



NLS-FR4060-30

NLS-FR4060-33

NLS-FR4060-38

Desktop Barcode Scanner

User Guide

Disclaimer

© 2015-2017 Fujian Newland Auto-ID Tech. Co., Ltd. All rights reserved.

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

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

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

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

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

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

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

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

<http://www.nlscan.com>

Revision History

Version	Description	Date
V1.0.0	Initial release.	September 6, 2015
V1.0.1	<ol style="list-style-type: none"> 1. Added the Inquire Product Information feature in Chapter 2. 2. Added the Timeout between Decodes (Same Barcode) feature for the Sense and Continuous modes in Chapter 4. 3. Added the Polling Rate feature and the Russian keyboard feature along with the programming procedure in Chapter 6. 4. Added the Character Encoding feature for PDF417, QR Code and Data Matrix in Chapter 8. <p>Note: You must have firmware version V1.01.017 or later to use the new features above.</p>	June 2, 2016
V1.0.2	<ol style="list-style-type: none"> 1. Added the Enable/Disable the Switch feature in Chapter 3. 2. Added Chapter 7 PS/2 Interface. 3. Added Chapter 9 Data Formatter. 4. Added Chapter 10 Batch Programming. <p>Note: You must have firmware version V1.01.031 and hardware version V2.1 or later to use the new feature above.</p>	August 24, 2016
V1.0.3	<ol style="list-style-type: none"> 1. Added the Specify Decoding Area (Top, Bottom, Left, Right) feature in Chapter 3. 2. Changed the range of Decode Session Timeout to 100ms - 3,600,000ms in Chapter 4. 3. Added the EAN-13 Beginning with 290 Add-On Code Required, EAN-13 Beginning with 378/379 Add-On Code Required, EAN-13 Beginning with 414/419 Add-On Code Required, EAN-13 Beginning with 434/439 Add-On Code Required, EAN-13 Beginning with 977 Add-On Code Required, EAN-13 Beginning with 978 Add-On Code Required and EAN-13 Beginning with 979 Add-On Code Required; Febraban and Transmit Delay; Code 32 (Italian Pharma Code), Code 32 Prefix, Transmit Code 32 Check Digit and Transmit Code 32 Start/Stop Character features in Chapter 8. <p>Note: You must have firmware version V1.01.037 or later to use the new features above.</p>	August 22, 2017

Table of Contents

Revision History	- 3 -
Preface	1
Introduction	1
Chapter Description	1
Explanation of Icons	2
Chapter 1 Getting Started	3
Introduction	3
Features of the FR40	3
Unpacking	3
FR40 Scanner	4
Data Port Pinout	5
Connecting the FR40 to a Host	5
Using USB Cable	6
Using RS-232 Cable	7
Using PS/2 Cable	8
Power On, Power Off, Reboot	9
Maintenance	9
Dimensions (unit: mm)	10
Left View	10
Front View	10
Right View	11
Scanning Instructions	12
Chapter 2 System Settings	13
Introduction	13
Barcode Programming	13
Command Programming	13
Programming Barcode/Command/Function	14
Use of Programming Barcodes	14
Beep	15
Good Read Beep	15
Good Read Beep Type	16
Good Read Beep Volume	16

Beep on Unknown Character	17
Startup Beep	17
Beep Indications	17
Transmit NGR Message.....	18
Default Settings.....	19
Factory Defaults.....	19
Custom Defaults	19
Inquire Product Information.....	20
Chapter 3 Scanning Preferences	21
Toggle between the Regular and Screen modes.....	21
Enable/Disable the Switch	21
Decode Area	22
Whole Area Decoding	22
Specific Area Decoding	22
Specify Decoding Area.....	23
Chapter 4 Scan Mode	25
Sense Mode.....	25
Decode Session Timeout	25
Timeout between Decodes (Same Barcode)	26
Batch Mode.....	27
Continuous Mode.....	28
Decode Session Timeout	28
Timeout between Decodes	29
Timeout between Decodes (Same Barcode)	30
Chapter 5 RS-232 Interface.....	31
Introduction	31
RS-232 Parameters	31
Baud Rate	32
Parity Check.....	33
Data Bit	34
Data Bit & Parity Check.....	34
Stop Bit	35
Chapter 6 USB Interface	36
Introduction	36

USB HID-KBW	36
Polling Rate.....	37
USB Country Keyboard Types	38
Beep on Unknown Character	41
Inter-Keystroke Delay	42
Convert Case	43
Emulate ALT+Keypad	44
Function Key Mapping	45
Emulate Numeric Keypad	46
Code Page.....	46
USB COM Port Emulation.....	47
USB HID-POS.....	48
Introduction	48
Access the Scanner with Your Program	49
Acquire Scanned Data	49
Send Data to the Scanner	49
VID/PID	50
Chapter 7 PS/2 Interface	51
Chapter 8 Symbologies.....	52
Introduction	52
Global Settings.....	52
Disable All Symbologies.....	52
Enable All Symbologies	52
Enable 1D Symbologies.....	53
Disable 1D Symbologies.....	53
Enable 2D Symbologies.....	53
Disable 2D Symbologies.....	53
Video Reverse	54
1D Symbologies	55
Code 128	55
Restore Factory Defaults	55
Enable/Disable Code 128	55
Set Length Range for Code 128	56
AIM-128	57
Restore Factory Defaults	57

Enable/Disable AIM-128	57
Set Length Range for AIM-128	58
GS1-128(UCC/EAN-128)	59
Restore Factory Defaults	59
Enable/Disable UCC/EAN-128	59
EAN-8	60
Restore Factory Defaults	60
Enable/Disable EAN-8	60
Transmit Check Digit.....	60
2-Digit Add-On Code.....	61
5-Digit Add-On Code.....	62
Add-On Code Required	63
EAN-8 Extension	63
EAN-13	64
Restore Factory Defaults	64
Enable/Disable EAN-13	64
Transmit Check Digit.....	64
2-Digit Add-On Code.....	65
5-Digit Add-On Code.....	66
Add-On Code Required	66
EAN-13 Beginning with 290 Add-On Code Required.....	67
EAN-13 Beginning with 378/379 Add-On Code Required.....	67
EAN-13 Beginning with 414/419 Add-On Code Required.....	68
EAN-13 Beginning with 434/439 Add-On Code Required.....	68
EAN-13 Beginning with 977 Add-On Code Required.....	69
EAN-13 Beginning with 978 Add-On Code Required.....	69
EAN-13 Beginning with 979 Add-On Code Required.....	70
UPC-E.....	71
Restore Factory Defaults	71
Enable/Disable UPC-E.....	71
Transmit Check Digit.....	71
2-Digit Add-On Code.....	72
5-Digit Add-On Code.....	73
Add-On Code Required	74
Transmit System Character "0"	74
UPC-E Extension	74

UPC-A.....	75
Restore Factory Defaults	75
Enable/Disable UPC-A.....	75
Transmit Check Digit.....	75
2-Digit Add-On Code.....	76
5-Digit Add-On Code.....	77
Add-On Code Required	78
Transmit Preamble Character	78
Interleaved 2 of 5	79
Restore Factory Defaults	79
Enable/Disable Interleaved 2 of 5	79
Set Length Range for Interleaved 2 of 5	80
Check Digit Verification	81
Febraban.....	82
Disable/Enable Febraban	82
Transmit Delay.....	82
ITF-14	84
ITF-6	85
Matrix 2 of 5	86
Restore Factory Defaults	86
Enable/Disable Matrix 2 of 5.....	86
Set Length Range for Matrix 2 of 5.....	87
Check Digit Verification.....	88
Code 39	89
Restore Factory Defaults	89
Enable/Disable Code 39.....	89
Transmit Start/Stop Character.....	89
Set Length Range for Code 39	90
Check Digit Verification.....	91
Enable/Disable Code 39 Full ASCII	92
Enable/Disable Code 32	92
Code 32 Prefix	92
Transmit Code 32 Check Digit	93
Transmit Code 32 Start/Stop Character	93
Codabar	94
Restore Factory Defaults	94

Enable/Disable Codabar	94
Set Length Range for Codabar	95
Check Digit Verification	96
Start/Stop Character.....	97
Code 93	98
Restore Factory Defaults	98
Enable/Disable Code 93	98
Set Length Range for Code 93	99
Check Digit Verification	100
GS1 Databar(RSS)	101
Restore Factory Defaults	101
Enable/Disable GS1 Databar	101
Transmit Application Identifier "01"	101
Code 11.....	102
Restore Factory Defaults	102
Enable/Disable Code 11	102
Set Length Range for Code 11.....	103
Check Digit Verification	104
ISSN	105
Restore Factory Defaults	105
Enable/Disable ISSN	105
Add-On Code.....	106
Add-On Code Required	106
ISBN	107
Restore Factory Defaults	107
Enable/Disable ISBN	107
Set ISBN Format.....	107
Industrial 25	108
Restore Factory Defaults	108
Enable/Disable Industrial 25	108
Set Length Range for Industrial 25	109
Check Digit Verification	110
Standard 25 (IATA 2 of 5)	111
Restore Factory Defaults	111
Enable/Disable Standard 25	111
Set Length Range for Standard 25	112

Check Digit Verification	113
Plessey	114
Restore Factory Defaults	114
Enable/Disable Plessey	114
Set Length Range for Plessey	115
Check Digit Verification	116
MSI-Plessey	117
Restore Factory Defaults	117
Enable/Disable MSI-Plessey	117
Set Length Range for MSI-Plessey	118
Check Digit Verification	119
2D Symbolologies	120
PDF417	120
Restore Factory Defaults	120
Enable/Disable PDF417	120
Set Length Range for PDF417	121
PDF417 Twin Code	122
Transmission Order of Twin Code	123
Character Encoding	123
QR Code	124
Restore Factory Defaults	124
Enable/Disable QR Code	124
Set Length Range for QR Code	125
QR Twin Code	126
Micro QR	127
Character Encoding	127
Data Matrix	128
Restore Factory Defaults	128
Enable/Disable Data Matrix	128
Set Length Range for Data Matrix	129
Data Matrix Twin Code	130
Rectangular Barcode	131
Mirror Image	131
Character Encoding	131
Chapter 9 Prefix & Suffix	132

Introduction	132
Global Settings.....	133
Enable/Disable All Prefix/Suffix	133
Prefix Sequences.....	133
Custom Prefix.....	134
Enable/Disable Custom Prefix	134
Set Custom Prefix	134
AIM ID Prefix	135
Code ID Prefix.....	135
Restore All Default Code IDs	136
Modify Code ID	136
Custom Suffix.....	140
Enable/Disable Custom Suffix.....	140
Set Custom Suffix	140
Terminating Character Suffix.....	141
Enable/Disable Terminating Character Suffix.....	141
Set Terminating Character Suffix.....	142

Chapter 10 Data Formatter **143**

Introduction	143
Add a Data Format.....	143
Programming with Barcodes.....	144
Programming with a Batch Command	146
Enable Data Format	147
Change Data Format for a Single Scan	147
Enable/Disable Data Formatter	148
Non-Match Error Beep	149
Clear Data Format.....	150
Query Data Formats.....	150
Formatter Command Type 6	151
Send Commands	151
Move Commands.....	154
Search Commands	156
Miscellaneous Commands	159

Chapter 11 Batch Programming..... **162**

Introduction	162
--------------------	-----

Create a Batch Command.....	163
Create a Batch Barcode.....	164
Use Batch Barcode	165
Appendix.....	166
Appendix 1: Factory Defaults Table.....	166
Appendix 2: AIM ID Table.....	171
Appendix 3: Code ID Table.....	172
Appendix 4: ASCII Table.....	173
Appendix 5: Digit Barcodes.....	177
Appendix 6: Save/Cancel Barcodes.....	179
Appendix 7: ASCII Function Key Mapping Table.....	180
Appendix 8: Code Pages List.....	182

Preface

Introduction

This manual provides detailed instructions for setting up and using the NLS-FR4060-30/NLS-FR4060-33/NLS-FR4060-38 desktop barcode scanner (hereinafter referred to as “**FR40 scanner**” or “**the scanner**”).

Chapter Description

- ✧ *Chapter 1, Getting Started* : Gives a general description of FR40 scanner.
- ✧ *Chapter 2, System Settings* : Introduces configuration methods and describes how to configure general parameters of FR40 scanner.
- ✧ *Chapter 3, Scan Preferences* : Describes how to adjust the scanner to decode barcodes on different mediums.
- ✧ *Chapter 4, Scan Mode* : Describes how to configure scan mode.
- ✧ *Chapter 5, RS-232 Interface* : Describes how to configure RS-232 communication parameters.
- ✧ *Chapter 6, USB Interface* : Describes how to configure USB communication parameters.
- ✧ *Chapter 7, PS/2 Interface* : Describes how to configure PS/2 communication parameters.
- ✧ *Chapter 8, Symbologies* : Lists all supported symbologies and describes how to configure the relevant parameters..
- ✧ *Chapter 9, Prefix & Suffix* : Describes how to use prefix and suffix to customize scanned data.
- ✧ *Chapter 10, Data Formatter* : Explains how to customize scanned data with the data formatter.
- ✧ *Chapter 11, Batch Programming* : Explains how to integrate a complex programming task into a single barcode.
- ✧ *Appendix* : 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 FR40 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 Regular mode and Screen mode, tailored to different scanning needs.

An illustrated introduction to the FR40 scanner is included in this chapter. If you have an FR40 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.

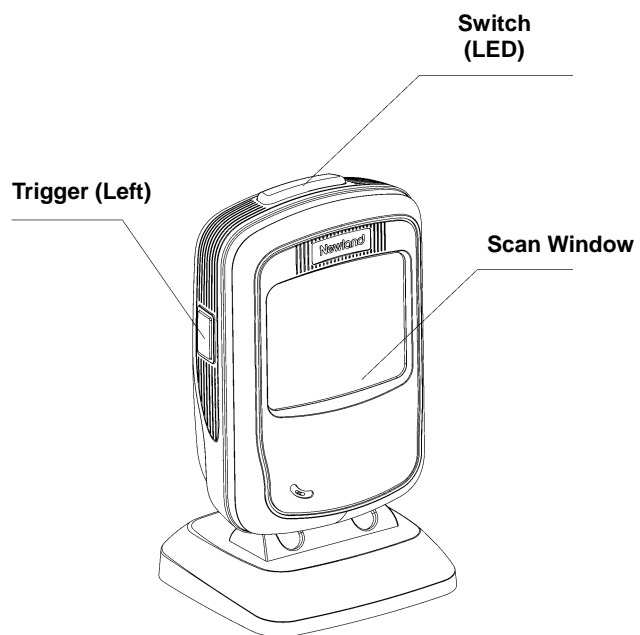
Features of the FR40

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

Unpacking

Open the package and take out FR40 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-sales service.

FR40 Scanner

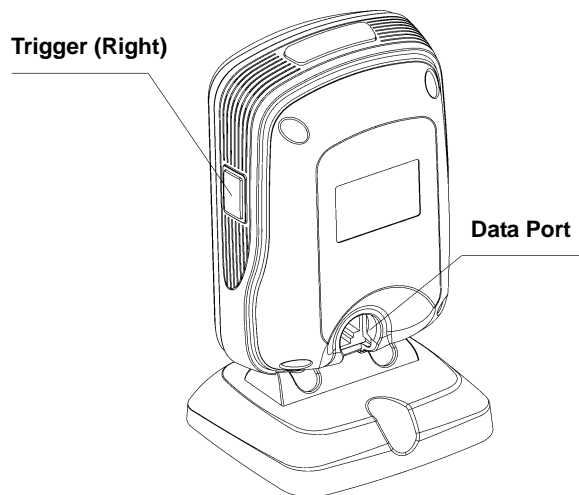


Switch:

Press it to toggle between the Screen mode (red LED lights up) and Regular mode (green LED lights up).

LED:

LED flashes once: Barcode is decoded.



Data Port Pinout

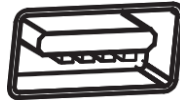
PIN	Signal	Type	Function
1	KB_CLK	I/O	Keyboard clock signal (PS/2)
2	KB_DATA	I/O	Keyboard data signal (PS/2)
3	VCC	P	Power+ (DC5V)
4	TXD	O	RS-232 output
5	RXD	I	RS-232 input
6	PC_CLK / CTS	I/O	PC clock signal (PS/2) / Clear to send (RS-232)
7	PC_DATA / RTS	I/O	PC data signal (PS/2) / Request to send (RS-232)
8	GND	P	Ground
9	D-	I/O	USB signal
10	D+	I/O	

Connecting the FR40 to a Host

The FR40 scanner must be connected to a Host in actual application, such as PC, POS or any intelligent terminal with USB, RS-232 or PS/2 port, via USB, RS-232 or PS/2 cable.

USB

USB port on the Host



RS-232

RS-232 port on the Host

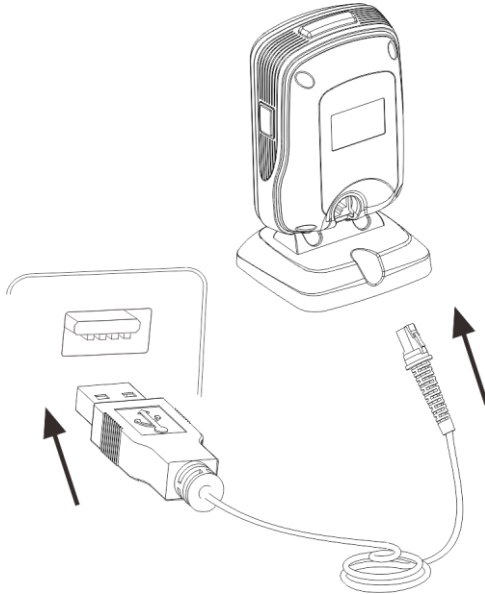


PS/2

PS/2 port on the Host



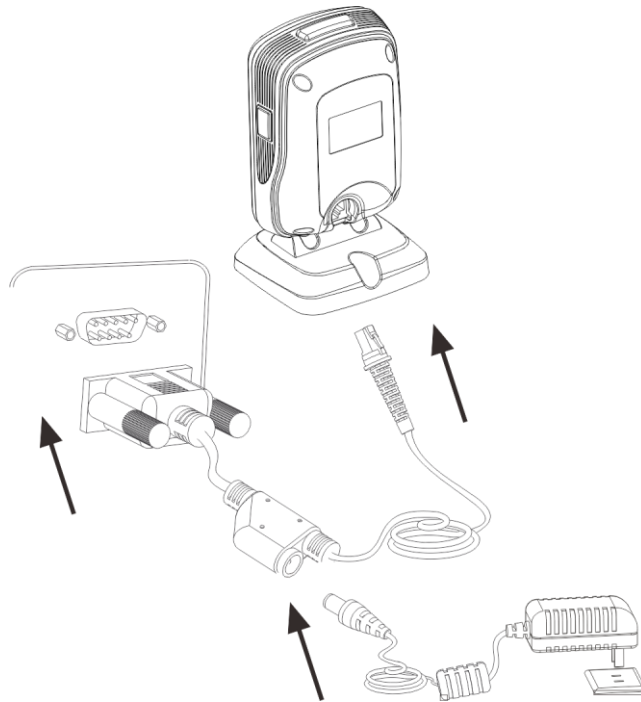
Using USB Cable



Connect the FR40 scanner to a Host through a USB cable with RJ45 and USB connectors:

1. Plug the RJ45 connector into the data port on the scanner.
2. Plug the USB connector into the USB port on the Host.

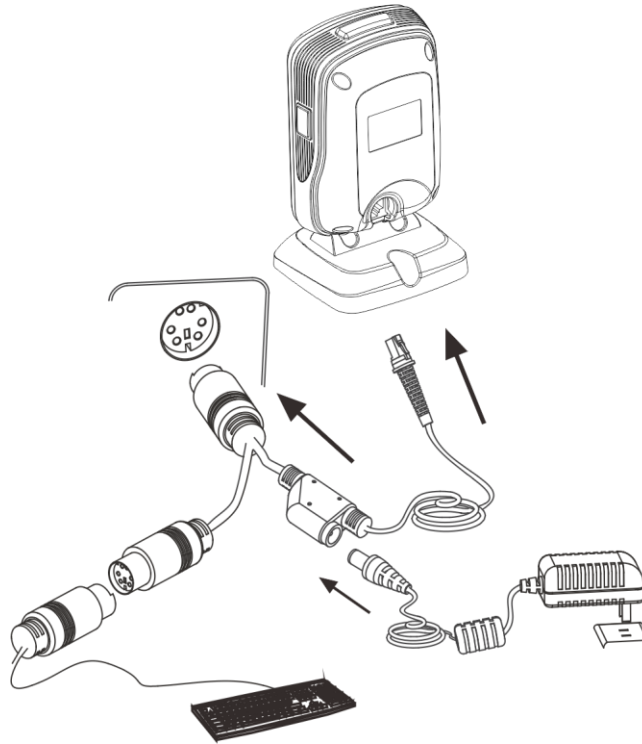
Using RS-232 Cable



Connect the FR40 scanner to a Host through a RS-232 cable with RJ45, RS-232 and power connectors:

1. Plug the RJ45 connector into the data port on the scanner.
2. Plug the RS-232 connector into the RS-232 port on the Host.
3. Connect the supplied power adaptor to the power connector of the RS-232 cable.

Using PS/2 Cable



Connect the scanner to a Host through a PS/2 cable with RJ45 and PS/2 connectors and a power jack:

1. Plug the RJ45 connector into the data slot on the scanner.
2. Plug the PS/2 connector into the PS/2 port on the Host.
3. When required, plug the power adapter into the power jack on the PS/2 cable.
4. When required, connect the PS/2 cable to a keyboard via its PS/2 port.

Power On, Power Off, Reboot

Power on the scanner

Connect the FR40 scanner to a Host. Then the scanner will be turned on.

Power off the scanner

Remove the communication cable from the FR40 scanner; or remove the USB cable from the Host; or disconnect the power adaptor from mains.

Reboot the scanner

If the FR40 scanner stops responding to input or runs abnormally, turn off the scanner and then turn it back on.

Maintenance

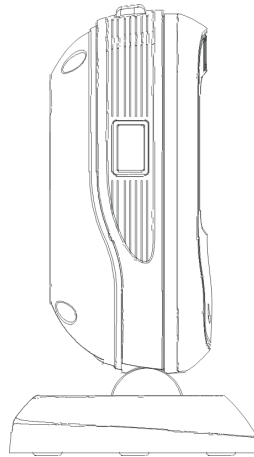
- ✧ The scan window should be kept clean.
- ✧ Do not scratch the scan window.
- ✧ Use soft brush to remove the stain from the scan window.
- ✧ Use the soft cloth to clean the window, such as eyeglass cleaning cloth.
- ✧ Do not spray any liquid on the scan window.
- ✧ Do not use any detergent to clean other parts of the device except for water.



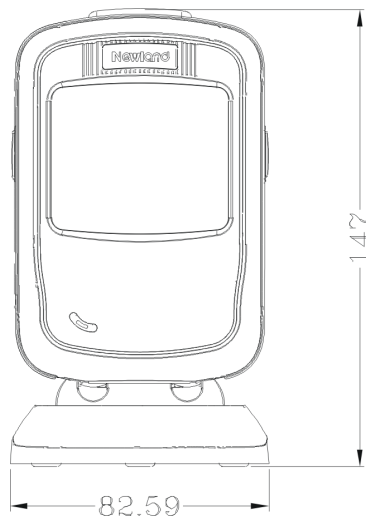
The warranty **DOES NOT** cover damages caused by inappropriate care and maintenance.

Dimensions (unit: mm)

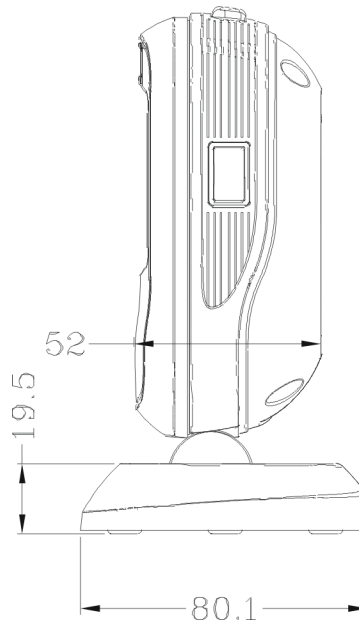
Left View



Front View



Right View



Scanning Instructions

When the FR40 scanner is in the Sense scan mode, you can follow the steps below to scan a barcode:

1. Connect the scanner to a Host with the cable. Then the scanner will be powered on.
2. Present a barcode to the center of the scan window. Then the scanner will project a red beam and start to decode the barcode.
3. If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be sent to the Host.



0006010

【Enter Setup】

Chapter 2 System Settings

Introduction

There are two ways to configure the FR40 scanner: barcode programming and command programming.

Barcode Programming

The FR40 scanner can be configured through scanning a number of 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 straightforward. However, it requires manually scanning barcodes. As a result, errors are likely to occur.

Command Programming

The FR40 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 develop an application to send those command strings to their scanners.



0006000

****【Exit Setup】**



【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 settings.

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.

Some functions or options may involve parameter value settings that require scanning numeric barcodes. To find the numeric barcodes, see the “**Digit Barcodes**” section in **Appendix**.



****【Exit Setup】**



【Enter Setup】



****【Exit Setup】**



0006010

【Enter Setup】

Programming barcode data can be transmitted to the Host. Scan the appropriate barcode below to enable or disable the transmission of programming barcode data (programming commands) to the Host.



0002000

**** 【Do Not Transmit Programming Barcode Data】**



0002010

【Transmit Programming Barcode Data】

Beep

Good Read Beep

Scanning the **Good Read Beep Off** barcode disables the scanner's ability to beep upon a successful decode of non-programming barcode; scanning the **Good Read Beep On** barcode can enable it.



0203010

**** 【Good Read Beep On】**



0203000

【Good Read Beep Off】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Good Read Beep Type



0203020

【Type 1】



0203022

**** 【Type 3】**



0203021

【Type 2】

Good Read Beep Volume



0203030

**** 【Loud】**



0203032

【Low】



0203031

【Medium】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Beep on Unknown Character

Due to the differences in keyboard layouts, some characters contained in barcode data may be unavailable on the selected keyboard. As a result, the scanner fails to transmit the unknown characters.

Scan the appropriate barcode below to enable or disable the emission of beep when an unknown character is detected.



1103030

**** 【Do Not Beep on Unknown Character】**



1103031

【Beep on Unknown Character】

Startup Beep



0204001

**** 【Startup Beep On】**



0204000

【Startup Beep Off】

Beep Indications

Beep Sequence	Indication
4 ascending beeps	The scanner is powered up (if the Startup Beep is on).
1 beep	A non-programming barcode was decoded (if the Good Read Beep is on).
2 beeps	A programming barcode was decoded.
3 short low beeps and 2 high beeps	The scanner failed to decode a programming barcode.
1 long low beep	The scanner detected an unknown character when using USB HID-KBW (if the Beep on Unknown Character is enabled).



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Transmit NGR Message

Scan the appropriate barcode below to select whether or not to transmit a user-defined NGR (Not Good Read) message when the scanner fails to decode a barcode.



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 (hex) of desired characters and then scan the **Save** barcode.

An NGR message can contain 0-7 characters (ASCII value of character: 0x00-0xFF).



0320020

【Edit NGR Message】

E
example

Example: Set the NGR message to “!ERR”

1. Check the hex values of “!ERR” in the ASCII Table. (“!ERR”: 21, 45, 52, 52)
2. Scan the **Enter Setup** barcode.
3. Scan the **Edit NGR Message** barcode.
4. Scan the numeric barcodes “2”, “1”, “4”, “5”, “5”, “2”, “5” and “2”.
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Default Settings

Factory Defaults

Scanning the following barcode can restore the scanner to the factory defaults.

You may need to reset all parameters to the factory defaults when:

- ✧ scanner is not properly configured so that it fails to decode barcodes.
- ✧ you forget previous configuration and want to avoid its impact.



0001000

【Restore All Factory Defaults】

Custom Defaults

Custom defaults make it possible to save the frequently-used settings on the scanner.

Scanning the **Save as Custom Defaults** barcode can save the current settings as custom defaults. Once custom default settings are stored, they can be recovered at any time by scanning the **Restore All Custom Defaults** barcode.

Custom defaults are stored in the non-volatile memory and they won't be lost when power is removed.



0001150

【Save as Custom Defaults】



0001160

【Restore All Custom Defaults】



Restoring the scanner to the factory defaults will not remove the custom defaults from the scanner.



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Inquire Product Information

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



9876537

【Inquire Product Information】



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Chapter 3 Scanning Preferences

Toggle between the Regular and Screen modes

The scanner can capture barcodes printed on paper labels or displayed on the screen of a mobile phone. Select a mode that fits your application..

- ◇ **Regular Mode:** Read barcodes printed on paper or objects.
- ◇ **Screen Mode:** Read barcodes off mobile phones or LCD displays.

Switch between the Regular and Screen modes:

Method 1: Press the button (Switch) at the top of the scanner.

Method 2: Scan the **Screen Mode** barcode to activate the Screen mode (indicated by red LED); scan the **Regular Mode** barcode to activate the Regular mode (indicated by green LED).



0313141

**** 【Regular Mode】**



0313142

【Screen Mode】

Enable/Disable the Switch

You may enable or disable the Switch at the top of the scanner by scanning the appropriate barcode below.



0313146

**** 【Enable the Switch】**



0313147

【Disable the Switch】



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 decode 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】



0006000

**** 【Exit Setup】**



0006010

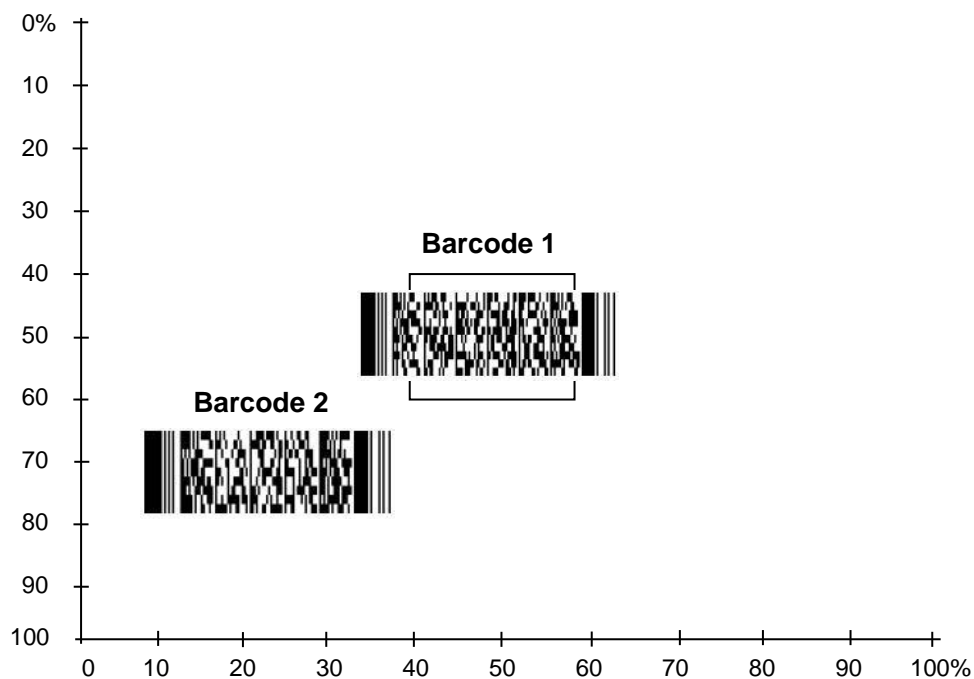
【Enter Setup】

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.

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).



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】



0322030

【Top of Decoding Area】



0322040

【Bottom of Decoding Area】



0322050

【Left of Decoding Area】



0322060

【Right of Decoding Area】

E
example

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

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".
5. Scan the **Save** barcode.
6. Scan the **Bottom of Decoding Area** barcode.
7. Scan the numeric barcodes "8" and "0".
8. Scan the **Save** barcode.
9. Scan the **Left of Decoding Area** barcode.
10. Scan the numeric barcodes "2" and "0".
11. Scan the **Save** barcode.
12. Scan the **Right of Decoding Area** barcode.
13. Scan the numeric barcodes "8" and "0".
14. Scan the **Save** barcode.
15. Scan the **Exit Setup** barcode.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Chapter 4 Scan Mode

Sense Mode

If the Sense mode is enabled, presenting a barcode to the scanner activates a decode session. The session continues until the barcode decodes or the decode session timeout expires or the barcode is moved away from the scanner. Holding down the left or right trigger on the scanner can also activate a decode session. The presence of obstacle between the scanner and barcode can affect the trigger distance.



0302000

**** 【Sense Mode】**

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. If the timeout expires or the barcode decodes, the decode session stops. It is programmable in 1ms increments from 100ms to 3,600,000ms. When it is set to 0, the timeout is infinite. The default setting is 3,000ms.



0313000

【Decode Session Timeout】

E
sample

Example: Set the decode session timeout to 1500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes "1", "5", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Timeout between Decodes (Same Barcode)

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

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

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

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



0313020

** **【Disable Timeout between Decodes】**



0313030

【Enable Timeout between Decodes】

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



0313010

【Timeout between Decodes (Same Barcode)】

E
example

Example: Set the timeout between decodes (same barcode) to 1000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes "1", "0", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.



0006000

** **【Exit Setup】**



0006010

【Enter Setup】

Batch Mode

If the Batch Mode is enabled, presenting barcodes one after another to the scanner or holding down the left or right trigger activates a round of multiple decode sessions. This round of multiple scans continues until you release the trigger or stop presenting barcode to the scanner. Rereading a barcode in the same round is not allowed if it was decoded previously. After a round ends, you need to wait for 20ms or longer before you can start another round.



0302003

【Batch Mode】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Continuous Mode

If the Continuous mode is enabled, the scanner automatically activates one decode session after another.



0302020

【Continuous Mode】

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. If the timeout expires or the barcode decodes, the decode session stops. It is programmable in 1ms increments from 100ms to 3,600,000ms. When it is set to 0, the timeout is infinite. The default setting is 3,000ms.



0313040

【Decode Session Timeout】

E
example

Example: Set the decode session timeout to 1500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes “1”, “5”, “0” and “0”.
4. Scan the **Save** barcode.
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
sample

Example: Set the timeout between decodes to 500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes** barcode.
3. Scan the numeric barcodes "5", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Timeout between Decodes (Same Barcode)

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

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

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

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



0313020

**** 【Disable Timeout between Decodes】**



0313030

【Enable Timeout between Decodes】

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



0313010

【Timeout between Decodes (Same Barcode)】

E
example

Example: Set the timeout between decodes (same barcode) to 1000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes "1", "0", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Chapter 5 RS-232 Interface

Introduction

When the scanner is connected to the RS-232 port of a Host, you need to scan the barcode below to enable RS-232 communication and set communication parameters (including baud rate, parity check, data bit and stop bit) to match the Host.



1100000

【RS-232】

RS-232 Parameters

When the scanner is connected to the Host via serial port, it is necessary to maintain consistency in communication parameters configuration on both devices to ensure smooth communication between them. The default settings of the scanner are 9600bps, no parity check, 8 data bits and 1 stop bit.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Baud Rate

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



0100030

****【9600】**



0100050

【19200】



0100000

【1200】



0100060

【38400】



0100010

【2400】



0100070

【57600】



0100020

【4800】



0100080

【115200】



0100040

【14400】



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Parity Check

Set the parity type to match the Host requirements.

- ◇ **Odd Parity:** If the data contains an odd number of 1 bits, the parity bit value is set to 0.
- ◇ **Even Parity:** If the data contains an even number of 1 bits, the parity bit value is set to 0.
- ◇ **None:** Select this option when no parity bit is required.



0101000

**** 【None】**



0101020

【Odd Parity】



0101010

【Even Parity】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Data Bit

Set the number of data bits to match the Host requirements.



0103030

**** 【8 Data Bits】**



0103020

【7 Data Bits】

Data Bit & Parity Check



0105010

【7 Data Bits/Even Parity】



0105020

【7 Data Bits/Odd Parity】



0105030

**** 【8 Data Bits/ No Parity】**



0105040

【8 Data Bits/Even Parity】



0105050

【8 Data Bits/Odd Parity】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Stop Bit

The stop bit(s) at the end of each transmitted character marks the end of transmission of one character and prepares the receiving device for the next character in the serial data stream. Set the number of stop bits to match the Host requirements.



0102000

**** 【1 Stop Bit】**



0102010

【2 Stop Bits】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Chapter 6 USB Interface

Introduction

There are three options for USB connection.

- ◇ USB HID-KBW: The scanner's transmission is simulated as USB keyboard input with no need for command configuration or a driver. The barcode data could be entered by the virtual keyboard directly and it is also convenient for the Host to receive data.
- ◇ USB COM Port Emulation: The USB port on the Host is emulated as a RS-232 port with the same data transmission and configuration as a real RS-232 port. This mode is based on USB DataPipe protocol and thus requires a driver.
- ◇ HID-POS: It is based on the HID interface, with no need for a custom driver. It excels virtual keyboard and traditional RS-232 interface in transmission speed.

USB HID-KBW

When the scanner is connected to the USB port on a Host, you can enable the USB HID-KBW feature by scanning the barcode below. The scanner's transmission will be simulated as USB keyboard input. The Host receives keystrokes on the virtual keyboard. It works on a Plug and Play basis and no driver is required.



1100020

**** 【USB HID-KBW】**



If the Host allows keyboard input, then no extra software is needed for HID-KBW input.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Polling Rate

This parameter specifies the polling rate for a USB keyboard. If the Host drops characters, change the polling rate to a bigger value.



1103170

**** 【1ms】**



1103171

【2ms】



1103172

【3ms】



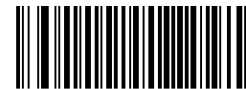
1103173

【4ms】



1103174

【5ms】



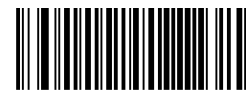
1103175

【6ms】



1103176

【7ms】



1103177

【8ms】



1103178

【9ms】



1103179

【10ms】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

USB Country Keyboard Types

Keyboard layouts may vary from country to country. The default setting is US keyboard type.



1103001

**** 【U.S.】**



1103002

【Japan】



1103003

【Denmark】



1103004

【Finland】



1103005

【France】



1103006

【Turkey_F】



1103007

【Italy】



1103008

【Norway】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】



1103222

【Spain】



1103226

【Turkey_Q】



1103227

【UK】



1103209

【Austria, Germany】



1103202

【Belgium】



1103220

【Russia】



1103223

【Sweden】



1103218

【Portugal】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

E *sample*

Set the scanner to get proper output for Russian encoded with Windows 1251 (PDF417/QR Code/Data Matrix)

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Code Page** barcode from the “**Code Page**” section in Chapter 6.
3. Scan the numeric barcode “1” from Appendix 5.
4. Scan the **Save** barcode from Appendix 6.
5. Scan the appropriate **Default Character Encoding** barcode according to the symbology your application needs from the “**Character Encoding**” section in Chapter 7.
6. Scan the **Mode 3** barcode from the “**Emulate ALT+Keypad**” section in Chapter 6.
7. Scan the **Exit Setup** barcode.

E *sample*

Set the scanner to get proper output for Russian encoded with UTF-8 (PDF417/QR Code/Data Matrix)

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Code Page** barcode from the “**Code Page**” section in Chapter 6.
3. Scan the numeric barcode “1” from Appendix 5.
4. Scan the **Save** barcode from Appendix 6.
5. Scan the appropriate **UTF-8** barcode according to the symbology your application needs from the “**Character Encoding**” section in Chapter 7.
6. Scan the **Mode 3** barcode from the “**Emulate ALT+Keypad**” section in Chapter 6.
7. Scan the **Exit Setup** barcode.



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Beep on Unknown Character

Due to the differences in keyboard layouts, some characters contained in barcode data may be unavailable on the selected keyboard. As a result, the scanner fails to transmit the unknown characters.

Scan the appropriate barcode below to enable or disable the emission of beep when an unknown character is detected.



1103030

**** 【Do Not Beep on Unknown Character】**



1103031

【Beep on Unknown Character】

E
xample

Supposing French keyboard is selected and barcode data "ADF" is being dealt with, the keyboard will fail to locate the "Ð" (0xD0) character and the scanner will ignore the character and continue to process the next one.

Do Not Beep on Unknown Character: The scanner does not beep and the Host receives "AF".

Beep on Unknown Character: The scanner beeps and the Host still receives "AF".



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Inter-Keystroke Delay

This parameter specifies the delay between emulated keystrokes. It is programmable in 5ms increments from 0ms to 75ms. Single-digit values must have a leading zero. The default setting is 10ms.



1103050

**** 【No Delay】**



1103052

【Long Delay (40ms)】



1103051

【Short Delay (20ms)】



1103053

【Custom Delay】

E
xample

Set the inter-keystroke delay to 5ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Delay** barcode.
3. Scan the numeric barcodes "0" and "5".
4. Scan the **Exit Setup** barcode.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Convert Case

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



1103040

**** 【No Case Conversion】**



1103043

【Invert Upper and Lower Case Characters】



1103041

【Convert All to Upper Case】



1103042

【Convert All to Lower Case】

E
xample

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



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Emulate ALT+Keypad

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

The following options are available:

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

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



1103060

** 【Disable】



1103061

【Mode 1】



1103062

【Mode 2】



1103063

【Mode 3】

E
sample

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

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

"A" -- Keystroke "A"

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

"F" -- Keystroke "F"

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

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

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

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



0006000

** 【Exit Setup】



0006010

【Enter Setup】

Function Key Mapping

When Function Key Mapping is enabled, function characters (0x00 - 0x1F) are sent as ASCII sequences over the keypad. For more information, see **Appendix 7: ASCII Function Key Mapping Table**.



1103140

【Enable Function Key Mapping】




1103130

****【Disable Function Key Mapping】**

E
sample

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 characters like “+”, “_”, “*”, “/” and “.” is still emulated as keystrokes on main keyboard.



1103110

**** 【Do Not Emulate Numeric Keypad】**



1103120

【Emulate Numeric Keypad】

Code Page

In order to support more international characters, the **Code Page** programming feature is provided. This feature is only effective when ASCII characters are sent in the ALT+Keypad way. Programming a code page requires scanning numeric barcode (For more information, see **Appendix 8: Code Pages List**). The default code page is Windows 1252 (Latin I).



1103180

【Set the Code Page】

E
Example

Example: Set the code page to Windows 1252 (Latin I)

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Code Page** barcode.
3. Scan the numeric barcode “0”.
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

USB COM Port Emulation

If your scanner is connected to the USB port on a Host, the USB COM Port Emulation feature allows the Host to receive data in the way as a serial port does. However, you need to set communication parameters on the scanner to match the Host requirements. A driver is required for this feature.



1100060

【USB COM Port Emulation】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

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.



1100080

USB HID-POS



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

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.

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)							



0006000

**** 【Exit Setup】**



0006010
【Enter Setup】

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)
FR4060-3X	USB HID-KBW	1A03	6659
	USB COM Port Emulation	1A06	6662
	USB HID-POS	1A10	6672



0006000
**** 【Exit Setup】**



0006010

【Enter Setup】

Chapter 7 PS/2 Interface

Hardware version V2.1 or higher is required for the PS/2 feature. When the scanner is connected to the PS/2 port of a host device, scan the **PS/2** barcode below to enable the interface. If there is no external keyboard connected, the **External Keyboard Not Connected** option should be selected.



1100070

【PS/2】



1106010

【External Keyboard Not Connected】



1106011

**** 【External Keyboard Connected】**



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Chapter 8 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 more slowly your scanner decodes. It is recommended to disable those that are rarely used to improve the performance of the scanner.

Global 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 will be able to read all supported 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】**



【Enter Setup】

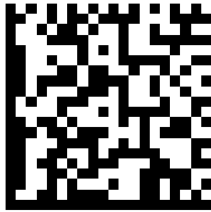
Video Reverse

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

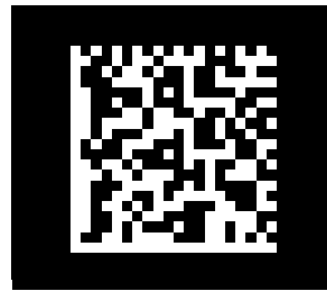
Regular barcode: Dark image on a bright background.

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 (default): Read regular barcodes only.

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



【Video Reverse ON】



**** 【Video Reverse OFF】**



**** 【Exit Setup】**



0006010

【Enter Setup】

1D Symbologies

Code 128

Restore Factory Defaults



0400000

**** 【Restore the Factory Defaults of Code 128】**

Enable/Disable Code 128



0400010

【Disable Code 128】



0400020

**** 【Enable 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)】



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.

E
xample

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".
4. Scan the **Save** barcode.
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】

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)】



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 Code 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".
4. Scan the **Save** barcode.
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】

GS1-128(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】

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】

2-Digit Add-On Code

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



0401050

**** 【Disable 2-Digit Add-On Code】**



0401060

【Enable 2-Digit Add-On Code】



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

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



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

5-Digit Add-On Code

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



0401070

**** 【Disable 5-Digit Add-On Code】**



0401080

【Enable 5-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 5-digit add-on barcode. It can also decode EAN-8 barcodes without 5-digit add-on codes.

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



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Add-On Code Required



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】

2-Digit Add-On Code

An EAN-13 barcode can be augmented with a two-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is an EAN-13 barcode while the part circled by red dotted line is a two-digit add-on code.



0402050

**** 【Disable 2-Digit Add-On Code】**



0402060

【Enable 2-Digit Add-On Code】



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

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



0006000

**** 【Exit Setup】**



【Enter Setup】

5-Digit Add-On Code

An EAN-13 barcode can be augmented with a five-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is an EAN-13 barcode while the part circled by red dotted line is a five-digit add-on code.



**** 【Disable 5-Digit Add-On Code】**



【Enable 5-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 5-digit add-on barcode. It can also decode EAN-13 barcodes without 5-digit add-on codes.

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

Add-On Code Required

When **EAN-13 Add-On Code Required** is selected, the scanner will only read EAN-13 barcodes that contain add-on codes.



【EAN-13 Add-On Code Required】



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



**** 【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】**



【Enter Setup】

2-Digit Add-On Code

A UPC-E barcode can be augmented with a two-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-E barcode while the part circled by red dotted line is a two-digit add-on code.



**** 【Disable 2-Digit Add-On Code】**



【Enable 2-Digit Add-On Code】



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

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



**** 【Exit Setup】**

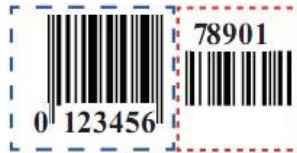


0006010

【Enter Setup】

5-Digit Add-On Code

A UPC-E barcode can be augmented with a five-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-E barcode while the part circled by red dotted line is a five-digit add-on code.



0403070

**** 【Disable 5-Digit Add-On Code】**



0403080

【Enable 5-Digit Add-On Cod】



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

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



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Add-On Code Required



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”】

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】**



【Enter Setup】

2-Digit Add-On Code

A UPC-A barcode can be augmented with a two-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is a two-digit add-on code.



**** 【Disable 2-Digit Add-On Code】**



【Enable 2-Digit Add-On Code】



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

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



**** 【Exit Setup】**



0006010

【Enter Setup】

5-Digit Add-On Code

A UPC-A barcode can be augmented with a five-digit add-on code to form a new one. In the example below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is a five-digit add-on code.



0404070

**** 【Disable 5-Digit Add-On Code】**



0404080

【Enable 5-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 5-digit add-on barcode. It can also decode UPC-A barcodes without 5-digit add-on codes.

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



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Add-On Code Required



0404110

【UPC-A Add-On Code Required】



0404120

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

Transmit Preamble Character

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-A barcode. Select one of the following options for transmitting UPC-A preamble to the host device: transmit system character only or transmit system character and country code ("0" for USA).



0404090

**** 【System Character】**



0404100

【System Character & Country Code】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Interleaved 2 of 5

Restore Factory Defaults



0405000

**** 【Restore the Factory Defaults of Interleaved 2 of 5】**

Enable/Disable Interleaved 2 of 5



0405020

**** 【Enable Interleaved 2 of 5】**



0405010

【Disable Interleaved 2 of 5】



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



0006000

**** 【Exit Setup】**

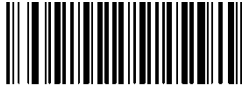


0006010

【Enter Setup】

Set Length Range for Interleaved 2 of 5

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



0405030

【Set the Minimum Length (Default: 6)】



0405040

【Set the Maximum Length (Default: 127)】



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".
4. Scan the **Save** barcode.
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】

Transmit Delay

This feature is available only when USB HID-KBW is enabled. **Transmit Delay per Character** applies to both Expanded and Unexpanded Febraban while **Transmit Delay per 12 Characters** applies to Expanded Febraban only.



0700160

**** 【Disable Transmit Delay per Character】**



0700161

【Enable Transmit Delay per Character】



0700170

**** 【Disable Transmit Delay per 12 Characters】**



0700171

【Enable Transmit Delay per 12 Characters】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Custom Transmit Delay per Character: This parameter is programmable in 5ms increments from 0ms to 75ms. To set it, scan the **Custom Transmit Delay per Character** barcode and two numeric barcodes that represent a desired value. Single-digit values must have a leading zero. The default value is 70ms.

Custom Transmit Delay per 12 Characters: To set this parameter, scan the **Custom Transmit Delay per 12 Characters** barcode and a numeric barcode (0-7, which represent 0ms, 300ms, 400ms, 500ms, 600ms, 700ms, 800ms and 900ms, respectively). The default value is 700ms.



0700162

【Custom Transmit Delay per Character】



0700172

【Custom Transmit Delay per 12 Characters】

E
xample

Set the transmit delay per character to 5ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Transmit Delay per Character** barcode.
3. Scan the numeric barcodes “0” and “1”.
4. Scan the **Enable Transmit Delay per Character** barcode.
5. Scan the **Exit Setup** barcode.

E
xample

Set the transmit delay per 12 characters to 600ms:

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Transmit Delay per 12 Characters** barcode.
3. Scan the numeric barcode “4”.
4. Scan the **Enable Transmit Delay per 12 Characters** barcode.
5. Scan the **Exit Setup** barcode.



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. By default, ITF-14 is disabled.

ITF-14 priority principle: For the Interleaved 2 of 5 barcodes with a length of 14 characters and the last character as the check character, the ITF-14 configurations shall take precedence over the Interleaved 2 of 5 settings.



0405260

【Restore the Factory Defaults of ITF-14】



0405080

**** 【Disable ITF-14】**



0405090

【Enable ITF-14, Do Not Transmit Check Digit】



0405100

【Enable ITF-14, Transmit Check Digit】



An example of the ITF-14 priority principle: when ITF-14 is enabled and Interleaved 2 of 5 is disabled, the scanner only decodes Interleaved 2 of 5 barcodes with a length of 14 characters and the last character as the check character.



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. By default, ITF-6 is disabled.

ITF-6 priority principle: For the Interleaved 2 of 5 barcodes with a length of 6 characters and the last character as the check character, the ITF-6 configurations shall take precedence over the Interleaved 2 of 5 settings.



0405270

【Restore the Factory Defaults of ITF-6】



0405110

**** 【Disable ITF-6】**



0405120

【Enable ITF-6, Do Not Transmit Check Digit】



0405130

【Enable ITF-6, Transmit Check Digit】



An example of the ITF-6 priority principle: when ITF-6 is enabled and Interleaved 2 of 5 is disabled, the scanner only decodes Interleaved 2 of 5 barcodes with a length of 6 characters and the last character as the check character.



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)】



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”.
4. Scan the **Save** barcode.
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】**



【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.



【Disable】



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



【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.)



**** 【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: 4)】



0408040

【Set the Maximum Length (Default: 127)】



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".
4. Scan the **Save** barcode.
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

You can enable or disable your scanner's ability 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 bar code 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)】



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”.
4. Scan the **Save** barcode.
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】**



【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.



**** 【Disable】**



【Do Not Transmit Check Digit After Verification】



【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.)



**** 【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



0410010

【Disable Code 93】



0410020

**** 【Enable 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)】



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”.
4. Scan the **Save** barcode.
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】

GS1 Databar(RSS)

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)】



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.

E
xample

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”.
4. Scan the **Save** barcode.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Check Digit Verification

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

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



0415050

【Disable】



0415090

【One Check Digit, MOD11 (Len<=10)】
【Two Check Digits, MOD11/MOD11(Len>10)】



0415060

**** 【One Check Digit, MOD11】**



0415100

【One Check Digit, MOD11 (Len<=10)】
【Two Check Digits, MOD11/MOD9 (Len>10)】



0415070

【Two Check Digits, MOD11/MOD11】



0415110

**** 【Do Not Transmit Check Digit】**



0415080

【Two Check Digits, MOD11/MOD9】



0415120

【Transmit Check Digit】



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



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

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



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.

Add-On Code Required



0421070

【ISSN Add-On Code Required】



0421080

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



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】

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)】



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.

E
sample

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".
4. Scan the **Save** barcode.
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】**



【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.



**** 【Disable】**



【Do Not Transmit Check Digit After Verification】



【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.)



**** 【Exit Setup】**



0006010

【Enter Setup】

Standard 25 (IATA 2 of 5)

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】**



【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.



【Set the Minimum Length (Default: 6)】



【Set the Maximum Length (Default: 127)】



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”.
4. Scan the **Save** barcode.
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.



****【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)】



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”.
4. Scan the **Save** barcode.
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】**



【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.



**** 【Disable】**



【Do Not Transmit Check Digit After Verification】



【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.)



**** 【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)】



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.

E
xample

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".
4. Scan the **Save** barcode.
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, MOD10** 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】

2D Symbologies

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: 255)】



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.

E
xample

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".
4. Scan the **Save** barcode.
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】

PDF417 Twin Code

PDF417 twin code is 2 PDF417 barcodes paralleled vertically or horizontally. Two of them must have the same direction and similar specifications and be placed closely together.

There are 3 options for reading PDF417 twin codes:

- ◇ **Single PDF417 Only:** Read either PDF417 code.
- ◇ **Twin PDF417 Only:** Read both PDF417 codes.
- ◇ **Both Single & Twin:** Read both PDF417 codes. If successful, transmit as twin PDF417 only. Otherwise, try single PDF417 only.



0501070

**** 【Single PDF417 Only】**



0501080

【Twin PDF417 Only】



0501090

【Both Single & Twin】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Transmission Order of Twin Code

Order 1: Transmit the one containing more information first.

Order 2: Transmit the one containing less information first.



0501110

**** 【Order 1】**



0501100

【Order 2】

Character Encoding



0501350

**** 【Default Character Encoding】**



0501351

【UTF-8】



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: 7089)】



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.

E
xample

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”.
4. Scan the **Save** barcode.
5. Scan the **Set the Maximum Length** barcode.
6. Scan the numeric barcode “1”.
7. Scan the numeric barcode “2”.
8. Scan the **Save** barcode.
9. Scan the **Exit Setup** barcode.



0006000

****【Exit Setup】**



0006010

【Enter Setup】

QR Twin Code

QR twin code is 2 QR barcodes paralleled vertically or horizontally. Two of them must have the same direction and similar specifications and be placed closely together.

There are 3 options for reading QR twin codes:

- ◇ **Single QR Only:** Read either QR code.
- ◇ **Twin QR Only:** Read both QR codes. Transmission order: left (upper) QR code followed by right (lower) QR code.
- ◇ **Both Single & Twin:** Read both QR codes. If successful, transmit as twin QR only. Otherwise, try single QR only.



0502070

**** 【Single QR Only】**



0502090

【Both Single & Twin】



0502080

【Twin QR Only】



0006000

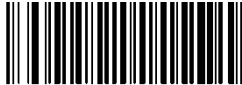
**** 【Exit Setup】**



0006010

【Enter Setup】

Micro QR



0502110

**** 【Enable Micro QR】**



0502100

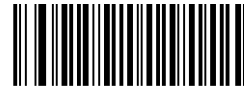
【Disable Micro QR】

Character Encoding



0502160

**** 【Default Character Encoding】**



0502161

【UTF-8】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Data Matrix

Restore Factory Defaults



0504000

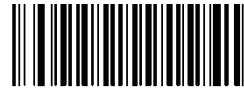
**** 【Restore the Factory Defaults of Data Matrix】**

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: 255)】



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”.
4. Scan the **Save** barcode.
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】

Data Matrix Twin Code

Data Matrix twin code is 2 Data Matrix barcodes paralleled vertically or horizontally. Two of them must have the same direction and similar specifications and be placed closely together.

There are 3 options for reading Data Matrix twin codes:

- ◇ **Single Data Matrix Only:** Read either Data Matrix code.
- ◇ **Twin Data Matrix Only:** Read both Data Matrix codes. Transmission order: left (upper) Data Matrix code followed by right (lower) Data Matrix code.
- ◇ **Both Single & Twin:** Read both Data Matrix codes. If successful, transmit as twin Data Matrix only. Otherwise, try single Data Matrix only.



0504070

**** 【Single Data Matrix Only】**



0504090

【Both Single & Twin】



0504080

【Twin Data Matrix Only】



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 Mirror Images】



0504330

**** 【Do Not Decode Mirror Images】**

Character Encoding



0504350

**** 【Default Character Encoding】**



0504351

【UTF-8】



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Chapter 9 Prefix & Suffix

Introduction

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

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

Data editing may include:

- ✧ Append AIM ID/Code ID/custom prefix before the scanned data
- ✧ Append custom suffix after the scanned data
- ✧ Append terminating character to the end of the data



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Global Settings

Enable/Disable All Prefix/Suffix

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

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



0311000

**** 【Disable All Prefix/Suffix】**



0311010

【Enable All Prefix/Suffix】

Prefix Sequences

2 prefix sequence options are provided.



0317010

【Code ID + Custom Prefix + AIM ID】



0317040

**** 【Custom Prefix + 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 before the scanned data a user-defined prefix that cannot exceed 10 characters. For example, if the custom prefix is “AB” and the scanned 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, the numeric barcodes corresponding to the hexadecimal value of a desired prefix and the **Save** barcode.

Note: A custom prefix cannot exceed 10 characters.



0300000

【Set Custom Prefix】

E
example

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”.
4. Scan the **Save** barcode.
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** section 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** section 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
example

Set PDF417 Code ID to “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”.
4. Scan the **Save** barcode.
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】



0004020

【Modify Code 128 Code ID】



0004030

【Modify GS1-128 Code ID】



0004210

【Modify AIM-128 Code ID】



0004040

【Modify EAN-8 Code ID】



0004050

【Modify EAN-13 Code ID】



0004060

【Modify UPC-E Code ID】



0004070

【Modify UPC-A Code ID】



0006000

****【Exit Setup】**



0006010

【Enter Setup】



0004240

【Modify ISBN Code ID】



0004230

【Modify ISSN Code ID】



0004130

【Modify Code 39 Code ID】



0004170

【Modify Code 93 Code ID】



0004080

【Modify Interleaved 2 of 5 Code ID】



0004090

【Modify ITF-14 Code ID】



0004100

【Modify ITF-6 Code ID】



0004150

【Modify Codabar Code ID】



0004250

【Modify Industrial 25 Code ID】



0004260

【Modify Standard 25 Code ID】



0006000

****【Exit Setup】**



0006010

【Enter Setup】



0004110

【Modify Matrix 25Code ID】



0004220

【Modify COOP 25 Code ID】



0004280

【Modify Code 11 Code ID】



0004270

【Modify Plessey Code ID】



0004290

【Modify MSI/Plessey Code ID】



0004310

【Modify MSI/Plessey Code ID】



0006000

****【Exit Setup】**



0006010

【Enter Setup】

Custom Suffix

Enable/Disable Custom Suffix

If custom suffix is enabled, you are allowed to append after the scanned data a user-defined suffix that cannot exceed 10 characters.

For example, if the custom suffix is “AB” and the scanned 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, the numeric barcodes corresponding to the hexadecimal value of a desired suffix and 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”.
4. Scan the **Save** barcode.
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】**



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Set Terminating Character Suffix

The scanner provides a shortcut for setting the terminating character suffix to CR (0x0D) or CRLF (0x0D,0x0A) and enabling it by scanning the appropriate barcode below.



0310010

**** 【Terminating Character CR (0x0D)】**



0310020

【Terminating Character CRLF (0x0D,0x0A)】

To set a terminating character suffix, scan the **Set Terminating Character Suffix** barcode, the numeric barcodes corresponding to the hexadecimal value of a desired terminating character, and the **Save** barcode.

Note: A terminating character suffix cannot exceed 2 characters.



0310000

【Set Terminating Character Suffix】

E
sample

Set the terminating character suffix to “0A”:

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Terminating Character Suffix** barcode.
3. Scan the numeric barcodes “0” and “A”.
4. Scan the **Save** barcode.
5. Scan the **Enable Terminating Character Suffix** barcode.
6. Scan the **Exit Setup** barcode.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Chapter 10 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**" section in this chapter) within the format programming to output data. The maximum size of formatter commands in a data format is 112 characters. By default, the data formatter is disabled. Enable it when required. If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** code below.



0323100

**** Default Data Format**

Add a Data Format

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

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



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Programming with Barcodes

The following explains how to program a data format by scanning the specific barcodes. Scanning any irrelevant barcode or failing to follow the setting procedure will result in programming failure. To find the alphanumeric barcodes needed to create a data format, see **Appendix 6: Digit Barcodes**.

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**” section 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 **Appendix 10: Symbology ID Number** 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.

Step 8: Enter formatter command

Refer to the “**Formatter Command Type 6**” section 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.



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Step 9: Scan the **Save** barcode from **Appendix 7: Save/Cancel Barcodes** to save your data format.

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

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



0006000

****【Exit Setup】**



0006010
【Enter Setup】

Programming with a Batch Command

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

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

Parameter Value consists of the following elements:

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

Formatter command type: 6 (1 character).

Interface type: 999 (3 characters).

Symbology ID Number: The ID number of the symbology 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 symbology (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**” section.

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**” section in Chapter 11 to learn how to put a batch barcode into use.

Example 1: Program format_0 using formatter command type 6, Code 128 containing 10 characters applicable, send all characters followed by “A”.

Batch command: **nls0323000=“069990020010F141”;**

Example 2: Program format_0 using formatter command type 6, all symbologies, all lengths applicable, send the first 5 characters in barcode, wait for 1s, send the next 6 characters, wait for 1s, then send the rest of the barcode data.

Batch command: **nls0323000=“069999999999F20500EF0200F20600EF0200E900”;**



0006000
** 【Exit Setup】



0006010

【Enter Setup】

Enable Data Format

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



0323030

**** Format_0**



0323031

Format_1



0323032

Format_2



0323033

Format_3

Change Data Format for a Single Scan

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

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



0323050

Single Scan – Format_0



0323051

Single Scan – Format_1



0323052

Single Scan – Format_2



0323053

Single Scan – Format_3



0006000

**** 【Exit Setup】**



0006010
【Enter Setup】

Enable/Disable Data Formatter

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



** Disable Data Formatter

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

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

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

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

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



0006000
** 【Exit Setup】



0006010

【Enter Setup】



0323040

Enable Data Formatter, Required, Keep Prefix/Suffix



0323041

Enable Data Formatter, Required, Drop Prefix/Suffix



0323042

Enable Data Formatter, Not Required, Keep Prefix/Suffix



0323043

Enable Data Formatter, Not Required, Drop Prefix/Suffix

Non-Match Error Beep

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



0323060

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



0323061

Non-Match Error Beep OFF



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

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

Query Data Formats

You may scan the following bar code to get the information of data format(s) you have created. For instance, if you have added Format_0 as per the example in the “**Programming with Barcodes**” section in this chapter, then the query result will be **Data Format0:069990020010F141;**.



0323070

Query Data Formats



0006000

**** 【Exit Setup】**



0006010

【Enter Setup】

Formatter Command Type 6

When working with the Data Formatter, a virtual cursor is moved along your input data string. The following commands are used to both move this cursor to different positions, and to select, replace, and insert data into the final output. For the hex value of ASCII characters involved in the commands, refer to **Appendix 4: ASCII Table**.

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=F2nxx (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】**



【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.



****【Exit Setup】**



0006010

【Enter Setup】

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



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

Command string: **E908F40902**

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

08 is the number of characters at the end to ignore

F4 is the “Insert a character multiple times” command

09 is the hex value for a horizontal tab

02 is the number of times the tab character is sent

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

B3 Insert symbology name

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

B4 Insert barcode length

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



0006000

****【Exit Setup】**



【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.



**** 【Exit Setup】**



0006010

【Enter Setup】

F5 Example: Move the cursor forward and send the data



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

Command string: **F503F10D**

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

03 is the number of characters to move the cursor

F1 is the “Send all characters” command

0D is the hex value for a CR

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

<CR>

F6 Move the cursor backward a number of characters

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

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

F7 Move the cursor to the beginning

Syntax=F7

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

EA Move the cursor to the end

Syntax=EA

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



0006000

****【Exit Setup】**



【Enter Setup】

Search Commands

F8 Search forward for a character

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

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

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



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

Command string: **F844F10D**

F8 is the "Search forward for a character" command

44 is the hex value for "D"

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: **DEFGHIJ**

<CR>

F9 Search backward for a character

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

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



**** 【Exit Setup】**



0006010

【Enter Setup】

B0 Search forward for a string

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

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

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



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

Command string: **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】**



【Enter Setup】

E6 Search forward for a non-matching character

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

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

E6 Example: Remove zeros at the beginning of barcode data



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

Command string: **E630F10D**

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

30 is the hex value for 0

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: **37692**

<CR>

E7 Search backward for a non-matching character

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

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



**** 【Exit Setup】**



0006010

【Enter Setup】

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】**



【Enter Setup】

E4 Replace characters

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

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

E4 Example: Replace zeros with CRs in barcode data



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

Command string: **E402300DF10D**

E4 is the "Replace characters" command

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

30 is the hex value for 0

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

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: **1234**

5678

ABC

<CR>



****【Exit Setup】**



0006010

【Enter Setup】

EF Insert a delay

Syntax=EFnnnn (nnnn: The delay in 5ms increments, up to 9999)

Inserts a delay of up to 49,995 milliseconds (in multiples of 5), starting from the current cursor position. This command can only be used with USB HID-KBW.

EF Example: Insert a delay of 1s in between the 5th and 6th character

Send the first 5 characters in a barcode, wait for 1s, then send the rest of the barcode data.

Command string: **F20500EF0200E900**

F2 is the “Send a number of characters” command

05 is the number of characters to send

00 is the hex value for a Null character

EF is the “Insert a delay” command

0200 is the delay value (5msX200=1000ms=1s)

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

00 is the number of characters that will not be sent at the end of the message



0006000

****【Exit Setup】**



0006010
【Enter Setup】

Chapter 11 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 **Enable Code ID Prefix** (0307010), **Continuous Mode** (0302020), **Decode Session Timeout** (0313040) = 2s:

1. Input the commands:

0307010;0302020;0313040=2000;

2. Generate a batch barcode.

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



0001110
Enable Batch Barcode



0006000
** 【Exit Setup】



0006010

【Enter Setup】

Create a Batch Command

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

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

4 command syntaxes are described as below:

1. Syntax 1: Command

This syntax applies to most configuration situations.

Example:

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

Enable the Sense Mode: **0302000**

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

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

Example:

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

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

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

Example:

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

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

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

Example:

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



0006000

****【Exit Setup】**



0006010
【Enter Setup】

Create a Batch Barcode

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

Example: Create a batch barcode for **Enable Code ID Prefix, Continuous Mode, Decode Session Timeout = 2s**:

1. Input the following commands:

0307010;0302020;0313040=2000;

2. Generate a QR batch barcode.



0006000
** 【Exit Setup】



0006010

【Enter Setup】

Use Batch Barcode

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



0006010

Enter Setup



0001110

Enable Batch Barcode



Batch Barcode



0006000

Exit Setup



0006000

****【Exit Setup】**

Appendix

Appendix 1: Factory Defaults Table

Parameter	Factory Default	Remark
Symbologies		
Code 128		
Code 128	Enabled	
Maximum Length	127	
Minimum Length	1	
AIM-128		
AIM-128	On	
Maximum Length	127	
Minimum Length	1	
GS1-128 (UCC/EAN-128)		
GS1-128	On	
Maximum Length	127	
Minimum Length	1	
EAN-8		
EAN-8	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Extend to EAN-13	Disabled	
EAN-13		
EAN-13	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
EAN-13 Beginning with 290 Add-On Code Required	Do Not Require Add-On Code	

EAN-13 Beginning with 378/379 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 414/419 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 434/439 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 977 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 978 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 979 Add-On Code Required	Do Not Require Add-On Code	
UPC-E		
UPC-E	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Extend to UPC-A	Disabled	
System Character "0"	Do not transmit	
UPC-A		
UPC-A	Enabled	
Check Digit	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
System Character	Transmit	
Country Code	Do not transmit	
Interleaved 2 of 5		
Interleaved 2 of 5	Enabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	No less than 6
Maximum Length	Maximum Length	

Febraban		
Febraban	Disabled	
Transmit Delay per Character	Disabled	
	70ms	
Transmit Delay per 12 Characters	Disabled	
	500ms	
ITF-6		
ITF-6	Disabled	
ITF-14		
ITF-14	Disabled	
Matrix 2 of 5		
Matrix 2 of 5	Disabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	6	No less than 6
Code 39		
Code 39	Enabled	
Check Digit Verification	Disabled	
Start/Stop Character	Do not 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	4	
Codabar		
Codabar	Enabled	
Check Digit Verification	Disabled	
Start/Stop Character	ABCD/ABCD format Uppercase Do not transmit	
Maximum Length	127	
Minimum Length	1	

Code 93		
Code 93	Enabled	
Check Digit Verification	Enabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	3	No less than 3
UCC/EAN-128		
UCC/EAN-128	Enabled	
GS1 Databar		
GS1 Databar	Enabled	
Application Identifier (AI) "01"	Transmit	
Code 11		
Code 11	Enabled	
Check Digit	Do not transmit	
Check Digit Verification	1 Check Digit, MOD11	
Maximum Length	127	
Minimum Length	2	No less than 2
ISSN		
ISBN	Disabled	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
ISBN		
ISBN	Disabled	
ISBN Format	ISBN-13	
Industrial 25		
Industrial 25	Enabled	
Check Digit Verification	Disabled	
Maximum Length	127	
Minimum Length	6	No less than 6
Standard 25		
Standard 25	Enabled	
Check Digit Verification	Disabled	
Maximum Length	127	
Minimum Length	6	No less than 6

Plessey		
Plessey	Disabled	
Check Digit Verification	Disabled	
Maximum Length	127	
Minimum Length	1	No less than 1
MSI-Plessey		
MSI-Plessey	Disabled	
Check Digit Verification	Disabled	
Check Digit	Do not transmit	
Maximum Length	127	
Minimum Length	2	No less than 2
PDF417		
PDF417	Enabled	
PDF417 Twin Code	Read single PDF417 only	
Transmission Order of Twin Code	Order 1	
Character Encoding	Default Character Encoding	
Maximum Length	255	
Minimum Length	1	
QR Code		
QR Code	Enabled	
QR Twin Code	Read single QR only	
Micro QR	Enabled	
Character Encoding	Default Character Encoding	
Maximum Length	7089	
Minimum Length	1	
Data Matrix		
Data Matrix	Enabled	
DM Twin Code	Read single Data Matrix only	
Read Rectangular Barcode	Enabled	
Mirror Image	Do not decode	
Character Encoding	Default Character Encoding	
Maximum Length	255	
Minimum Length	1	

Appendix 2: AIM ID Table

Symbology	AIM ID	Possible AIM ID Modifiers (m)
Code 128	]C0	
UCC/EAN-128	]C1	
EAN-8	]E4	
EAN-13	]E0	
EAN-13 with Addon	]E3	
UPC-E	]E0	
UPC-E with Addon	]E3	
UPC-A	]E0	
UPC-A with Addon	]E3	
Interleaved 2 of 5, Febraban	]Im	0, 1, 3
ITF-6	]Im	1, 3
ITF-14	]Im	1, 3
Matrix 2 of 5	]X0	
Code 39, Code 32	]Am	0, 1, 3, 4, 5, 7
Codabar	]Fm	0, 2, 4
Code 93	]G0	
Code 11	]Hm	0, 1, 3
ISBN	]X0	
Industrial 25	]S0	
Standard 25	]R0	
Plessey	]P0	
MSI-Plessey	]Mm	0, 1
GS1 Databar	]e0	
EAN•UCC Composite	]em	0-3
PDF417	]Lm	0-2
QR Code	]Qm	0-6
Aztec	]zm	0-9, A-C
Data Matrix	]dm	0-6
Maxicode	]Um	0-3
Chinese Sensible Code	]X0	

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

Appendix 3: Code ID Table

Symbology	Code ID
Code 128	j
UCC/EAN-128	j
EAN-8	d
EAN-13	d
UPC-E	c
UPC-A	c
Interleaved 2 of 5, Febraban	e
ITF-6	e
ITF-14	e
Matrix 2 of 5	v
Code 39, Code 32	b
Codabar	a
Code 93	i
Code 11	H
GS1 Databar	R
EAN•UCC Composite	y
ISBN	B
Industrial 25	l
Standard 25	f
Plessey	n
MSI-Plessey	m
PDF417	r
QR Code	s
Aztec	z
Data Matrix	u
Maxicode	x
Chinese Sensible Code	h

Appendix 4: ASCII Table

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

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

43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[(Left / Opening Bracket)
5c	92	\ (Back Slash)
5d	93	] (Right / Closing Bracket)
5e	94	^ (Caret / Circumflex)
5f	95	_ (Underscore)
60	96	' (Grave Accent)
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e

66	102	f
67	103	g
68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q
72	114	r
73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7a	122	z
7b	123	{ (Left/ Opening Brace)
7c	124	| (Vertical Bar)
7d	125	} (Right/Closing Brace)
7e	126	~ (Tilde)
7f	127	DEL (Delete)

Appendix 5: Digit Barcodes

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

0~9



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】

Appendix 6: 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.



【 Save 】



【 Cancel 】



【 Delete the Last Digit 】



【 Delete All Digits 】

Appendix 7: ASCII Function Key Mapping Table

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

ASCII Function Key Mapping Table (Continued)

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

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

Appendix 8: Code Pages List

Numeric Barcode Needed	Code Page
0	Windows 1252 (Latin I)
1	Windows 1251 (Cyrillic)



Headquarters

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

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

TEL: +86 - (0) 591-83978605

FAX: +86 - (0) 591-83979216

E-mail: marketing@nlscan.com

WEB: www.nlscan.com

Newland Europe BV

Rolweg 25, 4104 AV Culemborg, The Netherlands

TEL: +31 (0) 345 87 00 33

FAX: +31 (0) 345 87 00 39

Email: info@newland-id.com

WEB: www.newland-id.com

Tech Support: tech-support@newland-id.com

Newland North America Inc.

Address: 46559 Fremont Blvd., Fremont, CA 94538, USA

TEL: 510 490 3888

Fax: 510 490 3887

Email: info@newlandna.com

WEB: www.newlandna.com

Newland Taiwan Inc.

7F-6, No. 268, Liancheng Rd., Zhonghe Dist. 235, New
Taipei City, Taiwan

TEL: +886 2 7731 5388

FAX: +886 2 7731 5389

Email: info@newland-id.com.tw

WEB: www.newland-id.com.tw