



# Newland

SCANNING MADE SIMPLE



## HR3290 CS Marlin

### Wireless 2D barcode scanner

user guide

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## Revision History

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

V1.1.0	<p>1. Added the <b>Reread Timeout Reset</b> features in Chapter 2.</p> <p>2. Added the <b>Code Page</b> and <b>Character Encoding</b> features in Chapter 4.</p> <p>3. Added the <b>Enable/Disable PDF417 ECI Output, Enable/Disable QR ECI Output, Enable/Disable Data Matrix ECI Output</b> and <b>Enable/Disable Chinese Sensible Code ECI Output</b> features in Chapter 5.</p> <p>4. Added the <b>Multiple Data Formats</b> feature in Chapter 8.</p> <p>5. Added the <b>Transmit No Preamble for UPC-A</b> feature in Chapter 5.</p> <p>6. Updated the programming barcodes for the <b>Good Read Beep Volume</b> feature in Chapter 2.</p> <p><b>Note:</b> You must have firmware version V1.3.11 or later to use the features in Item 1-4, V1.3.12 or later to use the feature in Item 5, and V1.3.17 or later to use the feature in Item 6.</p>	January 18, 2019
V1.1.1	<p>Added the <b>Mode 4</b> option for the Emulate ALT+Keypad feature in Chapter 4.</p> <p><b>Note:</b> Firmware version V1.3.18 or later is required for the new feature above.</p>	February 25, 2019

# Table of Contents

<b>Revision History .....</b>	<b>- 3 -</b>
<b>Preface.....</b>	<b>1</b>
Introduction .....	1
Chapter Description .....	1
Explanation of Icons .....	2
<b>Chapter 1 Getting Started.....</b>	<b>3</b>
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
<b>Chapter 2 System Settings.....</b>	<b>15</b>
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
Reread Timeout .....	30
Sense Mode .....	32
Decode Session Timeout .....	32
Image Stabilization Timeout .....	33
Continue after Good Read .....	33
Reread Timeout .....	34
Sensitivity .....	36
Continuous Mode .....	37
Decode Session Timeout .....	37

Timeout between Decodes.....	38
Reread Timeout.....	38
Decode Area .....	40
Whole Area Decoding.....	40
Specific Area Decoding.....	40
Specify Decoding Area .....	40
<b>Chapter 3 Inquiry Commands .....</b>	<b>43</b>
Introduction .....	43
Obtain Scanner Information.....	43
Obtain Cradle Information.....	43
Obtain FLASH Information.....	44
<b>Chapter 4 Communication Settings .....</b>	<b>45</b>
Introduction .....	45
Wireless Communication .....	45
Host Acknowledgment .....	46
Keep/Delete Stored Data after Batch Transmission .....	46
RS-232 Interface.....	47
Baud Rate.....	47
Parity Check .....	48
Stop Bit .....	48
Hareware Flow Control.....	49
Data Bit .....	49
USB Interface.....	50
USB HID-KBW .....	50
Examine KBW Connection.....	50
USB Country Keyboard Types .....	51
Inter-Keystroke Delay.....	53
Convert Case .....	54
Emulate ALT+Keypad.....	55
Function Key Mapping .....	56
Emulate Numeric Keypad .....	57
Code Page.....	57

Character Encoding.....	58
USB COM Port Emulation .....	59
USB HID-POS .....	59
Introduction .....	59
Access the Scanner with Your Program.....	59
Acquire Scanned Data .....	60
Send Data to the Scanner.....	60
VID/PID.....	60
<b>Chapter 5 Symbologies .....</b>	<b>61</b>
Introduction .....	61
General Settings .....	61
Disable All Symbologies .....	61
Enable All Symbologies .....	61
Enable 1D Symbologies .....	62
Disable 1D Symbologies .....	62
Enable 2D Symbologies .....	62
Disable 2D Symbologies .....	62
Video Reverse .....	63
Code 128 .....	64
Restore Factory Defaults.....	64
Enable/Disable Code 128.....	64
Set Length Range for Code 128.....	65
EAN-8.....	66
Restore Factory Defaults.....	66
Enable/Disable EAN-8.....	66
Transmit Check Digit .....	66
Add-On Code.....	67
Add-On Code Required.....	68
EAN-8 Extension .....	68
EAN-13.....	69
Restore Factory Defaults.....	69
Enable/Disable EAN-13.....	69



Transmit Check Digit .....	69
Add-On Code.....	70
Add-On Code Required.....	71
EAN-13 Beginning with 290 Add-On Code Required.....	72
EAN-13 Beginning with 378/379 Add-On Code Required .....	72
EAN-13 Beginning with 414/419 Add-On Code Required .....	73
EAN-13 Beginning with 434/439 Add-On Code Required .....	73
EAN-13 Beginning with 977 Add-On Code Required.....	74
EAN-13 Beginning with 978 Add-On Code Required.....	74
EAN-13 Beginning with 979 Add-On Code Required.....	75
UPC-E .....	76
Restore Factory Defaults.....	76
Enable/Disable UPC-E .....	76
Transmit Check Digit .....	76
Add-On Code.....	77
Add-On Code Required.....	78
Transmit System Character “0” .....	78
UPC-E Extension.....	79
UPC-A .....	80
Restore Factory Defaults.....	80
Enable/Disable UPC-A .....	80
Transmit Check Digit .....	80
Add-On Code.....	81
Add-On Code Required .....	82
Transmit Preamble Character .....	82
Interleaved 2 of 5 .....	83
Restore Factory Defaults.....	83
Enable/Disable Interleaved 2 of 5 .....	83
Set Length Range for Interleaved 2 of 5 .....	84
Check Digit Verification.....	85
Febraban.....	86
Disable/Enable Febraban .....	86
ITF-14.....	87

ITF-6.....	88
Matrix 2 of 5 .....	89
Restore Factory Defaults.....	89
Enable/Disable Matrix 2 of 5 .....	89
Set Length Range for Matrix 2 of 5 .....	90
Check Digit Verification.....	91
Code 39.....	92
Restore Factory Defaults.....	92
Enable/Disable Code 39.....	92
Transmit Start/Stop Character .....	92
Set Length Range for Code 39.....	93
Check Digit Verification.....	94
Enable/Disable Code 39 Full ASCII .....	95
Enable/Disable Code 32.....	95
Code 32 Prefix.....	95
Transmit Code 32 Check Digit.....	96
Transmit Code 32 Start/Stop Character .....	96
Codabar .....	97
Restore Factory Defaults.....	97
Enable/Disable Codabar.....	97
Set Length Range for Codabar .....	98
Check Digit Verification.....	99
Start/Stop Character .....	100
Code 93.....	101
Restore Factory Defaults.....	101
Enable/Disable Code 93.....	101
Set Length Range for Code 93.....	102
Check Digit Verification.....	103
UCC/EAN-128.....	104
Restore Factory Defaults.....	104
Enable/Disable UCC/EAN-128.....	104
Set Length Range for UCC/EAN-128.....	105
GS1 Databar .....	106

Restore Factory Defaults.....	106
Enable/Disable GS1 Databar .....	106
Transmit Application Identifier “01” .....	106
Code 11 .....	107
Restore Factory Defaults.....	107
Enable/Disable Code 11 .....	107
Set Length Range for Code 11 .....	108
Check Digit Verification.....	109
ISBN .....	110
Restore Factory Defaults.....	110
Enable/Disable ISBN .....	110
Set ISBN Format.....	110
Add-On Code.....	111
Add-On Code Required .....	112
ISSN .....	113
Restore Factory Defaults.....	113
Enable/Disable ISSN .....	113
Add-On Code.....	114
Add-On Code Required .....	115
AIM-128.....	116
Restore Factory Defaults.....	116
Enable/Disable AIM-128 .....	116
Set Length Range for AIM-128.....	117
Industrial 25 .....	118
Restore Factory Defaults.....	118
Enable/Disable Industrial 25.....	118
Set Length Range for Industrial 25.....	119
Check Digit Verification.....	120
Standard 25.....	121
Restore Factory Defaults.....	121
Enable/Disable Standard 25 .....	121
Set Length Range for Standard 25.....	122
Check Digit Verification.....	123

Plessey.....	124
Restore Factory Defaults.....	124
Enable/Disable Plessey.....	124
Set Length Range for Plessey.....	125
Check Digit Verification.....	126
MSI-Plessey.....	127
Restore Factory Defaults.....	127
Enable/Disable MSI-Plessey.....	127
Set Length Range for MSI-Plessey.....	128
Check Digit Verification.....	129
PDF417.....	130
Restore Factory Defaults.....	130
Enable/Disable PDF417.....	130
Set Length Range for PDF417.....	131
Enable/Disable PDF417 ECI Output.....	132
QR Code.....	133
Restore Factory Defaults.....	133
Enable/Disable QR Code.....	133
Set Length Range for QR Code.....	134
Micro QR.....	135
Enable/Disable QR ECI Output.....	135
Data Matrix.....	136
Restore Factory Defaults.....	136
Enable/Disable Data Matrix.....	136
Set Length Range for Data Matrix.....	137
Rectangular Barcode.....	138
Mirror Image.....	138
Enable/Disable Data Matrix ECI Output.....	138
Chinese Sensible Code.....	139
Restore Factory Defaults.....	139
Enable/Disable Chinese Sensible Code.....	139
Set Length Range for Chinese Sensible Code.....	139
Enable/Disable Chinese Sensible Code ECI Output.....	140

<b>Chapter 6 Prefix &amp; Suffix .....</b>	<b>141</b>
Introduction .....	141
General Settings .....	142
Enable/Disable All Prefix/Suffix .....	142
Prefix Sequences .....	142
Custom Prefix .....	143
Enable/Disable Custom Prefix.....	143
Set Custom Prefix.....	143
AIM ID Prefix.....	144
Code ID Prefix.....	144
Restore All Default Code IDs.....	145
Modify Code ID .....	145
Custom Suffix.....	149
Enable/Disable Custom Suffix.....	149
Set Custom Suffix .....	149
Terminating Character Suffix .....	150
Enable/Disable Terminating Character Suffix.....	150
Set Terminating Character Suffix.....	150
<b>Chapter 7 Ambient Illumination .....</b>	<b>152</b>
<b>Chapter 8 Data Formatter .....</b>	<b>153</b>
Introduction .....	153
Add a Data Format.....	153
Programming with Barcodes .....	154
Programming with a Batch Command .....	156
Enable/Disable Data Formatter .....	157
Non-Match Error Beep.....	158
Multiple Data Formats.....	159
Data Format Selection .....	159
Change Data Format for a Single Scan.....	160
Clear Data Format .....	161
Formatter Command Type 6.....	163
Send Commands.....	163

Move Commands .....	166
Search Commands.....	168
Miscellaneous Commands .....	171
<b>Chapter 9 Batch Programming .....</b>	<b>175</b>
Introduction .....	175
Create a Batch Command .....	176
Create a Batch Barcode .....	177
Use Batch Barcode .....	178
<b>Appendix .....</b>	<b>179</b>
Digit Barcodes.....	179
Save/Cancel Barcodes .....	181
Factory Defaults Table .....	182
AIM ID Table.....	189
Code ID Table .....	192
ASCII Table .....	193
ASCII Function Key Mapping Table.....	197
Symbology ID Number.....	199

# 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 &amp; 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

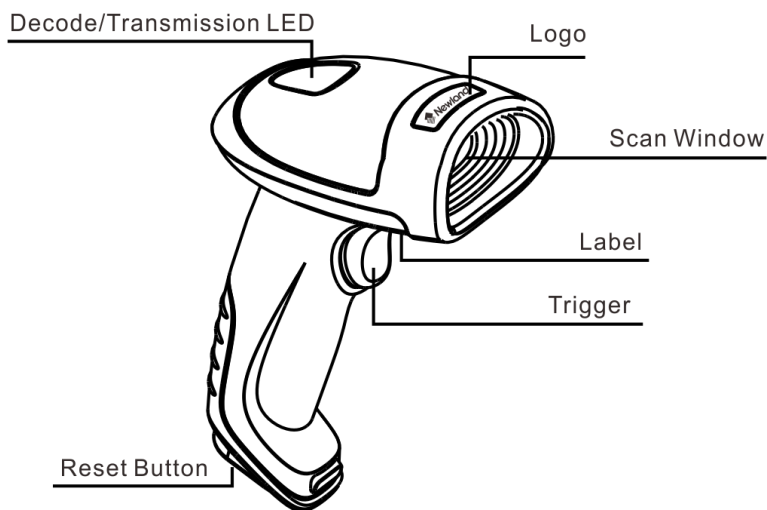


Fig. 1-1

### Decode/Transmission LED:

**Green:** Barcode decoded successfully.

Battery is fully charged.

**Blue:** Zigbee is available.

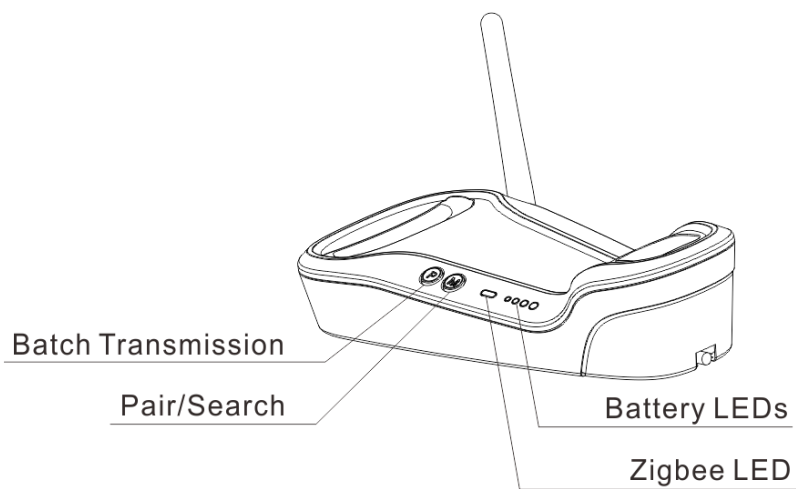
**Red:** Data transmission failed.

Device is charging.

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

---

## CD32 Cradle



**Fig. 1-2**

### **Buttons:**

**P:** Batch Transmission

**M:** Pair/Search

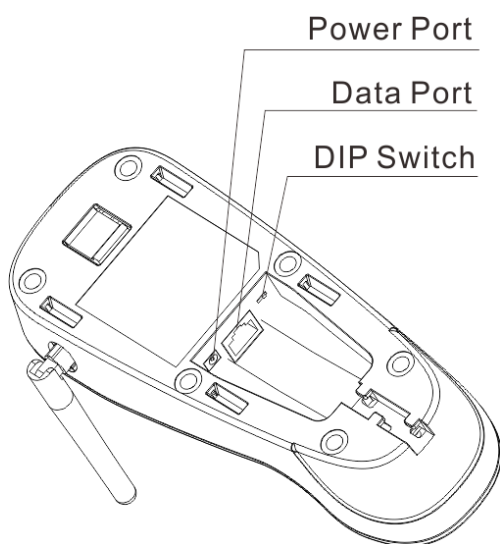
### **LEDs:**

**Zigbee LED (blue):**

Zigbee is available.

**Battery LEDs (green):**

Indicate battery level (four levels)



**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

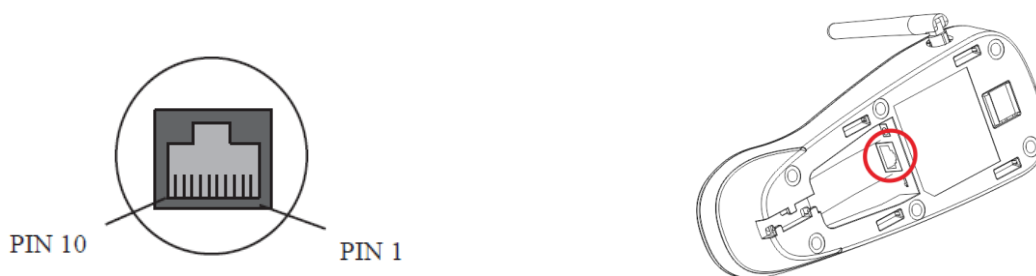


Fig. 1-4

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	

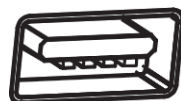
---

## 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

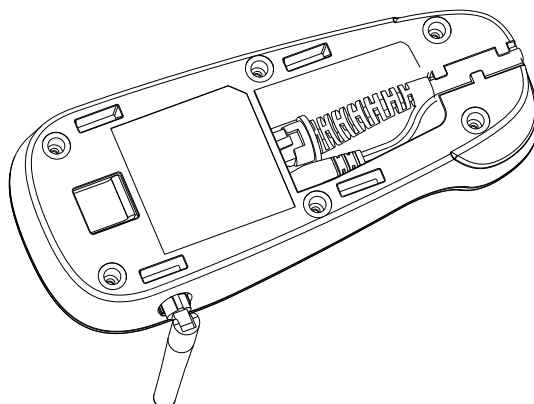
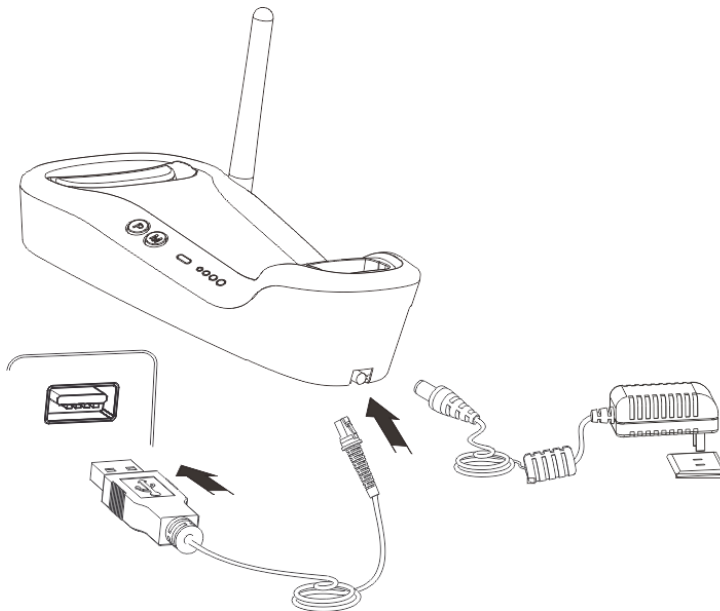


Fig. 1-5

---

## Using USB Cable



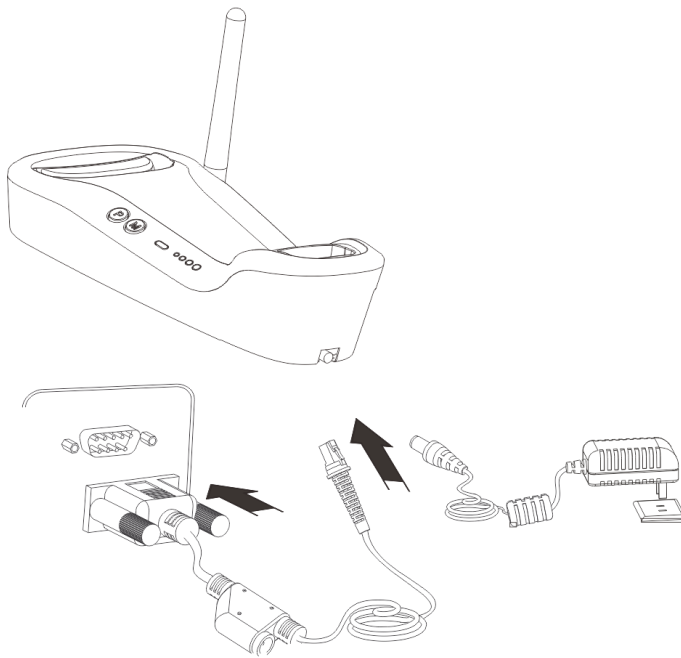
**Fig. 1-6**

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

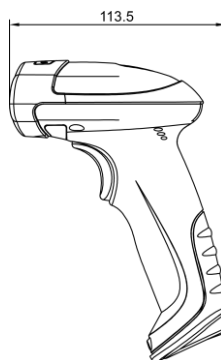


Fig. 1-8

### Front View

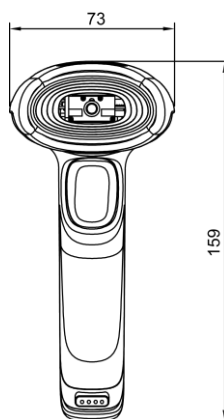


Fig. 1-9

### Top View

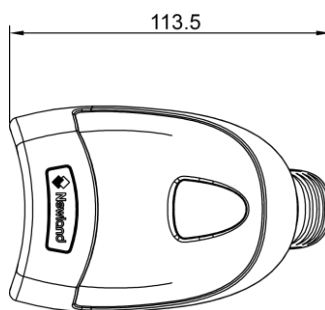
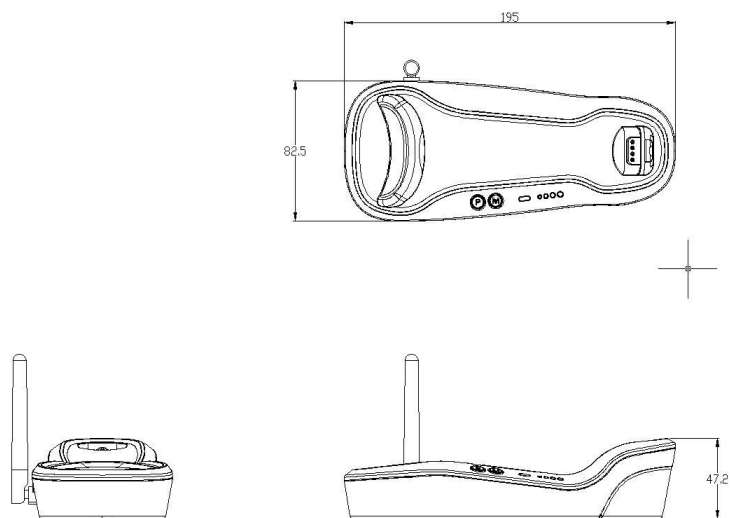


Fig. 1-10

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## Dimensions of CD32 Cradle (unit: mm)



**Fig. 1-11**

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## 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.

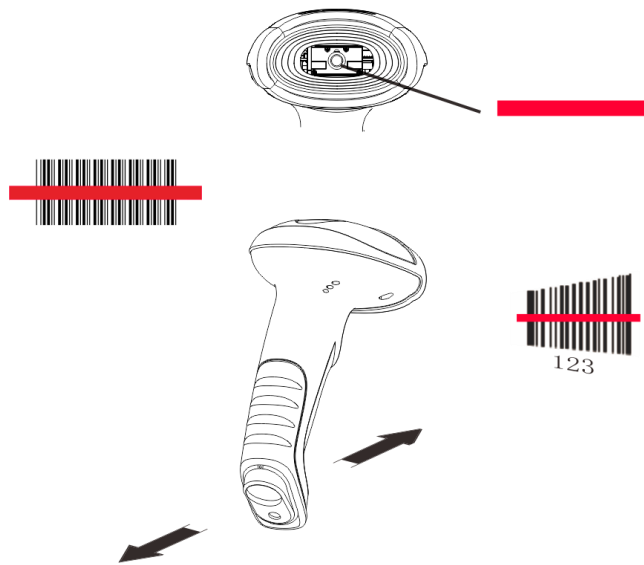


Fig. 1-12

---

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

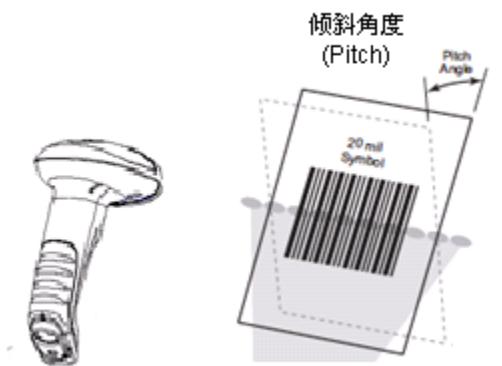


Fig. 1-13

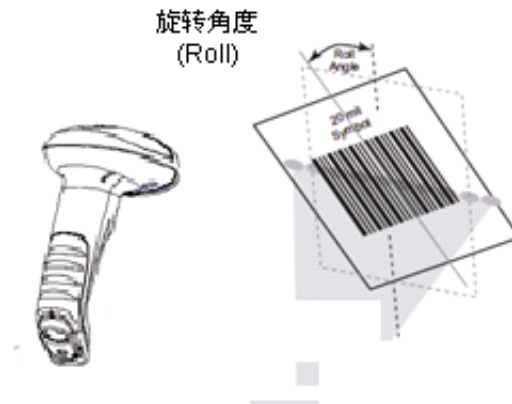


Fig. 1-14

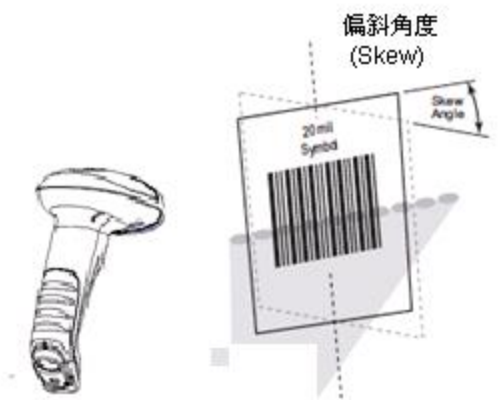


Fig. 1-15



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 Cradle**



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

There are 20 volume levels to choose from. The bigger the value, the louder the Good Read Beep.



@GRBVLL20

**\*\* Loud**



@GRBVLL10

**Medium**



@GRBVLL5

**Low**



@GRBVLL

**Custom Volume (Level 1-20)**

**E**  
*xample*

### Set the Good Read Beep volume to Level 8:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Volume** 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 **Exit Setup** barcode.

## 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**

---

## Reread Timeout

Reread Timeout can avoid undesired rereading of same barcode in a given period of time.

To enable/disable the Reread Timeout, scan the appropriate barcode below.

**Enable Reread Timeout:** Do not allow the scanner to re-read same barcode before the Reread Timeout expires.

**Disable Reread Timeout:** Allow the scanner to re-read same barcode.



0313161

**\*\* Disable Reread Timeout**



0313171

**Enable Reread Timeout**

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

**Reread Timeout**

**E**  
*xample*

### Set the Reread Timeout to 2,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Reread Timeout** 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**

---

You may wish to restart the reread timeout when the scanner encounters the same barcode that was decoded in the last scan session before the reread timeout expires. To enable this feature, scan the **Reread Timeout Reset On** barcode. This feature is only effective when **Reread Timeout** is enabled.



0313200

**\*\* Reread Timeout Reset Off**



0313201

**Reread Timeout Reset On**



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**

## Reread Timeout

Reread Timeout can avoid undesired rereading of same barcode in a given period of time.

To enable/disable the Reread Timeout, scan the appropriate barcode below.

**Enable Reread Timeout:** Do not allow the scanner to re-read same barcode before the Reread Timeout expires.

**Disable Reread Timeout:** Allow the scanner to re-read same barcode.



0313020

**Disable Reread Timeout**



0313030

**\*\* Enable Reread Timeout**

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

**Reread Timeout**

**E**  
*xample*

### Set the Reread Timeout to 2,500ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Reread Timeout** 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**

---

You may wish to restart the reread timeout when the scanner encounters the same barcode that was decoded in the last scan session before the reread timeout expires. To enable this feature, scan the **Reread Timeout Reset On** barcode. This feature is only effective when **Reread Timeout** is enabled.



0313200

**\*\* Reread Timeout Reset Off**



0313201

**Reread Timeout Reset On**



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.

### Reread Timeout

Reread Timeout can avoid undesired rereading of same barcode in a given period of time.

To enable/disable the Reread Timeout, scan the appropriate barcode below.

**Enable Reread Timeout:** Do not allow the scanner to re-read same barcode before the Reread Timeout expires.

**Disable Reread Timeout:** Allow the scanner to re-read same barcode.



0313160

**\*\* Disable Reread Timeout**

0313170

**Enable Reread Timeout**

0006000

**\*\* Exit Setup**



0006010

**Enter Setup**

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

**Reread Timeout****E**  
*xample***Set the Reread Timeout to 2,500ms:**

1. Scan the **Enter Setup** barcode.
2. Scan the **Reread Timeout** 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.

You may wish to restart the reread timeout when the scanner encounters the same barcode that was decoded in the last scan session before the reread timeout expires. To enable this feature, scan the **Reread Timeout Reset On** barcode. This feature is only effective when **Reread Timeout** is enabled.



0313200

**\*\* Reread Timeout Reset Off**

0313201

**Reread Timeout Reset On**

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

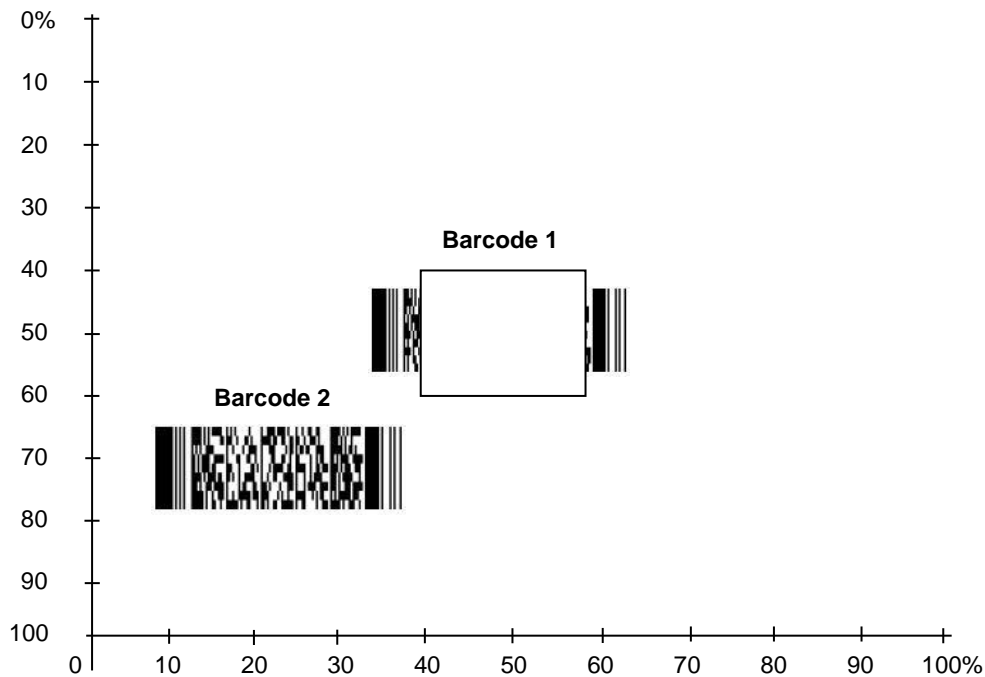
**\*\* Exit Setup**



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:



0006000

\*\* Exit Setup



0006010

**Enter Setup**

- 
1. Scan the **Enter Setup** barcode.
  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 twice 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.
- **Mode 4:** ASCII characters falling into 0x00~0x1F are sent in the ALT+Keypad way.

**Note:** In the event of a conflict between **Function Key Mapping** and **Mode 3/Mode 4, Function Key Mapping** shall govern.



EC02260

**\*\* Disable**



EC02261

**Mode 1**



EC02262

**Mode 2**



EC02263

**Mode 3**



EC02266

**Mode 4**



0006000

**\*\* Exit Setup**



0006010

**Enter Setup**

**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"

## 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**

## Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the barcode being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, select the code page with which the barcodes were created by scanning the appropriate barcode below. This feature is only effective when **Emulate ALT+Keypad** is turned on.



EC02270

**\*\* Code Page 1252 (West European Latin)**



EC02271

**Code Page 1251 (Cyrillic)**



EC02272

**Code Page 1254 (Turkish)**



EC02273

**Code Page 1256 (Arabic)**



0006000

**\*\* Exit Setup**



0006010

**Enter Setup**

---

## Character Encoding



EC02234

**\*\* Default Character Encoding**



EC02235

**UTF-8**



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](http://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 Symbologies**



0001040

**Enable 1D Symbologies**

## **Disable 1D Symbologies**



0001030

**Disable 1D Symbologies**

## **Enable 2D Symbologies**



0001060

**Enable 2D Symbologies**

## **Disable 2D Symbologies**



0001050

**Disable 2D Symbologies**

---



0006000

**\*\* Exit Setup**



0006010

Enter Setup

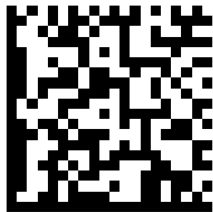
## Video Reverse

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), or transmit no preamble.



0404090

**\*\* System Character**



0404100

**System Character & Country Code**



0404180

**No Preamble**



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&lt;=10)

Two Check Digits, MOD11/MOD11(Len&gt;10)



0415060

\*\* One Check Digit, MOD11



0415100

【 One Check Digit, MOD11 (Len&lt;=10)

【 Two Check Digits, MOD11/MOD9 (Len&gt;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**

---

## **Enable/Disable PDF417 ECI Output**



0501341

**Disable PDF417 ECI Output**



0501340

**\*\* Enable PDF417 ECI Output**



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**

## Enable/Disable QR ECI Output



0502151

**Disable QR ECI Output**



0502150

**\*\* Enable QR ECI Output**



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**

## Enable/Disable Data Matrix ECI Output



0504341

**Disable Data Matrix ECI Output**



0504340

**\*\* Enable Data Matrix ECI Output**



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**

---

## **Enable/Disable Chinese Sensible Code ECI Output**



0508111

**Disable Chinese Sensible Code ECI Output**



0508110

**\*\* Enable Chinese Sensible Code ECI Output**



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.



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**\*\* Exit Setup**



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**Enter Setup**

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## 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.



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**\*\* Exit Setup**





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**Enter Setup**

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



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**\*\* Exit Setup**



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Enter Setup

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## 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”;**



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\*\* Exit Setup



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Enter Setup

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## 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).



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**\*\* Exit Setup**



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**Enter Setup**

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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**



0006000

**\*\* Exit Setup**



0006010

Enter Setup

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## Multiple Data Formats

After the Data Formatter is enabled, you can set the scanner to use one or multiple data formats by scanning the appropriate barcode below.

**Multiple Data Formats Off:** Only one data format (default: Format\_0) is put into use. To learn how to switch to another data format, see the “Data Format Selection” section below.

**Multiple Data Formats On:** The scanner toggles from Format\_0 through Format\_3 until scanned data matches the requirements of one data format. If no match is found, the scanner generates an error beep (if Non-Match Error Beep is turned ON) and the data is not transmitted.



0323080

**\*\* Multiple Formats Off**



0323081

**Multiple Formats On**

## Data Format Selection

You can select a data format you want to use by scanning the appropriate barcode below. Note that this setting is valid only when the **Multiple Data Formats** feature is turned off.



0323030

**\*\* Format\_0**



0323031

**Format\_1**



0323032

**Format\_2**



0323033

**Format\_3**



0006000

**\*\* Exit Setup**



0006010

Enter Setup

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## 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. This setting is valid only when the **Multiple Data Formats** feature is turned off.

For example, you may have set your scanner to use 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**

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## 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**

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0006000

**\*\* Exit Setup**





0006010

Enter Setup

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## 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.



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\*\* Exit Setup



0006010

Enter Setup

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### 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.



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\*\* 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

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#### **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



1234567890ABCDEFGHIJ

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

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### 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: **B00003464748F10D**

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**

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### **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

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## Miscellaneous Commands

### FB Suppress characters

Syntax=FBnnxyy..zz (nn: The numeric value (00-15) for the number of suppressed characters; xyy..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



345 678 90

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=E4nnxx<sub>1</sub>xx<sub>2</sub>yy<sub>1</sub>yy<sub>2</sub>...zz<sub>1</sub>zz<sub>2</sub> (nn: The total count of the number of characters (characters to be replaced plus replacement characters; xx<sub>1</sub>: The characters to be replaced, xx<sub>2</sub>: The replacement characters, continuing through zz<sub>1</sub> and zz<sub>2</sub>)

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

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## BA Replace a string with another

Syntax=BA $nn$ NN<sub>1</sub>SS<sub>1</sub>NN<sub>2</sub>SS<sub>2</sub>

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

NN<sub>1</sub>: The length of the string to be replaced, NN<sub>1</sub>>0.

SS<sub>1</sub>: The ASCII hex value of each character in the string to be replaced.

NN<sub>2</sub>: The length of replacement string, NN<sub>2</sub>>=0. To replace string "SS<sub>1</sub>" with NUL (i.e. delete string "SS<sub>1</sub>"), you should set NN<sub>2</sub> to 00 and leave out SS<sub>2</sub>.

SS<sub>2</sub>: The ASCII hex value of each character in the replacement string

From the current cursor position, search forward for the occurrence of "SS<sub>1</sub>" string (of length "NN<sub>1</sub>") and replace the string with "SS<sub>2</sub>" string (of length "NN<sub>2</sub>") in the output message until every "SS<sub>1</sub>" 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

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0006000

\*\* Exit Setup



0006010

**Enter Setup**

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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

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## 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, Reread Timeout 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**

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## 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**

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## 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**



0000100

**A**



0000110

**B**



0000120

**C**



0000130

**D**



0000140

**E**



0000150

**F**

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## 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
<b>System Settings</b>			
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
	Reread Timeout	Disabled 1,500ms	0~65,535ms
	Reread Timeout Reset	Off	
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	
	Reread Timeout	Enabled 1,500ms	0~65,535ms
	Reread Timeout Reset	Off	
	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
	Reread Timeout	Disabled 1,500ms	0~65,535ms
	Reread Timeout Reset	Off	

Parameter		Factory Default	Remark
Decode Area		Whole Area Decoding	
Specify Decoding Area		40% top, 60% bottom, 40% left, 60% right	
<b>Communication Settings</b>			
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	
	Code Page	Code Page 1252	
	Character Encoding	Default Character Encoding	
<b>Prefix &amp; Suffix</b>			
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
<b>Ambient Illumination</b>			
Ambient Illumination		Normal illuminance	
<b>Data Formatter</b>			
Data Formatter		Disabled	
Non-Match Error Beep		On	
Multiple Data Formats		Off	
Data Format Selection		Format_0	

Parameter	Factory Default	Remark
<b>Symbologies</b>		
Video Reverse	Disabled	Applicable to all symbologies.
<b>Code 128</b>		
Code 128	Enabled	
Maximum Length	127	
Minimum Length	1	
<b>UCC/EAN-128</b>		
UCC/EAN-128	Enabled	
Maximum Length	127	
Minimum Length	1	
<b>AIM-128</b>		
AIM-128	Enabled	
Maximum Length	127	
Minimum Length	1	
<b>EAN-8</b>		
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	
<b>EAN-13</b>		
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
<b>ISSN</b>		
ISSN	Disabled	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
<b>ISBN</b>		
ISBN	Disabled	
ISBN Format	ISBN-13	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
<b>UPC-E</b>		
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	
<b>UPC-A</b>		
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	
<b>Interleaved 2 of 5</b>		
Interleaved 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	100	
Minimum Length	6	
<b>Febraban</b>		
Febraban	Disabled	
<b>ITF-6</b>		
ITF-6	Disabled	
Check Digit	Do not transmit	

Parameter	Factory Default	Remark
<b>ITF-14</b>		
ITF-14	Disabled	
Check Digit	Do not transmit	
<b>Matrix 2 of 5</b>		
Matrix 2 of 5	Disabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
<b>Industrial 2 of 5</b>		
Industrial 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
<b>Standard 2 of 5</b>		
Standard 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	
<b>Code 39</b>		
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
<b>Codabar</b>		
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	
<b>Code 93</b>		
Code 93	Enabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	3	
<b>GS1 Databar</b>		
GS1 Databar	Enabled	
Application Identifier "01"	Transmit	
<b>Code 11</b>		
Code 11	Enabled	
Check Digit Verification	One check digit, MOD11	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	2	
<b>Plessey</b>		
Plessey	Disabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	1	

Parameter	Factory Default	Remark
<b>MSI-Plessey</b>		
MSI-Plessey	Disabled	
Check Digit Verification	One check digit, MOD10	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	2	
<b>PDF417</b>		
PDF417	Enabled	
Maximum Length	1024	
Minimum Length	1	
PDF417 ECI Output	Enabled	
<b>QR Code</b>		
QR Code	Enabled	
Micro QR	Enabled	
Maximum Length	1024	
Minimum Length	1	
QR ECI Output	Enabled	
<b>Data Matrix</b>		
Data Matrix	Enabled	
Rectangular Barcode	Enabled	
Mirror Image	Decode	
Maximum Length	1024	
Minimum Length	1	
Data Matrix ECI Output	Enabled	
<b>Chinese Sensible Code</b>		
Chinese Sensible Code	Disabled	
Maximum Length	7827	
Minimum Length	1	
Chinese Sensible Code ECI Output	Enabled	

## AIM ID Table

Symbology	AIM ID	Remark
<b>EAN-13</b>	]E0	Standard EAN-13
	]E3	EAN-13 + 2/5-Digit Add-On Code
<b>EAN-8</b>	]E4	Standard EAN-8
	]E4...]E1...	EAN-8 + 2-Digit Add-On Code
	]E4...]E2...	EAN-8 + 5-Digit Add-On Code
<b>UPC-E</b>	]E0	Standard UPC-E
	]E3	UPC-E + 2/5-Digit Add-On Code
<b>UPC-A</b>	]E0	Standard UPC-A
	]E3	UPC-A + 2/5-Digit Add-On Code
<b>Code 128</b>	]C0	Standard Code 128
<b>UCC/EAN-128</b>	]C1	FNC1 is the character right after the start character
<b>AIM-128</b>	]C2	FNC1 is the 2nd character after the start character
<b>ISBT-128</b>	]C4	
<b>Interleaved 2 of 5 Febraban</b>	]I0	No check digit verification
	]I1	Transmit check digit after verification
	]I3	Do not transmit check digit after verification
<b>ITF-6</b>	]I1	Transmit check digit
	]I3	Do not transmit check digit
<b>ITF-14</b>	]I1	Transmit check digit
	]I3	Do not transmit check digit
<b>Industrial 2 of 5</b>	]S0	Not specified
<b>Standard 2 of 5</b>	]R0	No check digit verification
	]R8	One check digit, MOD10; do not transmit check digit
	]R9	One check digit, MOD10; transmit check digit
<b>Code 39</b>	]A0	Transmit barcodes as is; Full ASCII disabled; no check digit verification
	]A1	One check digit, MOD43; transmit check digit
	]A3	One check digit, MOD43; do not transmit check digit
	]A4	Full ASCII enabled; no check digit verification
	]A5	Full ASCII enabled; transmit check digit
	]A7	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

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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).

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## 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

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## 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)

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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)



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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)

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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)

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## 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	

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### 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+-

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## 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



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