Newland

SCANNING MADE SIMPLE

HR11+ Aringa
handheld scanner
user guide

Disclaimer

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Revision History

Version	Description	Date
V1.0.0	Initial release.	June 5, 2017
V1.0.1	1. Changed the default settings of the following parameters to: Timeout between Decodes: 0ms Febraban Enable Febraban, Expand 2. Modified Chapter 7 Data Formatter. Note: Firmware version V1.07.003 or later is required for the changes above.	June 26, 2017
V1.0.2	Added the **Video Reverse** feature in Chapter 6. Note: Firmware version V1.07.004 or later is required for the new feature above.	August 23, 2017
V1.0.3	1. Supported the **SETUPE0** and **SETUPE1** commands. 2. Updated the **Emulate ALT+Keypad** and **Function Key Mapping** features, and added the **Emulate Keypad with Leading Zero** feature in Chapter 4. 3. Added the **Surround GS1 AI's with Parentheses** feature in Chapter 6. 4. Updated Chapter 7 (replaced the DFMSET command with the DFMADD command). 5. Updated the "ASCII Function Key Mapping Table" in Appendix. Note: Firmware version V1.08.004 or later is required for the new feature in item 1; firmware version V1.13.005 or later is required for the new features in items 2-5.	October 25, 2018
V1.0.4	Updated all programming barcodes in the manual.	January 30, 2019
V1.0.5	Added the Datalogic Magellan Aux-RS232 section in Chapter 4.	January 21, 2020

Table of Contents

Preface

Introduction

This manual provides detailed instructions for setting up and using the NLS-HR11 Plus hand-held barcode scanner (hereinafter referred to as **"the HR11"** or **"the scanner"**).

Chapter Description

✦ *Chapter 1, Getting Started*   : This chapter gives a general description of the scanner including wiring instructions and basic operations.

✦ *Chapter 2, General Settings*   : This chapter introduces three methods to configure the scanner: barcode programming, command programming and EasySet programming.

✦ *Chapter 3, Query Commands*   : This chapter describes how to obtain the information of the scanner by scanning programming barcodes.

✦ *Chapter 4, Communication Settings*: This chapter describes how to configure RS-232 and USB parameters.

✦ *Chapter 5, Prefix & Suffix*   : This chapter describes how to use prefix and suffix to customize scanned data.

✦ *Chapter 6, Symbologies*   : This chapter lists all compatible symbologies and describes how to configure the relevant parameters.

✦ *Chapter 7, Data Formatter*   : This chapter explains how to customize scanned data with the data formatter.

✦ *Appendix*   : This chapter offers factory defaults table and a bunch of frequently used programming barcodes.

Document Set

The documentation set for the HR11 scanner provides information for specific user needs and includes:

Quick Start Guide Describes how to get the scanner up and running, and introduces some basic operations.

User Guide Describes how to use and set the scanner.

Introduction

HR11 scanner is a 1D barcode scanner with excellent performance, which supports all common 1D symbologies. Based on the **UIMG°** technology independently developed by Newland, HR11 scanner is able to deliver rapid image acquisition and accurate decoding; it can provide customers with best services. HR11 scanner boasts the ergonomical design that ensures easy and comfortable operation.

An illustrated introduction to the HR11 scanner is included in this chapter. If you have an HR11 device 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.

Unpacking

Open the package and take out HR11 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.

HR11 Scanner
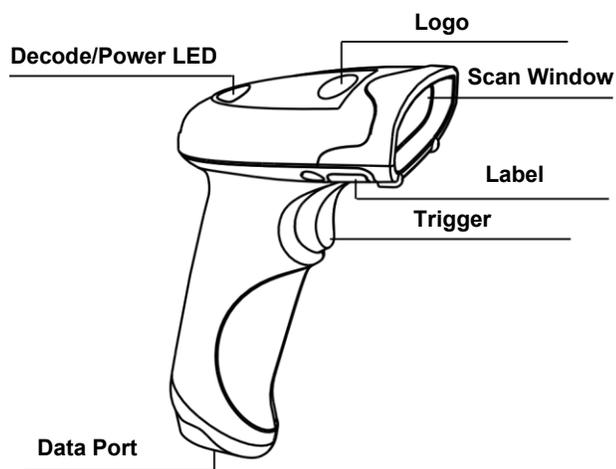
Decode/Power LED:

Red   : The device is powered on.

Green: Barcode is decoded successfully.

Data Port Pinout
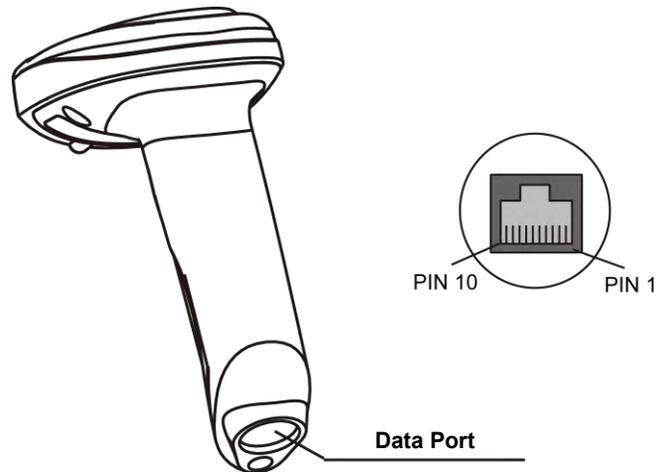
Data port pinout (factory default):

PIN	Signal	Type	Description
1	NC	-	Not connected
2	NC	-	Not connected
3	VCC	P	Power+ (+5V)
4	TXD	O	RS-232 Output
5	RXD	I	RS-232 Input
6	CTS	I	Flow control signal
7	RTS	O	
8	GND	P	Ground
9	D-	I/O	USB signal
10	D+	I/O	

Connecting the Scanner to a Host Device

The scanner must be connected to a host device in actual application, such as PC, POS or any intelligent terminal with USB or RS-232 port, using a communication cable (USB or RS-232 cable).

USB

USB port on the host device

RS-232

RS-232 port on the host device

Note: Please check the port on the host device and purchase the cable accordingly.

Using USB Cable
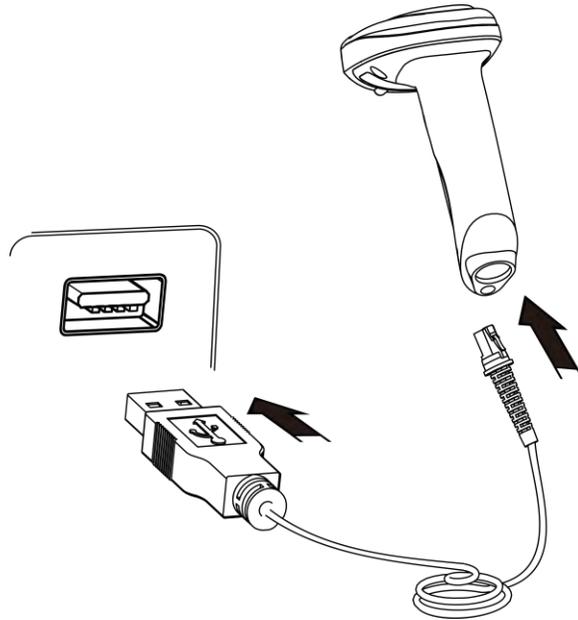
Connect the scanner to a host device through a USB cable with RJ45 and USB connectors:

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
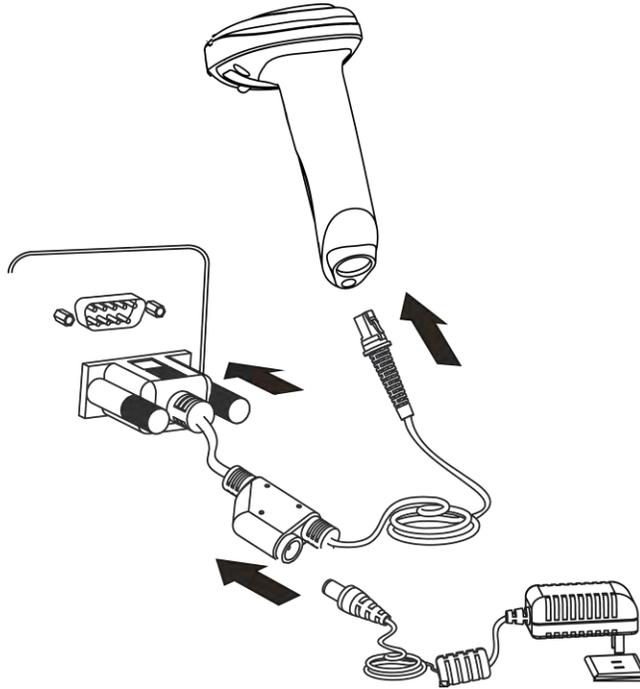
Connect the scanner to a host device through an RS-232 cable with RJ45, RS-232 and power connectors:

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.

Removing Communication Cable
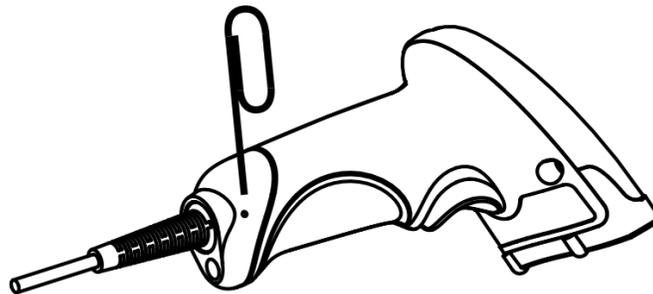
Get an appropriate needle or a straightened paper clip and then follow the steps below:

1. Disconnect the power adaptor from mains if there is one.
2. Insert the needle into the hole.
3. Pull out the cable slowly from the scanner while pressing the needle in.
4. Remove the needle.
5. Disconnect the cable from the Host.

Power On/Off, Sleep, Reboot

Power on the scanner

Connect the scanner to a host device. Then the scanner will be turned on and automatically go into the sleep mode.

Power off the scanner

There are four ways to turn off the scanner:
- ✧ Remove the communication cable from the scanner; or
- ✧ remove the communication cable from the host device; or
- ✧ disconnect the power adaptor from mains; or
- ✧ Scan the **Power Off** barcode from the "Operating Mode Options" section in Chapter 2.

Enter the sleep mode

If no operation is performed on the scanner for some time, the scanner will automatically enter the sleep state.

Reboot the scanner

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

Maintenance

1. The scan window should be kept clean.

2. Do not scratch the scan window.

3. Use soft brush to remove the stain from the scan window.

4. Use the soft cloth to clean the window, such as eyeglass cleaning cloth.

5. Do not spray any liquid on the scan window.

6. Do not use any detergent to clean other parts of the device except for water.

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

Dimensions (unit: mm)

Side View
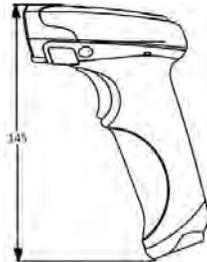
Front View
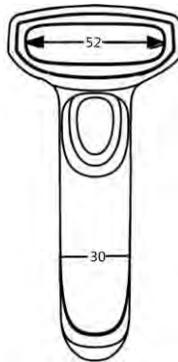
Top View
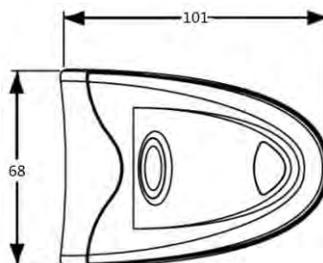
Scanning Instructions

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

1. Press and hold the trigger. Then the scanner will project a red aiming beam.

2. Aim the red beam across the center of barcode, as shown below.

3. Release the trigger when the red beam goes off. If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be sent to the host device.

Note: For barcodes of the same batch, the scanner keeps a very high success ratio in certain distance which is regarded as the optimal scanning distance.
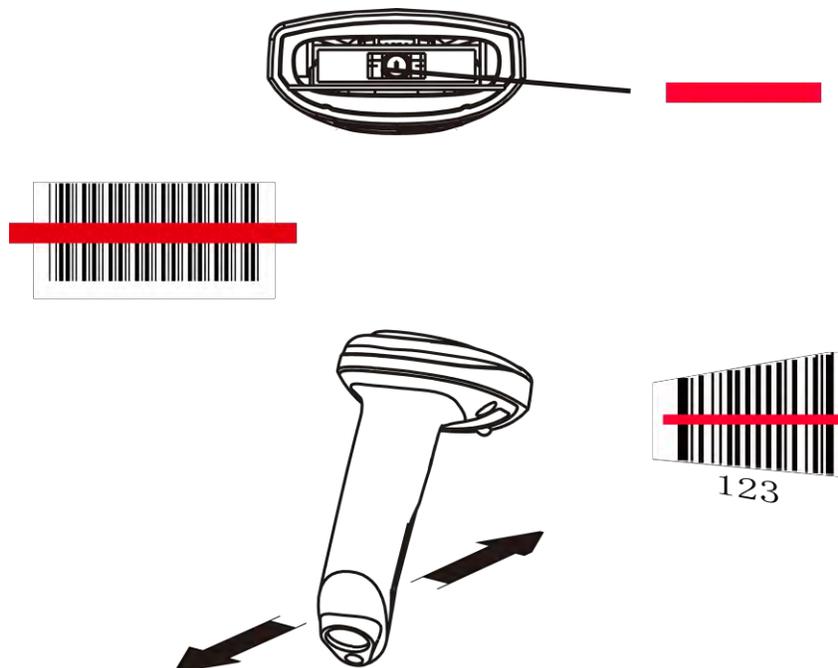
Chapter 2 General Settings

Introduction

There are three ways to configure the HR11 Plus: Barcode programming, command programming and Easyset programming.

Barcode Programming

The HR11 Plus can be configured by scanning programming barcodes. All user programmable features/options are described along with their programming barcodes/commands in the following sections.

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

Command Programming

The HR11 Plus can also be configured by serial commands (HEX) sent from the host device.

Users can design an application program to send those command strings to the scanners to perform device configuration.

EasySet Programming

Besides the two methods mentioned above, you can conveniently perform scanner configuration through EasySet too. EasySet is a Windows-based configuration tool particularly designed for Newland products, enabling users to gain access to decoded data and captured images and to configure scanners. For more information about this tool, refer to the *EasySet User Guide*.

Programming Barcode/ Programming Command/Function

@SETUPN1

** Enter Setup

1
2
3
4

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

1. The **Enter Setup** barcode.

2. The **Enter Setup** command.

3. The description of feature.

4. ** indicates factory default settings.

Note: "@" included in the programming command indicates permanent setting which means the setting will not be lost by removing power from the scanner or turning off or rebooting it; whereas "#" included in the programming command indicates temporary setting which means the setting will be lost by removing power from the scanner or turning off or rebooting it.

Use of Programming Command

Besides the barcode programming method, the scanner can also be configured by serial commands (HEX) sent from the host device. **All commands must be entered in uppercase letters**.

Command Syntax

Prefix StorageType Tag SubTag {Data} [,SubTag {Data}] [;Tag SubTag {Data}] […] Suffix

Prefix: "~<SOH>0000" (HEX: **7E 01 30 30 30 30**), 6 characters.

StorageType: "@" (HEX: **40**) or "#" (HEX: **23**), 1 character. "@" means permanent setting which will not be lost by removing power from the scanner or rebooting it; "#" means temporary setting which will be lost by removing power from the scanner or rebooting it.

Tag: A 3-character case-sensitive field that identifies the desired command group. For example, all USB HID-KBW configuration settings are identified with a Tag of KBW.

SubTag: A 3-character case-sensitive field that identifies the desired parameter within the tag group. For example, the SubTag for the keyboard layout is CTY.

Data: The value for a feature or parameter setting, identified by the Tag and SubTag.

Suffix: ";<ETX>" (HEX: **3B 03**), 2 characters.

Multiple commands can be issued within one Prefix/Suffix sequence. For configuration commands, only the **Tag**, **SubTag**, and **Data** fields must be repeated for each command in sequence. If an additional command is to be applied to the same Tag, then the command is separated with a comma (,) and only the **SubTag** and **Data** fields of the additional commands are issued. If the additional command requires a different **Tag** field, the command is separated from previous command by a semicolon (;).

Query Commands

For query commands, the entry in the **Data** field in the syntax above is one of the following characters means:

* (HEX: **2A**)　　　What is the scanner's current value for the setting(s).

& (HEX: **26**)　　　What is the factory default value for the setting(s).

^ (HEX: **5E**) What is the range of possible values for the setting(s).

The value of the **StoreType** field in a query command can be either "@" (HEX: **40**) or "#" (HEX: **23**).

A query command with the **SubTag** field omitted means to query all the settings concerning a tag. For example, to query all the current settings about Code 11, you should enter **7E 01 30 30 30 30 40 43 31 31 2A 3B 03** (i.e. ~<SOH>0000@C11*;<ETX>).

Responses

Different from command sequence, the prefix of a response consists of the six characters of "<STX><SOH>0000" (HEX: **02 01 30 30 30 30**).

The scanner responds to serial commands with one of the following three responses:

<ACK> (HEX: **06**)   Indicates a good command which has been processed.

<NAK> (HEX: **15**)   Indicates a good configuration command with its **Data** field entry out of the allowable range for this Tag and SubTag combination (e.g. an entry for an inter-keystroke delay of 100 when the field will only allow 2 digits), or an invalid query command.

<ENQ> (HEX: **05**)   Indicates an invalid Tag or SubTag command.

When responding, the scanner echoes back the command sequence with the status character above inserted directly before each of the punctuation marks (the comma or semicolon) in the command.

Examples

Example 1: Enable Code 11, set the minimum and maximum lengths to 12 and 22 respectively.

Enter: **7E 01 30 30 30 30 40 43 31 31 45 4E 41 31 2C 4D 49 4E 31 32 2C 4D 41 58 32 32 3B 03**
(~<SOH>0000@C11ENA1,MIN12,MAX22;<ETX>)

Response: **02 01 30 30 30 30 40 43 31 31 45 4E 41 31 06 2C 4D 49 4E 31 32 06 2C 4D 41 58 32 32 06 3B 03**
(<STX><SOH>0000@C11ENA1<ACK>,MIN12<ACK>,MAX22<ACK>;<ETX>)

Example 2: Query the current minimum and maximum lengths of Code 11.

Enter: **7E 01 30 30 30 30 40 43 31 31 4D 49 4E 2A 2C 4D 41 58 2A 3B 03**
(~<SOH>0000@C11MIN*,MAX*;<ETX>)

Response: **02 01 30 30 30 30 40 43 31 31 4D 49 4E 31 32 06 2C 4D 41 58 32 32 06 3B 03**
(<STX><SOH>0000@C11MIN12<ACK>,MAX22<ACK>;<ETX>)

Make a Beeping Sound

You may wish to force the scanner to beep upon a command sent from the host. A beeping sound is made to gain a user's attention to an error or other important event.

BEEPONxxxFyyyT (xxx: The desired frequency, 1-20,000Hz; yyy: The desired duration, 1-20,000ms)

Example: Make a 50ms beep at 2,000Hz

Enter: **7E 01 30 30 30 30 40 42 45 45 50 4F 4E 32 30 30 30 46 35 30 54 3B 03**
(~<SOH>0000#BEEPON2000F50T;<ETX>)

Response: **02 01 30 30 30 30 40 42 45 45 50 4F 4E 32 30 30 30 46 35 30 54 06 3B 03**
(<STX><SOH>0000#BEEPON2000F50T<ACK>;<ETX>)

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.

The HR11 Plus is in the setup mode by default. In real application, programming barcodes hardly overlap with non-programming barcodes, so it is unnecessary to exit the setup mode each time you finish the configuration.

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.

The scanner can be configured to send or not to send programming barcode data (i.e. programming command) to the host device by scanning the appropriate barcode below. By default, the **Do Not Send the Programming Barcode Data** option is enabled. Note that restarting/rebooting the scanner will reset this parameter to its default value.

‖‖‖‖‖‖‖‖‖‖‖‖‖
@SETUPT0
** Do Not Send the Programming Barcode Data

‖‖‖‖‖‖‖‖‖‖‖‖‖
@SETUPT1
Send the Programming Barcode Data

Factory Defaults

Scanning the following barcode can restore the scanner to the factory defaults. See the "Factory Defaults Table" in Appendix for more information.

Note: Use this feature with discretion.

‖‖‖‖‖‖‖‖‖‖‖‖‖
@FACDEF
Restore All Factory Defaults

‖‖‖‖‖‖‖‖‖‖‖‖‖
@SETUPN0
Exit Setup

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

@CUSSAV
Save as Custom Defaults

@CUSDEF
Restore All Custom Defaults

Note: If custom defaults use a different communication interface (e.g. USB HID-KBW, but the scanner is currently using USB COM Port Emulation), you need to reboot the scanner to make the change effective after scanning the **Restore All Custom Defaults** barcode.

Operating Mode Options

@PWROFF
Power Off[1]

@PWRDSP
Deep Sleep Mode[2]

@PWRSLP
Light Sleep Mode[3]

@REBOOT
Reboot Scanner

Note:

[1] The scanner that has been turned off in this way cannot be awakened. To turn it back on, disconnect it from the host device and reconnect it.

[2] To awaken the scanner, press the trigger.

[3] To awaken the scanner, press the trigger or communicate with the scanner.

The Deep Sleep mode and Light Sleep mode are available for temporary use only. They will become invalid after the scanner is turned off or rebooted.

Scan Mode

Manual Mode

Manual Mode (default): A trigger pull activates a decode session. The decode session continues until the barcode is decoded or you release the trigger or the decode session timeout expires (default: 15 seconds; user programmable).

@SCNMOD1
** Manual Mode

Decode Session Timeout

Decode Session Timeout: This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1,000ms increments from 1,000ms to 15,000ms. When it is set to 0, the timeout is infinite. The default timeout is 15,000ms.

To program this parameter, scan the **Decode Session Timeout** barcode, the numeric barcodes and the **Save** barcode. To find the numeric barcodes, see the "Digit Barcodes" section in Appendix.

@ORTSET
Decode Session Timeout

Example: Set the decode session timeout to 2,000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes "2", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Auto Sleep

Auto Sleep allows the scanner in the Manual mode to automatically enter the light sleep mode if no operation or communication is performed for a time period (user programmable). When the scanner is in the light sleep mode, pressing the trigger or receiving command from the host device can awaken the scanner.

|||||||||||||||||||||||||||||||||||||
@ATIDLE1
** Enable Auto Sleep

|||||||||||||||||||||||||||||||||||||
@ATIDLE0
Disable Auto Sleep

The parameter below specifies how long the scanner remains idle (no operation or communication occurs) before it is put into the light sleep mode. It is programmable in 1ms increments from 0ms to 6,000ms. The default setting is 500ms.

|||||||||||||||||||||||||||||||||||||
@ATIDUR
Time Period from Idle to Sleep

Example: Set the time period from idle to sleep to 1000ms

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

Batch Mode

A trigger pull activates a round of multiple decode sessions. This round of multiple scans continues until you release the trigger. Rereading the same barcode is not allowed in the same round.

@SCNMOD12
Batch Mode

Decode Session Timeout

Decode Session Timeout: This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1,000ms increments from 1,000ms to 15,000ms. When it is set to 0, the timeout is infinite. The default timeout is 15,000ms.

To program this parameter, scan the **Decode Session Timeout** barcode, the numeric barcodes and the **Save** barcode. To find the numeric barcodes, see the "Digit Barcodes" section in Appendix.

@ORTSET
Decode Session Timeout

Example: Set the decode session timeout to 2,000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes "2", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Auto Mode

Auto Mode: Pressing the trigger activates a decode session. The decode session continues until the barcode is decoded or the decode session timeout expires (default: 15 seconds; user programmable). The scanner automatically starts one session after another until you press the trigger a second time.

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@SCNMOD8
Auto Mode

Decode Session Timeout

Decode Session Timeout: This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1,000ms increments from 1,000ms to 15,000ms. When it is set to 0, the timeout is infinite. The default timeout is 15,000ms.

To program this parameter, scan the **Decode Session Timeout** barcode, the numeric barcodes and the **Save** barcode. To find the numeric barcodes, see the "Digit Barcodes" section in Appendix.

‖‖‖ ‖ ‖‖‖ ‖‖ ‖‖ ‖‖‖ ‖‖
@ORTSET
Decode Session Timeout

 Example: Set the decode session timeout to 2,000ms

1.   Scan the **Enter Setup** barcode.
2.   Scan the **Decode Session Timeout** barcode.
3.   Scan the numeric barcodes "2", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4.   Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5.   Scan the **Exit Setup** barcode.

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

Disable Timeout between Decodes (Same Barcode): Allow the scanner to re-read same barcode, ignoring the timeout between decodes (same barcode).

@RRDENA0
** Disable Timeout between Decodes (Same Barcode)

@RRDENA1
Enable Timeout between Decodes (Same Barcode)

The following parameter sets the timeout between decodes for same barcode. It is programmable in 100ms increments from 0ms to 12,000ms. When it is set to 12700, the timeout is infinite. The default setting is 400ms.

@RRDDUR
Timeout between Decodes (Same Barcode)

Example: Set the timeout between decodes (same barcode) to 1,000ms

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

Blink Mode

Blink Mode: The scanner automatically activates a decode session. The decode session continues until the barcode is decoded or the decode session timeout expires (100ms; non-programmable). When a decode session is completed, the scanner waits until the timeout between decodes expires (default: 1s, user programmable) and then starts next session. The scanner continues to work in this pattern.

Pressing the trigger can also activate a decode session; holding down the trigger can suspend decode session.

```
@SCNMOD9
```
Blink Mode

Timeout between Decodes

Timeout between Decodes: This parameter sets the time period between the end of one decode session and the start of next session. It is programmable in 500ms increments from 0ms to 7,500ms. The default timeout is 0ms. To program this parameter, scan the **Timeout between Decodes** barcode, the numeric barcodes and the **Save** barcode.

```
@SCNINV
```
Timeout between Decodes

Example: Set the timeout between decodes to 1,000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes** barcode.
3. Scan the numeric barcodes "1", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Sense Mode

Sense Mode: The scanner activates a decode session every time when it detects a change in ambient illumination (excluding the situation when change is detected before the timeout between decodes expires). Decode session continues until the barcode is decoded or the decode session timeout expires.

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

@SCNMOD2
Sense Mode

Decode Session Timeout

Decode Session Timeout: This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1,000ms increments from 1,000ms to 15,000ms. When it is set to 0, the timeout is infinite. The default timeout is 15,000ms.

To program this parameter, scan the **Decode Session Timeout** barcode, the numeric barcodes and the **Save** barcode. To find the numeric barcodes, see the "Digit Barcodes" section in Appendix.

@ORTSET
Decode Session Timeout

Example: Set the decode session timeout to 2,000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes "2", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Timeout between Decodes

Timeout between Decodes: This parameter sets the time period between the end of one decode session and the start of next session. It is programmable in 500ms increments from 0ms to 7,500ms. The default timeout is 0ms. To program this parameter, scan the **Timeout between Decodes** barcode, the numeric barcodes and the **Save** barcode.

@SCNINV

Timeout between Decodes

Example: Set the timeout between decodes to 1,000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes** barcode.
3. Scan the numeric barcodes "1", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Sensitivity

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

```
@SENLVL3
```
** High Sensitivity

```
@SENLVL10
```
Low Sensitivity

```
@SENLVL5
```
Medium Sensitivity

```
@SENLVL
```
Custom Sensitivity

It is recommended not to set the custom sensitivity when one of the other three options can meet your needs.

Note: Sensitivity: Level 0-15; the smaller the number, the higher the sensitivity.

Example: Set the sensitivity to level 5

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

2. Scan the **Custom Sensitivity** barcode.

3. Scan the numeric barcode "5" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Exit Setup** barcode.

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

Disable Timeout between Decodes (Same Barcode): Allow the scanner to re-read same barcode, ignoring the timeout between decodes (same barcode).

@RRDENA0
** Disable Timeout between Decodes (Same Barcode)

@RRDENA1
Enable Timeout between Decodes (Same Barcode)

The following parameter sets the timeout between decodes for same barcode. It is programmable in 100ms increments from 0ms to 12,000ms. When it is set to 12700, the timeout is infinite. The default setting is 400ms.

@RRDDUR
Timeout between Decodes (Same Barcode)

Example: Set the timeout between decodes (same barcode) to 1,000ms

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

Continuous Mode

Continuous Mode: The scanner automatically activates decode sessions one after another. The decode session continues until the barcode is decoded. For a good read, the scanner waits until the timeout between decodes expires and then starts next session. For a bad read, the scanner continues to decode the barcode until it is decoded.

Holding down the trigger can also activate the scanner to decode continuously, but with no intervals (i.e. timeout between decodes will be ignored).

@SCNMOD10
Continuous Mode

Timeout between Decodes

Timeout between Decodes: This parameter sets the time period between the end of one decode session and the start of next session. It is programmable in 500ms increments from 0ms to 7,500ms. The default timeout is 0ms. To program this parameter, scan the **Timeout between Decodes** barcode, the numeric barcodes and the **Save** barcode.

@SCNINV
Timeout between Decodes

Example: Set the timeout between decodes to 1,000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes** barcode.
3. Scan the numeric barcodes "1", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

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

Disable Timeout between Decodes (Same Barcode): Allow the scanner to re-read same barcode, ignoring the timeout between decodes (same barcode).

@RRDENA0
** Disable Timeout between Decodes (Same Barcode)

@RRDENA1
Enable Timeout between Decodes (Same Barcode)

The following parameter sets the timeout between decodes for same barcode. It is programmable in 100ms increments from 0ms to 12,000ms. When it is set to 12700, the timeout is infinite. The default setting is 400ms.

@RRDDUR
Timeout between Decodes (Same Barcode)

Example: Set the timeout between decodes (same barcode) to 1,000ms

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

@SETUPN0
Exit Setup

Command Trigger Mode

Command Trigger Mode: The scanner activates a decode session when receiving the command string of "**7E 01 30 30 30 30 40 53 43 4E 43 54 4D 31 3B 03**" (~<SOH>0000@SCNCTM1;<ETX>) or scanning the **Start Trigger Simulation** barcode. The decode session continues until the barcode is decoded, or the decode session timeout expires, or the scanner receives the command string of "**7E 01 30 30 30 30 40 53 43 4E 43 54 4D 30 3B 03**" (~<SOH>0000@SCNCTM0;<ETX>) or scans the **Stop Trigger Simulation** barcode.

If the scanner receives the command string of "**7E 01 30 30 30 30 40 53 43 4E 43 54 4D 30 3B 03**" (~<SOH>0000@SCNCTM0;<ETX>) or scans the **Stop Trigger Simulation** barcode during a decode session, it will stop the decode session right away.

@SCNMOD11

Command Trigger Mode

@SCNCTM1

Start Trigger Simulation

@SCNCTM0

Stop Trigger Simulation

Note: Command Trigger mode is available only when the scanner uses RS-232 or USB COM Port Emulation. If you select this scan mode while using USB HID-KBW, USB HID-POS or IBM SurePOS communication, the scanner will ignore this setting and automatically switch to the Blink mode.

Decode Session Timeout

Decode Session Timeout: This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1,000ms increments from 1,000ms to 15,000ms. When it is set to 0, the timeout is infinite. The default timeout is 15,000ms.

To program this parameter, scan the **Decode Session Timeout** barcode, the numeric barcodes and the **Save** barcode. To find the numeric barcodes, see the "Digit Barcodes" section in Appendix.

@ORTSET

Decode Session Timeout

Example: Set the decode session timeout to 2,000ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode.
3. Scan the numeric barcodes "2", "0", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Bad Read Message

Scan the appropriate barcode below to select whether or not to send a bad read message (user-programmable) when a good read does not occur before trigger release, or the decode session timeout expires, or the scanner receives the command string of "**7E 01 30 30 30 30 40 53 43 4E 43 54 4D 30 3B 03**" (~<SOH>0000@SCNCTM0;<ETX>). This feature is **NOT** available in the Continuous mode.

@NGRENA0
** Bad Read Message OFF

@NGRENA1
Bad Read Message ON

A bad read message can contain two characters. To set a bad read message, scan the **Set Bad Read Message** barcode, the numeric barcodes and the **Save** barcode. The default setting is none.

@NGRSET
Set Bad Read Message

Example: Set the bad read message to "F"

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Bad Read Message** barcode.
3. Scan the numeric barcodes "4" and "6" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Security Setup

This parameter specifies the number of times to decode a barcode during a scan attempt. The higher the security level, the lower the error rate and decoding efficiency.

@SAFLVL0

Set Security Level to 1

@SAFLVL2

Set Security Level to 3

@SAFLVL1

Set Security Level to 2

@SAFLVL3

** Set Security Level to 4

Power On Beep

The scanner can be programmed to beep when it is powered on. Scan the **Off** barcode if you do not want a power on beep.

@PWBENA1

** On

@PWBENA0

Off

@SETUPN0
Exit Setup

Good Read Beep

@GRBENA1

** Good Read Beep ON

@GRBENA0

Good Read Beep OFF

Good Read Beep Frequency

@GRBFRQ800

Low

@GRBFRQ2730

** Medium

@GRBFRQ4200

High

Good Read Beep Volume

@GRBVOL0

** Loud

@GRBVOL1

Medium

@GRBVOL2

Low

Good Read Beep Duration

||| || ||||| ||| ||||| ||| |||||

@GRBDUR80
Medium (80ms)

||| ||| ||||| ||| ||||| ||| |||||

@GRBDUR40
Short (40ms)

||| ||| ||||| ||| ||||| ||| |||||

@GRBDUR120
** Long (120ms)

Good Read LED

@GRLENA1
** Good Read LED ON

@GRLENA0
Good Read LED OFF

Good Read LED Duration

Good Read LED Duration is programmable in 100ms increments from 0ms to 25,500ms. The default duration is 100ms. To program this parameter, scan the **Good Read LED Duration** barcode, the numeric barcodes and the **Save** barcode.

@GRLDUR100
** Short (100ms)

@GRLDUR200
Medium (200ms)

@GRLDUR300
Long (300ms)

@GRLDUR400
Prolonged (400ms)

@GRLDUR
Custom Duration

Example: Set the good read LED duration to 500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Duration** barcode.
3. Scan the numeric barcodes "5", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Good Read Indicator Timing

This sets the good read indicators (such as beep and LED) to occur either before or after successfully transmitting data.

||||| ||| |||| || ||||| |||
@GRBTIM0
Indicate after Data Transmission

||||| ||| |||| || ||||| |||
@GRBTIM1
** Indicate before Data Transmission

ACK/NAK Options

This enables/disables the ability of the scanner to support the RS-232 ACK/NAK protocol. When enabled, the scanner and/or the host sends an ACK (Default: <ACK>) when it receives data properly, and sends an NAK (Default: <NAK>) when the data is in error. This setting is valid only when the scanner uses RS-232 or USB COM or USB HID-POS communication.

4 options are provided:

Disable

Enable for Barcode Transmission: The scanner expects an ACK or NAK response from the host when a barcode is sent.

Enable for Host-command Acknowledgment: The scanner will respond with an ACK when the host sends the Enable Character (Default: "E", user-programmable) or Disable Character (Default: "D", user-programmable) and an NAK when it sends other character.

Enable for Barcode Transmission & Host-command Acknowledgment

Note: Do not enable this feature unless required.

@ANPENA0
** Disable

@ANPENA1
Enable for Barcode Transmission

@ANPENA2
Enable for Host-command Acknowledgment

@ANPENA3
Enable for Barcode Transmission & Host-command Acknowledgment

ACK/NAK Error Handling

You can specify the method the scanner uses to handle receive errors detected while waiting for an ACK character from the host.

3 options are provided:

Ignore Errors Detected: After a barcode is sent, the scanner will respond with an ACK if the host sends the Enable or Disable Character; the scanner will no longer wait for an ACK or NAK response if receiving any other character from the host.

Process Error as Valid ACK Character: After a barcode is sent, the scanner will process it as a valid ACK if the host sends any other character instead of an ACK or NAK response.

Process Error as Valid NAK Character: After a barcode is sent, the scanner will process it as a valid NAK if the host sends any other character instead of an ACK or NAK response.

@ANPERR0

** Ignore Errors Detected

@ANPERR1

Process Error as Valid ACK Character

@ANPERR2

Process Error as Valid NAK Character

ACK/NAK Character

You can specify an ASCII character or hex value to be used as the ACK/NAK character. ASCII characters or any hex value can be selected. Default ACK character=<ACK> (HEX: 06); default NAK character=<NAK> (HEX: 15).

@ANPACK
Set ACK Character

@ANPNAK
Set NAK Character

Example: Set the ACK character to 0x11

1. Scan the **Enter Setup** barcode.
2. Scan the **Set ACK Character** barcode.
3. Scan the numeric barcodes "1" and "1" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

ACK/NAK Transmit Error Beep

This specifies whether or not the scanner will issue a beep (200Hz, lasting for 400ms) when it receives an NAK response from the host following barcode transmission.

@ANPITF1
ACK/NAK Transmit Error Beep ON

@ANPITF0
** ACK/NAK Transmit Error Beep OFF

ACK/NAK Retry Count

This parameter specifies the number of times the scanner retries a barcode transmission when it awaits an ACK or NAK response from the host. The selection range is from 1 to 254 retries. A selection of 0 disables the count; a selection of 255 means unlimited retries. The default value is 3 (retries).

```
@ANPTRY
```
Set ACK/NAK Retry Count

Example: Set the ACK/NAK Retry Count to 200

1. Scan the **Enter Setup** barcode.
2. Scan the **Set ACK/NAK Retry Count** barcode.
3. Scan the numeric barcodes "2", "0" and "0" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

ACK/NAK Timeout

This parameter specifies the amount of time the scanner waits for an ACK character from the host following a barcode transmission. A selection of 0 disables the timeout.

ACK/NAK Timeout: 0-75, corresponding to 0ms, 200ms (**default**), ..., 15,000ms, in 200ms increments

```
@ANPTOV
```
Set ACK/NAK Timeout

Example: Set the ACK/NAK Timeout to 400ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Set ACK/NAK Timeout** barcode.
3. Scan the numeric barcode "2" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Enable/Disable Character

You can specify the value of the RS-232 host command used to enable or disable the scanner's ability to read barcode. ASCII characters or any hex value can be selected. Default Enable character= "E" (HEX: 45); default Disable character= "D" (HEX: 44).

```
@ANPECH
```
Set Enable Character

```
@ANPDCH
```
Set Disable Character

Example: Set the Enable character to "K" (0x4B)

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Enable Character** barcode.
3. Scan the numeric barcodes "4" and "B" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode

Chapter 3 Query Commands

You can scan one of the barcodes below to inquire the scanner information. The results will be sent to the Host.

@QRYSYS
Query Product Information

@QRYDCV
Query the Decoder Version

@QRYFWV
Query the Firmware Version

@QRYHWV
Query the Hardware Version

@QRYDAT
Query the Manufacturing Date

@QRYPDN
Query the Product Name

Chapter 4 Communication Settings

The scanner provides an RS-232 interface and a USB interface to communicate with the host device. The host device can receive scanned data and send commands to control the scanner or to access/alter the configuration information of the scanner via the interface.

RS-232 Interface

When the scanner is connected to the RS-232 port of a host device, the scanner will automatically enable RS-232 communication. However, you need to set communication parameters (including baud rate, parity check, data bit and stop bit) on the scanner to match the host device so that two devices can communicate with each other.

Baud Rate

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

@232BAD3
** 9600

@232BAD0
1200

@232BAD1
2400

@232BAD2
4800

@232BAD4
14400

@232BAD5
19200

@232BAD6
38400

@232BAD7
57600

@232BAD8
115200

@SETUPN0
Exit Setup

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@SETUPN1
```
** Enter Setup

Parity Check

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@232PAR0
```
** None

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@232PAR1
```
Even Parity

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@232PAR2
```
Odd Parity

Stop Bit

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@232STP0
```
** 1 Stop Bit

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@232STP1
```
2 Stop Bits

Data Bit

When the number of data bits is set to 7, you can only select either **Even Parity** or **Odd Parity**.

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@232DAT0
```
** 8 Data Bits

```
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
@232DAT1
```
7 Data Bits

Flow Control

If CTS flow control is enabled, the scanner determines whether to transmit data based on CTS signal level. When CTS signal is at high level which means the serial port's cache memory of receiving device (such as PC) is full, the scanner stops sending data through serial port until CTS signal is set to low level by receiving device and discards data 100ms later if receiving device still remains unprepared for receiving it. In the case of **CTS Flow Control** or **RTS_CTS Flow Control**[1], scanning may resume after the scanner sends or discards data; in the case of **RTS_CTS Flow Control**[2], scanning may resume only when CTS signal is at low level after the scanner sends or discards data.

If RTS flow control is enabled, whether the scanner receives data or not is dependent on RTS signal level. If the scanner is not ready for receiving, it will set RTS signal to high level. When sending device (such as PC) detects it, it will not send data to the scanner any more to prevent data loss.

If **No Flow Control** is selected, reception/transmission of serial data will not be influenced by RTS/CTS signal.

@232FLW0
** No Flow Control

@232FLW2
CTS Flow Control

@232FLW1
RTS Flow Control

@232FLW3
RTS_CTS Flow Control[1]

@232FLW4
RTS_CTS Flow Control[2]

Note: If **RTS_CTS Flow Control**[2] is selected, but the serial cable used does not contain RTS/CTS pins or is faulty, the scanner may stop responding (unable to read barcode or communicate). To troubleshoot this problem, connect the scanner to a host device with a USB cable and then scan any other flow control option programming barcode.

Datalogic Magellan Aux-RS232

Scanning the following barcode to program the scanner for a Datalogic Magellan Aux-RS232 port configuration.

@INTERF14

Datalogic Magellan Aux-RS232

Note: A specific data cable is necessary for the Datalogic Magellan Aux-RS232 port. Please contact salesperson to buy CBL-125R or CBL-128R cable.

USB Interface

USB Suspend

This feature allows the scanner to suspend its USB interface to conserve power when host PC goes into sleep or hibernate mode. To wake up the suspended device, disconnect and then connect the USB cable or awaken the host PC.

|||||| |||| |||| ||| ||||||
@USPENA0
** Disable USB Suspend

|||||| |||| |||| ||| ||||||
@USPENA1
Enable USB Suspend

USB HID-KBW

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

|||||| |||| |||| ||| ||||||
@INTERF3
** USB HID-KBW

Keyboard Layout

@KBWCTY0
** 1 – US (English)

@KBWCTY6
7 – Finland (Swedish)

@KBWCTY1
2 – Belgium (French)

@KBWCTY7
8 - France

@KBWCTY2
3 – Brazil (Portuguese)

@KBWCTY8
9 – German (Austria)

@KBWCTY3
4 – Canada (French)

@KBWCTY9
10 – Greece (Greek)

@KBWCTY4
5 - Czechoslovakia (Czech)

@KBWCTY10
11 – Hungary (Hungarian)

@KBWCTY5
6 - Danmark

@KBWCTY11
12 – Israel (Hebrew)

@KBWCTY12
13 - Italy

@KBWCTY19
19 - Russia

@KBWCTY14
14 – Netherlands (Dutch)

@KBWCTY22
20 – Spain (Spanish_International Sort)

@KBWCTY15
15 – Norwegian (Norway)

@KBWCTY23
21 – Swedish (Sweden)

@KBWCTY16
16 – Polish (Poland)

@KBWCTY24
22 – German (Switzerland)

@KBWCTY17
17 – Portuguese (Portugal)

@KBWCTY25
23 - Turkey_F

@KBWCTY18
18 - Romania

@KBWCTY26
24 – Turkey_Q

@KBWCTY27
25 - UK

@KBWCTY28
26 - Japan

Inter-Keystroke Delay

This parameter specifies the delay between emulated keystrokes. It is programmable in 5ms increments from 0ms to 75ms.

```
‖|‖‖|‖‖‖|‖‖‖|‖
@KBWDLY
```
Custom Delay

```
‖|‖‖|‖‖‖|‖‖‖|‖
@KBWDLY0
```
** No Delay

```
‖|‖‖|‖‖‖|‖‖‖|‖
@KBWDLY20
```
Short Delay (20ms)

```
‖|‖‖|‖‖‖|‖‖‖|‖
@KBWDLY40
```
Long Delay (40ms)

Example: Set the inter-keystroke delay to 5ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Delay** barcode.
3. Scan the numeric barcode "5" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Convert Case

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

```
‖|‖‖|‖‖‖|‖‖‖|‖
@KBWCAS0
```
** No Case Conversion

```
‖|‖‖|‖‖‖|‖‖‖|‖
@KBWCAS2
```
Convert All to Lower Case

```
‖|‖‖|‖‖‖|‖‖‖|‖
@KBWCAS1
```
Convert All to Upper Case

Emulate ALT+Keypad

When **Emulate ALT+Keypad** is turned on, any character whose ASCII value is greater than or equal to 0x20 is sent over the numeric keypad no matter which keyboard type is selected.

1. ALT Make

2. Enter the number corresponding to a desired character on the keypad.

3. ALT Break

Note: Since sending a character involves multiple keystroke emulations, this method appears less efficient.

@KBWALT0
** Emulate ALT+Keypad OFF
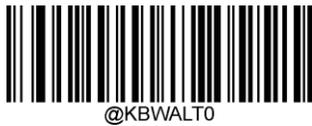
@KBWALT1
Emulate ALT+Keypad ON

Example: Supposing **Emulate ALT+Keypad** is ON, and **Emulate Keypad with Leading Zero** is Off, barcode data "AĐF" (65/208/70) is sent as below:

"A" – "ALT Make" + "065" + "ALT Break"

"Đ" -- "ALT Make" + "208" + "ALT Break"

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

Emulate Keypad with Leading Zero

You may turn this feature on to send character sequences sent over the numeric keypad as ISO characters which have a leading zero. For example, ASCII A transmits as "ALT MAKE" 0065 "ALT BREAK". This feature is only effective when **Emulate ALT+Keypad** is enabled.

@KBWALZ1
** On

@KBWALZ0
Off

Function Key Mapping

When **Ctrl+ASCII Mode** is selected, function characters (0x00 - 0x1F) are sent as ASCII sequences.

||||| ||| |||| |||| ||| |||||
@KBWFKM0
** Disable

||||| ||| |||| |||| ||| |||||
@KBWFKM1
Ctrl+ASCII Mode

||||| ||| |||| |||| ||| |||||
@KBWFKM2
Alt+Keypad Mode

Example: If **Ctrl+ASCII Mode** is selected and other parameters of USB HID-KBW adopt factory defaults, barcode data "A<HT>(i.e. Horizontal Tab)F" (0x41/0x09/0x46) is sent as below:

  "A" - Keystroke "A".
  <HT> - "Ctrl Make" + Keystroke "I" + "Ctrl Break"
  "F" - Keystroke "F"

For some text editors, "Ctrl I" means italic convert. So the output may be "A*F*".

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.

||||| ||| |||| |||| ||| |||||
@KBWNUM0
** Do Not Emulate Numeric Keypad

||||| ||| |||| |||| ||| |||||
@KBWNUM1
Emulate Numeric Keypad

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.

@KBWPOR0
** 1ms

@KBWPOR1
2ms

@KBWPOR2
3ms

@KBWPOR3
4ms

@KBWPOR4
5ms

@KBWPOR5
6ms

@KBWPOR6
7ms

@KBWPOR7
8ms

@KBWPOR8
9ms

@KBWPOR9
10ms

Code Page

The **Code Page** programming feature is provided to support more international characters. This setting is valid only when ASCII characters are sent in the ALT+Keypad way.

@KBWCPG0
** Code Page 1252 (Latin I)

@KBWCPG1
Code Page 1251 (Cyrillic)

USB COM Port Emulation

If you connect the scanner to the host device via a USB connection, the **USB COM Port Emulation** feature allows the host to receive data in the way as a serial port does. A driver is required for this feature.

@INTERF2
USB COM Port Emulation

USB HID-POS

Introduction

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

Features:

✧ HID based, no custom driver required.

✧ Way more efficient in communication than keyboard emulation and traditional RS-232 interface.

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

@INTERF5
USB HID-POS

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)							
58-61	Reserved (1-4)							
62	0x00							
63	-	-	-	-	-	-	-	Decoded Data Continued

IBM SurePOS

IBM SurePOS (Tabletop)

IBM SurePOS (Handheld)

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)
	USB HID-KBW	0C03	3075
	USB COM Port Emulation	0C06	3078
HR11 Plus	USB HID-POS	0C10	3088
	IBM SurePOS (Tabletop)	0C20	3104
	IBM SurePOS (Handheld)	0C21	3105

Chapter 5 Prefix & Suffix

Introduction

In real applications, barcode data may be found insufficient for your needs. You may wish to include additional information such as barcode type, data acquisition time or delimiter in data being scanned.

Adding extra information to printed barcodes does not seem like a sensible solution since that will increase the barcode size and make them inflexible. Instead, we come up with the idea of appending prefix and suffix to the data without making any change to barcodes. We will show you how to conduct the configuration in this chapter.

Note: Customized data: <Prefix> <Data><Suffix><Terminating Character>

Prefix Sequence

@PRESEQ0
** Code ID+Custom+AIM ID

@PRESEQ1
Custom+Code ID+AIM ID

Custom Prefix

Enable/Disable Custom Prefix

If custom prefix is enabled, you are allowed to append to scanned data a user-defined prefix that cannot exceed 11 characters.

For example, if barcode data is "123" and custom prefix is "AB", the host device will receive "AB123".

@CPRENA0
** Disable Custom Prefix

@CPRENA1
Enable Custom Prefix

Set Custom Prefix

To set a custom prefix, scan the **Set Custom Prefix** barcode and the numeric barcodes representing the hexadecimal value(s) of a desired prefix and then scan the **Save** barcode. Refer to the "ASCII Table" in Appendix for hexadecimal values of characters.

Note: A custom prefix cannot exceed 11 characters.

```
@CPRSET
```
Set Custom Prefix

Example: Set the custom prefix to "CODE" (HEX: 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" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Enable Custom Prefix** barcode.
6. Scan the **Exit Setup** barcode.

AIM ID Prefix

AIM (Automatic Identification Manufacturers) IDs and ISO/IEC 15424 standards define symbology identifiers and data carrier identifiers. (For the details, see the "AIM ID Table" in Appendix. If AIM ID prefix is enabled, the scanner will add the symbology identifier before the scanned data after decoding.
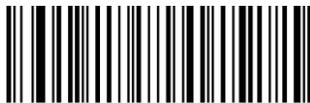
```
@AIDENA0
```
** Disable AIM ID Prefix

```
@AIDENA1
```
Enable AIM ID Prefix

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 characters (0x01~0xFF).

@CIDENA0

** Disable Code ID Prefix

@CIDENA1

Enable Code ID Prefix

Restore All Default Code IDs

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

@CIDDEF

Restore All Default Code IDs

Modify Code ID

To change the Code ID of a symbology, scan the appropriate **Modify Code ID** barcode below and the numeric barcodes representing the hexadecimal value of a desired Code ID and then scan the **Save** barcode.

@CID002
Modify Code 128 Code ID

@CID003
Modify UCC/EAN-128 Code ID

@CID020
Modify AIM 128 Code ID

@CID004
Modify EAN-8 Code ID

@CID005
Modify EAN-13 Code ID

@CID023
Modify ISSN Code ID

@CID024
Modify ISBN Code ID

@CID006
Modify UPC-E Code ID

@CID007
Modify UPC-A Code ID

@CID008
Modify Interleaved 2 of 5 Code ID

||||| |||| ||| |||| |||||
@CID010
Modify ITF-6 Code ID

||||| |||| ||| |||| |||||
@CID009
Modify ITF-14 Code ID

||||| |||| ||| |||| |||||
@CID128
Modify Deutsche 14 Code ID

||||| |||| ||| |||| |||||
@CID129
Modify Deutsche 12 Code ID

||||| |||| ||| |||| |||||
@CID022
Modify COOP 25 Code ID

||||| |||| ||| |||| |||||
@CID011
Modify Matrix 2 of 5 Code ID

||||| |||| ||| |||| |||||
@CID025
Modify Industrial 25 Code ID

||||| |||| ||| |||| |||||
@CID026
Modify Standard 25 Code ID

||||| |||| ||| |||| |||||
@CID013
Modify Code 39 Code ID

||||| |||| ||| |||| |||||
@CID015
Modify Codabar Code ID

@CID017

Modify Code 93 Code ID

@CID028

Modify Code 11 Code ID

@CID027

Modify Plessey Code ID

@CID029

Modify MSI-Plessey Code ID

@CID031

Modify GS1 Databar Code ID

Example: Set PDF417 Code ID to "p" (HEX: 0x70)

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

2. Scan the **Modify PDF417 Code ID** barcode.

3. Scan the numeric barcodes "7" and "0" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Exit Setup** barcode.

Example: 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.

Custom Suffix

Enable/Disable Custom Suffix

If custom suffix is enabled, you are allowed to append to scanned data a user-defined suffix that cannot exceed 11 characters.

For example, if barcode data is "123" and custom suffix is "AB", the host device will receive "123AB".

‖‖‖‖‖‖‖‖‖‖‖‖‖
@CSUENA0
** Disable Custom Suffix

‖‖‖‖‖‖‖‖‖‖‖‖‖
@CSUENA1
Enable Custom Suffix

Set Custom Suffix

To set a custom suffix, scan the **Set Custom Suffix** barcode and the numeric barcodes representing the hexadecimal value(s) of a desired prefix and then scan the **Save** barcode. Refer to the "ASCII Table" in Appendix for hexadecimal values of characters.

Note: A custom prefix cannot exceed 11 characters.

‖‖‖‖‖‖‖‖‖‖‖‖‖
@CSUSET
Set Custom Suffix

Example: Set the custom suffix to "AGE" (HEX: 0x41/0x47/0x45)

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Custom Suffix** barcode.
3. Scan the numeric barcodes "4", "1", "4", "7", "4" and "5" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Enable Custom Suffix** barcode.
6. Scan the **Exit Setup** barcode.

Terminating Character Suffix

Enable/Disable Terminating Character Suffix

A terminating character can be used to mark the end of data.

A terminating character suffix can contain 1 or 2 characters.

@TSUENA0
Disable Terminating Character Suffix

@TSUENA1
** Enable Terminating Character Suffix

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.

@TSUSET0D
** Terminating Character CR (0x0D)

@TSUSET0D0A
Terminating Character CRLF (0x0D,0x0A)

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

@TSUSET
Set Terminating Character Suffix

Example: Set the terminating character to LF (HEX: 0x0A)
1. Scan the **Enter Setup** barcode.
2. Scan the **Set Terminating Character Suffix** barcode.
3. Scan the numeric barcodes "0" and "A" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Exit Setup** barcode.

Chapter 6 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 symbologies. It is recommended to disable those that are rarely used to increase the efficiency of the scanner.

Global Settings

Enable/Disable All Symbologies

If the **Disable All Symbologies** feature is enabled, the scanner will not be able to read any non-programming barcodes except the programming barcodes.

|||||||||||||||||||||||||||||||||
@ALLENA1
Enable All Symbologies

|||||||||||||||||||||||||||||||||
@ALLENA0
Disable All Symbologies

Video Reverse

Regular barcode: Dark image on a bright background.

Inverse barcode: Bright image on a dark background.

Video Reverse allows the scanner to read barcodes that are inverted.

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

Video Reverse OFF: Read regular barcodes only.

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

|||||||||||||||||||||||||||||||||
@ALLINV1
Video Reverse ON

|||||||||||||||||||||||||||||||||
@ALLINV0
** Video Reverse OFF

Surround GS1 Application Identifiers (AI's) with Parentheses

When **Surround GS1 AI's with Parentheses** is selected, each application identifier (AI) contained in scanned data will be enclosed in parentheses in the output message.
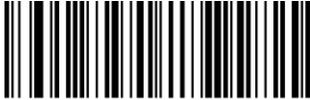
@GS1AIP0

** Do Not Surround GS1 AI's with Parentheses

@GS1AIP1

Surround GS1 AI's with Parentheses

Code 128

Restore Factory Defaults

@128DEF

Restore the Factory Defaults of Code 128

Enable/Disable Code 128

@128ENA1

** Enable Code 128

@128ENA0

Disable Code 128

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.

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.

@128MIN
Set the Minimum Length

@128MAX
Set the Maximum Length

Example: Set the scanner to decode Code128 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

UCC/EAN-128

Restore Factory Defaults

@GS1DEF

Restore the Factory Defaults of UCC/EAN-128

Enable/Disable UCC/EAN-128

@GS1ENA1

** Enable UCC/EAN-128

@GS1ENA0

Disable UCC/EAN-128

@SETUPN0

73   **Exit Setup**

Set Length Range for UCC/EAN-128

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

If minimum length is set to be greater than maximum length, the scanner only decodes UCC/EAN-128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only UCC/EAN-128 barcodes with that length are to be decoded.

@GS1MIN
Set the Minimum Length

@GS1MAX
Set the Maximum Length

Example: Set the scanner to decode UCC/EAN-128 barcodes containing between 8 and 12 characters

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

2. Scan the **Set the Minimum Length** barcode.

3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

AIM 128

Restore Factory Defaults

@AIMDEF
Restore the Factory Defaults of AIM 128

Enable/Disable AIM 128

@AIMENA1
Enable AIM 128

@AIMENA0
** Disable AIM 128

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.

If minimum length is set to be greater than maximum length, the scanner only decodes AIM 128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only AIM 128 barcodes with that length are to be decoded.

@AIMMIN
Set the Minimum Length

@AIMMAX
Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

EAN-8

Restore Factory Defaults

@EA8DEF

Restore the Factory Defaults of EAN-8

Enable/Disable EAN-8

@EA8ENA1

** Enable EAN-8

@EA8ENA0

Disable EAN-8

Transmit Check Character

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

@EA8CHK2

** Transmit EAN-8 Check Character

@EA8CHK1

Do Not Transmit EAN-8 Check Character

@SETUPN0

Exit Setup

Add-On Code

An EAN-8 barcode can be augmented with a two-digit or five-digit add-on code to form a new one.

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

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

@EA8AD20
** Disable 2-Digit Add-On Code

@EA8AD21
Enable 2-Digit Add-On Code

@EA8AD50
** Disable 5-Digit Add-On Code

@EA8AD51
Enable 5-Digit Add-On Code

Add-On Code Required

When **EAN-8 Add-On Code Required** is selected, the scanner will only read EAN-8 barcodes that contain add-on codes.

‖‖‖‖‖ @EA8REQ1

EAN-8 Add-On Code Required

‖‖‖‖‖ @EA8REQ0

** EAN-8 Add-On Code Not Required

Convert EAN-8 to EAN-13

Convert EAN-8 to EAN-13: Convert EAN-8 decoded data to EAN-13 format before transmission. After conversion, the data follows EAN-13 format and is affected by EAN-13 programming selections (e.g., Check Character).

Do Not Convert EAN-8 to EAN-13: EAN-8 decoded data is transmitted as EAN-8 data, without conversion.

‖‖‖‖‖ @EA8EXP0

** Do Not Convert EAN-8 to EAN-13

‖‖‖‖‖ @EA8EXP1

Convert EAN-8 to EAN-13

‖‖‖‖‖ @SETUPN0

Exit Setup

EAN-13

Restore Factory Defaults

||||| ||| |||| || |||| ||| |||||
@E13DEF

Restore the Factory Defaults of EAN-13

Enable/Disable EAN-13

||||| ||| |||| || |||| ||| |||||
@E13ENA1

** Enable EAN-13

||||| ||| |||| || |||| ||| |||||
@E13ENA0

Disable EAN-13

Transmit Check Character

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

||||| ||| |||| || |||| ||| |||||
@E13CHK2

** Transmit EAN-13 Check Character

||||| ||| |||| || |||| ||| |||||
@E13CHK1

Do Not Transmit EAN-13 Check Character

Add-On Code

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

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

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

@E13AD20
** Disable 2-Digit Add-On Code

@E13AD21
Enable 2-Digit Add-On Code

@E13AD50
** Disable 5-Digit Add-On Code

@E13AD51
Enable 5-Digit Add-On Code

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.

@E13REQ1
EAN-13 Add-On Code Required

@E13REQ0
** EAN-13 Add-On Code Not Required

@SETUPN0

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.

@E132900

** Do Not Require Add-On Code

@E132901

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.

@E133780

** Do Not Require Add-On Code

@E133781

Require Add-On Code

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.

@E134140
** Do Not Require Add-On Code

@E134141
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.

@E134340
** Do Not Require Add-On Code

@E134341
Require Add-On Code

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.

@E139770

** Do Not Require Add-On Code

@E139771

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.

@E139780

** Do Not Require Add-On Code

@E139781

Require Add-On Code

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.

@E139790

** Do Not Require Add-On Code

@E139791

Require Add-On Code

@SETUPN0

Exit Setup

ISSN

Restore Factory Defaults

@ISSDEF

Restore the Factory Defaults of ISSN

Enable/Disable ISSN

@ISSENA1

Enable ISSN

@ISSENA0

**** Disable ISSN**

ISBN

Restore Factory Defaults

@ISBDEF
Restore the Factory Defaults of ISBN

Enable/Disable ISBN

@ISBENA1
Enable ISBN

@ISBENA0
** Disable ISBN

Set ISBN Format

@ISBT100
** ISBN-13

@ISBT101
ISBN-10

UPC-E

Restore Factory Defaults

@UPEDEF
Restore the Factory Defaults of UPC-E

Enable/Disable UPC-E0

This setting enables or disables the scanner to read UPC-E barcodes that lead with the 0 number system.

@UPEENA1
** Enable UPC-E0

@UPEENA0
Disable UPC-E0

Enable/Disable UPC-E1

This setting enables or disables the scanner to read UPC-E barcodes that lead with the 0 number system.

@UPEEN11
Enable UPC-E1

@UPEEN10
** Disable UPC-E1

Transmit Check Character

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

```
@UPECHK2
** Transmit UPC-E Check Character
```

```
@UPECHK1
Do Not Transmit UPC-E Check Character
```

Add-On Code

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

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

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

```
@UPEAD20
** Disable 2-Digit Add-On Code
```

```
@UPEAD21
Enable 2-Digit Add-On Code
```

```
@UPEAD50
** Disable 5-Digit Add-On Code
```

```
@UPEAD51
Enable 5-Digit Add-On Code
```

Add-On Code Required

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

@UPEREQ1

UPC-E Add-On Code Required

@UPEREQ0

** UPC-E Add-On Code Not Required

Transmit Preamble Character

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

@UPEPRE0

** No Preamble

@UPEPRE1

System Character

@UPEPRE2

System Character & Country Code

Convert UPC-E to UPC-A

Convert UPC-E to UPC-A: Convert UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Character).

Do Not Convert UPC-E to UPC-A: UPC-E decoded data is transmitted as UPC-E data, without conversion.

@UPEEXP0
** Do Not Convert UPC-E to UPC-A

@UPEEXP1
Convert UPC-E to UPC-A

@SETUPN0

Exit Setup

UPC-A

Restore Factory Defaults

@UPADEF
Restore the Factory Defaults of UPC-A

Enable/Disable UPC-A

@UPAENA1
** Enable UPC-A

@UPAENA0
Disable UPC-A

Transmit Check Character

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

@UPACHK2
** Transmit UPC-A Check Character

@UPACHK1
Do Not Transmit UPC-A Check Character

Add-On Code

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

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

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

@UPAAD20

** Disable 2-Digit Add-On Code

@UPAAD21

Enable 2-Digit Add-On Code

@UPAAD50

** Disable 5-Digit Add-On Code

@UPAAD51

Enable 5-Digit Add-On Code

Add-On Code Required

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

@UPAREQ1

UPC-A Add-On Code Required

@UPAREQ0

** UPC-A Add-On Code Not Required

@SETUPN0

Exit Setup

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).

@UPAPRE0
No Preamble

@UPAPRE1
** System Character

@UPAPRE2
System Character & Country Code

Interleaved 2 of 5

Restore Factory Defaults

@I25DEF

Restore the Factory Defaults of Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5

@I25ENA1

** Enable Interleaved 2 of 5

@I25ENA0

Disable Interleaved 2 of 5

Check Character Verification

A check character is optional for Interleaved 2 of 5 and can be added as the last character. 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 Character After Verification: The scanner checks the integrity of all Interleaved 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

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

@I25CHK0
Disable

@I25CHK1
** Do Not Transmit Check Character After Verification

@I25CHK2
Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character 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 character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 6, Interleaved 2 of 5 barcodes with a total length of 6 characters including the check character cannot be read.)

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.

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.

@I25MIN

Set the Minimum Length

@I25MAX

Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

@SETUPN0

Exit Setup

Febraban

Enable/Disable Febraban
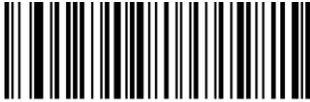
@I25FBB0
Disable Febraban

@I25FBB1
Enable Febraban, Do Not Expand

@I25FBB2
**** 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.

@FEBSEN0
**** Disable Transmit Delay per Character**

@FEBSEN1
Enable Transmit Delay per Character

@FEBMEN0
**** Disable Transmit Delay per 12 Characters**

@FEBMEN1
Enable Transmit Delay per 12 Characters

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, numeric barcode(s) that represent a desired value and the **Save** barcode. 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 500ms.

@FEBSDT

Custom Transmit Delay per Character

@FEBMDT

Custom Transmit Delay per 12 Characters

Example: 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 barcode "5" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Enable Transmit Delay per Character** barcode.
6. Scan the **Exit Setup** barcode.

Example: 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 barcodes "4" from the "Digit Barcodes" section in Appendix.
4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
5. Scan the **Enable Transmit Delay per 12 Characters** barcode.
6. Scan the **Exit Setup** barcode.

@SETUPN0

Exit 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.

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.

@IT6DEF

Restore the Factory Defaults of ITF-6

@IT6ENA0

** Disable ITF-6**

@IT6ENA1

Enable ITF-6 But Do Not Transmit Check Character

@IT6ENA2

Enable ITF-6 and Transmit Check Character

Note: 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.

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.

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.

@I14DEF

Restore the Factory Defaults of ITF-14

@I14ENA1

Enable ITF-14 But Do Not Transmit Check Character

@I14ENA0

** Disable ITF-14

@I14ENA2

Enable ITF-14 and Transmit Check Character

Note: 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.

In the events that the ITF-14 configuration clashes with the Deutsche14 settings, the former shall prevail.

@SETUPN0

Exit Setup

Deutsche 14

Restore Factory Defaults

@D14DEF

Restore the Factory Defaults of Deutsche 14

Enable/Disable Deutsche 14

@D14ENA1

Enable Deutsche 14 But Do Not Transmit Check Character

@D14ENA0

** Disable Deutsche 14

@D14ENA2

Enable Deutsche 14 and Transmit Check Character

Note: It is advised not to enable Deutsche 14 unless necessary, because Deutsche 14, ITF-14 and Interleaved 2 of 5 use the same encoding method and enabling them at the same time can easily cause confusion with each other when decoding.

Deutsche 12

Restore Factory Defaults

@D12DEF

Restore the Factory Defaults of Deutsche 12

Enable/Disable Deutsche 12

@D12ENA1

Enable Deutsche 12 But Do Not Transmit Check Character

@D12ENA0

** Disable Deutsche 12

@D12ENA2

Enable Deutsche 14 and Transmit Check Character

Note: It is advised not to enable Deutsche 12 unless necessary, because Deutsche 12, ITF-12 and Interleaved 2 of 5 use the same encoding method and enabling them at the same time can easily cause confusion with each other when decoding.

@SETUPN0

COOP 25 (Japanese Matrix 2 of 5)

Restore Factory Defaults

@COPDEF

Restore the Factory Defaults of COOP 25

Enable/Disable COOP 25

@COPENA1

Enable COOP 25

@COPENA0

** Disable COOP 25

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

Check Character Verification

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

Disable: The scanner transmits COOP 25 barcodes as is.

Do Not Transmit Check Character After Verification: The scanner checks the integrity of all COOP 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: The scanner checks the integrity of all COOP 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@COPCHK0
** Disable

@COPCHK2
Transmit Check Character After Verification

@COPCHK1
Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, COOP 25 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, COOP 25 barcodes with a total length of 4 characters including the check character cannot be read.)

@SETUPN0
Exit Setup

Set Length Range for COOP 25

The scanner can be configured to only decode COOP 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.

If minimum length is set to be greater than maximum length, the scanner only decodes COOP 25 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only COOP 25 barcodes with that length are to be decoded.

@COPMIN
Set the Minimum Length

@COPMAX
Set the Maximum Length

Example: Set the scanner to decode COOP 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

Matrix 2 of 5 (European Matrix 2 of 5)

Restore Factory Defaults

@M25DEF
Restore the Factory Defaults of Matrix 2 of 5

Enable/Disable Matrix 2 of 5

@M25ENA1
** Enable Matrix 2 of 5

@M25ENA0
Disable Matrix 2 of 5

Note: 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.

@SETUPN0
Exit Setup

Check Character Verification

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

Disable: The scanner transmits COOP 25 barcodes as is.

Do Not Transmit Check Character After Verification: The scanner checks the integrity of all COOP 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: The scanner checks the integrity of all COOP 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@M25CHK0
** Disable

@M25CHK2
Transmit Check Character After Verification

@M25CHK1
Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, COOP 25 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, COOP 25 barcodes with a total length of 4 characters including the check character cannot be read.)

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.

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.

@M25MIN

Set the Minimum Length

@M25MAX

Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

@SETUPN0

Exit Setup

Industrial 25

Restore Factory Defaults

@L25DEF

Restore the Factory Defaults of Industrial 25

Enable/Disable Industrial 25

@L25ENA1

** Enable Industrial 25

@L25ENA0

Disable Industrial 25

Note: 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.

Check Character Verification

A check character is optional for Industrial 25 and can be added as the last character. 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 Character After Verification: The scanner checks the integrity of all Industrial 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: The scanner checks the integrity of all Industrial 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@L25CHK0
**** Disable**

@L25CHK2
Transmit Check Character After Verification

@L25CHK1
Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, Industrial 25 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character 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 character cannot be read.)

@SETUPN0
Exit 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.

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.

@L25MIN

Set the Minimum Length

@L25MAX

Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

Standard 25

Restore Factory Defaults

@S25DEF

Restore the Factory Defaults of Standard 25

Enable/Disable Standard 25

@S25ENA1

** Enable Standard 25

@S25ENA0

Disable Standard 25

Note: 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.

@SETUPN0

Exit Setup

Check Character Verification

A check character is optional for Standard 25 and can be added as the last character. 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 Character After Verification: The scanner checks the integrity of all Standard 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: The scanner checks the integrity of all Standard 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

@S25CHK0

** Disable

@S25CHK2

Transmit Check Character After Verification

@S25CHK1

Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, Standard 25 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character 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 character cannot be read.)

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.

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.

@S25MIN
Set the Minimum Length

@S25MAX
Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

@SETUPN0
Exit Setup

Code 39

Restore Factory Defaults

@C39DEF

Restore the Factory Defaults of Code 39

Enable/Disable Code 39

@C39ENA1

** Enable Code 39

@C39ENA0

Disable Code 39

Note: 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.

Check Character Verification

A check character is optional for Code 39 and can be added as the last character. 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 Character After Verification: The scanner checks the integrity of all Code 39 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

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

@C39CHK0
** Disable

@C39CHK2
Transmit Check Character After Verification

@C39CHK1
Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, Code 39 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character 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 character cannot be read.)

@SETUPN0
Exit Setup

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.

@C39TSC1
Transmit Start/Stop Character

@C39TSC0
** Do not Transmit Start/Stop Character

Enable/Disable Code 39 Full ASCII

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

@C39ASC0
Disable Code 39 Full ASCII

@C39ASC1
** Enable Code 39 Full ASCII

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.

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.

@C39MIN

Set the Minimum Length

@C39MAX

Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

@SETUPN0

Exit Setup

Enable/Disable Code 32 (Italian Pharma Code)

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 character verification must be disabled for this parameter to function.

@C39E320

** Disable Code 32

@C39E321

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.

@C39S320

** Disable Code 32 Prefix

@C39S321

Enable Code 32 Prefix

Transmit Code 32 Start/Stop Character

Code 32 must be enabled for this parameter to function.

@C39T321

Transmit Code 32 Start/Stop Character

@C39T320

** Do Not Transmit Code 32 Start/Stop Character

Transmit Code 32 Check Character

Code 32 must be enabled for this parameter to function.

@C39C321

Transmit Code 32 Check Character

@C39C320

** Do Not Transmit Code 32 Check Character

@SETUPN0

Exit Setup

Codabar

Restore Factory Defaults

@CBADEF
Restore the Factory Defaults of Codabar

Enable/Disable Codabar

@CBAENA1
** Enable Codabar

@CBAENA0
Disable Codabar

Note: 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.

Check Character Verification

A check character is optional for Codabar and can be added as the last character. 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 Character After Verification: The scanner checks the integrity of all Codabar barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

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

@CBACHK0
** Disable

@CBACHK2
Transmit Check Character After Verification

@CBACHK1
Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, Codabar barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character 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 character cannot be read.)

@SETUPN0
Exit Setup

Start/Stop Character

@CBATSC0

Do Not Transmit Start/Stop Character

@CBATSC1

** Transmit Start/Stop Character

@CBASCF0

** ABCD/ABCD as the Start/Stop Character

@CBASCF1

ABCD/TN*E as the Start/Stop Character

@CBASCF2

abcd/abcd as the Start/Stop Character

@CBASCF3

abcd/tn*e as the Start/Stop Character

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.

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.

@CBAMIN

Set the Minimum Length

@CBAMAX

Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

@SETUPN0

Exit Setup

Code 93

Restore Factory Defaults

@C93DEF

Restore the Factory Defaults of Code 93

Enable/Disable Code 93

@C93ENA1

** Enable Code 93

@C93ENA0

Disable Code 93

Note: 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.

Check Character Verification

Check characters are optional for Code 93 and can be added as the last two characters, which are calculated values used to verify the integrity of the data. By default, the scanner does not transmit check characters after verification.

Disable: The scanner transmits Code 93 barcodes as is.

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

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

‖|‖|||‖||‖|‖||‖|‖|||‖
@C93CHK0
Disable

‖|‖||‖|||‖|‖||‖|‖||‖|‖
@C93CHK2
Transmit Check Character After Verification

‖|‖|||‖||‖|‖|||‖||‖|‖
@C93CHK1
** Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, Code 93 barcodes with a length that is less than the configured minimum length after having the two check characters excluded will not be decoded. (For example, when the **Do Not Transmit Check Characters 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 characters cannot be read.)

‖|‖||‖|‖||‖|‖||‖|‖||‖
@SETUPN0
Exit 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.

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.

@C93MIN
Set the Minimum Length

@C93MAX
Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

Code 11

Restore Factory Defaults

@C11DEF

Restore the Factory Defaults of Code 11

Enable/Disable Code 11

@C11ENA1

Enable Code 11

@C11ENA0

** Disable Code 11

Note: 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.

Check Character Verification

Check characters are optional for Code 11 and can be added as the last one or two characters, 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.

@C11CHK0
Disable

@C11CHK1
**** One Check Character, MOD11**

@C11CHK2
Two Check Characters, MOD11/MOD11

@C11CHK3
Two Check Characters, MOD11/MOD9

@C11CHK4
One Check Character, MOD11 (Len<=10)
Two Check Characters, MOD11/MOD11 (Len>10)

@C11CHK5
One Check Character, MOD11 (Len<=10)
Two Check Characters, MOD11/MOD9 (Len>10)

@C11TCK0
**** Do Not Transmit Check Character**

@C11TCK1
Transmit Check Character

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

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.

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.

@C11MIN
Set the Minimum Length

@C11MAX
Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

Plessey

Restore Factory Defaults

@PLYDEF

Restore the Factory Defaults of Plessey

Enable/Disable Plessey

@PLYENA1

Enable Plessey

@PLYENA0

** Disable Plessey

Note: 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.

Check Character Verification

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

Disable: The scanner transmits Plessey barcodes as is.

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

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

@PLYCHK0
Disable

@PLYCHK2
Transmit Check Character After Verification

@PLYCHK1
** Do Not Transmit Check Character After Verification

Note: If the **Do Not Transmit Check Character After Verification** option is enabled, Plessey barcodes with a length that is less than the configured minimum length after having the check characters excluded will not be decoded. (For example, when the **Do Not Transmit Check Character 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 characters cannot be read.)

@SETUPN0
Exit 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.

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.

@PLYMIN
Set the Minimum Length

@PLYMAX
Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

MSI-Plessey

Restore Factory Defaults

@MSIDEF

Restore the Factory Defaults of MSI-Plessey

Enable/Disable MSI-Plessey

@MSIENA1

Enable MSI-Plessey

@MSIENA0

** Disable MSI-Plessey

Note: 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.

@SETUPN0

Exit Setup

Check Character Verification

Check characters are optional for MSI-Plessey and can be added as the last one or two characters, 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.

@MSICHK0
Disable

@MSICHK1
** One Check Character, MOD10

@MSICHK2
Two Check Characters, MOD10/MOD10
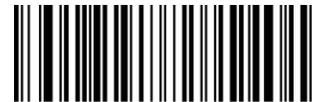
@MSICHK3
Two Check Characters, MOD10/MOD11

@MSITCK0
** Do Not Transmit Check Character

@MSITCK1
Transmit Check Character

Note: If you select a check character algorithm and the **Do Not Transmit Check Character** option, MSI-Plessey barcodes with a length that is less than the configured minimum length after having the check character(s) excluded will not be decoded. (For example, when the **One Check Character, MOD10** and **Do Not Transmit Check Character** options are enabled and the minimum length is set to 4, MSI-Plessey barcodes with a total length of 4 characters including the check character cannot be read.)

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.

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.

@MSIMIN
Set the Minimum Length

@MSIMAX
Set the Maximum Length

Example: 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" from the "Digit Barcodes" section in Appendix.

4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

5. Scan the **Set the Maximum Length** barcode.

6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.

7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.

8. Scan the **Exit Setup** barcode.

@SETUPN0
Exit Setup

GS1 Databar

Restore Factory Defaults

@RSSDEF

Restore the Factory Defaults of GS1 Databar

Enable/Disable GS1 Databar

@RSSENA1

** Enable GS1 Databar

@RSSENA0

Disable GS1 Databar

Note: 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.

Chapter 7 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 116 characters.

Add a Data Format

Data format is used to edit barcode data. When you create a data format, you must select one of the four labels (Format_0, Format_1, Format_2 and Format_3) for your data format, specify the application scope of data format (such as barcode type and data length) and include formatter commands. Multiple data formats may be created using the same label. 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 serial commands.

Programming with Barcodes

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

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

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

@DFMADD

Add Data Format

Step 3: Select a label (Format_0 or Format_1 or Format_2 or Format_3).
Scan a numeric barcode **0** or **1** or **2** or **3** to label this data format 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 the "Symbology ID Number" section in Appendix and find 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 "Data Formatter Commands" 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 "F", "1", "4" and "1". A command can contain up to 116 characters.

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

Example: Program a Format_0 data format 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 as the label
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

Programming with Serial Commands

A data format can also be created by serial commands (HEX) sent from the host device. **All commands must be entered in uppercase letters**.

The syntax consists of the following elements:

Prefix: "~<SOH>0000" (HEX: **7E 01 30 30 30 30**), 6 characters.

Storage type: "@" (HEX: **40**) or "#" (HEX: **23**), 1 character. "@" means permanent setting which will not be lost by removing power from the scanner or rebooting it; "#" means temporary setting which will be lost by removing power from the scanner or rebooting it.

Add Data Format Command: "DFMADD" (HEX: **44 46 4D 41 44 44**), 6 character.

Data format label: "0" (HEX: **30**) or "1" (HEX: **31**) or "2" (HEX: **32**) or "3" (HEX: **33**), 1 character. "0", "1", "2" and "3" represent Format_0, Format_1, Format_2 and Format_3 respectively.

Formatter command type: "6" (HEX: **36**), 1 character.

Interface type: "999" (HEX: **39 39 39**), 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. 116 characters. For more information, see the "Formatter Command Type 6" section in this chapter.

Suffix: ";<ETX>" (HEX: **3B 03**), 2 characters.

Example: Program a Format_0 data format using formatter command type 6, Code 128 containing 10 characters applicable, send all characters followed by "A".

Enter: **7E 01 30 30 30 30 40 44 46 4D 41 44 44 30 36 39 39 39 30 30 33 39 39 39 39 46 31 34 31 3B 03**

(~<SOH>0000@DFMADD069990020010F141;<ETX>)

Response: **02 01 30 30 30 30 40 44 46 4D 41 44 44 30 36 39 39 39 30 30 33 39 39 39 39 46 31 34 31 06 3B 03**

(<STX><SOH>0000@DFMADD069990020010F141<ACK>;<ETX>)

When creating multiple data formats sharing a label, the formats are separated from each other by a vertical bar (|) in the serial command.

Example: ~<SOH>0000@DFMADD069990020010F141|069990039999F142|069990049999F143;<ETX>
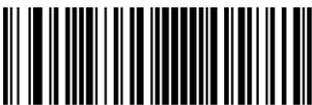
Enable/Disable Data Formatter

When Data Formatter is disabled, the barcode data is outputted to the host as read, including prefixes and suffixes.

@DFMENA0
** 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).

@DFMENA1

Enable Data Formatter, Required, Keep Prefix/Suffix

@DFMENA2

Enable Data Formatter, Required, Drop Prefix/Suffix

@DFMENA3

Enable Data Formatter, Not Required, Keep Prefix/Suffix

@DFMENA4

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.

@DFMTON0

Non-Match Error Beep OFF

@DFMTON1

** Non-Match Error Beep ON

Data Format Selection

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

```
@DFMUSE0
```
** Format_0

```
@DFMUSE1
```
Format_1

```
@DFMUSE2
```
Format_2

```
@DFMUSE3
```
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 use the data format you saved as Format_3. You can switch to Format_1 for a single trigger pull by scanning the **Single Scan – Format_1** barcode below. The next barcode that is scanned uses Format_1, then reverts back to Format_3.

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

```
@DFMSIN0
```
Single Scan – Format_0

```
@DFMSIN1
```
Single Scan – Format_1

```
@DFMSIN2
```
Single Scan – Format_2

```
@DFMSIN3
```
Single Scan – Format_3

```
@SETUPN0
```
Exit 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.

@DFMCAL
Clear All

@DFMCLR
Clear One

Query Data Formats

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

@DFMQCU
Query Data Formats

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 the "ASCII Table" in Appendix.

Send Commands

F1 Send all characters

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

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

F2 Send a number of characters

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

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

F2 Example: Send a number of characters

1234567890ABCDEFGHIJ

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>

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

1234567890ABCDEFGHIJ

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.

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

1234567890ABCDEFGHIJ

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.

B3 and B4 Example: Insert the symbology name and length

1234567890ABCDEFGHIJ

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>

B5 Insert key strokes

Syntax=B5nnssxx (nn: The number of keys pressed (without key modifiers); ss: the key modifier from the table below; xx: the key number from the "Unicode Key Maps" in Appendix.)

Insert a key stroke or combination of key strokes. Key strokes are dependent on your keyboard (see the "Unicode Key Maps" in Appendix). This command can only be used with USB HID-KBW.

Key Modifiers	
No Key Modifier	00
Shift Left	01
Shift Right	02
Alt Left	04
Alt Right	08
Control Left	10
Control Right	20

For example, B501001F inserts an "a" on a U.S. style keyboard. B5 = the command, 01 = number of keys pressed (without the key modifier), 00 is No Key Modifier, and 1F is the "a" key. If an "A" were to be inserted, B501011F or B501021F would be entered.

If there are two keystrokes, the syntax would change from Syntax=B5nnssxx for one keystroke to Syntax=B5nnssxxssxx. An example that would insert "aA" is as follows: B502001F011F.

Note: Key modifiers can be added together when needed. Example: Shift Left + Alt Left + Control Left =15

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.

F5 Example: Move the cursor forward and send the data

1234567890ABCDEFGHIJ

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.

Search Commands

F8 Search forward for a character

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

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

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

1234567890ABCDEFGHIJ

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

Command string: **F844F10D**

F8 is the "Search forward for a character" command

44 is the hex value for "D"

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: **DEFGHIJ**

<CR>

F9 Search backward for a character

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

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

@SETUPN1

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

1234567890ABCDEFGHIJ

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**
<div align="center">**<CR>**</div>

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."

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.

@SETUPN0

Exit Setup

Miscellaneous Commands

FB Suppress characters

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

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

FB Example: Remove spaces in barcode data

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>

E4 Replace characters

Syntax＝E4nnxx$_1$xx$_2$yy$_1$yy$_2$…zz$_1$zz$_2$ (nn: The total count of the number of characters (characters to be replaced plus replacement characters; xx$_1$: The characters to be replaced, xx$_2$: The replacement characters, continuing through zz$_1$ and zz$_2$)

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

E4 Example: Replace zeros with CRs in barcode data

1234056780ABC

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>

BA Replace a string with another

Syntax＝BAnnNN$_1$SS$_1$NN$_2$SS$_2$

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

NN$_1$: The length of the string to be replaced, NN$_1$>0.

SS$_1$: The ASCII hex value of each character in the string to be replaced.

NN$_2$: The length of replacement string, NN$_2$>=0. To replace string "SS$_1$" with NUL (i.e. delete string "SS$_1$"), you should set NN$_2$ to 00 and leave out SS$_2$.

SS$_2$: The ASCII hex value of each character in the replacement string

From the current cursor position, search forward for the occurrence of "SS$_1$" string (of length "NN$_1$") and replace the string with "SS$_2$" string (of length "NN$_2$") in the output message until every "SS$_1$" string is replaced or the count of replacements made reaches "nn" times, without moving the cursor.

BA Example: Replace "23"s with "ABC"s in barcode data
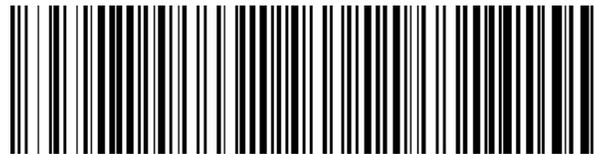
cd123abc23bc12ab232

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

Command string: **BA0002323303414243F100**

BA is the "Replace a string with another" command

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

02 is the length of the string to be replaced

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

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

03 is the length of the replacement string

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

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

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

F1 is the "Send all characters" command

00 is the hex value for a NUL

The data is output as: **cd1ABCabcABCbc12abABC2**

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

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

Command string: **BA0102323300F100**

BA is the "Replace a string with another" command

01 is the count of replacements to be made

02 is the length of the string to be replaced

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

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

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

F1 is the "Send all characters" command

00 is the hex value for a NUL

The data is output as: **cd1abc23bc12ab232**

@SETUPN0

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 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

Appendix

Factory Defaults Table

Parameter		Factory Default	Remark
General Settings			
Barcode Programming		Enabled	
Programming Barcode Data		Do not send	
Default Scan Mode		Manual Mode	
Manual Mode	Decode Session Timeout	15,000ms	1,000~15,000ms 0: Infinite
	Auto Sleep	Enabled	
	Time Period from Idle to Sleep	500ms	0~6,000ms
Batch Mode	Decode Session Timeout	15,000ms	1,000~15,000ms 0: Infinite
Auto Mode	Decode Session Timeout	15,000ms	1,000~15,000ms 0: Infinite
	Timeout between Decodes (Same Barcode)	Disabled 400ms	0~12,000ms 12700: Infinite
Blink Mode	Timeout between Decodes	0ms	0~7,500ms
Sense Mode	Decode Session Timeout	15,000ms	1,000~15,000ms 0: Infinite
	Timeout between Decodes	0ms	0~7,500ms
	Timeout between Decodes (Same Barcode)	Disabled 400ms	0~12,000ms 12700: Infinite
	Sensibility	High	Level 0~15
Continous Mode	Timeout between Decodes	0ms	0~7,500ms
	Timeout between Decodes (Same Barcode)	Disabled 400ms	0~12,000ms 12700: Infinite
Command Trigger Mode	Decode Session Timeout	15,000ms	1,000~15,000ms 0: Infinite

Parameter		Factory Default	Remark
Bad Read Message		Off None	Max. 2 chars
Security		Level 4	
Power On Beep		On	
Good Read Beep		On	
Good Read Beep Frequency		Medium	
Good Read Beep Volume		Loud	
Good Read Beep Duration		Long (120ms)	0~25,500ms
Good Read LED		On	
Good Read LED Duration		Short (100ms)	0~25,500ms
Good Read Indicator Timing		Indicate before Data Transmission	
ACK/NAK		Disabled	
ACK/NAK Error Handling		Ignore Errors Detected	
ACK Character		<ACK> (0x06)	
NAK Character		<NAK> (0x15)	
ACK/NAK Transmit Error Beep		Off	
ACK/NAK Retry Count		3	0~254 255: Unlimited
ACK/NAK Timeout		200ms	0~15,000ms
Enable Character		E (0x45)	
Disable Charater		D (0x44)	
Communication Settings			
Default Interface		USB HID-KBW	
RS-232	Baud Rate	9600 bps	
	Parity Check	None	
	Stop Bit	1	
	Data Bit	8	
	Flow Control	No Flow Control	
USB	USB Suspend	Disabled	
	Keyboard Layout	1 – US (English)	USB HID-KBW
	Inter-Keystroke Delay	0ms	USB HID-KBW 0~75ms
	Convert Case	No Case Conversion	USB HID-KBW
	Emulate ALT+Keypad	Off	USB HID-KBW

Parameter		Factory Default	Remark
	Emulate Keypad with Leading Zero	On	USB HID-KBW
	Function Key Mapping	Disabled	USB HID-KBW
	Emulate Numeric Keypad	Disabled	USB HID-KBW
	Polling Rate	1ms	USB HID-KBW
	Code Page	Code Page 1252 (Latin I)	USB HID-KBW
Prefix & Suffix			
Prefix Sequence		Code ID+Custom+AIM ID	
AIM ID Prefix		Disabled	
Code ID Prefix		Disabled	Max. 2 chars (0x01-0xFF)
Custom Prefix		Disabled	Max. 11 chars
Custom Suffix		Disabled	Max. 11 chars
Terminating Character Suffix		Enabled CR (0x0D)	Max. 2 chars
Symbologies			
Global Settings			
Video Reverse		Off	Applicable to all symbologies.
Surround GS1 AI's with Parentheses		Do Not Surround GS1 AI's with Parentheses	
Code 128			
Code 128		Enabled	
Maximum Length		255	
Minimum Length		1	
UCC/EAN-128			
UCC/EAN-12		Enabled	
Maximum Length		255	
Minimum Length		1	
AIM 128			
AIM 128		Disabled	
Maximum Length		255	

Parameter	Factory Default	Remark
Minimum Length	1	
EAN-8		
EAN-8	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Convert EAN-8 to EAN-13	Disabled	
EAN-13		
EAN-13	Enabled	
Check Character	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	
ISSN		
ISSN	Disabled	
ISBN		
ISBN	Disabled	
ISBN Format	ISBN-13	
UPC-E		
UPC-E0	Enabled	
UPC-E1	Disabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	

Parameter	Factory Default	Remark
Convert UPC-E to UPC-A	Disabled	
Transmit Preamble Character	No Preamble	
UPC-A		
UPC-A	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not required	
Transmit Preamble Character	System Character	
Interleaved 2 of 5		
Interleaved 2 of 5	Enabled	
Check Character Verification	Enabled	
Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	6	No less than 5
Febraban		
Febraban	Enable Febraban, Expand	
Transmit Delay per Character	Disabled, 70ms	
Transmit Delay per 12 Characters	Disabled, 500ms	
ITF-6		
ITF-6	Disabled	
Check Character	Do not transmit	
ITF-14		
ITF-14	Disabled	
Check Character	Do not transmit	
Deutshe 14		
Deutshe 14	Disabled	
Check Character	Do not transmit	
Deutshe 12		
Deutshe 12	Disabled	
Check Character	Do not transmit	

Parameter	Factory Default	Remark
COOP 25(Japanese Matrix 2 of 5)		
COOP 25	Disabled	
Check Character Verification	Disabled	
Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	6	No less than 3
Matrix 2 of 5(European Matrix 2 of 5)		
Matrix 2 of 5	Enabled	
Check Character Verification	Disabled	
Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	6	No less than 3
Industrial 25		
Industrial 25	On	
Check Character Verification	Disabled	
Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	6	No less than 4
Standard 25		
Standard 25	Enabled	
Check Character Verification	Disabled	
Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	6	No less than 4
Code 39		
Code 39	Enabled	
Check Character Verification	Disabled	
Check Character	Do not transmit	
Code 39 Start/Stop Character	Do not transmit	

Parameter	Factory Default	Remark
Code 39 Full ASCII	Enabled	
Code 32	Disabled	
Code 32 Prefix	Disabled	
Code 32 Start/Stop Character	Do not transmit	
Code 32 Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	4	No lesss than 4 (including start/stop characters and check character)
Codabar		
Codabar	Enabled	
Check Character Verification	Disabled	
Check Character	Do not transmit	
Start/Stop Character	ABCD/ABCD Transmit	
Maximum Length	255	
Minimum Length	4	No less than 1
Code 93		
Code 93	Enabled	
Check Character Verification	Enabled	
Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	2	No less than 1
Code 11		
Code 11	Disabled	
Check Character	Do not transmit	
Check Character Verification	1 Check Character, MOD11	
Maximum Length	255	

Parameter	Factory Default	Remark
Minimum Length	4	No less than 3
Plessey		
Plessey	Disabled	
Check Character Verification	Enabled	
Check Character	Do not transmit	
Maximum Length	255	
Minimum Length	4	No less than 4
MSI-Plessey		
MSI-Plessey	Disabled	
Check Character	Do not transmit	
Check Character Verification	1 Check Character, MOD10	
Maximum Length	255	
Minimum Length	4	No less than 3
GS1 Databar		
GS1 Databar	Enabled	
Data Formatter		
Data Formatter	Disabled	
Data Format Selection	Format_0	
Non-Match Error Beep	On	

AIM ID Table

Symbology	AIM ID	Possible AIM ID Modifiers (m)
Code 128	]C0	
UCC/EAN-128	]C1	
AIM 128	]C2	
EAN-8	]E4	
EAN-13	]E0	
EAN-13 with Add-On	]E3	
ISSN	]X0	
ISBN	]X0	
UPC-E	]E0	
UPC-E with Add-On	]E3	
UPC-A	]E0	
UPC-A with Add-On	]E3	
Interleaved 2 of 5, Febraban	]Im	0, 1, 3
ITF-6	]Im	1, 3
ITF-14	]Im	1, 3
Deutsche 14	]X0	
Deutsche 12	]X0	
COOP 25 (Japanese Matrix 2 of 5)	]X0	
Matrix 2 of 5 (European Matrix 2 of 5)	]X0	
Industrial 25	]S0	
Standard 25	]R0	
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
Plessey	]P0	
MSI-Plessey	]Mm	0, 1
GS1 Databar	]e0	

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

Code ID Table

Symbology	Code ID
Code 128	j
UCC/EAN-128	u
AIM 128	f
EAN-8	g
EAN-13	d
ISSN	n
ISBN	B
UPC-E	h
UPC-A	c
Interleaved 2 of 5, Febraban	e
ITF-6	r
ITF-14	q
Deutsche 14	w
Deutsche 12	l
COOP 25 (Japanese Matrix 2 of 5)	o
Matrix 2 of 5 (European Matrix 2 of 5)	v
Industrial 25	i
Standard 25	s
Code 39, Code 32	b
Codabar	a
Code 93	y
Code 11	z
Plessey	p
MSI-Plessey	m
GS1 Databar	R

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)

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

Hex	Dec	Char
3e	62	> (Greater Than)
3f	63	? (Question Mark)
40	64	@ (AT Symbol)
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[(Left/ Opening Bracket)
5c	92	\ (Back Slash)
5d	93	] (Right/ Closing Bracket)

Hex	Dec	Char
5e	94	^ (Caret/ Circumflex)
5f	95	_ (Underscore)
60	96	' (Grave Accent)
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q
72	114	r
73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7a	122	z
7b	123	{ (Left/ Opening Brace)
7c	124	| (Vertical Bar)
7d	125	} (Right/ Closing Brace)
7e	126	~ (Tilde)
7f	127	DEL (Delete)

ASCII Function Key Mapping Table

ASCII Function	ASCII Value (HEX)	Function Key Mapping Disabled	Ctrl+ASCII
NUL (Null char.)	00	Null	Ctrl+@
SOH (Start of Header)	01	Keypad Enter	Ctrl+A
STX (Start of Text)	02	Caps Lock	Ctrl+B
ETX (End of Text)	03	ALT	Ctrl+C
EOT (End of Transmission)	04	Null	Ctrl+D
ENQ (Enquiry)	05	CTRL	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/ | Function Key Mapping | | | | |
Keyboard Layout	1B	1C	1D	1E	1F
United States	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-
Belgium	Ctrl+[	Ctrl+<	Ctrl+]	Ctrl+6	Ctrl+-
Scandinavia	Ctrl+8	Ctrl+<	Ctrl+9	Ctrl+6	Ctrl+-
France	Ctrl+^	Ctrl+8	Ctrl+$	Ctrl+6	Ctrl+=
Germany		Ctrl+Ã	Ctrl++	Ctrl+6	Ctrl+-
Italy		Ctrl+\	Ctrl++	Ctrl+6	Ctrl+-
Switzerland		Ctrl+<	Ctrl+.	Ctrl+6	Ctrl+-
United Kingdom	Ctrl+[	Ctrl+¢	Ctrl+]	Ctrl+6	Ctrl+-
Denmark	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-
Norway	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-
Spain	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-

Symbology ID Number

Symbology	ID Number
Code 128	002
UCC/EAN-128	003
EAN-8	004
EAN-13	005
UPC-E	006
UPC-A	007
Interleaved 2 of 5, Febraban	008
ITF-14	009
ITF-6	010
Matrix 2 of 5	011
Code 39, Code 32	013
Codabar	015
Code 93	017
AIM-128	020
COOP 25	022
ISSN	023
ISBN	024
Industrial 25	025
Standard 25	026
Plessey	027
Code 11	028
MSI-Plessey	029
GS1 Databar	031
Deutsche 14	128
Deutsche 12	129

Unicode Key Maps

104 Key U.S. Style Keyboard

Digit Barcodes

0~9

```
@DIGIT0
0
```

```
@DIGIT5
5
```

```
@DIGIT1
1
```

```
@DIGIT6
6
```

```
@DIGIT2
2
```

```
@DIGIT7
7
```

```
@DIGIT3
3
```

```
@DIGIT8
8
```

```
@DIGIT4
4
```

```
@DIGIT9
9
```

A~F

‖‖‖‖‖‖‖‖‖‖
@DIGITA
A

‖‖‖‖‖‖‖‖‖‖
@DIGITD
D

‖‖‖‖‖‖‖‖‖‖
@DIGITB
B

‖‖‖‖‖‖‖‖‖‖
@DIGITE
E

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@DIGITC
C

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@DIGITF
F

Save/Cancel Barcodes

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

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

◇ **Delete the Last Digit:** The last digit "3" will be removed.

◇ **Delete All Digits:** All digits "123" will be removed.

◇ **Cancel:** The maximum length configuration will be cancelled. And the scanner is still in the setup mode.

<table>
<tr>
<td align="center">@DIGSAV
Save</td>
<td align="center">@DIGCAN
Cancel</td>
</tr>
<tr>
<td align="center">@DIGDEL
Delete the Last Digit</td>
<td align="center">@DIGDAL
Delete All Digits</td>
</tr>
</table>

SCANNING MADE SIMPLE

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