISSN	110
Add-On Code	111
Add-On Code Required	112
AIM-128	113
Restore Factory Defaults	113
Enable/Disable AIM-128	113
Set Length Range for AIM-128.....	114
Industrial 25	115
Restore Factory Defaults	115
Enable/Disable Industrial 25	115
Set Length Range for Industrial 25	116
Check Digit Verification	117
Standard 25.....	118
Restore Factory Defaults	118
Enable/Disable Standard 25.....	118

Set Length Range for Standard 25.....	119
Check Digit Verification	120
Plessey	121
Restore Factory Defaults	121
Enable/Disable Plessey	121
Set Length Range for Plessey	122
Check Digit Verification	123
MSI-Plessey	124
Restore Factory Defaults	124
Enable/Disable MSI-Plessey.....	124
Set Length Range for MSI-Plessey.....	125
Check Digit Verification	126
PDF417	127
Restore Factory Defaults	127
Enable/Disable PDF417.....	127
Set Length Range for PDF417.....	128
QR Code	129
Restore Factory Defaults	129
Enable/Disable QR Code.....	129
Set Length Range for QR Code.....	130
Micro QR.....	131
Data Matrix.....	132
Restore Factory Defaults	132
Enable/Disable Data Matrix.....	132
Set Length Range for Data Matrix.....	133
Rectangular Barcode	134
Mirror Image.....	134
Chinese Sensible Code.....	135
Restore Factory Defaults	135
Enable/Disable Chinese Sensible Code	135
Set Length Range for Chinese Sensible Code.....	135
Chapter 6 Prefix & Suffix	136
Introduction	136
General Settings	137
Enable/Disable All Prefix/Suffix	137
Prefix Sequences.....	137
Custom Prefix.....	138

Enable/Disable Custom Prefix	138
Set Custom Prefix	138
AIM ID Prefix	139
Code ID Prefix	139
Restore All Default Code IDs	140
Modify Code ID	140
Custom Suffix	144
Enable/Disable Custom Suffix	144
Set Custom Suffix	144
Terminating Character Suffix	145
Enable/Disable Terminating Character Suffix	145
Set Terminating Character Suffix	145
Chapter 7 Ambient Illumination	147
Chapter 8 Data Formatter	148
Introduction	148
Add a Data Format	148
Programming with Barcodes	149
Programming with a Batch Command	151
Enable Data Format	152
Change Data Format for a Single Scan	152
Enable/Disable Data Formatter	153
Non-Match Error Beep	154
Clear Data Format	154
Query Data Formats	155
Formatter Command Type 6	156
Send Commands	156
Move Commands	159
Search Commands	161
Miscellaneous Commands	164
Chapter 9 Batch Programming	168
Introduction	168
Create a Batch Command	169
Create a Batch Barcode	170
Use Batch Barcode	171
Appendix	172
Digit Barcodes	172

Save/Cancel Barcodes.....	174
Factory Defaults Table.....	175
AIM ID Table.....	182
Code ID Table	185
ASCII Table	186
ASCII Function Key Mapping Table.....	190
Symbology ID Number	192

Preface

Introduction

This manual provides detailed instructions for setting up and using the NLS-HR3290 series cordless 2D barcode scanner (hereinafter referred to as “**HR32 cordless scanner**” or “**the scanner**”).

Chapter Description

- | | |
|--|--|
| ✧ <i>Chapter 1, Getting Started</i> | Gives a general description of HR32 cordless scanner. |
| ✧ <i>Chapter 2, System Settings</i> | Introduces three configuration methods and describes how to configure general parameters of HR32 cordless scanner. |
| ✧ <i>Chapter 3, Inquiry Commands</i> | Describes how to obtain the information of HR32 cordless scanner by scanning programming barcodes. |
| ✧ <i>Chapter 4, Communication Settings</i> | Describes how to configure communication mode, serial port parameters and USB function. |
| ✧ <i>Chapter 5, Symbologies</i> | Lists all compatible symbologies and describes how to configure the relevant parameters. |
| ✧ <i>Chapter 6, Prefix & Suffix</i> | Describes how to use prefix and suffix to customize scanned data. |
| ✧ <i>Chapter 7, Ambient Illumination</i> | Describes how to configure the scanner to adapt it to ambient light of different intensity. |
| ✧ <i>Chapter 8, Data Formatter</i> | Explains how to customize scanned data with the data formatter. |
| ✧ <i>Chapter 9, Batch Programming</i> | Explains how to integrate a complex programming task into a single bar code. |
| ✧ <i>Appendix</i> | Provides factory defaults table and a bunch of frequently used programming barcodes. |

Explanation of Icons



This icon indicates something relevant to this manual.



This icon indicates this information requires extra attention from the reader.



This icon indicates handy tips that can help you use or configure the scanner with ease.



This icon indicates practical examples that can help you to acquaint yourself with operations.

Chapter 1 Getting Started

Introduction

The HR32 cordless scanner reads a 1D or 2D barcode by capturing its image. Adopting the advanced **UIMG** technology independently developed by Newland Auto-ID Tech, it provides users with three scan modes, including Manual Mode, Sense Mode and Continuous Mode, tailored to different scanning needs.

An illustrated introduction to the HR32 cordless scanner is included in this chapter. If you have an HR32 cordless scanner at hand, make good use of it to develop a better understanding of this manual. This chapter is written for normal users, maintenance staff and software developers.

Features of the HR32

- Comprehensive data capture: most 1D and 2D barcodes.
- Fast and accurate decoding capability: integrates high-performance processor and barcode decoder board.
- Easy to configure and update.

Unpacking

Open the package and take out HR32 cordless scanner and its accessories. Check to make sure everything on the packing list is present and intact. If any contents are damaged or missing, please keep the original package and contact your dealer immediately for after-sale service.

Note: CD32, the cradle for HR32 cordless scanner is individually wrapped.

Scanner

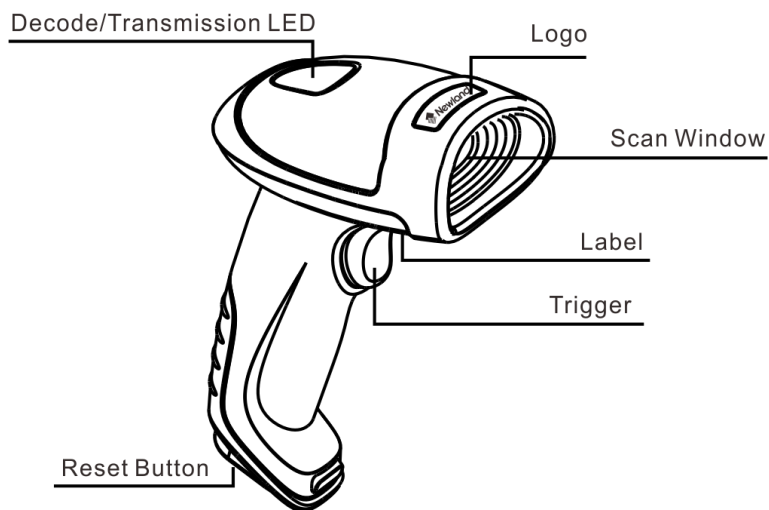


Fig. 1-1

Decode/Transmission LED:

Green: Barcode decoded successfully.

Battery is fully charged.

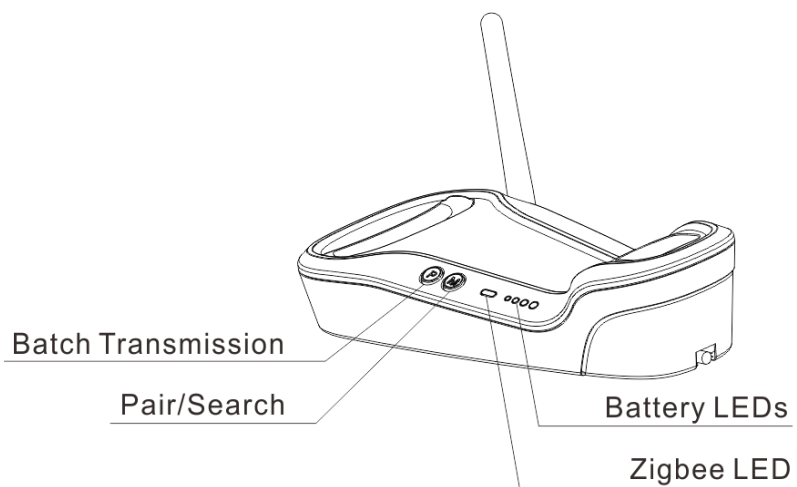
Blue: Zigbee is available.

Red: Data transmission failed.

Device is charging.

Purple: Firmware update is in progress.
There is data in FLASH memory.

CD32 Cradle



Buttons:

P: Batch Transmission

M: Pair/Search

LEDs:

Zigbee LED (blue):

Zigbee is available.

Battery LEDs (green):

Indicate battery level (four levels)

Fig. 1-2

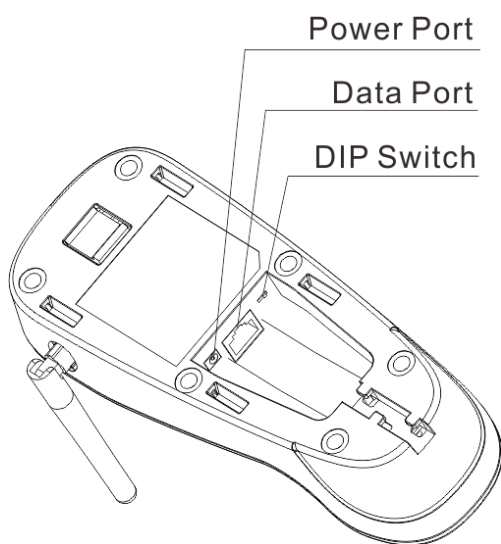


Fig. 1-3

Communication Mode

Communication modes: synchronous mode (default), asynchronous mode and batch mode.

- ✧ **Synchronous Mode:** If Zigbee is available, scanned data will be transferred to the cradle immediately after a good read; if Zigbee is unavailable, the transmission of decoded data cannot be accomplished.
- ✧ **Asynchronous Mode:** If Zigbee is available, scanned data will be transferred to the cradle immediately after a good read; if Zigbee is unavailable, the decoded data will be first stored in the flash memory in a FIFO (first in first out) manner, and be sent automatically to the cradle when Zigbee becomes available.
- ✧ **Batch Mode:** The decoded data will be stored in the flash memory no matter whether Zigbee is available or not. To send the stored data to the cradle, you need to insert the scanner in the cradle and then press “P” button on the cradle.

CD32 Data Port

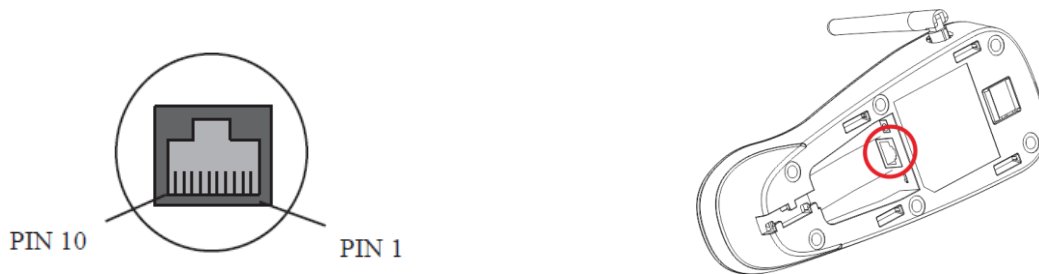


Fig. 1-4

PIN	Signal	Type	Function
1	NC	-	No connection
2	NC	-	No connection
3	VCC	P	Power+ (+5V)
4	TXD	O	RS-232 output
5	RXD	I	RS-232 input
6	CTS	I	Flow control signal
7	RTS	O	
8	GND	P	Ground
9	D-	I/O	USB signal
10	D+	I/O	

USB/RS-232 Port

CD32 cradle must be connected to a Host in actual application, such as PC, POS or any intelligent terminal with USB or RS-232 port, via a communication cable, either USB or RS-232 cable.

USB

USB port on the Host



RS-232

RS-232 port on the Host



Note: Please check the port on the Host and purchase the right cable.

Connecting Cradle to a Host

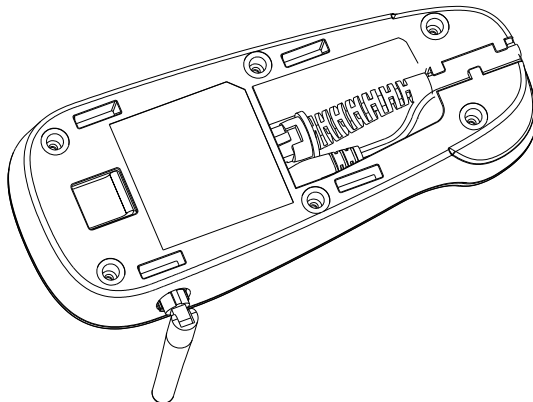


Fig. 1-5

Using USB Cable

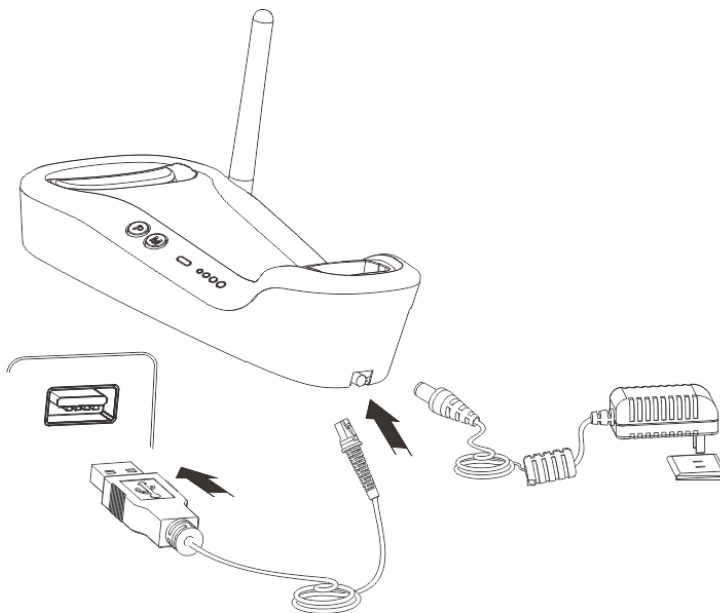


Fig. 1-6

Connect the CD32 cradle to a Host through a USB cable with RJ45 and USB connectors:

1. Plug the RJ45 connector into the data port (see Fig.1-3) on the cradle.
2. Plug the USB connector into the USB port on the Host.
3. Plug the supplied power adapter into the power port (see Fig.1-3) on the cradle.

Using RS-232 Cable

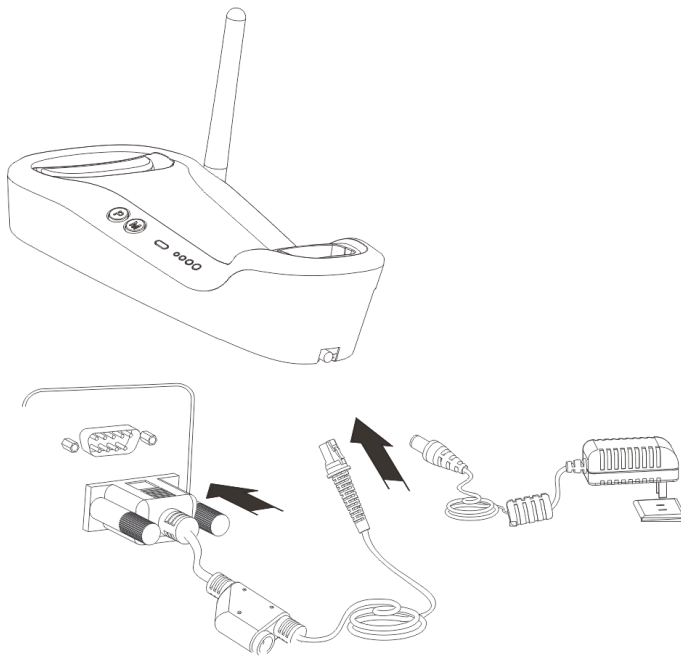


Fig. 1-7

Connect the CD32 cradle to a Host through an RS-232 cable with RJ45 and RS-232 connectors:

1. Plug the RJ45 connector into the data port (see Fig.1-3) on the cradle.
2. Plug the RS-232 connector into the RS-232 port on the Host.
3. Plug the supplied power adapter into the power port (see Fig.1-3) on the cradle.

Power On, Sleep, Power Off, Reboot

Powering on the scanner

Hold down the trigger on the scanner for 1 second or longer.

Entering the sleep mode

If no operation is performed on the scanner for 5 seconds, it will automatically enter the sleep mode. (Applicable to the Manual mode only)

Powering off the scanner

Scan the **Power Off** barcode. (See the **Operating Mode Options** in Chapter 2)

Note: The scanner that has remained in sleep mode for a specific time period (default: 5 minutes, programmable) will be automatically turned off. (To change the time period, see the **Power-Off Timeout** in Chapter 2).

Rebooting the scanner

If the scanner stops responding to input or runs abnormally, press the Reset button on the scanner to reboot it.

Maintenance

1. The scan window should be kept clean.
2. Do not scratch the scan window.
3. Use soft brush to remove the stain from the scan window.
4. Use the soft cloth to clean the window, such as eyeglass cleaning cloth.
5. Do not spray any liquid on the scan window.
6. Only use water to clean other parts of the device.



The warranty **DOES NOT** cover damages caused by inappropriate care and maintenance.

Dimensions of Scanner (unit: mm)

Side View

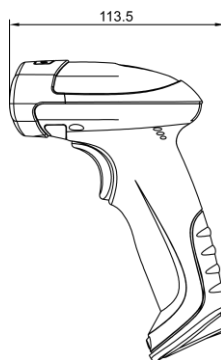


Fig. 1-8

Front View

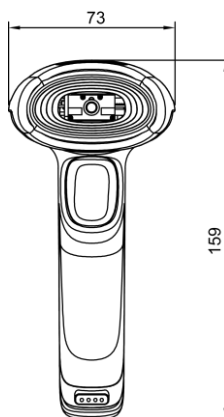


Fig. 1-9

Top View

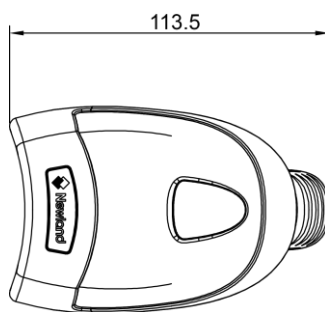


Fig. 1-10

Dimensions of CD32 Cradle (unit: mm)

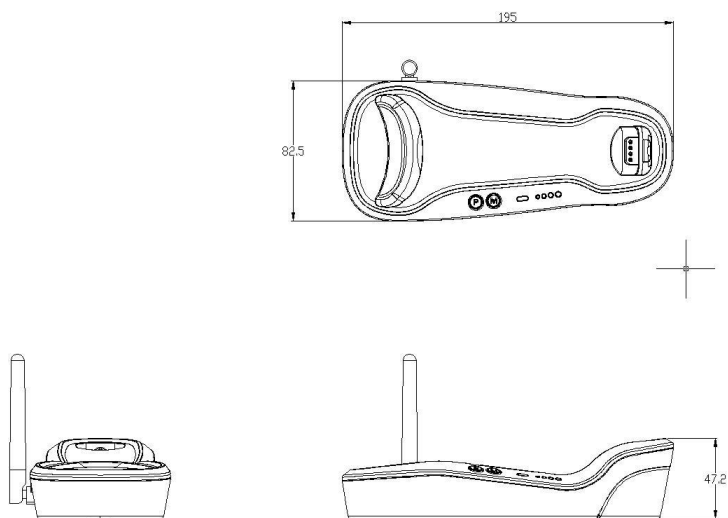


Fig. 1-11

Scanning Instructions

When the scanner is in the Manual scan mode, you can follow the steps below to scan a barcode:

1. Press and hold the trigger. Then the scanner will project a red aiming beam.
2. Aim the red beam across the center of barcode, as shown in Fig.1-12.
3. Release the trigger when the red beam goes off. If the barcode is decoded successfully, the scanner will beep and the decoded data will be sent to the Host.

Note: For the same batch of barcodes, the scanner will keep a very high success ratio in certain distance which can be regarded as the optimal scanning distance.

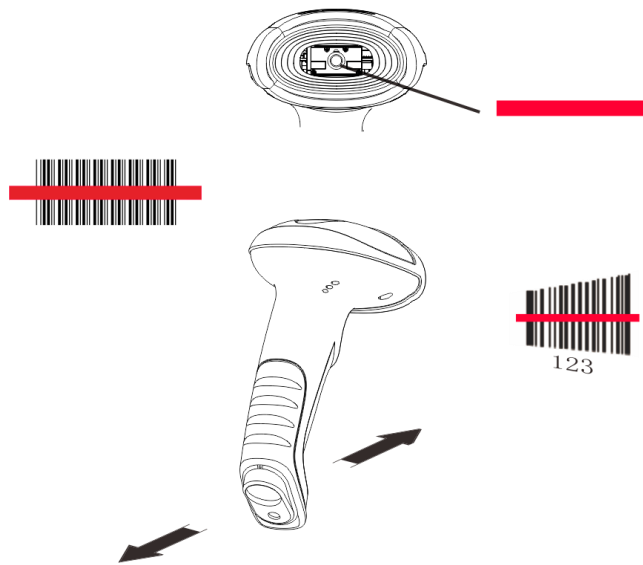


Fig. 1-12

Scan Angle

The scanner is designed to function within a certain range of scan angles. Any unreasonable deviation may cause decoding failure.

Scan angles of the scanner:

- ◇ Pitch: $\pm 55^\circ$, 0° Roll and 0° Skew (Fig. 1-13)
- ◇ Roll: 360° , 0° Pitch and 0° Skew (Fig. 1-14)
- ◇ Skew: $\pm 55^\circ$, 0° Roll and 0° Pitch (Fig. 1-15)

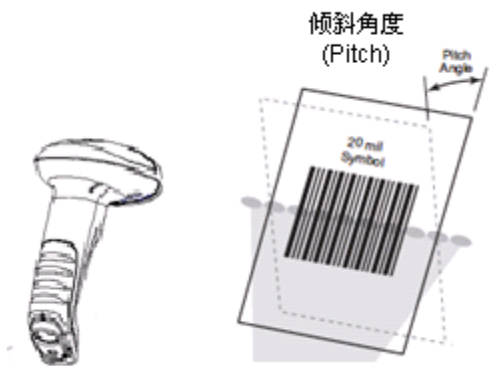


Fig. 1-13

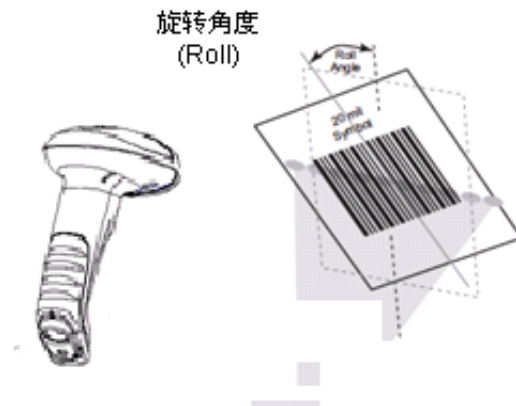


Fig. 1-14

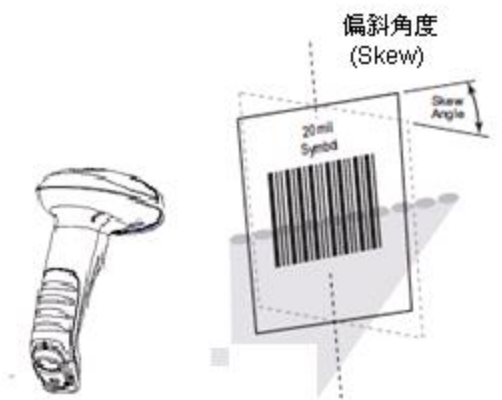


Fig. 1-15



0006010

Enter Setup

Chapter 2 System Settings

Introduction

There are two ways to configure the scanner: barcode programming and command programming.

Barcode Programming

The scanner can be configured through scanning programming barcodes. In the following sections, we will explain the available options and features and provide the barcodes to program them.

This programming method is most straightforward. However, it requires manually scanning barcodes. As a result, errors are more likely to occur.

Command Programming

The scanner can also be configured by command strings sent from the Host. In the following sections, the commands will be provided along with programming barcodes.

Users can also design an application to send those command strings to their scanners.

Note: All settings except temporary ones are stored in non-volatile memory of the scanner and will not be lost by removing power from the scanner.



0006000

**** Exit Setup**



0006010

Enter Setup

Programming Barcode/Command/Function



The figure above is an example that shows you the programming barcode and command for the **Exit Setup** function:

1. The **Exit Setup** barcode
2. The **Exit Setup** command
3. The function/feature that can be enabled by using the programming barcode or command listed above.
4. ** indicates factory default setting.



0006000

** Exit Setup



0006010

Enter Setup

Use of Programming Barcodes

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

After scanning the **Exit Setup** barcode, only some special programming barcodes, such as the **Enter Setup** barcode, can be read.



0006000

**** Exit Setup**



0006010

Enter Setup



0006000

**** Exit Setup**



0006010

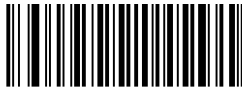
Enter Setup

Factory Defaults

Scanning the **Reset Scanner** barcode/the **Reset Cradle** barcode can restore the scanner/cradle to the factory default settings.

You may need to reset your scanner/cradle when:

1. scanner/cradle is not properly configured so that the scanner fails to decode barcodes or to communicate with cradle;
2. you forget previous configuration and want to avoid its impact;
3. functions that are rarely used have been enabled for the time being.



EM00230

Reset Scanner



EC00044

Reset Cradle



0006000

**** Exit Setup**



0006010

Enter Setup

Pairing Settings

Pair Scanner with Cradle

A cradle with its DIP switch (see Fig. 1-3) in the “C” position works as a normal cradle.

The scanner and cradle must be paired for communication to occur. A cradle can be paired with multiple scanners.

You need to perform this operation manually: After the scanner and cradle are powered on, insert the scanner in the cradle and then press the “M” button on the cradle. The scanner beeps on a successful pairing.

Pair Cradle with Zigbee Router

A cradle with its DIP switch (see Fig. 1-3) in the “R” position functions as a Zigbee router. You can extend communication distance of the cradle by pairing multiple Zigbee routers with it.

To pair a cradle (DIP switch in the “C” position) with a Zigbee router (DIP switch in the “R” position):

- a. Pair a scanner with the cradle by following the instructions above.
- b. Insert the paired scanner in the Zigbee router and then press the “M” button on the router.

The scanner beeps on a successful pairing.

Search Paired Scanners

When scanner(s) and cradle are powered on, press the “M” button on the cradle and the paired scanner(s) will beep.



0006000

**** Exit Setup**



0006010

Enter Setup

Operating Mode Options



EM00200

Power Off



EM00204

Reboot Scanner



EC00105

Reboot Scanner



0006000

**** Exit Setup**



0006010

Enter Setup

Power-Off Timeout

Power-off timeout specifies the amount of time the scanner remains in sleep mode before it powers off automatically. Scan the barcode below to set this parameter.



EM00270

**** 5 Minutes**



EM00271

10 Minutes



EM00272

20 Minutes



EM00273

30 Minutes



EM00274

60 Minutes



EM00275

Disable Auto Power Off



0006000

**** Exit Setup**



0006010

Enter Setup

Illumination

A couple of illumination options are provided to improve the lighting conditions during every image capture:

- ✧ **Normal:** Illumination LEDs are turned on only when scanner is reading barcode.
- ✧ **Always ON:** Illumination LEDs keep ON after scanner is powered on.
- ✧ **OFF:** Illumination LEDs are OFF all the time.



0200000

**** Normal**



0200010

Always ON



0200020

OFF



0006000

**** Exit Setup**



0006010

Enter Setup

Aiming

When scanning/capturing image, the scanner projects an aiming pattern which allows positioning the target barcode within its field of view and thus makes decoding easier.

- ✧ **Normal:** The scanner projects an aiming pattern only during barcode scanning/capture.
- ✧ **Always ON:** Aiming pattern is constantly ON after the scanner is powered on.
- ✧ **OFF:** Aiming pattern is OFF all the time.



0201000

**** Normal**



0201020

OFF



0201010

Always ON



0006000

**** Exit Setup**



0006010

Enter Setup

Beep

Good Read Beep

Scan the appropriate barcode below to enable or disable the emission of beep when a non-programming barcode is decoded.



0203010

**** Good Read Beep On**



0203000

Good Read Beep Off

Good Read Beep Type



0203020

Type 1



0203022

**** Type 3**



0203021

Type 2



0006000

**** Exit Setup**



0006010

Enter Setup

Good Read Beep Volume



0203030

**** Loud**



0203032

Low



0203031

Medium

Startup Beep



EM00261

**** Startup Beep On**



EM00260

Startup Beep Off



0006000

**** Exit Setup**



0006010

Enter Setup

Transmit NGR Message

Scan a barcode below to select whether or not to transmit a user-defined NGR (Not Good Read) message when a barcode is not decoded.



0320010

Transmit NGR Message

0320000

**** Do Not Transmit NGR Message**

Edit NGR Message

To edit an NGR message, scan the **Edit NGR Message** barcode and the numeric barcodes corresponding to the ASCII values (decimal) of desired character(s) and then scan the **Save** barcode.

An NGR message can contain 0-7 characters (ASCII value of character: 0-255).



0320020

Edit NGR Message**E**
xample

Set the NGR message to “!ERR” (0x21, 0x45, 0x52, 0x52):

1. Scan the **Enter Setup** barcode.
2. Scan the **Edit NGR Message** barcode.
3. Scan the numeric barcodes “2”, “1”, “4”, “5”, “5”, “2”, “5” and “2”. (See the **Digit Barcodes** in **Appendix**)
4. Scan the **Save** barcode. (See the **Save/Cancel Barcodes** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Scan Mode

Manual Mode

A trigger pull activates a decode session. The decode session continues until the barcode is decoded or you release the trigger or decode session timeout expires.



0302000

**** Manual Mode**

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1ms increments from 100ms to 3,600,000ms. The default setting is 3,000ms.



0313000

Decode Session Timeout

E
xample

Set the Decode Session Timeout to 1,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes “1”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Level Trigger/Pulse Trigger

Level Trigger: During a scan attempt, the decode session ends once the Trigger is released.

Pulse Trigger: During a scan attempt, the release of the Trigger does not affect the decode session.



0313090

**** Level Trigger**



0313091

Pulse Trigger

Auto Sleep

Auto Sleep allows the scanner in the Manual Mode to automatically enter the sleep or low power mode if no operation or communication is performed for a time period (user programmable). When the scanner is in the sleep mode, pressing the Trigger or receiving command from the host device can awake the scanner. The scanner returns to full operation within 100ms.



0313060

**** Enable Auto Sleep**



0313070

Disable Auto Sleep



0006000

**** Exit Setup**



0006010

Enter Setup

The parameter below specifies how long the scanner remains idle (no operation or communication occurs) before it is put into sleep mode. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 500ms.



0313050

Time Period from Idle to Sleep**E**
*xample***Set the Time Period from Idle to Sleep to 500ms:**

1. Scan the **Enter Setup** barcode.
2. Scan the **Time Period from Idle to Sleep** barcode.
3. Scan the numeric barcodes “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Timeout between Decodes (Same Barcode)

Timeout between Decodes (Same Barcode) can avoid undesired rereading of same barcode in a given period of time.

To enable/disable the Timeout between Decodes (Same Barcode), scan the appropriate barcode below.

Enable Timeout between Decodes: Do not allow the scanner to re-read same barcode before the timeout between decodes (same barcode) expires.

Disable Timeout between Decodes: Allow the scanner to re-read same barcode.



0313161

**** Disable Timeout between Decodes**



0313171

Enable Timeout between Decodes

The following parameter sets the timeout between decodes for same barcode. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 1,500ms.



0313010

Timeout between Decodes (Same Barcode)

E
xample

Set the Timeout between Decodes (Same Barcode) to 2,500ms:

1. Scan the **Enter Setup** barcode.
 2. Scan the **Timeout between Decodes (Same Barcode)** barcode.
 3. Scan the numeric barcodes “2”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
 4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
 5. Scan the **Exit Setup** barcode.
-



0006000

**** Exit Setup**



0006010

Enter Setup

Sense Mode

The scanner waits for the image stabilization timeout to expire before activating a decode session every time it detects a change in ambient illumination. Decode session continues until the barcode is decoded or the decode session timeout expires.

In the Sense mode, a trigger pull can also activate a decode session. The decode session continues until the barcode is decoded or the trigger is released. When the session ends, the scanner continues to monitor ambient illumination.



0302010

Sense Mode

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1ms increments from 100ms to 3,600,000ms. The default setting is 3,000ms.



0313000

Decode Session Timeout

E
xample

Set the Decode Session Timeout to 1,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes “1”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Image Stabilization Timeout

This parameter defines the amount of time that the scanner waits for the image to stabilize to a point that it can be decoded with more accuracy. It is programmable in 1ms increments from 0ms to 1,600ms. The default setting is 500ms.



0313120

Image Stabilization Timeout**E**
xample

Set the Image Stabilization Timeout to 1,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Image Stabilization Timeout** barcode.
3. Scan the numeric barcodes “1”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.

Continue after Good Read

Continue after Good Read: The scanner starts next decode session after good read.

Pause after Good Read: The scanner starts another round of illumination monitoring and image stabilization after good read.



0313130

**** Pause after Good Read**

0313131

Continue after Good Read

0006000

**** Exit Setup**



0006010

Enter Setup

Timeout between Decodes (Same Barcode)

Timeout between Decodes (Same Barcode) can avoid undesired rereading of same barcode in a given period of time.

To enable/disable the Timeout between Decodes (Same Barcode), scan the appropriate barcode below.

Enable Timeout between Decodes: Do not allow the scanner to re-read same barcode before the timeout between decodes (same barcode) expires.

Disable Timeout between Decodes: Allow the scanner to re-read same barcode.



0313020

Disable Timeout between Decodes



0313030

**** Enable Timeout between Decodes**

The following parameter sets the timeout between decodes for same barcode. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 1,500ms.



0313010

Timeout between Decodes (Same Barcode)

E
xample

Set the Timeout between Decodes (Same Barcode) to 2,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes (Same Barcode)** barcode.
3. Scan the numeric barcodes “2”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Sensitivity

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



0312010

Medium Sensitivity

0312000

Low Sensitivity

0312020

High Sensitivity

0312030

Enhanced Sensitivity

If the above four options fail to meet your needs, you may program the threshold value of illumination change.

Illumination changes that reaches or surpasses the predefined threshold value will cause the scanner to start a decode session. The lower the threshold value, the greater the sensitivity of the scanner. The default threshold value is 2.



0312040

Threshold Value of Illumination Change (1~20)

E
xample

Set the threshold value of illumination change to 4:

1. Scan the **Enter Setup** barcode.
2. Scan the **Threshold Value of Illumination Change** barcode.
3. Scan the numeric barcode "4". (See the **Digit Barcodes** in **Appendix**)
4. Scan the **Save** barcode. (See the **Save/Cancel Barcodes** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Continuous Mode

If the Continuous mode is enabled, the scanner automatically starts one decode session after another. To suspend/resume barcode reading, simply press the trigger.



0302020

Continuous Mode

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1ms increments from 100ms to 3,600,000ms. The default setting is 3,000ms.



0313000

Decode Session Timeout

E
xample

Set the Decode Session Timeout to 1,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes “1”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Timeout between Decodes

This parameter sets the timeout between decode sessions. When a decode session ends, next session will not happen until the timeout between decodes expires. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 1,000ms.



0313040

Timeout between Decodes

E
xample

Set the Timeout between Decodes to 1,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes** barcode.
3. Scan the numeric barcodes “1”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Timeout between Decodes (Same Barcode)

Timeout between Decodes (Same Barcode) can avoid undesired rereading of same barcode in a given period of time.

To enable/disable the Timeout between Decodes (Same Barcode), scan the appropriate barcode below.

Enable Timeout between Decodes: Do not allow the scanner to re-read same barcode before the timeout between decodes (same barcode) expires.

Disable Timeout between Decodes: Allow the scanner to re-read same barcode.



0313160

**** Disable Timeout between Decodes**



0313170

Enable Timeout between Decodes

The following parameter sets the timeout between decodes for same barcode. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 1,500ms.



0313010

Timeout between Decodes (Same Barcode)

E
sample

Set the Timeout between Decodes (Same Barcode) to 2,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes (Same Barcode)** barcode.
3. Scan the numeric barcodes “2”, “5”, “0” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Decode Area

Whole Area Decoding

When this option is enabled, the scanner attempts to decode barcode(s) within its field of view, from the center to the periphery, and transmits the barcode that has been first decoded.



0322000

**** Whole Area Decoding**

Specific Area Decoding

The scanner attempts to read barcode(s) within a specified decoding area and transmits the barcode that has been first decoded. This option allows the scanner to narrow its field of view to make sure it reads only those barcodes intended by the user. For instance, if multiple barcodes are placed closely together, specific area decoding in conjunction with appropriate pre-defined decoding area will insure that only the desired barcode is read.



0322010

Specific Area Decoding

Specify Decoding Area

If **Specific Area Decoding** is enabled, the scanner only reads barcodes that intersect the predefined decoding area.

The default decoding area is an area of 40% top, 60% bottom, 40% left and 60% right of the scanner's field of view, as shown in the figure below. In the following example, the white box is the decoding area. Since Barcode 1 passes through the decoding area, it will be read. Barcode 2 does not pass through the decoding area, so it will not be read.



0006000

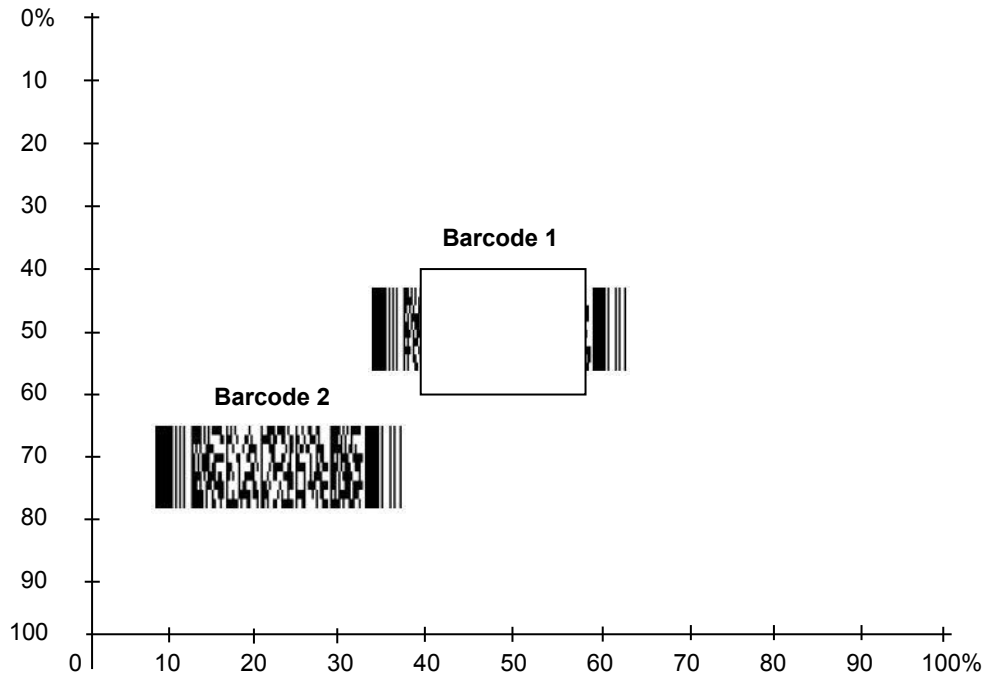
**** Exit Setup**



0006010

Enter Setup

You can define the decoding area using the **Top of Decoding Area**, **Bottom of Decoding Area**, **Left of Decoding Area** and **Right of Decoding Area** barcodes as well as numeric barcode(s) that represent(s) a desired percentage (0-100).



0322030

Top of Decoding Area

0322040

Bottom of Decoding Area

0322050

Left of Decoding Area

0322060

Right of Decoding Area

E
xample

Set the decoding area to 20% top, 80% bottom, 20% left and 80% right:

1. Scan the **Enter Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

-
2. Scan the **Specific Area Decoding** barcode.
 3. Scan the **Top of Decoding Area** barcode.
 4. Scan the numeric barcodes “2” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
 5. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
 6. Scan the **Bottom of Decoding Area** barcode.
 7. Scan the numeric barcodes “8” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
 8. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
 9. Scan the **Left of Decoding Area** barcode.
 10. Scan the numeric barcodes “2” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
 11. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
 12. Scan the **Right of Decoding Area** barcode.
 13. Scan the numeric barcodes “8” and “0”. (See the ***Digit Barcodes*** in **Appendix**)
 14. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
 15. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Chapter 3 Inquiry Commands

Introduction

This chapter provides programming barcodes you may need to obtain device information.

Obtain Scanner Information

You can scan the barcode below to inquire the scanner information (such as model number, serial number, manufacture date and firmware version). The result will be sent to the Host.



EM00300

Inquire All Information About Scanner

Obtain Cradle Information

You can scan the barcode below to inquire the cradle information (such as model number, serial number, manufacture date and firmware version). The result will be sent to the Host.



EC00320

Inquire All Information About Cradle



0006000

**** Exit Setup**



0006010

Enter Setup

Obtain FLASH Information

To inquire the number of the barcodes stored in flash memory or empty the memory, scan the appropriate barcode below.



EM04301

Inquire the Number of Barcodes in Flash Memory



EM04303

Delete All Barcodes in Flash Memory



0006000

**** Exit Setup**



0006010

Enter Setup

Chapter 4 Communication Settings

Introduction

Three types of wireless communication between scanner and cradle: synchronous, asynchronous and batch modes.

Two types of wired communication between cradle and the Host: RS-232 and USB.

Wireless Communication

Wireless communication modes include Synchronous (default), Asynchronous and Batch modes.

- ✧ **Synchronous Mode:** If Zigbee is available, scanned data will be transferred to the cradle immediately after a good read; if Zigbee is unavailable, the transmission of decoded data cannot be accomplished.
- ✧ **Asynchronous Mode:** If Zigbee is available, scanned data will be transferred to the cradle immediately after a good read; if Zigbee is unavailable, scanned data will be first stored in the flash memory and be sent automatically to the cradle in a FIFO (first in first out) manner when Zigbee becomes available.
- ✧ **Batch Mode:** Scanned data will be stored in the flash memory no matter whether Zigbee is available or not. To send the stored data to the cradle, you need to insert the scanner in the cradle and then press “P” button on the cradle.



EM04310

**** Synchronous Mode**



EM04311

Asynchronous Mode



EM04312

Batch Mode



0006000

**** Exit Setup**



0006010

Enter Setup

Host Acknowledgment

Some applications require that the host device validate incoming barcode data and provide acknowledgment to the scanner. When Host Acknowledgment is turned on, the scanner waits for this acknowledgment after each scan. If scanned data is deemed valid, the host device returns 0x06 and the green LED on the scanner flashes thrice along with the Validation Passed beep; if the data is deemed invalid, the host device returns 0x15 and the red LED on the scanner flashes thrice along with the Validation Failed beep. This feature is only available in the Synchronous mode.



EC70120

**** Host Acknowledgment Off**

EC70121

Host Acknowledgment On

Host Acknowledgment Timeout specifies the maximum time the scanner waits for the acknowledgment from the host device.



EC70122

Host Acknowledgment Timeout 1s

EC70123

**** Host Acknowledgment Timeout 3s**

EC70124

Host Acknowledgment Timeout 5s

Keep/Delete Stored Data after Batch Transmission

You may scan the appropriate barcode below to choose whether to keep or delete stored data in the flash memory after batch transmission (i.e. data transmission in the Batch mode).



EM04325

**** Auto Delete Stored Data after Transmission**

EM04324

Keep Stored Data after Transmission

0006000

**** Exit Setup**



0006010

Enter Setup

RS-232 Interface

Baud Rate

When the CD32 cradle is connected to the Host via serial port, you need to set communication parameters (including baud rate, parity check, data bit and stop bit) to match the host device.

Baud rate is the number of bits of data transmitted per second. Set the cradle's baud rate to match the Host requirements. Otherwise, data may not reach the Host or may reach it in distorted form. The default baud rate is 115200.



EC02103

Baud Rate 4800



EC02104

Baud Rate 9600



EC02105

Baud Rate 14400



EC02106

Baud Rate 19200



EC02107

Baud Rate 38400



EC02110

Baud Rate 57600



EC02111

**** Baud Rate 115200**



0006000

**** Exit Setup**



0006010

Enter Setup

Parity Check

By default, the **None** option is enabled.



EC02120

**** None**



EC02122

Even



EC02121

Odd

Stop Bit

By default, the **1 Stop Bit** option is enabled.



EC02131

**** 1 Stop Bit**



EC02133

2 Stop Bits



0006000

**** Exit Setup**



0006010

Enter Setup

Hardware Flow Control

By default, the hardware flow control is disabled.



EC02140

**** Disable Hardware Flow Control**



EC02143

Enable Hardware Flow Control



Before enabling hardware flow control, make sure that RTS/CTS signal line is contained in RS-232 cable. Without the signal line, RS-232 communication errors will occur.

Data Bit

8 data bits are used and cannot be altered.



0006000

**** Exit Setup**



0006010

Enter Setup

USB Interface

Two communication options are provided when the cradle is connected to the Host via USB interface:
USB HID-KBW and USB COM Port Emulation

USB HID-KBW



EC02300

**** USB HID-KBW**

Examine KBW Connection

By default, the scanner examines whether KBW connection is available before data transmission by sending the Caps Lock key to the host device first.



EC02223

**** Examine KBW Connection**



EC02224

Do Not Examine KBW Connection



0006000

**** Exit Setup**



0006010

Enter Setup

USB Country Keyboard Types

Keyboard layouts vary from country to country. The default setting is U.S. keyboard.



EC02201

**** U.S.**



EC02202

Japanese



EC02203

Denmark



EC02204

Finland



EC02205

France



EC02206

Turkey F



EC02207

Italy



EC02210

Norway



0006000

**** Exit Setup**



0006010

Enter Setup



EC02211

Spain



EC02212

Turkey Q



EC02213

UK



EC02214

Germany



EC02215

Belgium



EC02216

Russia



EC02217

Sweden



EC02200

Portugal



0006000

**** Exit Setup**



0006010

Enter Setup

Inter-Keystroke Delay

This parameter specifies the delay between emulated keystrokes.



EC02220

**** No Delay**



EC02222

40ms



EC02221

20ms



EC02225

60ms



EC02226

80ms



0006000

**** Exit Setup**



0006010

Enter Setup

Convert Case

Scan the appropriate barcode below to convert barcode data to your desired case.



EC02230

**** No Case Conversion**



EC02232

Convert All to Lower Case



EC02231

Convert All to Upper Case



EC02233

Invert Upper and Lower Case Characters

E
xample

When the **Invert Upper and Lower Case Characters** feature is enabled, barcode data “AbC” is transmitted as “aBc”.



0006000

**** Exit Setup**



0006010

Enter Setup

Emulate ALT+Keypad

This feature allows any ASCII character (0x00 - 0xFF) to be sent over the numeric keypad no matter which keyboard type is selected. Since sending a character involves multiple keystroke emulations, this method appears less efficient.

The following options are available:

- **Disable:** No ASCII character is sent in the ALT+Keypad way.
- **Mode 1:** ASCII characters not supported by the selected keyboard type but falling into 0x20~0xFF are sent in the ALT+Keypad way.
- **Mode 2:** ASCII characters falling into 0x20~0xFF are sent in the ALT+Keypad way.
- **Mode 3:** All ASCII characters (0x00~0xFF) are sent in the ALT+Keypad way.

Note: In the event of a conflict between **Function Key Mapping** and **Mode 3, Function Key Mapping** shall govern.



EC02260

** Disable



EC02261

Mode 1



EC02262

Mode 2



EC02263

Mode 3

Example: Supposing US keyboard is selected, barcode data "ADF" (65/208/70) is sent as below:

(1) **Mode 1** is enabled:

"A" -- Keystroke "A"

"D" -- "ALT Make" + "208" + "ALT Break"

"F" -- Keystroke "F"

(2) **Mode 3** is enabled:

"A" -- "ALT Make" + "065" + "ALT Break"

"D" -- "ALT Make" + "208" + "ALT Break"

"F" -- "ALT Make" + "070" + "ALT Break"



0006000

** Exit Setup



0006010

Enter Setup

Function Key Mapping

When Function Key Mapping is enabled, function characters (0x00 - 0x1F) are sent as ASCII sequences over the keypad. For more information, see **ASCII Function Key Mapping Table** in **Appendix**.



EC02265


Enable Function Key Mapping



EC02264

**** Disable Function Key Mapping**

Example: Barcode data 0x16

 T	Enable Function Key Mapping	Ctrl+V
	Disable Function Key Mapping	F1



0006000

**** Exit Setup**



0006010

Enter Setup

Emulate Numeric Keypad

When this feature is disabled, sending barcode data is emulated as keystroke(s) on main keyboard.

To enable this feature, scan the Emulate Numeric Keypad barcode. Sending a number (0-9) is emulated as keystroke(s) on numeric keypad, whereas sending other character like "+", "_", "*", "/" and "." is still emulated as keystrokes on main keyboard.



EC02251

**** Do Not Emulate Numeric Keypad**



EC02250

Emulate Numeric Keypad



0006000

**** Exit Setup**



0006010

Enter Setup

USB COM Port Emulation

To use this feature, a driver is required.



EC02301

USB COM Port Emulation

USB HID-POS

Introduction

The USB HID-POS interface is recommended for new application programs. It can send up to 56 characters in a single USB report and appears more efficient than keyboard emulation.

Features:

- ✧ HID based, no custom driver required.
- ✧ Way more efficient in communication than keyboard emulation and traditional RS-232 interface.

Note: USB HID-POS does not require a custom driver. However, a HID interface on Windows 98 does. All HID interfaces employ standard driver provided by the operating system. Use defaults when installing the driver.



EC02302

USB HID-POS

Access the Scanner with Your Program

Use CreateFile to access the scanner as a HID device and then use ReadFile to deliver the scanned data to the application program. Use WriteFile to send data to the scanner.

For detailed information about USB and HID interfaces, go to www.USB.org.



0006000

**** Exit Setup**



0006010

Enter Setup

Acquire Scanned Data

After scanning and decoding a barcode, the scanner sends the following input report:

	Bit							
Byte	7	6	5	4	3	2	1	0
0	Report ID = 0x02							
1	Length of the barcode							
2-57	Decoded data (1-56)							
58-60	AIM ID							
61-62	Reserved							
63	-	-	-	-	-	-	-	Decoded Data Continued

Send Data to the Scanner

This output report is used to send data to the device. All programming commands can be used.

	Bit							
Byte	7	6	5	4	3	2	1	0
0	Report ID = 0x04							
1	Length of the output data							
2-63	Output data (1-62)							

VID/PID

USB uses VID (Vendor ID) and PID (Product ID) to identify and locate a device. The VID is assigned by USB Implementers Forum. Newland's vendor ID is 1EAB (Hex). A PID is assigned to each interface.

Product	Interface	PID (Hex)	PID (Dec)
HR3290 Cordless	USB HID-KBW	0C03	3075
	USB COM Port Emulation	0C06	3078
	USB HID-POS	0C10	3088



0006000

**** Exit Setup**



0006010

Enter Setup

Chapter 5 Symbologies

Introduction

Every symbology (barcode type) has its own unique attributes. This chapter provides programming barcodes for configuring the scanner so that it can identify various barcode symbologies. The more symbologies you enable, the slower your scanner decodes. It is recommended to disable those that are rarely used to improve the performance of the scanner.

Note: Maximum barcode length supported by the scanner is 3K bytes.

General Settings

Disable All Symbologies

If the **Disable All Symbologies** feature is enabled, the scanner can only identify the programming barcodes.



0001010

Disable All Symbologies

Enable All Symbologies

If the **Enable All Symbologies** feature is enabled, the scanner can read all compatible barcode symbologies as well as the programming barcodes.



0001020

Enable All Symbologies



0006000

**** Exit Setup**



0006010

Enter Setup

Enable 1D Symbolologies



0001040

Enable 1D Symbolologies

Disable 1D Symbolologies



0001030

Disable 1D Symbolologies

Enable 2D Symbolologies



0001060

Enable 2D Symbolologies

Disable 2D Symbolologies



0001050

Disable 2D Symbolologies



0006000

**** Exit Setup**



0006010

Enter Setup

Video Reverse

The **Video Reverse** feature only applies to 2D barcodes.

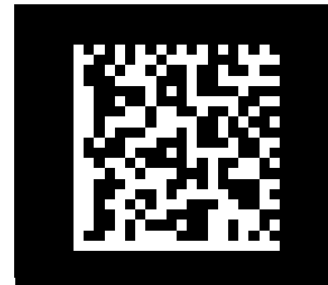
Regular barcode: Dark image on a bright background.

Inverse barcode: Bright image on a dark background.

The examples of regular barcode and inverse barcode are shown below.



Regular Barcode



Inverse Barcode

Video Reverse is used to allow the scanner to read barcodes that are inverted.

Video Reverse ON: Read both regular barcodes and inverse barcodes.

Video Reverse OFF: Read regular barcodes only.

The scanner shows a slight decrease in scanning speed when Video Reverse is ON.



0001021

Video Reverse ON



0001011

**** Video Reverse OFF**



0006000

**** Exit Setup**



0006010

Enter Setup

Code 128

Restore Factory Defaults



0400000

Restore the Factory Defaults of Code 128

Enable/Disable Code 128



0400020

**** Enable Code 128**



0400010

Disable Code 128



If the scanner fails to identify Code 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 128** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Code 128

The scanner can be configured to only decode Code 128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0400030

Set the Minimum Length (Default: 1)



0400040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Code 128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 128 barcodes with that length are to be decoded.



Set the scanner 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". (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode "1".
7. Scan the numeric barcode "2".
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

EAN-8

Restore Factory Defaults



0401000

Restore the Factory Defaults of EAN-8

Enable/Disable EAN-8



0401020

**** Enable EAN-8**



0401010

Disable EAN-8

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.



0401040

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



0401030

Do Not Transmit EAN-8 Check Digit



0006000

**** Exit Setup**



0006010

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.



0401050

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

0401060

Enable 2-Digit Add-On Code

0401070

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

0401080

Enable 5-Digit Add-On Code

Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The scanner 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 scanner 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.



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code Required

EAN-8 Add-On Code Required: The scanner only decodes EAN-8 barcodes that contain add-on codes.

EAN-8 Add-On Code Not Required: The scanner decodes a mix of EAN-8 barcodes with and without add-on codes.



0401110

EAN-8 Add-On Code Required



0401120

**** EAN-8 Add-On Code Not 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 to 13 digits.



0401090

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



0401100

Enable EAN-8 Zero Extend



0006000

**** Exit Setup**



0006010

Enter Setup

EAN-13

Restore Factory Defaults



0402000

**** Restore the Factory Defaults of EAN-13**

Enable/Disable EAN-13



0402020

**** Enable EAN-13**



0402010

Disable EAN-13

Transmit Check Digit



0402040

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



0402030

Do Not Transmit EAN-13 Check Digit



0006000

**** Exit Setup**



0006010

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. In the examples below, the part surrounded by blue dotted line is an EAN-13 barcode while the part circled by red dotted line is add-on code.



0402050

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



0402060

Enable 2-Digit Add-On Code



0402070

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



0402080

Enable 5-Digit Add-On Code



Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The scanner 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 scanner 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.



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code Required

EAN-13 Add-On Code Required: The scanner only decodes EAN-13 barcodes that contain add-on codes.

EAN-13 Add-On Code Not Required: The scanner decodes a mix of EAN-13 barcodes with and without add-on codes.



0402090

EAN-13 Add-On Code Required



0402100

**** EAN-13 Add-On Code Not Required**



0006000

**** Exit Setup**



0006010

Enter Setup

EAN-13 Beginning with 290 Add-On Code Required

This setting programs the scanner to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “290”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “290” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.



0402110

**** Do Not Require Add-On Code**



0402120

Require Add-On Code

EAN-13 Beginning with 378/379 Add-On Code Required

This setting programs the scanner to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a “378” or “379”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with a “378” or “379” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.



0402130

**** Do Not Require Add-On Code**



0402140

Require Add-On Code



0006000

**** Exit Setup**



0006010

Enter Setup

EAN-13 Beginning with 414/419 Add-On Code Required

This setting programs the scanner to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a “414” or “419”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with a “414” or “419” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.



0402150

**** Do Not Require Add-On Code**



0402160

Require Add-On Code

EAN-13 Beginning with 434/439 Add-On Code Required

This setting programs the scanner to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a “434” or “439”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with a “434” or “439” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.



0402170

**** Do Not Require Add-On Code**



0402180

Require Add-On Code



0006000

**** Exit Setup**



0006010

Enter Setup

EAN-13 Beginning with 977 Add-On Code Required

This setting programs the scanner to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “977”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “977” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.



0402190

**** Do Not Require Add-On Code**



0402200

Require Add-On Code

EAN-13 Beginning with 978 Add-On Code Required

This setting programs the scanner to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “978”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “978” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.



0402210

**** Do Not Require Add-On Code**



0402220

Require Add-On Code



0006000

**** Exit Setup**



0006010

Enter Setup

EAN-13 Beginning with 979 Add-On Code Required

This setting programs the scanner to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with “979”. The following settings can be programmed:

Require Add-On Code: All EAN-13 barcodes that begin with “979” must have a 2-digit or 5-digit add-on code. The EAN-13 barcode with the add-on code is then transmitted. If the required add-on code is not found, the EAN-13 barcode is discarded.

Do Not Require Add-On Code: If you have selected **Require Add-On Code**, and you want to disable this feature, scan **Do Not Require Add-On Code**. EAN-13 barcodes are handled, depending on your selection for the “Add-On Code Required” feature.



0402230

**** Do Not Require Add-On Code**



0402240

Require Add-On Code



0006000

**** Exit Setup**



0006010

Enter Setup

UPC-E

Restore Factory Defaults



0403000

**** Restore the Factory Defaults of UPC-E**

Enable/Disable UPC-E



0403020

**** Enable UPC-E**



0403010

Disable UPC-E



If the scanner fails to identify UPC-E barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-E** barcode.

Transmit Check Digit

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



0403040

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



0403030

Do Not Transmit UPC-E Check Digit



0006000

**** Exit Setup**



0006010

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. In the examples below, the part surrounded by blue dotted line is a UPC-E barcode while the part circled by red dotted line is add-on code.



0403050

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

0403060

Enable 2-Digit Add-On Code

0403070

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

0403080

Enable 5-Digit Add-On Code

Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The scanner 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 scanner 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.



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code Required

UPC-E Add-On Code Required: The scanner only decodes UPC-E barcodes that contain add-on codes.

UPC-E Add-On Code Not Required: The scanner decodes a mix of UPC-E barcodes with and without add-on codes.



0403130

UPC-E Add-On Code Required



0403140

**** UPC-E Add-On Code Not Required**

Transmit System Character “0”

The first character of UPC-E barcode is the system character “0”.



0403090

**** Do Not Transmit System Character “0”**



0403100

Transmit System Character “0”



0006000

**** Exit Setup**



0006010

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.



0403110

**** Disable UPC-E Extend**



0403120

Enable UPC-E Extend



0006000

**** Exit Setup**



0006010

Enter Setup

UPC-A

Restore Factory Defaults



0404000

Restore the Factory Defaults of UPC-A

Enable/Disable UPC-A



0404020

**** Enable UPC-A**



0404010

Disable UPC-A



If the scanner fails to identify UPC-A barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-A** barcode.

Transmit Check Digit

UPC-A is 12 digits in length with the last one as its check digit used to verify the integrity of the data.



0404040

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



0404030

Do Not Transmit UPC-A Check Digit



0006000

**** Exit Setup**



0006010

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. In the examples below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is add-on code.



0404050

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

0404060

Enable 2-Digit Add-On Code

0404070

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

0404080

Enable 5-Digit Add-On Code

Enable 2-Digit Add-On Code/ Enable 5-Digit Add-On Code: The scanner 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 scanner 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.



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code Required

UPC-A Add-On Code Required: The scanner only decodes UPC-A barcodes that contain add-on codes.

UPC-A Add-On Code Not Required: The scanner decodes a mix of UPC-A barcodes with and without add-on codes.



0404110

UPC-A Add-On Code Required



0404120

**** UPC-A Add-On Code Not Required**

Transmit Preamble Character

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 or transmit system character and country code ("0" for USA).



0404090

**** System Character**



0404100

System Character & Country Code



0006000

**** Exit Setup**



0006010

Enter Setup

Interleaved 2 of 5

Restore Factory Defaults



0405000

Restore the Factory Defaults of Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5



0405020

**** Enable Interleaved 2 of 5**



0405010

Disable Interleaved 2 of 5



If the scanner fails to identify Interleaved 2 of 5 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Interleaved 2 of 5** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Interleaved 2 of 5

The scanner can be configured to only decode Interleaved 2 of 5 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0405030

Set the Minimum Length (Default: 6)



0405040

Set the Maximum Length (Default: 100)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Interleaved 2 of 5 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Interleaved 2 of 5 barcodes with that length are to be decoded.



Set the scanner to decode Interleaved 2 of 5 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

** Exit Setup



0006010

Enter Setup

Check Digit Verification

A check digit is optional for Interleaved 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 scanner transmits Interleaved 2 of 5 barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner 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 scanner 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.

Since Interleaved 2 of 5 must always have an even number of digits, a zero may need to be added as the first digit when the check digit is added. The check digit is automatically generated when making Interleaved 2 of 5 barcodes.



0405050

** Disable



0405060

Do Not Transmit Check Digit After Verification



0405070

Transmit Check Digit After Verification



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.)



0006000

** Exit Setup



0006010

Enter Setup

Febraban

Disable/Enable Febraban



0405280

**** Disable Febraban**



0405290

Enable Febraban, Do Not Expand



0405300

Enable Febraban, Expand



0006000

**** Exit Setup**



0006010

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.



0405260

Restore the Factory Defaults of ITF-14



0405080

**** Disable ITF-14**



0405090

Enable ITF-14 But Do Not Transmit Check Digit



0405100

Enable ITF-14 and Transmit Check Digit



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



0006000

**** Exit Setup**



0006010

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.



0405270

Restore the Factory Defaults of ITF-6



0405110

**** Disable ITF-6**



0405120

Enable ITF-6 But Do Not Transmit Check Digit



0405130

Enable ITF-6 and Transmit Check Digit



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



0006000

**** Exit Setup**



0006010

Enter Setup

Matrix 2 of 5

Restore Factory Defaults



0406000

Restore the Factory Defaults of Matrix 2 of 5

Enable/Disable Matrix 2 of 5



0406020

Enable Matrix 2 of 5



0406010

**** Disable Matrix 2 of 5**



If the scanner fails to identify Matrix 2 of 5 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Matrix 2 of 5** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Matrix 2 of 5

The scanner can be configured to only decode Matrix 2 of 5 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0406030

Set the Minimum Length (Default: 6)



0406040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Matrix 2 of 5 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Matrix 2 of 5 barcodes with that length are to be decoded.

E
xample

Set the scanner to decode Matrix 2 of 5 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

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 scanner transmits Matrix 2 of 5 barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner 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 scanner 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.

Since Matrix 2 of 5 must always have an even number of digits, a zero may need to be added as the first digit when the check digit is added. The check digit is automatically generated when making Matrix 2 of 5 barcodes.



0406050

Disable



0406060

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



0406070

Transmit Check Digit After Verification



If the **Do Not Transmit Check Digit After Verification** option is enabled, Matrix 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, Matrix 2 of 5 barcodes with a total length of 4 characters including the check digit cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

Code 39

Restore Factory Defaults



0408000

Restore the Factory Defaults of Code 39

Enable/Disable Code 39



0408020

**** Enable Code 39**



0408010

Disable Code 39



If the scanner fails to identify Code 39 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 39** barcode.

Transmit Start/Stop Character

Code 39 uses an asterisk (*) for both the start and the stop characters. You can choose whether or not to transmit the start/stop characters by scanning the appropriate barcode below.



0408090

**** Transmit Start/Stop Character**



0408080

Do Not Transmit Start/Stop Character



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Code 39

The scanner can be configured to only decode Code 39 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0408030

Set the Minimum Length (Default: 1)



0408040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Code 39 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 39 barcodes with that length are to be decoded.



Set the scanner to decode Code 39 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

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 scanner transmits Code 39 barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner 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 scanner 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.



0408050

**** Disable**



0408060

Do Not Transmit Check Digit After Verification



0408070

Transmit Check Digit After Verification



If the **Do Not Transmit Check Digit After Verification** option is enabled, Code 39 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, Code 39 barcodes with a total length of 4 characters including the check digit cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

Enable/Disable Code 39 Full ASCII

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



0408100

Disable Code 39 Full ASCII



0408110

**** Enable Code 39 Full ASCII**

Enable/Disable Code 32

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate barcode below to enable or disable Code 32. Code 39 must be enabled and Code 39 check digit verification must be disabled for this parameter to function.



0408120

**** Disable Code 32**



0408130

Enable Code 32

Code 32 Prefix

Scan the appropriate barcode below to enable or disable adding the prefix character "A" to all Code 32 barcodes. Code 32 must be enabled for this parameter to function.



0408140

**** Disable Code 32 Prefix**



0408150

Enable Code 32 Prefix



0006000

**** Exit Setup**



0006010

Enter Setup

Transmit Code 32 Check Digit

Code 32 must be enabled for this parameter to function.



0408180

**** Do Not Transmit Code 32 Check Digit**



0408190

Transmit Code 32 Check Digit

Transmit Code 32 Start/Stop Character

Code 32 must be enabled for this parameter to function.



0408160

**** Do Not Transmit Code 32 Start/Stop Character**



0408170

Transmit Code 32 Start/Stop Character



0006000

**** Exit Setup**



0006010

Enter Setup

Codabar

Restore Factory Defaults



0409000

Restore the Factory Defaults of Codabar

Enable/Disable Codabar



0409020

**** Enable Codabar**



0409010

Disable Codabar



If the scanner fails to identify Codabar barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Codabar** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Codabar

The scanner can be configured to only decode Codabar barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0409030

Set the Minimum Length (Default: 1)



0409040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Codabar barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Codabar barcodes with that length are to be decoded.



Set the scanner to decode Codabar 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”. (See the **Digit Barcodes** in **Appendix**)
4. Scan the **Save** barcode. (See the **Save/Cancel Barcodes** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

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 scanner transmits Codabar barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner 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 scanner 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.



0409050

**** Disable**



0409060

Do Not Transmit Check Digit After Verification



0409070

Transmit Check Digit After Verification



If the **Do Not Transmit Check Digit After Verification** option is enabled, Codabar 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, Codabar barcodes with a total length of 4 characters including the check digit cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

Start/Stop Character

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



0409090

Transmit Start/Stop Character



0409080

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



0409100

**** ABCD/ABCD as the Start/Stop Character**



0409120

Start/Stop Character in Uppercase



0409110

ABCD/TN*E as the Start/Stop Character



0409130

Start/Stop Character in Lowercase



0006000

**** Exit Setup**



0006010

Enter Setup

Code 93

Restore Factory Defaults



0410000

Restore the Factory Defaults of Code 93

Enable/Disable Code 93



0410020

**** Enable Code 93]**



0410010

Disable Code 93



If the scanner fails to identify Code 93 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 93** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Code 93

The scanner can be configured to only decode Code 93 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0410030

Set the Minimum Length (Default: 3)



0410040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Code 93 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 93 barcodes with that length are to be decoded.



Set the scanner to decode Code 93 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

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 scanner transmits Code 93 barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner 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 scanner 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.



0410050

Disable



0410060

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



0410070

Transmit Check Digit After Verification



If the **Do Not Transmit Check Digit After Verification** option is enabled, Code 93 barcodes with a length that is less than the configured minimum length after having the two check digits 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, Code 93 barcodes with a total length of 4 characters including the two check digits cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

UCC/EAN-128

Restore Factory Defaults



0412000

Restore the Factory Defaults of UCC/EAN-128

Enable/Disable UCC/EAN-128



0412020

**** Enable UCC/EAN-128**



0412010

Disable UCC/EAN-128



If the scanner fails to identify UCC/EAN-128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UCC/EAN-128** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for UCC/EAN-128

The scanner can be configured to only decode UCC/EAN-128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0412030

Set the Minimum Length (Default: 1)

0412040

Set the Maximum Length (Default: 127)

Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes UCC/EAN-128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only UCC/EAN-128 barcodes with that length are to be decoded.



Set the scanner to decode UCC/EAN-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". (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode "1".
7. Scan the numeric barcode "2".
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

GS1 Databar

Restore Factory Defaults



0413000

Restore the Factory Defaults of GS1 Databar

Enable/Disable GS1 Databar



0413020

**** Enable GS1 Databar**



0413010

Disable GS1 Databar



If the scanner fails to identify GS1 Databar barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable GS1 Databar** barcode.

Transmit Application Identifier “01”



0413060

**** Transmit Application Identifier “01”**



0413050

Do Not Transmit Application Identifier “01”



0006000

**** Exit Setup**



0006010

Enter Setup

Code 11

Restore Factory Defaults



0415000

Restore the Factory Defaults of Code 11

Enable/Disable Code 11



0415020

**** Enable Code 11**



0415010

Disable Code 11



If the scanner fails to identify Code 11 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 11** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Code 11

The scanner can be configured to only decode Code 11 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0415030

Set the Minimum Length (Default: 2)



0415040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Code 11 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 11 barcodes with that length are to be decoded.



Set the scanner to decode Code 11 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

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 scanner transmits Code 11 barcodes as is.



0415050

Disable



0415090

One Check Digit, MOD11 (Len<=10)

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



0415060

** One Check Digit, MOD11



0415100

【 One Check Digit, MOD11 (Len<=10)

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



0415070

Two Check Digits, MOD11/MOD11



0415110

** Do Not Transmit Check Digit



0415080

Two Check Digits, MOD11/MOD9



0415120

Transmit Check Digit



If you select a check digit algorithm and the **Do Not Transmit Check Digit** option, Code 11 barcodes with a length that is less than the configured minimum length after having the check digit(s) excluded will not be decoded. (For example, when the **One Check Digit, MOD11** and **Do Not Transmit Check Digit** options are enabled and the minimum length is set to 4, Code 11 barcodes with a total length of 4 characters including the check digit cannot be read.)



0006000

** Exit Setup



0006010

Enter Setup

ISBN

Restore Factory Defaults



0416000

Restore the Factory Defaults of ISBN

Enable/Disable ISBN



0416020

Enable ISBN



0416010

**** Disable ISBN**



If the scanner fails to identify ISBN barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable ISBN** barcode.

Set ISBN Format



0416030

**** ISBN-13**



0416040

ISBN-10



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code

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



0416050

Enable 2-Digit Add-On Code



0416060

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



0416070

Enable 5-Digit Add-On Code



0416080

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



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

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



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code Required

ISBN Add-On Code Required: The scanner only decodes ISBN barcodes that contain add-on codes.

ISBN Add-On Code Not Required: The scanner decodes a mix of ISBN barcodes with and without add-on codes.



0416090

ISBN Add-On Code Required



0416100

**** ISBN Add-On Code Not Required**



0006000

**** Exit Setup**



0006010

Enter Setup

ISSN

Restore Factory Defaults



0421000

Restore the Factory Defaults of ISSN

Enable/Disable ISSN



0421020

Enable ISSN



0421010

**** Disable ISSN**



If the scanner fails to identify ISSN barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable ISSN** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code

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



0421030

Enable 2-Digit Add-On Code



0421040

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



0421050

Enable 5-Digit Add-On Code



0421060

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



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

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



0006000

**** Exit Setup**



0006010

Enter Setup

Add-On Code Required

ISSN Add-On Code Required: The scanner only decodes ISSN barcodes that contain add-on codes.

ISSN Add-On Code Not Required: The scanner decodes a mix of ISSN barcodes with and without add-on codes.



0421070

ISSN Add-On Code Required



0421080

**** ISSN Add-On Code Not Required**



0006000

**** Exit Setup**



0006010

Enter Setup

AIM-128

Restore Factory Defaults



0423000

Restore the Factory Defaults of AIM-128

Enable/Disable AIM-128



0423020

**** Enable AIM-128**



0423010

Disable AIM-128



If the scanner fails to identify AIM-128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable AIM-128** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for AIM-128

The scanner can be configured to only decode AIM-128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0423030

Set the Minimum Length (Default: 1)



0423040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes AIM-128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only AIM-128 barcodes with that length are to be decoded.



Set the scanner to decode AIM-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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Industrial 25

Restore Factory Defaults



0417000

Restore the Factory Defaults of Industrial 25

Enable/Disable Industrial 25



0417020

**** Enable Industrial 25**



0417010

Disable Industrial 25



If the scanner fails to identify Industrial 25 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Industrial 25** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Industrial 25

The scanner can be configured to only decode Industrial 25 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0417030

Set the Minimum Length (Default: 6)



0417040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Industrial 25 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Industrial 25 barcodes with that length are to be decoded.



Set the scanner to decode Industrial 25 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Check Digit Verification

A check digit is optional for Industrial 25 and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The scanner transmits Industrial 25 barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner checks the integrity of all Industrial 25 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 scanner checks the integrity of all Industrial 25 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.



0417050

**** Disable**



0417060

Do Not Transmit Check Digit After Verification



0417070

Transmit Check Digit After Verification



If the **Do Not Transmit Check Digit After Verification** option is enabled, Industrial 25 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, Industrial 25 barcodes with a total length of 4 characters including the check digit cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

Standard 25

Restore Factory Defaults



0418000

Restore the Factory Defaults of Standard 25

Enable/Disable Standard 25



0418020

**** Enable Standard 25**



0418010

Disable Standard 25



If the scanner fails to identify Standard 25 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Standard 25** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Standard 25

The scanner can be configured to only decode Standard 25 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0418030

Set the Minimum Length (Default: 6)



0418040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Standard 25 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Standard 25 barcodes with that length are to be decoded.



Set the scanner to decode Standard 25 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

** Exit Setup



0006010

Enter Setup

Check Digit Verification

A check digit is optional for Standard 25 and can be added as the last digit. It is a calculated value used to verify the integrity of the data.

Disable: The scanner transmits Standard 25 barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner checks the integrity of all Standard 25 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 scanner checks the integrity of all Standard 25 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.



0418050

**** Disable**



0418060

Do Not Transmit Check Digit After Verification



0418070

Transmit Check Digit After Verification



If the **Do Not Transmit Check Digit After Verification** option is enabled, Standard 25 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, Standard 25 barcodes with a total length of 4 characters including the check digit cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

Plessey

Restore Factory Defaults



0419000

Restore the Factory Defaults of Plessey

Enable/Disable Plessey



0419020

Enable Plessey



0419010

**** Disable Plessey**



If the scanner fails to identify Plessey barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Plessey** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Plessey

The scanner can be configured to only decode Plessey barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0419030

Set the Minimum Length (Default: 1)



0419040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes Plessey barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Plessey barcodes with that length are to be decoded.



Set the scanner to decode Plessey 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Check Digit Verification

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

Disable: The scanner transmits Plessey barcodes as is.

Do Not Transmit Check Digit After Verification: The scanner 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 scanner 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.



0419050

Disable



0419060

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



0419070

Transmit Check Digit After Verification



If the **Do Not Transmit Check Digit After Verification** option is enabled, Plessey barcodes with a length that is less than the configured minimum length after having the check digits 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, Plessey barcodes with a total length of 4 characters including the check digits cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

MSI-Plessey

Restore Factory Defaults



0420000

Restore the Factory Defaults of MSI-Plessey

Enable/Disable MSI-Plessey



0420020

Enable MSI-Plessey



0420010

**** Disable MSI-Plessey**



If the scanner fails to identify MSI-Plessey barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable MSI-Plessey** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for MSI-Plessey

The scanner can be configured to only decode MSI-Plessey barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0420030

Set the Minimum Length (Default: 2)



0420040

Set the Maximum Length (Default: 127)



Maximum length of a 1D barcode should not exceed 127 bytes. If minimum length is set to be greater than maximum length, the scanner only decodes MSI-Plessey barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only MSI-Plessey barcodes with that length are to be decoded.



Set the scanner to decode MSI-Plessey 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”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

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 scanner transmits MSI-Plessey barcodes as is.



0420050

Disable



0420080

Two Check Digits, MOD10/MOD11



0420060

**** One Check Digit, MOD10**



0420090

**** Do Not Transmit Check Digit**



0420070

Two Check Digits, MOD10/MOD10



0420100

Transmit Check Digit



If you select a check digit algorithm and the **Do Not Transmit Check Digit** option, MSI-Plessey barcodes with a length that is less than the configured minimum length after having the check digit(s) excluded will not be decoded. (For example, when the **One Check Digit, MOD11** and **Do Not Transmit Check Digit** options are enabled and the minimum length is set to 4, MSI-Plessey barcodes with a total length of 4 characters including the check digit cannot be read.)



0006000

**** Exit Setup**



0006010

Enter Setup

PDF417

Restore Factory Defaults



0501000

**** Restore the Factory Defaults of PDF417**

Enable/Disable PDF417



0501020

**** Enable PDF417**



0501010

Disable PDF417



If the scanner fails to identify PDF417 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable PDF417** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for PDF417

The scanner can be configured to only decode PDF417 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0501030

Set the Minimum Length (Default: 1)

0501040

Set the Maximum Length (Default: 1024)

Maximum length of a 2D barcode should not exceed 1024 bytes. Minimum length is not allowed to be greater than maximum length. If you only want to read PDF417 barcodes with a specific length, set both minimum and maximum lengths to be that desired length.



Set the scanner to decode PDF417 barcodes containing between 8 and 12 bytes:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

QR Code

Restore Factory Defaults



0502000

Restore the Factory Defaults of QR Code

Enable/Disable QR Code



0502020

**** Enable QR Code**



0502010

Disable QR Code



If the scanner fails to identify QR Code barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable QR Code** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for QR Code

The scanner can be configured to only decode QR Code barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0502030

Set the Minimum Length (Default: 1)



0502040

Set the Maximum Length (Default: 1024)



Maximum length of a 2D barcode should not exceed 1024 bytes. Minimum length is not allowed to be greater than maximum length. If you only want to read QR Code barcodes with a specific length, set both minimum and maximum lengths to be that desired length.



Set the scanner to decode QR Code barcodes containing between 8 and 12 bytes:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Micro QR



0502110

**** Enable Micro QR**



0502100

Disable Micro QR



0006000

**** Exit Setup**



0006010

Enter Setup

Data Matrix

Restore Factory Defaults



0504000

Restore the Factory Defaults of Data Matrix

Enable/Disable Data Matrix



0504020

**** Enable Data Matrix**



0504010

Disable Data Matrix



If the scanner fails to identify Data Matrix barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Data Matrix** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Set Length Range for Data Matrix

The scanner can be configured to only decode Data Matrix barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



0504030

Set the Minimum Length (Default: 1)

0504040

Set the Maximum Length (Default: 1024)

Maximum length of a 2D barcode should not exceed 1024 bytes. Minimum length is not allowed to be greater than maximum length. If you only want to read Data Matrix barcodes with a specific length, set both minimum and maximum lengths to be that desired length.



Set the scanner to decode Data Matrix barcodes containing between 8 and 12 bytes:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode.
3. Scan the numeric barcode “8”. (See the ***Digit Barcodes*** in **Appendix**)
4. Scan the **Save** barcode. (See the ***Save/Cancel Barcodes*** in **Appendix**)
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Rectangular Barcode

Data Matrix has two formats:

Square barcodes having the same amount of modules in length and width: 10*10, 12*12.... 144*144.

Rectangular barcodes having different amounts of models in length and width: 6*16, 6*14... 14*22.



0504110

**** Enable Rectangular Barcode**



0504100

Disable Rectangular Barcode

Mirror Image



0504331

**** Decode Mirrored DM**



0504330

Do Not Decode Mirrored DM



0006000

**** Exit Setup**



0006010

Enter Setup

Chinese Sensible Code

Restore Factory Defaults



0508000

Restore the Factory Defaults of Chinese Sensible Code

Enable/Disable Chinese Sensible Code



0508020

Enable Chinese Sensible Code



0508010

**** Disable Chinese Sensible Code**

Set Length Range for Chinese Sensible Code



0508030

Set the Minimum Length



0508040

Set the Maximum Length



0006000

**** Exit Setup**



0006010

Enter Setup

Chapter 6 Prefix & Suffix

Introduction

A 1D barcode could contain digits, letters, symbols, etc. A 2D barcode could contain more data, such as Chinese characters and other multi-byte characters. However, in real applications, they do not and should not have all information we need, such as barcode type, data acquisition time and delimiter, in order to keep the barcodes short and flexible.

Prefix and suffix are how to fulfill the needs mentioned above. They can be added, removed and modified while the original barcode data remains intact.



0006000

**** Exit Setup**



0006010

Enter Setup

General Settings

Enable/Disable All Prefix/Suffix

Disable All Prefix/Suffix: Transmit barcode data with no prefix/suffix.

Enable All Prefix/Suffix: Allow user to append Code ID prefix, AIM ID prefix, custom prefix/suffix and terminating character to the barcode data before the transmission.



0311000

Disable All Prefix/Suffix]



0311010

Enable All Prefix/Suffix

Prefix Sequences

2 prefix sequence options:



0317010

Code ID + Custom + AIM ID



0317040

**** Custom + Code ID + AIM ID**



0006000

**** Exit Setup**



0006010

Enter Setup

Custom Prefix

Enable/Disable Custom Prefix

If custom prefix is enabled, you are allowed to append to the data a user-defined prefix that cannot exceed 10 characters. For example, if the custom prefix is “AB” and the barcode data is “123”, the Host will receive “AB123”.



0305000

**** Disable Custom Prefix**

0305010

Enable Custom Prefix

Set Custom Prefix

To set a custom prefix, scan the **Set Custom Prefix** barcode and then the numeric barcodes corresponding to the hexadecimal value of a desired prefix. To save the settings, scan the **Save** barcode.

Note: A custom prefix cannot exceed 10 characters.



0300000

Set Custom Prefix**E**
xample

Set the custom prefix to “CODE” (its hexadecimal value is 0x43/0x4F/0x44/0x45):

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Custom Prefix** barcode.
3. Scan the numeric barcodes “4”, “3”, “4”, “F”, “4”, “4”, “4” and “5”. (See the **Digit Barcodes** in **Appendix**)
4. Scan the **Save** barcode. (See the **Save/Cancel Barcodes** in **Appendix**)
5. Scan the **Enable Custom Prefix** barcode.
6. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

AIM ID Prefix

AIM (Automatic Identification Manufacturers) ID defines symbology identifier (For the details, see the **AIM ID Table** in **Appendix**). If AIM ID prefix is enabled, the scanner will add the symbology identifier before the scanned data after decoding.



0308000

**** Disable AIM ID Prefix**



0308030

Enable AIM ID Prefix



AIM ID is not user programmable.

Code ID Prefix

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.



0307000

**** Disable Code ID Prefix**



0307010

Enable Code ID Prefix



0006000

**** Exit Setup**



0006010

Enter Setup

Restore All Default Code IDs

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



0307020

Restore All Default Code IDs

Modify Code ID

See the examples below to learn how to modify a Code ID and restore the default Code IDs of all symbologies.

E
xample

Modify PDF417 Code ID to be “p” (its hexadecimal value is 0x70):

1. Scan the **Enter Setup** barcode.
2. Scan the **Modify PDF417 Code ID** barcode.
3. Scan the numeric barcodes “7” and “0”. (See the **Digit Barcodes** in Appendix)
4. Scan the **Save** barcode. (See the **Save/Cancel Barcodes** in Appendix)
5. Scan the **Exit Setup** barcode.

Restore the default Code IDs of all symbologies:

1. Scan the **Enter Setup** barcode.
2. Scan the **Restore All Default Code IDs** barcode.
3. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup



0005000

Modify PDF417 Code ID



0005030

Modify Data Matrix Code ID



0005010

Modify QR Code ID



0005070

Modify Chinese Sensible Code ID



0004110

Modify Matrix 25 Code ID



0004230

Modify ISSN Code ID



0004210

Modify AIM-128 Code ID



0004040

Modify EAN-8 Code ID



0004100

Modify ITF-6 Code ID



0004050

Modify EAN-13 Code ID



0006000

**** Exit Setup**



0006010

Enter Setup



0004130

Modify Code 39 Code ID



0004060

Modify UPC-E Code ID



0004150

Modify Codabar Code ID



0004070

Modify UPC-A Code ID



0004170

Modify Code 93 Code ID



0004080

Modify Interleaved 2 of 5 Code ID



0004020

Modify Code 128 Code ID



0004090

Modify ITF-14 Code ID



0004240

Modify ISBN Code ID



0004030

Modify UCC/EAN-128 Code ID



0006000

**** Exit Setup**



0006010

Enter Setup



0004250

Modify Industrial 25 Code ID



0004280

Modify Code 11 Code ID



0004260

Modify Standard 25 Code ID



0004270

Modify Plessey Code ID



0004290

Modify MSI-Plessey Code ID



0004310

Modify GS1 Databar Code ID



0006000

**** Exit Setup**



0006010

Enter Setup

Custom Suffix

Enable/Disable Custom Suffix

If custom suffix is enabled, you are allowed to append to the data a user-defined suffix that cannot exceed 10 characters. For example, if the custom suffix is “AB” and the barcode data is “123”, the Host will receive “123AB”.



0306000

****Disable Custom Suffix**

0306010

Enable Custom Suffix

Set Custom Suffix

To set a custom suffix, scan the **Set Custom Suffix** barcode and then the numeric barcodes corresponding to the hexadecimal value of a desired suffix. To save the settings, scan the **Save** barcode.

Note: A custom suffix cannot exceed 10 characters.



0301000

Set Custom Suffix**E**
sample

Set the custom suffix to “CODE” (its hexadecimal value is 0x43/0x4F/0x44/0x45):

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Custom Suffix** barcode.
3. Scan the numeric barcodes “4”, “3”, “4”, “F”, “4”, “4”, “4” and “5”. (See the **Digit Barcodes** in **Appendix**)
4. Scan the **Save** barcode. (See the **Save/Cancel Barcodes** in **Appendix**)
5. Scan the **Enable Custom Suffix** barcode.
6. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Terminating Character Suffix

Enable/Disable Terminating Character Suffix

A terminating character such as carriage return (CR) or carriage return/line feed pair (CRLF) can only be used to mark the end of data, which means nothing can be added after it.



0309000

Disable Terminating Character Suffix



0309010

**** Enable Terminating Character Suffix**

Set Terminating Character Suffix

The scanner provides a shortcut for setting the terminating character suffix to 0x0D or 0x0D,0x0A and enabling it by scanning the following barcode.



0310010

Terminating Character 0x0D



0310020

**** Terminating Character 0x0D,0x0A**



0006000

**** Exit Setup**



0006010

Enter Setup

To set a terminating character suffix, scan the **Set Terminating Character Suffix** barcode and the numeric barcodes representing the hexadecimal value of a desired terminating character and then scan the **Save** barcode. Refer to the **ASCII Table** in **Appendix** for hexadecimal values of terminating characters.

Note: A terminating character suffix cannot exceed 2 characters.



0310000

Set Terminating Character Suffix

E
xample

Set the terminating character suffix to 0x0A:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Terminating Character Suffix** barcode.
3. Scan the numeric barcodes “0” and “A”. (See the **Digit Barcodes** in **Appendix**)
4. Scan the **Save** barcode. (See the **Save/Cancel Barcodes** in **Appendix**)
5. Scan the **Exit Setup** barcode.



0006000

**** Exit Setup**



0006010

Enter Setup

Chapter 7 Ambient Illumination

Ambient lighting conditions may vary from one operating environment to another, such as fluorescent lit warehouses or sunlit open spaces. Fluorescent lights may flicker when using AC power source in 50-60Hz. Usually indoor illuminance is around 1,000 lux while outdoor illuminance may reach 60,000 lux or even over 100,000 lux.

Two options are provided for ambient illumination settings:

Normal Illuminance: applicable to most indoor/outdoor environments.

High Illuminance: applicable to special environments with super-intense light source.

Change to this settings will not take effect until the scanner reboots or wakes from sleep.



0313150

**** Normal Illuminance (0~60000lux)**



0313151

High Illuminance (60000~120000lux)



0006000

**** Exit Setup**



0006010

Enter Setup

Chapter 8 Data Formatter

Introduction

You may use the Data Formatter to modify the scanner's output. For example, you can use the Data Formatter to insert characters at certain points in barcode data or to suppress/ replace/ send certain characters in barcode data as it is scanned.

Normally, when you scan a barcode, it gets outputted automatically; however, when you create a format, you must use a "send" command (see the **Send Commands** in this chapter) within the format programming to output data. The maximum size of formatter commands in a data format is 112 characters. By default, the data formatter is disabled. Enable it when required. If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** code below.



0323100

**** Default Data Format**

Add a Data Format

Data format is used to edit barcode data only. You can program up to four data formats, i.e. Format_0, Format_1, Format_2 and Format_3. When you create a data format, you must specify the application scope of your data format (such as barcode type and data length) and include formatter commands. When scanned data does not match your data format requirements, you will hear the non-match error beep (if the non-match error beep is ON).

There are two methods to program a data format: Programming with barcodes and programming with a batch command.



0006000

**** Exit Setup**



0006010

Enter Setup

Programming with Barcodes

The following explains how to program a data format by scanning the specific barcodes. Scanning any irrelevant barcode or failing to follow the setting procedure will result in programming failure. To find the alphanumeric barcodes needed to create a data format, see the ***Digit Barcodes*** in **Appendix**.

Step 1: Scan the **Enter Setup** barcode.

Step 2: Scan the **Add Data Format** barcode.



0323000

Add Data Format

Step 3: Select data format.

Scan a numeric barcode **0** or **1** or **2** or **3** to set this to Format_0 or Format_1 or Format_2 or Format_3.

Step 4: Select formatter command type.

Specify what type of formatter commands will be used. Scan a numeric barcode “6” to select formatter command type 6. (See the ***Formatter Command Type 6*** in this chapter for more information)

Step 5: Set interface type

Scan **999** for any interface type.

Step 6: Set Symbology ID Number

Refer to the ***Symbology ID Number*** in **Appendix** and find the ID number of the symbology to which you want to apply the data format. Scan three numeric barcodes for the symbology ID number. If you wish to create a data format for all symbologies, scan **999**.

Step 7: Set barcode data length

Specify what length of data will be acceptable for this symbology. Scan the four numeric barcodes that represent the data length. 9999 is a universal number, indicating all lengths. For example, 32 characters should be entered as 0032.



0006000

**** Exit Setup**



0006010

Enter Setup**Step 8:** Enter formatter command

Refer to the **Formatter Command Type 6** in this chapter. Scan the alphanumeric barcodes that represent the command you need to edit data. For example, when a command is F141, you should scan F141. A command can contain up to 112 characters.

Step 9: Scan the **Save** barcode from the **Save/Cancel Barcodes** in **Appendix** to save your data format.

Example: Program format_0 using formatter command type 6, Code 128 containing 10 characters applicable, send all characters followed by "A".

- | | |
|---|---|
| 1. Scan the Enter Setup barcode | Enter the Setup mode |
| 2. Scan the Add Data Format barcode | Add a data format |
| 3. Scan the 0 barcode | Select format_0 |
| 4. Scan the 6 barcode | Select formatter command type 6 |
| 5. Scan the 9 barcode three times | All interface types applicable |
| 6. Scan the barcodes 002 | Only Code 128 applicable |
| 7. Scan the barcodes 0010 | Only a length of 10 characters applicable |
| 8. Scan the alphanumeric barcodes F141 | Send all characters followed by "A" (hex: 41) |
| 9. Scan the Save barcode | Save the data format |



0006000

**** Exit Setup**



0006010

Enter Setup

Programming with a Batch Command

A data format can also be created by a batch command sent from the host device.

Syntax: "nls0323000" + "=" + Double Quotation Mark (") + Parameter Value + Double Quotation Mark (") + ";"

Parameter Value consists of the following elements:

Data format: 0~3 (1 character). 0, 1, 2 and 3 represent Format_0, Format_1, Format_2 and Format_3 respectively.

Formatter command type: 6 (1 character).

Interface type: 999 (3 characters).

Symbology ID Number: The ID number of the symbology (refer to the **Symbology ID Number** in **Appendix**) to which you want to apply the data format (3 characters). 999 indicates all symbologies.

Data length: The length of data that will be acceptable for this symbologys (4 characters). 9999 indicates all lengths. For example, 32 characters should be entered as 0032.

Formatter commands: The command string used to edit data (max. 112 characters). For more information, see the **Formatter Command Type 6** in this chapter.

Note: A batch command used to create a data format must conform to the syntax above. Returned value 0x06 indicates success; returned value 0x15 indicates failure.

To streamline the programming process, you may as well generate a batch barcode by inputting the batch command (e.g. **0323000="069990020010F141"**;) used to create a data format. See the **Use Batch Barcode** in Chapter 9 to learn how to put a batch barcode into use.

Example: Program format_0 using formatter command type 6, Code 128 containing 10 characters applicable, send all characters followed by "A".

Batch command: **nls0323000="069990020010F141"**;



0006000

** Exit Setup



0006010

Enter Setup

Enable Data Format

After enabling the Data Formatter, you may select a data format you want to use by scanning the appropriate barcode below.



0323030

**** Format_0**



0323031

Format_1



0323032

Format_2



0323033

Format_3

Change Data Format for a Single Scan

You can switch between data formats for a single scan. The next barcode is scanned using the data format selected here, then reverts to the format you have selected above. For example, you may have set your scanner to the data format you saved as Format_3. You can switch to Format_1 for a single trigger pull by scanning the **Single Scan – Format_1** barcode below. The next barcode that is scanned uses Format_1, then reverts back to Format_3.

Note: This setting will be lost by removing power from the scanner, or turning off/ rebooting the device.



0323050

Single Scan – Format_0



0323051

Single Scan – Format_1



0323052

Single Scan – Format_2



0323053

Single Scan – Format_3



0006000

**** Exit Setup**



0006010

Enter Setup

Enable/Disable Data Formatter

When Data Formatter is disabled, the data format you have enabled becomes invalid.



0323020

**** Disable Data Formatter**

You may wish to require the data to conform to a data format you have created. The following settings can be applied to your data format:

Enable Data Formatter, Required, Keep Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted along with prefixes and suffixes (if prefix and suffix are enabled). Any data that does not match your data format requirements generates an error beep (if Non-Match Error Beep is turned ON) and the data in that barcode is not transmitted.

Enable Data Formatter, Required, Drop Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted without prefixes and suffixes (even if prefix and suffix are enabled). Any data that does not match your data format requirements generates an error beep (if Non-Match Error Beep is turned ON) and the data in that barcode is not transmitted.

Enable Data Formatter, Not Required, Keep Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted along with prefixes and suffixes (if prefix and suffix are enabled). Barcode data that does not match your data format requirements is transmitted as read along with prefixes and suffixes (if prefix and suffix are enabled).

Enable Data Formatter, Not Required, Drop Prefix/Suffix: Scanned data that meets your data format requirements is modified accordingly and gets outputted without prefixes and suffixes (even if prefix and suffix are enabled). Barcode data that does not match your data format requirements is transmitted as read along with prefixes and suffixes (if prefix and suffix are enabled).



0006000

**** Exit Setup**



0006010

Enter Setup

0323040

Enable Data Formatter, Required, Keep Prefix/Suffix

0323041

Enable Data Formatter, Required, Drop Prefix/Suffix

0323042

Enable Data Formatter, Not Required, Keep Prefix/Suffix

0323043

Enable Data Formatter, Not Required, Drop Prefix/Suffix

Non-Match Error Beep

If Non-Match Error Beep is turned ON, the scanner generates an error beep when a barcode is encountered that does not match your required data format.



0323060

**** Non-Match Error Beep ON**

0323061

Non-Match Error Beep OFF

Clear Data Format

There are two methods to remove data format from your scanner:

Delete one data format: Scan the **Clear One** barcode, a numeric barcode (0-3) and the **Save** barcode. For example, to delete Format_2, you should scan the **Clear One** barcode, the **2** barcode and the **Save** barcode.

Delete all data formats: Scan the **Clear All** barcode.



0323011

Clear All

0323010

Clear One

0006000

**** Exit Setup**



0006010

Enter Setup

Query Data Formats

You may scan the following barcode to get the information of data format(s) you have created. For instance, if you have added Format_0 as per the example in the ***Programming with Barcodes*** in this chapter, then the query result will be **Data Format 0:069990020010F141;**.



0323070

Query Data Formats



0006000

** Exit Setup



0006010

Enter Setup

Formatter Command Type 6

When working with the Data Formatter, a virtual cursor is moved along your input data string. The following commands are used to both move this cursor to different positions, and to select, replace, and insert data into the final output. For the hex value of ASCII characters involved in the commands, refer to **ASCII Table** in Appendix.

Send Commands

F1 Send all characters

Syntax=F1xx (xx: The insert character's hex value)

Include in the output message all of the characters from the input message, starting from current cursor position, followed by an insert character.

F2 Send a number of characters

Syntax=F2nnxx (nn: The numeric value (00-99) for the number of characters; xx: The insert character's hex value)

Include in the output message a number of characters followed by an insert character. Start from the current cursor position and continue for "nn" characters or through the last character in the input message, followed by character "xx."

F2 Example: Send a number of characters



Send the first 10 characters from the barcode above, followed by a carriage return.

Command string: **F2100D**

F2 is the "Send a number of characters" command

10 is the number of characters to send

0D is the hex value for a CR

The data is output as: **1234567890**

<CR>



0006000

** Exit Setup



0006010

Enter Setup

F3 Send all characters up to a particular character

Syntax=F3ssxx (ss: The particular character's hex value; xx: The insert character's hex value)

Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the particular character "ss," followed by character "xx." The cursor is moved forward to the "ss" character.

F3 Example: Send all characters up to a particular character



Using the barcode above, send all characters up to but not including "D," followed by a carriage return.

Command string: **F3440D**

F3 is the "Send all characters up to a particular character" command

44 is the hex value for a "D"

0D is the hex value for a CR

The data is output as: **1234567890ABC**

<CR>

E9 Send all but the last characters

Syntax=E9nn (nn: The numeric value (00-99) for the number of characters that will not be sent at the end of the message)

Include in the output message all but the last "nn" characters, starting from the current cursor position. The cursor is moved forward to one position past the last input message character included.

F4 Insert a character multiple times

Syntax=F4xxnn (xx: The insert character's hex value; nn: The numeric value (00-99) for the number of times it should be sent)

Send "xx" character "nn" times in the output message, leaving the cursor in the current position.



0006000

**** Exit Setup**



0006010

Enter Setup

E9 and F4 Example: Send all but the last characters, followed by 2 tabs



Send all characters except for the last 8 from the barcode above, followed by 2 tabs.

Command string: **E908F40902**

E9 is the “Send all but the last characters” command

08 is the number of characters at the end to ignore

F4 is the “Insert a character multiple times” command

09 is the hex value for a horizontal tab

02 is the number of times the tab character is sent

The data is output as: **1234567890AB<tab><tab>**

B3 Insert symbology name

Insert the name of the barcode’s symbology in the output message, without moving the cursor.

B4 Insert barcode length

Insert the barcode’s length in the output message, without moving the cursor. The length is expressed as a numeric string and does not include leading zeros.



0006000

**** Exit Setup**



0006010

Enter Setup**B3 and B4 Example: Insert the symbology name and length**

Send the symbology name and length before the barcode data from the barcode above. Break up these insertions with spaces. End with a carriage return.

Command string: **B3F42001B4F42001F10D**

B3 is the “Insert symbology name” command

F4 is the “Insert a character multiple times” command

20 is the hex value for a space

01 is the number of time the space character is sent

B4 is the “Insert barcode length” command

F4 is the “Insert a character multiple times” command

20 is the hex value for a space

01 is the number of time the space character is sent

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as: **Code128 20 1234567890ABCDEFGHIJ**
<CR>

Move Commands**F5 Move the cursor forward a number of characters**

Syntax=F5nn (nn: The numeric value (00-99) for the number of characters the cursor should be moved ahead)

Move the cursor ahead “nn” characters from current cursor position.



0006000

**** Exit Setup**



0006010

Enter Setup

F5 Example: Move the cursor forward and send the data



Move the cursor forward 3 characters, then send the rest of the barcode data from the barcode above.
End with a carriage return.

Command string: **F503F10D**

F5 is the “Move the cursor forward a number of characters” command

03 is the number of characters to move the cursor

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as: **4567890ABCDEFGHIJ**

<CR>

F6 Move the cursor backward a number of characters

Syntax=F6nn (nn: The numeric value (00-99) for the number of characters the cursor should be moved back)

Move the cursor back “nn” characters from current cursor position.

F7 Move the cursor to the beginning

Syntax=F7

Move the cursor to the first character in the input message.

EA Move the cursor to the end

Syntax=EA

Move the cursor to the last character in the input message.



0006000

**** Exit Setup**



0006010

Enter Setup

Search Commands

F8 Search forward for a character

Syntax=F8xx (xx: The search character's hex value)

Search the input message forward for "xx" character from the current cursor position, leaving the cursor pointing to the "xx" character.

F8 Example: Send barcode data that starts after a particular character



Search for the letter "D" in barcodes and send all the data that follows, including the "D". Using the barcode above:

Command string: **F844F10D**

F8 is the "Search forward for a character" command

44 is the hex value for "D"

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: **DEFGHIJ**

<CR>

F9 Search backward for a character

Syntax=F9xx (xx: The search character's hex value)

Search the input message backward for "xx" character from the current cursor position, leaving the cursor pointing to the "xx" character.



0006000

** Exit Setup



0006010

Enter Setup

B0 Search forward for a string

Syntax=B0nnnnS (nnnn: The string length (up to 9999); S: The ASCII hex value of each character in the string)

Search forward for “S” string from the current cursor position, leaving cursor pointing to “S” string. For example, B0000454657374 will search forward for the first occurrence of the 4-character string “Test.”

B0 Example: Send barcode data that starts after a string of characters



Search for the letters “FGH” in barcodes and send all the data that follows, including “FGH.” Using the barcode above:

Command string: **B0003464748F10D**

B0 is the “Search forward for a string” command

0003 is the string length (3 characters)

46 is the hex value for “F”

47 is the hex value for “G”

48 is the hex value for “H”

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as: **FGHIJ**

<CR>

B1 Search backward for a string

Syntax=B1nnnnS (nnnn: The string length (up to 9999); S: The ASCII hex value of each character in the string)

Search backward for “S” string from the current cursor position, leaving cursor pointing to “S” string. For example, B1000454657374 will search backward for the first occurrence of the 4-character string “Test.”



0006000

**** Exit Setup**



0006010

Enter Setup

E6 Search forward for a non-matching character

Syntax=E6xx (xx: The search character's hex value)

Search the input message forward for the first non-"xx" character from the current cursor position, leaving the cursor pointing to the non-"xx" character.

E6 Example: Remove zeros at the beginning of barcode data



This example shows a barcode that has been zero filled. You may want to ignore the zeros and send all the data that follows. E6 searches forward for the first character that is not zero, then sends all the data after, followed by a carriage return. Using the barcode above:

Command string: **E630F10D**

E6 is the "Search forward for a non-matching character" command

30 is the hex value for 0

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: **37692**

<CR>

E7 Search backward for a non-matching character

Syntax=E7xx (xx: The search character's hex value)

Search the input message backward for the first non-"xx" character from the current cursor position, leaving the cursor pointing to the non-"xx" character.



0006000

**** Exit Setup**



0006010

Enter Setup

Miscellaneous Commands

FB Suppress characters

Syntax=FBnnxxyy..zz (nn: The numeric value (00-15) for the number of suppressed characters; xxyy..zz: The hex value of the characters to be suppressed)

Suppress all occurrences of up to 15 different characters, starting at the current cursor position, as the cursor is advanced by other commands.

FB Example: Remove spaces in barcode data



This example shows a barcode that has spaces in the data. You may want to remove the spaces before sending the data. Using the barcode above:

Command string: **FB0120F10D**

FB is the “Suppress characters” command

01 is the number of the characters to be suppressed

20 is the hex value for a space

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as: **34567890**

<CR>



0006000

**** Exit Setup**



0006010

Enter Setup

E4 Replace characters

Syntax=E4nnxx₁xx₂yy₁yy₂...zz₁zz₂ (nn: The total count of the number of characters (characters to be replaced plus replacement characters; xx₁: The characters to be replaced, xx₂: The replacement characters, continuing through zz₁ and zz₂)

Replace up to 15 characters in the output message, without moving the cursor.

E4 Example: Replace zeros with CRs in barcode data



If the barcode has characters that the host application does not want included, you can use the E4 command to replace those characters with something else. In this example, you will replace the zeros in the barcode above with carriage returns.

Command string: **E402300DF10D**

E4 is the “Replace characters” command

02 is the total count of characters to be replaced, plus the replacement characters (0 is replaced by CR, so total characters=2)

30 is the hex value for 0

0D is the hex value for a CR (the character that will replace the 0)

F1 is the “Send all characters” command

0D is the hex value for a CR

The data is output as: **1234**

5678

ABC

<CR>



0006000

**** Exit Setup**



0006010

Enter Setup**BA Replace a string with another**Syntax=BA nn NN₁SS₁NN₂SS₂

nn : The count of replacements to be made, if $nn=00$ or $nn \geq$ the number of occurrences of a string to be replaced, then replace all occurrences of that string.

NN₁: The length of the string to be replaced, NN₁>0.

SS₁: The ASCII hex value of each character in the string to be replaced.

NN₂: The length of replacement string, NN₂ \geq 0. To replace string "SS₁" with NUL (i.e. delete string "SS₁"), you should set NN₂ to 00 and leave out SS₂.

SS₂: The ASCII hex value of each character in the replacement string

From the current cursor position, search forward for the occurrence of "SS₁" string (of length "NN₁") and replace the string with "SS₂" string (of length "NN₂") in the output message until every "SS₁" string is replaced or the count of replacements made reaches " nn " times, without moving the cursor.

BA Example: Replace "23"s with "ABC"s in barcode data

cd123abc23bc12ab232

If the barcode has a string of characters that the host application does not want included, you can use the BA command to replace the string with something else. In this example, you will replace the "23"s in the barcode above with "ABC"s.

Command string: **BA0002323303414243F100**

BA is the "Replace a string with another" command

00 is the count of replacements to be made, 00 means to replace all occurrences of that string

02 is the length of the string to be replaced



0006000

**** Exit Setup**



0006010

Enter Setup

32 is the hex value for 2 (character in the string to be replaced)

33 is the hex value for 3 (character in the string to be replaced)

03 is the length of the replacement string

41 is the hex value for A (character in the replacement string)

42 is the hex value for B (character in the replacement string)

43 is the hex value for C (character in the replacement string)

F1 is the "Send all characters" command

00 is the hex value for a NUL

The data is output as: **cd1ABCabcABCbc12abABC2**

BA Example: Remove only the first occurrence of "23"s in barcode data

If the barcode has a string of characters that the host application wants removed, you can use the BA command to replace the string with NUL. In this example, you will remove the first occurrence of "23" in the barcode above.

Command string: **BA0102323300F100**

BA is the "Replace a string with another" command

01 is the count of replacements to be made

02 is the length of the string to be replaced

32 is the hex value for 2 (character in the string to be replaced)

33 is the hex value for 3 (character in the string to be replaced)

00 is the length of the replacement string, 00 means to replace the string to be replaced with NUL

F1 is the "Send all characters" command

00 is the hex value for a NUL

The data is output as: **cd1abc23bc12ab232**



0006000

**** Exit Setup**



0006010

Enter Setup

Chapter 9 Batch Programming

Introduction

Batch programming enables users to integrate a batch of commands into a single batch barcode.

Listed below are batch programming rules:

1. Command format: Command + "=" + Parameter Value.
2. Each command is terminated by a semicolon (;). Note that there is no space between a command and its terminator semicolon.
3. Use the barcode generator software to generate a 2D batch barcode.

Example: Create a batch barcode for **Illumination Always On** (0200010), **Sense Mode** (0302010), **Decode Session Timeout** (0313000) = 2s:

1. Input the commands:

0200010;0302010;0313000=2000;

2. Generate a batch barcode.

When setting up a scanner with the above configuration, scan the **Enable Batch Barcode** barcode and then the batch barcode generated.



0001110

Enable Batch Barcode

0006000

**** Exit Setup**



0006010

Enter Setup

Create a Batch Command

A batch command may contain a number of individual commands each of which is terminated by a semicolon (;).

Command Structure: Command (+ "=" + Parameter Value)

4 command syntaxes are described as below:

1. Syntax 1: Command

This syntax applies to most configuration situations.

Example:

Set the Baud Rate to 38400bps: **0100060**

Enable the Sense Mode: **0302010**

2. Syntax 2: Command + "=" + Decimal Digit(s)

This syntax applies to the options/features programming which requires the entry of parameter value (decimal), such as the Maximum/Minimum Length, Decode Session Timeout, Timeout between Decodes (Same Barcode) and Sensitivity.

Example:

Set the Decode Session Timeout to 3000ms: **0313000=3000**

Set the Sensitivity to (level) 10: **0312040=10**

3. Syntax 3: Command + "=" + Hexadecimal Digit(s) (e.g., 0x101A, 0x2C03)

This syntax applies to the features/options programming like the Custom Prefix/Suffix, Terminating Character Suffix, Code ID Suffix, which requires the entry of parameter value (hexadecimal).

Example:

Set the Terminating Character Suffix to CR/LF: **0310000=0x0D0A**

4. Syntax 4: Command + "=" + Double Quotation Marks

For situations where the parameter value is visible character in Syntax 3, this syntax is also appropriate.

Example:

Set the Custom Prefix to AUTO-ID: **0300000="AUTO-ID"**



0006000

** Exit Setup



0006010

Enter Setup

Create a Batch Barcode

Batch barcodes can be produced in the format of PDF417, QR Code or Data Matrix.

Example: Create a batch barcode for **Illumination Always On, Sense Mode, Decode Session Timeout = 2s**:

1. Input the following commands:

0200010;0302010;0313000=2000;

2. Generate a QR batch barcode.



0006000

**** Exit Setup**

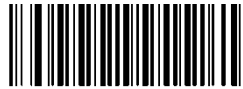


0006010

Enter Setup

Use Batch Barcode

To put a batch barcode into use, scan the following barcodes. (Use the example above.)



0006010

Enter Setup



0001110

Enable Batch Barcode



Batch Barcode



0006000

Exit Setup



0006000

**** Exit Setup**

Appendix

Digit Barcodes

After scanning numeric barcode(s), you need to scan the **Save** barcode to save the data.

0~5



0000000

0



0000010

1



0000020

2



0000030

3



0000040

4



0000050

5



0000060

6



0000070

7



0000080

8



0000090

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 scanner is still in the setup mode.



Factory Defaults Table

Parameter		Factory Default	Remark
System Settings			
Barcode Programming		Disabled	
Auto Power-Off Timeout		5 minutes	Applicable to Manual mode only
Illumination		Normal	
Aiming		Normal	
Startup Beep		Enabled	
Good Read Beep	Notification	Enabled	
	Beep Type	Type 3	
	Beep Volume	Loud	
NGR (Not Good Read) Message		Do not transmit	
		Null	
Scan Mode		Manual mode	
Manual Mode	Decode Session Timeout	3,000ms	Applicable to Trigger mode, Sense mode and Continuous mode 100~3,600,000ms
	Trigger Condition	Level trigger	
	Auto Sleep	Enabled	
	Time Period from Idle to Sleep	500ms	0~65,535ms
	Timeout between Decodes (Same Barcode)	Disabled	
		1,500ms	0~65,535ms
Sense Mode	Decode Session Timeout	3,000ms	Applicable to Trigger mode, Sense mode and Continuous mode 100~3,600,000ms
	Image Stabilization Timeout	500ms	0~1,600ms
	Operation after Good Decode	Pause after good decode	
	Timeout between Decodes (Same Barcode)	Enabled	
		1,500ms	0~65,535ms
	Threshold Value of Illumination Change	2	1~20
Continuous Mode	Decode Session Timeout	3,000ms	Applicable to Trigger mode, Sense mode and Continuous mode 100~3,600,000ms
	Timeout between Decodes	1,000ms	0~65,535ms
	Timeout between Decodes (Same Barcode)	Disabled	
		1,500ms	0~65,535ms

Parameter		Factory Default	Remark
Decode Area		Whole Area Decoding	
Specify Decoding Area		40% top, 60% bottom, 40% left, 60% right	
Communication Settings			
Wireless Communication Mode		Synchronous Mode	
Host Acknowledgment		Disabled	Only applicable to Synchronous mode
Host Acknowledgment Timeout		3s	Only applicable to Batch mode
Stored Data after Batch Transmission		Auto Delete	
USB HID-KBW		USB HID-KBW	
RS-232	Baud Rate	115200	
	Parity Check	None	
	Number of Data Bits	8	
	Number of Stop Bits	1	
	Hardware Flow Control	Disabled	
USB HID-KBW	Examine KBW Connection	Enabled	
	USB Country Keyboard Type	U.S.	
	Inter-Keystroke Delay	No delay	
	Convert Case	No conversion	
	Emulate ALT + Keypad	Disabled	
	Function Key Mapping	Disabled	
	Emulate Numeric Keypad	Disabled	
Prefix & Suffix			
Prefix Sequence		Custom+Code ID+AIM ID	
Custom Prefix		Disabled	
		Null	
AIM ID Prefix		Disabled	
Code ID Prefix		Disabled	
Custom Suffix		Disabled	
		Null	
Terminating Character Suffix		Enabled	
		0x0D, 0x0A	Carriage Return/Line Feed
Ambient Illumination			
Ambient Illumination		Normal illuminance	
Data Formatter			
Data Formatter		Disabled	
Enable Data Format		Format_0	
Non-Match Error Beep		On	

Parameter	Factory Default	Remark
Symbologies		
Video Reverse	Disabled	Applicable to all symbologies.
Code 128		
Code 128	Enabled	
Maximum Length	127	
Minimum Length	1	
UCC/EAN-128		
UCC/EAN-128	Enabled	
Maximum Length	127	
Minimum Length	1	
AIM-128		
AIM-128	Enabled	
Maximum Length	127	
Minimum Length	1	
EAN-8		
EAN-8	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Extend to EAN-13	Disabled	
EAN-13		
EAN-13	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
EAN-13 Beginning with 290 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 378/379 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 414/419 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 434/439 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 977 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 978 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 979 Add-On Code Required	Do Not Require Add-On Code	

Parameter	Factory Default	Remark
ISSN		
ISSN	Disabled	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
ISBN		
ISBN	Disabled	
ISBN Format	ISBN-13	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
UPC-E		
UPC-E	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Extend to UPC-A	Disabled	
System Character "0"	Do not transmit	
UPC-A		
UPC-A	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
System Character	Transmit	
Country Code	Do not transmit	
Interleaved 2 of 5		
Interleaved 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	100	
Minimum Length	6	
Febraban		
Febraban	Disabled	
ITF-6		
ITF-6	Disabled	
Check Digit	Do not transmit	

Parameter	Factory Default	Remark
ITF-14		
ITF-14	Disabled	
Check Digit	Do not transmit	
Matrix 2 of 5		
Matrix 2 of 5	Disabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
Industrial 2 of 5		
Industrial 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
Standard 2 of 5		
Standard 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
Code 39		
Code 39	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Start/Stop Character	Transmit	
Code 39 Full ASCII	Enabled	
Code 32	Disabled	
Code 32 Prefix	Disabled	
Code 32 Check Digit	Do not transmit	
Code 32 Start/Stop Character	Do not transmit	
Maximum Length	127	
Minimum Length	1	

Parameter	Factory Default	Remark
Codabar		
Codabar	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Start/Stop Character	Do not transmit	
Start/Stop Character Format	ABCD/ABCD	
Maximum Length	127	
Minimum Length	1	
Code 93		
Code 93	Enabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	3	
GS1 Databar		
GS1 Databar	Enabled	
Application Identifier "01"	Transmit	
Code 11		
Code 11	Enabled	
Check Digit Verification	One check digit, MOD11	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	2	
Plessey		
Plessey	Disabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	1	

Parameter	Factory Default	Remark
MSI-Plessey		
MSI-Plessey	Disabled	
Check Digit Verification	One check digit, MOD10	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	2	
PDF 417		
PDF 417	Enabled	
Maximum Length	1024	
Minimum Length	1	
QR Code		
QR Code	Enabled	
Micro QR	Enabled	
Maximum Length	1024	
Minimum Length	1	
Data Matrix		
Data Matrix	Enabled	
Rectangular Barcode	Enabled	
Mirror Image	Decode	
Maximum Length	1024	
Minimum Length	1	
Chinese Sensible Code		
Chinese Sensible Code	Disabled	
Maximum Length	7827	
Minimum Length	1	

AIM ID Table

Symbology	AIM ID	Remark
EAN-13	JE0	Standard EAN-13
	JE3	EAN-13 + 2/5-Digit Add-On Code
EAN-8	JE4	Standard EAN-8
	JE4...JE1...	EAN-8 + 2-Digit Add-On Code
	JE4...JE2...	EAN-8 + 5-Digit Add-On Code
UPC-E	JE0	Standard UPC-E
	JE3	UPC-E + 2/5-Digit Add-On Code
UPC-A	JE0	Standard UPC-A
	JE3	UPC-A + 2/5-Digit Add-On Code
Code 128	JC0	Standard Code 128
UCC/EAN-128	JC1	FNC1 is the character right after the start character
AIM-128	JC2	FNC1 is the 2nd character after the start character
ISBT-128	JC4	
Interleaved 2 of 5 Febraban	Jl0	No check digit verification
	Jl1	Transmit check digit after verification
	Jl3	Do not transmit check digit after verification
ITF-6	Jl1	Transmit check digit
	Jl3	Do not transmit check digit
ITF-14	Jl1	Transmit check digit
	Jl3	Do not transmit check digit
Industrial 2 of 5	JS0	Not specified
Standard 2 of 5	JR0	No check digit verification
	JR8	One check digit, MOD10; do not transmit check digit
	JR9	One check digit, MOD10; transmit check digit
Code 39	JA0	Transmit barcodes as is; Full ASCII disabled; no check digit verification
	JA1	One check digit, MOD43; transmit check digit
	JA3	One check digit, MOD43; do not transmit check digit
	JA4	Full ASCII enabled; no check digit verification
	JA5	Full ASCII enabled; transmit check digit
	JA7	Full ASCII enabled; do not transmit check digit

Symbology	AIM ID	Remark
Codabar	JF0	Standard Codabar
	JF2	Transmit check digit after verification
	JF4	Do not transmit check digit after verification
Code 93	JG0	Standard Code 93
Code 11	JH0	One check digit MOD11; transmit check digit
	JH1	Two check digits, MOD11/MOD11; transmit check digit
	JH3	Do not transmit check digit after verification
	JH9	No check digit verification
GS1-DataBar (RSS)	Je0	Standard GS1-DataBar
Plessey	JP0	Standard Plessey
MSI-Plessey	JM0	One check digit, MOD10; transmit check digit
	JM1	One check digit, MOD10; do not transmit check digit
	JM8	Two check digits
	JM9	No check digit verification
Matrix 2 of 5	JX0	Specified by the manufacturer
	JX1	No check digit verification
	JX2	One check digit, MOD10; transmit check digit
	JX3	One check digit, MOD11; do not transmit check digit
ISBN	JX4	Standard ISBN
ISSN	JX5	Standard ISSN
PDF417	JL0	Comply with 1994 PDF417 specifications
Data Matrix	jd0	ECC000 - ECC140
	jd1	ECC200
	jd2	ECC200, FNC1 is the 1st or 5th character after the start character
	jd3	ECC200, FNC1 is the 2nd or 6th character after the start character
	jd4	ECC200, ECI included
	jd5	ECC200, FNC1 is the 1st or 5th character after the start character, ECI included
	jd6	ECC200, FNC1 is the 2nd or 6th character after the start character, ECI included

Symbology	AIM ID	Remark
QR Code	]Q0	QR1
	]Q1	2005 version, ECI excluded
	]Q2	2005 version, ECI included
	]Q3	QR Code 2005, ECI excluded, FNC1 is the 1st character after the start character
	]Q4	QR Code 2005, ECI included, FNC1 is the 1st character after the start character
	]Q5	QR Code 2005, ECI excluded, FNC1 is the 2nd character after the start character
	]Q6	QR Code 2005, ECI included, FNC1 is the 2nd character after the start character
Chinese Sensible Code	]X0	

Reference: ISO/IEC 15424:2008 Information technology – Automatic identification and data capture techniques – Data Carrier Identifiers (including Symbology Identifiers).

Code ID Table

Symbology	Code ID
Code 128	j
UCC/EAN-128	j
AIM-128	f
EAN-8	d
EAN-13	d
ISSN	n
ISBN	B
UPC-E	c
UPC-A	c
Interleaved 2 of 5, Febraban	e
ITF-6	e
ITF-14	e
Matrix 2 of 5	v
Industrial 2 of 5	D
Standard 2 of 5	s
Code 39	b
Codabar	a
Code 93	i
Code 11	H
Plessey	p
MSI-Plessey	m
GS1 Databar	R
PDF417	r
QR Code	Q
Data Matrix	u
Chinese Sensible Code	h

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 Acknowledgement)
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)

Hex	Dec	Char
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	((Left / Opening 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)

Hex	Dec	Char
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)

Hex	Dec	Char
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)

ASCII Function Key Mapping Table

ASCII Function	ASCII Value (HEX)	No Function Key Mapping	Function Key Mapping
NUL (Null char.)	00	Null	Ctrl+2
SOH (Start of Header)	01	Keypad Enter	Ctrl+A
STX (Start of Text)	02	Caps Lock	Ctrl+B
ETX (End of Text)	03	Null	Ctrl+C
EOT (End of Transmission)	04	Null	Ctrl+D
ENQ (Enquiry)	05	Null	Ctrl+E
ACK (Acknowledgment)	06	Null	Ctrl+F
BEL (Bell)	07	Enter	Ctrl+G
BS (Backspace)	08	Left Arrow	Ctrl+H
HT (Horizontal Tab)	09	Horizontal Tab	Ctrl+I
LF (Line Feed)	0A	Down Arrow	Ctrl+J
VT (Vertical Tab)	0B	Vertical Tab	Ctrl+K
FF (Form Feed)	0C	Delete	Ctrl+L
CR (Carriage Return)	0D	Enter	Ctrl+M
SO (Shift Out)	0E	Insert	Ctrl+N
SI (Shift In)	0F	Esc	Ctrl+O
DLE (Data Link Escape)	10	F11	Ctrl+P
DC1 (XON) (Device Control 1)	11	Home	Ctrl+Q
DC2 (Device Control 2)	12	Print Screen	Ctrl+R
DC3 (XOFF) (Device Control 3)	13	Backspace	Ctrl+S
DC4 (Device Control 4)	14	tab+shift	Ctrl+T
NAK (Negative Acknowledgment)	15	F12	Ctrl+U
SYN (Synchronous Idle)	16	F1	Ctrl+V
ETB (End of Trans. Block)	17	F2	Ctrl+W
CAN (Cancel)	18	F3	Ctrl+X
EM (End of Medium)	19	F4	Ctrl+Y
SUB (Substitute)	1A	F5	Ctrl+Z
ESC (Escape)	1B	F6	See the following table
FS (File Separator)	1C	F7	
GS (Group Separator)	1D	F8	
RS (Request to Send)	1E	F9	
US (Unit Separator)	1F	F10	

ASCII Function Key Mapping Table (Continued)

The function key mappings of the last five characters in the previous table differ from one keyboard layout to another.

Country/ Keyboard Layout	Function Key Mapping				
	1B	1C	1D	1E	1F
United States	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-
Belgium	Ctrl+[	Ctrl+<	Ctrl+]	Ctrl+6	Ctrl+-
Scandinavia	Ctrl+8	Ctrl+<	Ctrl+9	Ctrl+6	Ctrl+-
France	Ctrl+^	Ctrl+8	Ctrl+\$	Ctrl+6	Ctrl+=
Germany		Ctrl+Ã	Ctrl++	Ctrl+6	Ctrl+-
Italy		Ctrl+\	Ctrl++	Ctrl+6	Ctrl+-
Switzerland		Ctrl+<	Ctrl+.	Ctrl+6	Ctrl+-
United Kingdom	Ctrl+[	Ctrl+ ¢	Ctrl+]	Ctrl+6	Ctrl+-
Denmark	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-
Norway	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-
Spain	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-

Symbology ID Number

Symbology	ID Number
Code 128	002
UCC/EAN128	003
EAN-8	004
EAN-13	005
UPC-E	006
UPC-A	007
Interleaved 2 of 5, Febraban	008
ITF-14	009
ITF-6	010
Matrix 2 of 5	011
Code 39, Code 32	013
Codabar	015
Code 93	017
AIM-128	020
ISSN	023
ISBN	024
Industrial 25	025
Standard 25	026
Plessey	027
Code11	028
MSI-Plessey	029
GS1 Databar	031
PDF417	032
QR Code	033
Data Matrix	035
Chinese Sensible Code	039



Newland EMEA HQ
+31 (0) 345 87 00 33
info@newland-id.com
newland-id.com

D-A-C-H
+49 (6) 182 82916-16
info@newland-id.de

United Kingdom
+44 (0) 1442 212020
sales@newland-id.co.uk

France
+39 (0) 345 8804096
france@newland-id.com

Russia
+31 (0) 345 87 00 33
russia@newland-id.com

Benelux
+31 (0) 345 87 00 33
benelux@newland-id.com

South Africa
Gauteng: +27 (0) 11 553 8010
Cape Town: +27 (0) 21 9140819
info@newland-id.co.za

Ibérica
+34 (0) 93 303 74 66
info@newland-id.es

Middle East
+39 (0) 345 8804096
middleeast@newland-id.com

Italy
+39 (0) 342 0562227
italy@newland-id.com

Turkey
+90 (0) 544 538 40 49
turkey@newland-id.com

Nordic & Baltic
+46 (0) 70 88 47 767
nordic@newland-id.com

Iran
+90 (0) 544 538 40 49
iran@newland-id.com