MK-5800BT

Bluetooth 2D Imager Barcode Scanner Configuration Guide

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/ TV technician for help.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

RF exposure warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "**Contains FCC ID: YKH319-BT82600** "

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an OEM or integrator, but should not be distributed to the end user.

1) This device is intended for OEM integrators only.

2) Please see the full Grant of Equipment document for other restrictions.

Revision History

Version	Description	Date
V1.0.0	Initial release.	November 4, 2016
V1.0.1	1. Added the **Specify Decoding Area (Top**, **Bottom**, **Left**, **Right)** feature in Chapter 4. 2. Added **Chapter 10 Batch Programming**. 3. Changed the range of Decode Session Timeout to 100ms - 3,600,000ms. 4. Added the **EAN-13 Beginning with 290 Add-On Code Required**, **EAN-13 Beginning with 378/379 Add-On Code Required**, **EAN-13 Beginning with 414/419 Add-On Code Required**, **EAN-13 Beginning with 434/439 Add-On Code Required**, **EAN-13 Beginning with 977 Add-On Code Required**, **EAN-13 Beginning with 978 Add-On Code Required**, **EAN-13 Beginning with 979 Add-On Code Required**, **Code 32 (Italian Pharma Code)**, **Code 32 Prefix**, **Transmit Code 32 Check Digit** and **Transmit Code 32 Start/Stop Character** features in Chapter 8. Note: Firmware version V1.04.052 or later is required for the new features 1 and 2; firmware version V1.04.071 or later is required for the new features 3 and 4.	February 13, 2017

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Enter Setup

Chapter 1 Getting Starte

Barcode Programming

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 engine. To exit the setup mode, scan the **Exit Setup** barcode.

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

Enter Setup

**** Exit Setup**

Factory Defaults

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

Note: Use this feature with discretion.

Restore All Factory Defaults

**** Exit Setup**

0006010

Enter Setup

Chapter 2 Scan Mode

Batch Mode

This round of multiple scans continues until the active trigger signal is no longer present. Rereading the same barcode is not allowed if it was decoded previously in the same round. For good read, the engine transmits decoded data via communication port. To activate another round of multiple scans, the Host needs to first negate the trigger, waits 20ms or longer and then drive the TRIG pin low.

0302003

Batch Mode

0006010

Enter Setup

Trigger Mode

The session continues until the barcode is decoded or decode session timeout expires or the active trigger signal is no longer present. For good read, the scanner transmits decoded data via communication port. To activate another session, the Host needs to first negate the trigger, waits 20ms or longer and then drive the TRIG pin low.

0302000

****Trigger Mode**

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1ms increments from 100ms to 3,600,000ms. When it is set to 0, the timeout is infinite. The default setting is 3,000ms. To learn how to program this parameter, see **Appendix 4**.

0313000

Decode Session Timeout

0006000

**** Exit Setup**

0006010

Enter Setup

Level Trigger/Pulse Trigger

Level trigger: Decode session is activated and continued by constant active trigger signal. The decode session ends once the barcode is decoded or decode session timeout expires.

Pulse trigger: Decode session is activated by electric pulse of trigger signal. The decode session continues until the barcode is decoded or decode session timeout expires.

0313090

**** Level Trigger**

0313091

Pulse Trigger

Auto Sleep

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

0313060

**** Enable Auto Sleep**

0313070

Disable Auto Sleep

The parameter below specifies how long the scanner remains idle (no operation or communication occurs) before it is put into sleep mode. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 500ms. To learn how to program this parameter, see **Appendix 4**.

0313050

Time Period from Idle to Sleep

0006010

Enter Setup

Timeout between Decodes (Same Barcode)

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

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

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

Disable Timeout between Decodes (Same Barcode): Allow the engine to re-read same barcode.

0313161

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

0313171

Enable Timeout between Decodes (Same Barcode)

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

To learn how to program this parameter, see **Appendix 4**.

0313010

Timeout between Decodes (Same Barcode)

0006000

**** Exit Setup**

0006010

Enter Setup

Sense Mode

If the Sense Mode is enabled, the scanner activates a decode session every time it detects a change in ambient illumination. The decode session continues until the barcode is decoded or the decode session timeout expires.

Driving the TRIG pin on the host interface connector low can also activate a decode session. The decode session continues until the active trigger signal is no longer present or the barcode is decoded or the decode session timeout expires. The trigger signal needs to be negated before the scanner is able to monitor ambient illumination again.

0302010

Sense Mode

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. If the timeout expires or the barcode is decoded, the engine goes back to monitoring ambient illumination. It is programmable in 1ms increments from 100ms to 3,600,000ms. When it is set to 0, the timeout is infinite. The default setting is 3,000ms. To learn how to program this parameter, see **Appendix 4**.

0313000

Decode Session Timeout

0006010

Enter Setup

Image Stabilization Timeout

This parameter defines the amount of time that the scanner waits for the image to stabilize to a point that it can be decoded with more accuracy. It is programmable in 1ms increments from 0ms to 1,600ms. The default setting is 500ms.To learn how to program this parameter, see **Appendix 4**.

0313120

Image Stabilization Timeout

Timeout between Decodes

This parameter sets the timeout between decode sessions. When a decode session ends, next session will not happen until the timeout between decodes expires. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 1,000ms. To learn how to program this parameter, see **Appendix 4**.

0313040

Timeout between Decodes

Continue after Good Read

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

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

0313130

**** Pause after Good Read**

0313131

Continue after Good Read

0006000

**** Exit Setup**

Enter Setup

Timeout between Decodes (Same Barcode)

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

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

Enable Timeout between Decodes (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.

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

Enable Timeout between Decodes (Same Barcode)

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

To learn how to program this parameter, see **Appendix 4**.

Timeout between Decodes (Same Barcode)

**** Exit Setup**

0006010

Enter Setup

Sensitivity

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

0312010

Medium Sensitivity

0312000

Low Sensitivity

0312020

High Sensitivity

0312030

Enhanced Sensitivity

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

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

To learn how to program this parameter, see **Appendix 4**.

0312040

Threshold Value of Illumination Change (1-20)

0006000

**** Exit Setup**

0006010

Enter Setup

Continuous Mode

This mode enables the scanner to scan/capture, decode and transmit over and over again.

When the scanner is operating in Continuous Mode, barcode reading can be suspended/resumed through control over the trigger signal. When barcode reading is in progress, negating the trigger signal after having maintained it for 30ms or longer will suspend barcode reading; when barcode reading is suspended, performing the same control over the trigger signal will resume barcode reading.

Continuous Mode

Decode Session Timeout

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1ms increments from 100ms to 3,600,000ms. When it is set to 0, the timeout is infinite. The default setting is 3,000ms. To learn how to program this parameter, see **Appendix 4**.

Decode Session Timeout

Timeout between Decodes

This parameter sets the timeout between decode sessions. When a decode session ends, next session will not happen until the timeout between decodes expires. It is programmable in 1ms increments from 0ms to 65,535ms. The default setting is 1,000ms. To learn how to program this parameter, see **Appendix 4**.

Timeout between Decodes

0006000

**** Exit Setup**

0006010

Enter Setup

Timeout between Decodes (Same Barcode)

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

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

Enable Timeout between Decodes (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.

0313160

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

0313170

Enable Timeout between Decodes (Same Barcode)

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

To learn how to program this parameter, see **Appendix 4**.

0313010

Timeout between Decodes (Same Barcode)

0006000

**** Exit Setup**

0006010

Enter Setup

Chapter 3 Scanning Preferences

Introduction

This chapter contains information as to how to adapt your scanner to various applications with preference setting. For instance, to narrow the field of view of the scanner to make sure it reads only those barcodes intended by the user.

Decode Area

Whole Area Decoding

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

0322000

**** Whole Area Decoding**

Specific Area Decoding

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

0322010

Specific Area Decoding

0006000

**** Exit Setup**

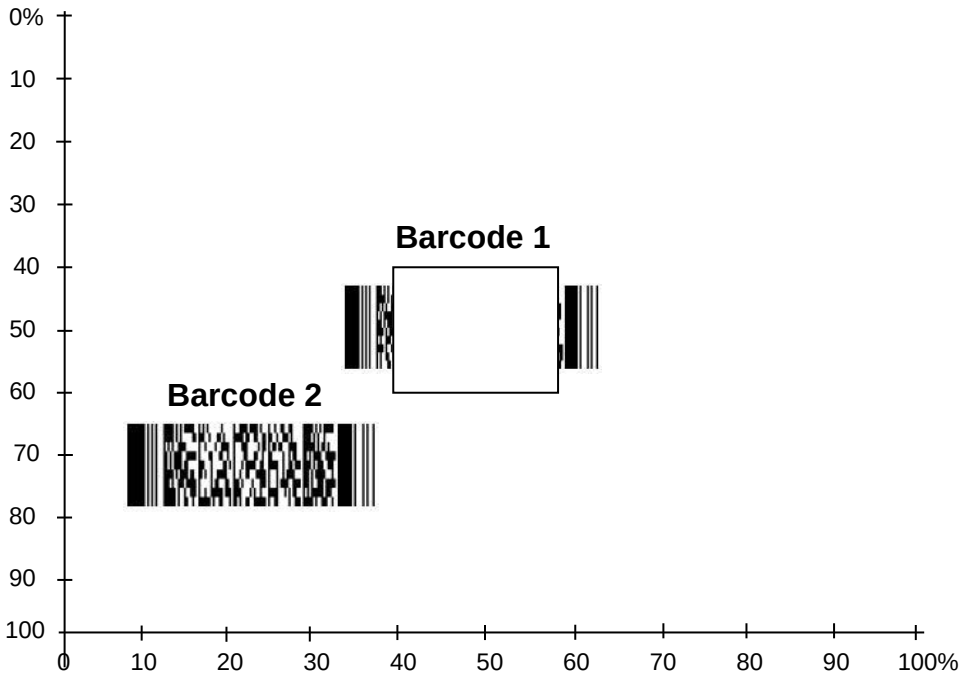
0006010
Enter Setup

Specify Decoding Area

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

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

You can define the decoding area using the **Top of Decoding Area**, **Bottom of Decoding Area**, **Left of Decoding Area** and **Right of Decoding Area** barcodes as well as numeric barcode(s) that represent(s) a desired percentage (0-100). To learn how to program decoding area, see **Appendix 5**.



0006000
**** Exit Setup**

0006010

Enter Setup

Top of Decoding Area

Bottom of Decoding Area

Left of Decoding Area

Right of Decoding Area


0006010

Enter Setup

Chapter 4 Illumination & Aiming

Illumination

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

Normal: Illumination LEDs are turned on during image capture.

Always ON: Illumination LEDs keep ON after the engine is powered on.

OFF: Illumination LEDs are OFF all the time.


0200000

**** Normal**


0200020

OFF


0200010

Always ON


0006000

** **Exit Setup**

0006010

Enter Setup

Aiming

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

Normal: The scnner projects an aiming pattern only during barcode scanning/capture.

Always ON: Aiming pattern is constantly ON after the scanner is powered on.

OFF: Aiming pattern is OFF all the time.

0201000

**** Normal**

0201020

OFF

0201010

Always ON

0006000

**** Exit Setup**

0006010

Enter Setup

Chapter 5 Beep & LED Notifications

Startup Beep

If startup beep is enabled, the scanner will beep after being turned on.

**** Enable Startup Beep**

Disable Startup Beep

0006000

**** Exit Setup**

0006010

Enter Setup

Good Read Beep for Non-programming Barcode

The scanner can provide a PWM output to an external driver circuit to drive a beeper after decoding a non-programming barcode. Scan the appropriate barcode below to enable or disable the emission of good read beep. Beep type (frequency) and volume are also user programmable.

0203010

**** Good Read Beep On for Non-programming Barcode**

0203000

Good Read Beep Off for Non-programming Barcode

Beep Type

0203020

Type 1

0203022

**** Type 3**

0203021

Type 2

0006000

**** Exit Setup**

0006010

Enter Setup

Beep Volume

**** Loud**

Low

Medium

Beep on Unknown Character

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

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

Beep on Unknown Character

**** Do Not Beep on Unknown Character**

**** Exit Setup**

0006010

Enter Setup

Good Read Beep for Programming Barcode

**** Good Read Beep On for Programming Barcode**

Good Read Beep Off for Programming Barcode

0006010

Enter Setup

Transmit NGR Message

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

Transmit NGR Message

**** Do Not Transmit NGR Message**

Edit NGR Message

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

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

Edit NGR Message

0006000

**** Exit Setup**

0006010

Enter Setup

Chapter 6 Prefix & Suffix

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

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

Data formatting may include:

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

The following formats can be used when editing barcode data:

- ✧ [Code ID] + [Custom Prefix] + [AIM ID] + [DATA] + [Custom Suffix] + [Terminating Character]
- ✧ [Custom Prefix] + [Code ID] + [AIM ID] + [DATA] + [Custom Suffix] + [Terminating Character]

0006000

**** Exit Setup**

0006010

Enter Setup

Global Settings

Enable/Disable All Prefix/Suffix

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

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

Enable All Prefix/Suffix

Disable All Prefix/Suffix

Prefix Sequences

Code ID+Custom Prefix+AIM ID

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

0006000

**** Exit Setup**

Enter Setup

Custom Prefix

Enable/Disable Custom Prefix

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

Enable Custom Prefix

**** Disable Custom Prefix**

Set Custom Prefix

To set a custom prefix, scan the **Set Custom Prefix** barcode and the numeric barcodes representing the hexadecimal values of a desired prefix and then scan the **Save** barcode. Refer to **Appendix 3: ASCII Table** for hexadecimal values of characters.

Note: A custom prefix cannot exceed 11 characters.

Set Custom Prefix

Example: Set the custom prefix to "CODE"

1. Check the hex values of "CODE" in the ASCII Table. ("CODE": 43, 4F, 44, 45)
2. Scan the **Enter Setup** barcode.
3. Scan the **Set Custom Prefix** barcode.
4. Scan the numeric barcodes "4", "3", "4", "F", "4", "4", "4" and "5".
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode.

**** Exit Setup**

0006010

Enter Setup

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 **"Appendix 1: AIM ID Table"** section). If AIM ID prefix is enabled, the engine will add the symbology identifier before the scanned data after decoding.

0308030

Enable AIM ID Prefix

0308000

**** Disable 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 English letters.

0307010

Enable Code ID Prefix

0307000

**** Disable Code ID Prefix**

Restore All Default Code IDs

For the information of default Code IDs, see the **"Appendix 2: Code ID Table"** section.

0307020

Restore All Default Code IDs

0006000

**** Exit Setup**

Enter Setup

Modify Code ID

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

Example: Set the Code ID of PDF417 to “p”

1. Check the hex value of “p” in the ASCII Table. (“p”: 70)
2. Scan the **Enter Setup** barcode.
3. Scan the **Modify PDF417 Code ID** barcode.
4. Scan the numeric barcodes “7” and “0”.
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode.

Modify PDF417 Code ID

Modify Data Matrix Code ID

Modify QR Code ID

Modify Chinese Sensible Code ID

Modify Code 128 Code ID

Modify GS1-128 Code ID

**** Exit Setup**

Enter Setup

Modify AIM-128 Code ID

Modify EAN-8 Code ID

Modify EAN-13 Code ID

Modify UPC-E Code ID

Modify UPC-A Code ID

Modify ISBN Code ID

Modify ISSN Code ID

Modify Code 39 Code ID

7.

8.

Modify Code 93 Code ID

Modify Interleaved 2 of 5 Code ID

**** Exit Setup**

0006010

Enter Setup

Modify ITF-14 Code ID

Modify ITF-6 Code ID

Modify Codabar Code ID

Modify Industrial 25 Code ID

Modify Standard 25 Code ID

Modify Matrix 25 Code ID

Modify COOP 25 Code ID

Modify Code 11 Code ID

Modify Plessey Code ID

Modify MSI/Plessey Code ID

Modify GS1 Databar Code ID

Enter Setup

Custom Suffix

Enable/Disable Custom Suffix

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

Enable Custom Suffix

** **Disable Custom Suffix**

Set Custom Suffix

To set a custom suffix, scan the **Set Custom Suffix** barcode and the numeric barcodes representing the hexadecimal values of a desired suffix and then scan the **Save** barcode. Refer to **Appendix 3: ASCII Table** for hexadecimal values of characters.

Note: A custom suffix cannot exceed 11 characters.

Set Custom Suffix

Example: Set the custom suffix to “CODE”

1. Check the hex values of “CODE” in the ASCII Table. (“CODE”: 43, 4F, 44, 45)
2. Scan the **Enter Setup** barcode.
3. Scan the **Set Custom Suffix** barcode.
4. Scan the numeric barcodes “4”, “3”, “4”, “F”, “4”, “4”, “4” and “5”.
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode.

** **Exit Setup**

Enter Setup

Terminating Character Suffix

A terminating character can be used to mark the end of data, which means nothing can be added after it.

A terminating character suffix cannot exceed 7 characters.

Enable/Disable Terminating Character Suffix

To enable/disable terminating character suffix, scan the appropriate barcode below.

** **Enable Terminating Character Suffix**

Disable Terminating Character Suffix

** **Exit Setup**

0006010

Enter Setup

Set Terminating Character Suffix

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

0310010

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

0310020

Terminating Character CRLF (0x0D,0x0A)

To set a terminating character suffix, scan the **Set Terminating Character Suffix** barcode and the numeric barcodes representing the hexadecimal value of a desired terminating character and then scan the **Save** barcode. Refer to **Appendix 3: ASCII Table** for hexadecimal values of terminating characters.

Note: A terminating character suffix cannot exceed 7 characters.

0310000

Set Terminating Character Suffix

Example: Set the terminating character suffix to 0x0D

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

0006000

**** Exit Setup**


0006010

Enter Setup

Chapter 7 Symbologies

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.


0001020

Enable All Symbologies


0001010

Disable All Symbologies

Enable/Disable 1D Symbologies

If the **Disable 1D Symbologies** feature is enabled, the scanner will not be able to read any 1D barcodes.


0001040

Enable 1D Symbologies


0001030

Disable 1D Symbologies

Enable/Disable 2D Symbologies

If the **Disable 2D Symbologies** feature is enabled, the scanner will not be able to read any 2D barcodes.


0001060

Enable 2D Symbologies


0001050

Disable 2D Symbologies


0006000

**** Exit Setup**

0006010

Enter Setup

Video Reverse

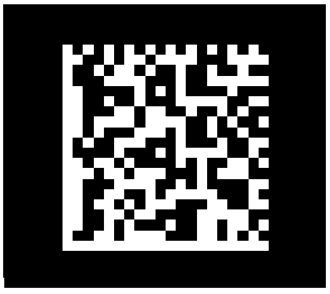
The **Video Reverse** feature only applies to 2D barcodes.

Regular barcode: Dark image on a bright background.

Inverse barcode: Bright image on a dark background.

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

Regular Barcode



Inverse Barcode

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

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

Video Reverse OFF: Read regular barcodes only.

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

0001021

Video Reverse ON

0001011

**** Video Reverse OFF**

0006000

**** Exit Setup**

0006010

Enter Setup

1D Symbologies

Code 128

Restore Factory Defaults

Restore the Factory Defaults of Code 128

Enable/Disable Code 128

**** Enable Code 128**

Disable Code 128

Set Length Range for Code 128

Set the Minimum Length

Set the Maximum Length

**** Exit Setup**

0006010

Enter Setup

GS1-128 (UCC/EAN-128)

Restore Factory Defaults

0412000

Restore the Factory Defaults of GS1-128

Enable/Disable GS1-128

0412020

** **Enable GS1-128**

0412010

Disable GS1-128

Set Length Range for GS1-128

0412030

Set the Minimum Length

0412040

Set the Maximum Length

0006000

** **Exit Setup**

0006010

Enter Setup

AIM-128

Restore Factory Defaults

Restore the Factory Defaults of AIM-128

Enable/Disable AIM-128

**** Enable AIM-128**

Disable AIM-128

Set Length Range for AIM-128

Set the Minimum Length

Set the Maximum Length

**** Exit Setup**

0006010

Enter Setup

EAN-8

Restore Factory Defaults

Restore the Factory Defaults of EAN-8

Enable/Disable EAN-8

**** Enable EAN-8**

Disable EAN-8

0006010

Enter Setup

Transmit Check Digit

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

0401040

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

0401030

Do Not Transmit EAN-8 Check Digit

Add-On Code

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

0401060

Enable 2-Digit Add-On Code

0401050

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

0401080

Enable 5-Digit Add-On Code

0401070

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

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

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

0006010

Enter Setup

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.

0401110

EAN-8 Add-On Code Required

0401120

**** EAN-8 Add-On Code Not Required**

EAN-8 Extension

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

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

0401100

Enable EAN-8 Zero Extend

0401090

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

0006000

**** Exit Setup**

0006010

Enter Setup

EAN-13

Restore Factory Defaults

Restore the Factory Defaults of EAN-13

Enable/Disable EAN-13

**** Enable EAN-13**

Disable EAN-13

Transmit Check Digit

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

Do Not Transmit EAN-13 Check Digit


0006010

Enter Setup

Add-On Code

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


0402060

Enable 2-Digit Add-On Code


0402050

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


0402080

Enable 5-Digit Add-On Code


0402070

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

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

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

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.


0402090

EAN-13 Add-On Code Required


0402100

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


0006000

**** Exit Setup**

0006010

Enter Setup

EAN-13 Beginning with 290 Add-On Code Required

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

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

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

0402110

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

0402120

Require Add-On Code

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

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

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

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

0402130

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

0402140

Require Add-On Code

0006000

**** Exit Setup**

0006010
Enter Setup

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

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

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

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


0402150

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


0402160

Require Add-On Code

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

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

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

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


0402170

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


0402180

Require Add-On Code


0006000
**** Exit Setup**

0006010

Enter Setup

EAN-13 Beginning with 977 Add-On Code Required

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

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

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

0402190

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

0402200

Require Add-On Code

EAN-13 Beginning with 978 Add-On Code Required

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

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

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

0402210

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

0402220

Require Add-On Code

0006010
Enter Setup

EAN-13 Beginning with 979 Add-On Code Required

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

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

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

0402230

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

0402240

Require Add-On Code

0006000

**** Exit Setup**

0006010

Enter Setup

ISSN

Restore Factory Defaults

Restore the Factory Defaults of ISSN

Enable/Disable ISSN

Enable ISSN

**** Disable ISSN**

**** Exit Setup**

Enter Setup

Add-On Code

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

Enable 2-Digit Add-On Code

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

Enable 5-Digit Add-On Code

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

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

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

Add-On Code Required

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

ISSN Add-On Code Required

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

**** Exit Setup**

0006010

Enter Setup

ISBN

Restore Factory Default

Restore the Factory Defaults of ISBN

Enable/Disable ISBN

**** Enable ISBN**

Disable ISBN

Set ISBN Format

**** ISBN-13**

ISBN-10

0006010

Enter Setup

Add-On Code

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

Enable 2-Digit Add-On Code

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

Enable 5-Digit Add-On Code

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

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

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

Add-On Code Required

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

ISBN Add-On Code Required

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

0006010

Enter Setup

UPC-E

Restore Factory Defaults

Restore the Factory Defaults of UPC-E

Enable/Disable UPC-E

**** Enable UPC-E**

Disable UPC-E

Transmit Check Digit

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

Do Not Transmit UPC-E Check Digit

**** Exit Setup**


0006010

Enter Setup

Add-On Code

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


0403060

Enable 2-Digit Add-On Code


0403050

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


0403080

Enable 5-Digit Add-On Code


0403070

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

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

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

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.


0403130

UPC-E Add-On Code Required


0403140

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


0006000

**** Exit Setup**

Enter Setup

Transmit System Character “0”

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

**** Transmit System Character “0”**

Do Not Transmit System Character “0”

UPC-E Extension

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

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

Enable UPC-E Extend

**** Disable UPC-E Extend**

**** Exit Setup**

0006010

Enter Setup

UPC-A

Restore Factory Defaults

Restore the Factory Defaults of UPC-A

Enable/Disable UPC-A

**** Enable UPC-A**

Disable UPC-A

Transmit Check Digit

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

Do Not Transmit UPC-A Check Digit

**** Exit Setup**

0006010

Enter Setup

Add-On Code

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


0404060

Enable 2-Digit Add-On Code


0404050

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


0404080

Enable 5-Digit Add-On Code


0404070

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

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

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

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.


0404110

UPC-A Add-On Code Required


0404120

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


0006000

**** Exit Setup**

0006010

Enter 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).

0404100

System Character & Country Code

0404090

**** System Character**

0006000

** **Exit Setup**

0006010

Enter Setup

Interleaved 2 of 5

Restore Factory Defaults

0405000

Restore the Factory Defaults of Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5

0405020

**** Enable Interleaved 2 of 5**

0405010

Disable Interleaved 2 of 5

Set Length Range for Interleaved 2 of 5

0405030

Set the Minimum Length

0405040

Set the Maximum Length

0006000

**** Exit Setup**

0006010

Enter Setup

Check Digit Verification

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

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

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

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

0405050

**** Disable**

0405060

Do Not Transmit Check Digit After Verification

0405070

Transmit Check Digit After Verification

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

0006000

**** Exit Setup**

0006010

Enter Setup

ITF-14

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

0405260

Restore the Factory Defaults of ITF-14

0405080

Disable ITF-14

0405090

** **Enable ITF-14 But Do Not Transmit Check Digit**

0405100

Enable ITF-14 and Transmit Check Digit

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

0006000

**** Exit Setup**

0006010

Enter Setup

ITF-6

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

0405270

Restore the Factory Defaults of ITF-6

0405110

**** Disable ITF-6**

0405120

Enable ITF-6 But Do Not Transmit Check Digit

0405130

Enable ITF-6 and Transmit Check Digit

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

0006000

**** Exit Setup**

0006010

Enter Setup

Matrix 2 of 5

Restore Factory Defaults

0406000

Restore the Factory Defaults of Matrix 2 of 5

Enable/Disable Matrix 2 of 5

0406020

Enable Matrix 2 of 5

0406010

**** Disable Matrix 2 of 5**

Set Length Range for Matrix 2 of 5

0406030

Set the Minimum Length

0406040

Set the Maximum Length

0006010

Enter Setup

Check Digit Verification

0406050

Disable

0406060

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

0406070

Transmit Check Digit After Verification

0006000

**** Exit Setup**

0006010

Enter Setup

Industrial 2 of 5

Restore Factory Defaults

0417000

Restore the Factory Defaults of Industrial 2 of 5

Enable/Disable Industrial 2 of 5

0417020

**** Enable Industrial 2 of 5**

0417010

Disable Industrial 2 of 5

Set Length Range for Industrial 2 of 5

0417030

Set the Minimum Length

0417040

Set the Maximum Length

0006000

**** Exit Setup**

0006010

Enter Setup

Check Digit Verification

**** Disable**

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification

0006010

Enter Setup

Standard 2 of 5（IATA 2 of 5）

Restore Factory Defaults

Restore the Factory Defaults of Standard 25

Enable/Disable Standard 25

**** Enable Standard 25**

Disable Standard 25

Set Length Range for Standard 25

Set the Minimum Length

Set the Maximum Length

**** Exit Setup**

0006010

Enter Setup

Check Digit Verification

**** Disable**

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification

0006000

**** Exit Setup**

0006010

Enter Setup

Code 39

Restore Factory Defaults

Restore the Factory Defaults of Code 39

Enable/Disable Code 39

**** Enable Code 39**

Disable Code 39

Transmit Start/Stop Character

Transmit Start/Stop Character

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

0006010

Enter Setup

Set Length Range for Code 39

0408030

Set the Minimum Length

0408040

Set the Maximum Length

Check Digit Verification

0408050

**** Disable**

0408070

Transmit Check Digit After Verification

0408060

Do Not Transmit Check Digit After Verification

Enable/Disable Code 39 Full ASCII

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

0408110

Enable Code 39 Full ASCII

0408100

**** Disable Code 39 Full ASCII**

0006000

**** Exit Setup**


0006010

Enter Setup

Enable/Disable Code 32

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


0408120

**** Disable Code 32**


0408130

Enable Code 32

Code 32 Prefix

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


0408140

**** Disable Code 32 Prefix**


0408150

Enable Code 32 Prefix


0006000

**** Exit Setup**

Enter Setup

Transmit Code 32 Check Digit

Code 32 must be enabled for this parameter to function.

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

Transmit Code 32 Check Digit

Transmit Code 32 Start/Stop Character

Code 32 must be enabled for this parameter to function.

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

Transmit Code 32 Start/Stop Character

**** Exit Setup**

0006010

Enter Setup

Codabar

Restore Factory Defaults

Restore the Factory Defaults of Codabar

Enable/Disable Codabar

**** Enable Codabar**

Disable Codabar

Set Length Range for Codabar

Set the Minimum Length

Set the Maximum Length

0006010

Enter Setup

Check Digit Verification

**** Disable**

Transmit Check Digit After Verification

Do Not Transmit Check Digit After Verification

Transmit Start/Stop Character

Transmit Start/Stop Character

**** Do not Transmit Start/Stop Character**

Enter Setup

Start/Stop Character Format

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

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

ABCD/TN*E as the Start/Stop Character

Start/Stop Character in Uppercase

Start/Stop Character in Lowercase

**** Exit Setup**

0006010

Enter Setup

Code 93

Restore Factory Defaults

Restore the Factory Defaults of Code 93

Enable/Disable Code 93

**** Enable Code 93**

Disable Code 93

Set Length Range for Code 93

Set the Minimum Length

Set the Maximum Length

0006000

**** Exit Setup**

0006010

Enter Setup

Check Digit Verification

Disable

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

Transmit Check Digit After Verification

0006010

Enter Setup

GS1-Databar (RSS)

Restore Factory Defaults

Restore the Factory Defaults of GS1-Databar

Enable/Disable GS1 Databar

**** Enable GS1-DataBar**

Disable GS1-DataBar

Transmit Application Identifier “01”

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

Do Not Transmit Application Identifier “01”

**** Exit Setup**

0006010

Enter Setup

Code 11

Restore Factory Defaults

Restore the Factory Defaults of Code 11

Enable/Disable Code 11

**** Enable Code 11**

Disable Code 11

Set Length Range for Code 11

Set the Minimum Length

Set the Maximum Length

0006010

Enter Setup

Transmit Check Digit

Transmit Check Digit

**** Do Not Transmit Check Digit**

Check Digit Verification

Disable

**** One Check Digit, MOD11**

Two Check Digits, MOD11/MOD11

Two Check Digits, MOD11/MOD9

One Check Digit, MOD11 (Len<=10)

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

One Check Digit, MOD11 (Len<=10)

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

0006000

**** Exit Setup**

0006010

Enter Setup

Plessey

Restore Factory Defaults

Restore the Factory Defaults of Plessey

Enable/Disable Plessey

**** Enable Plessey**

Disable Plessey

Set Length Range for Plessey

Set the Minimum Length

Set the Maximum Length

0006010

Enter Setup

Check Digit Verification

Disable

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

Transmit Check Digit After Verification

0006000

**** Exit Setup**

0006010

Enter Setup

MSI-Plessey

Restore Factory Defaults

Restore the Factory Defaults of MSI-Plessey

Enable/Disable MSI-Plessey

**** Enable MSI-Plessey**

Disable MSI-Plessey

Set Length Range for MSI-Plessey

Set the Minimum Length

Set the Maximum Length

0006000

**** Exit Setup**

0006010

Enter Setup

Transmit Check Digit

Transmit Check Digit

**** Do Not Transmit Check Digit**

Check Digit Verification

Disable

**** One Check Digit, MOD10**

Two Check Digits, MOD10/MOD10

Two Check Digits, MOD10/MOD11

0006000

**** Exit Setup**

0006010

Enter Setup

2D Symbologies

PDF 417

Restore Factory Defaults

Restore the Factory Defaults of PDF 417

Enable/Disable PDF 417

**** Enable PDF 417**

Disable PDF 417

Set Length Range for PDF 417

Set the Minimum Length

Set the Maximum Length

0006000

**** Exit Setup**

Enter Setup

PDF 417 Twin Code

PDF417 twin code is 2 PDF417 barcodes paralleled vertically or horizontally. They must both be either regular or inverse barcodes. They must have similar specifications and be placed closely together.

There are 3 options for reading PDF417 twin codes:

Single PDF417 Only: Read either PDF417 code.

Twin PDF417 Only: Read both PDF417 codes.

Both Single & Twin: Read both PDF417 codes. If successful, transmit as twin PDF417 only. Otherwise, try single PDF417 only.

**** Single PDF417 Only**

Twin PDF417 Only

Both Single & Twin

Character Encoding

**** Default Character Encoding**

UTF-8

**** Exit Setup**

0006010

Enter Setup

QR Code

Restore Factory Defaults

0502000

Restore the Factory Defaults of QR Code

Enable/Disable QR Code

0502020

**** Enable QR Code**

0502010

Disable QR Code

Set Length Range for QR Code

0502030

Set the Minimum Length

0502040

Set the Maximum Length

Micro QR

0502110

Enable Micro QR

0502100

**** Disable Micro QR**

0006000

**** Exit Setup**


0006010

Enter Setup

QR Twin Code

QR twin code is 2 QR barcodes paralleled vertically or horizontally. They must both be either regular or inverse barcodes. They must have similar specifications and be placed closely together.

There are 3 options for reading QR twin codes:

Single QR Only: Read either QR code.

Twin QR Only: Read both QR codes.

Both Single & Twin: Read both QR codes. If successful, transmit as twin QR only. Otherwise, try single QR only.


0502070

**** Single QR Only**


0502080

Twin QR Only


0502090

Both Single & Twin

Character Encoding


0502160

**** Default Character Encoding**


0502161

UTF-8


0006000

**** Exit Setup**

0006010

Enter Setup

Data Matrix

Restore Factory Defaults

Restore the Factory Defaults of Data Matrix

Enable/Disable Data Matrix

**** Enable Data Matrix**

Disable Data Matrix

Set Length Range for Data Matrix

Set the Minimum Length

Set the Maximum Length

0006010

Enter Setup

Rectangular Barcode

**** Enable Rectangular Barcode**

Disable Rectangular Barcode

Mirror Image

**** Decode Mirror Images**

Do Not Decode Mirror Images

0006000

**** Exit Setup**

0006010

Enter Setup

Data Matrix Twin Code

Data Matrix twin code is 2 Data Matrix barcodes paralleled vertically or horizontally. They must both be either regular or inverse barcodes. They must have similar specifications and be placed closely together.

There are 3 options for reading Data Matrix twin codes:

Single Data Matrix Only: Read either Data Matrix code.

Twin Data Matrix Only: Read both Data Matrix codes. Transmission order: Data Matrix code on the left (in the upper position) followed by the one on the right (in the lower position).

Both Single & Twin: Read both Data Matrix codes. If successful, transmit as twin Data Matrix only. Otherwise, try single Data Matrix only.

0504070

**** Single Data Matrix Only**

0504080

Twin Data Matrix Only

0504090

Both Single & Twin

Character Encoding

0504350

**** Default Character Encoding**

0504351

UTF-8

0006000

**** Exit Setup**

0006010

Enter Setup

Chinese Sensible Code

Restore Factory Defaults

Restore the Factory Defaults of Chinese Sensible Code

Enable/Disable Chinese Sensible Code

Enable Chinese Sensible Code

**** Disable Chinese Sensible Code**

Set Length Range for Chinese Sensible Code

Set the Minimum Length

Set the Maximum Length

0006000

**** Exit Setup**

0006010

Enter Setup

Chapter 8 Image Control

Image Flipping

The user may get reversed images when the engine is installed in non-standard ways. When it happens, image flipping can be used to right the “wrong”.

The following figures illustrate standard image and three flipped images.

- ✧ Fig.9-1 Standard Image: Image the engine should get when it is installed properly and no reflector is used in its optical imaging system.
- ✧ Fig.9-2 Horizontal Flipped Image: It happens when horizontal reflection occurs along the optical path. To get standard images, enable the **Flip Horizontally** option.
- ✧ Fig.9-3 Vertical Flipped Image: It happens when vertical reflection occurs along the optical path. To get standard images, enable the **Flip Vertically** option.
- ✧ Fig.9-4 Horizontal and Vertical Flipped Image: It happens when the engine is installed upside down. To get standard images, enable the **Flip Horizontally and Vertically** option.

Fig.9-1 Standard Image

Fig.9-2 Horizontal Flipped Image

Fig.9-3 Vertical Flipped Image

Fig.9-4 Horizontal and Vertical Flipped Image

0006000

**** Exit Setup**

0006010

Enter Setup

Flip

0202000

**** Do Not Flip**

0202030

Flip Vertically

0202031

Flip Horizontally

0202032

Flip Horizontally and Vertically

Flip Vertically

0202033

Flip Vertically

0202034

Do Not Flip Vertically

Flip Horizontally

0202035

Flip Horizontally

0202036

Do Not Flip Horizontally

0006000

**** Exit Setup**

0006010

Enter Setup

Chapter 9 Batch Programming

Introduction

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

Listed below are batch programming rules:

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

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

1. Input the commands:

   0200010;0302010;0313000=2000;

2. Generate a batch barcode.

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

Enable Batch Barcode

**** Exit Setup**


0006010
Enter Setup

Create a Batch Command

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

Command Structure: Command (+ “=” + Parameter Value)

4 command syntaxes are described as below:

1. Syntax 1: Command

This syntax applies to most configuration situations.

Example:

Set the Baud Rate to 38400bps: **0100060**
Enable the Sense Mode: **0302010**

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

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

Example:

Set the Decode Session Timeout to 3000ms: **0313000=3000**
Set the Sensitivity to (level) 10: **0312040=10**

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

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

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

4. Syntax 4: Command + “=” + Double Quotation Marks

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

Example:
Set the Custom Prefix to AUTO-ID: **0300000=“AUTO-ID”**


0006000

** **Exit Setup**

0006010

Enter Setup

Create a Batch Barcode

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

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

1. Input the following commands:

   0200010;0302010;0313000=2000;

2. Generate a QR batch barcode.

0006010

Enter Setup

Use Batch Barcode

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

0006010

Enter Setup

0001110

Enable Batch Barcode

Batch Barcode

0006000

Exit Setup

0006000

**** Exit Setup**

Chapter 10 Troubleshooting

FAQ

Problem: Barcodes cannot be read.

Solution:

1. Find out the barcode type and verify that the barcode type is enabled. If the barcode parameters include check digit verification, select the Disable option.
2. If you do not know the barcode type, enable all symbologies.
3. If they are inverse barcodes (bright images on a dark background), enable the Video Reverse feature.

Problem: Incorrect output.

Solution:

1. If this problem happens to all barcodes and additional characters appear before/after barcode data, disable all prefix/suffix.
2. If this problem only happens to some barcodes and matches one of the following situations:

a) incomplete barcode data: Enable the check digit verification.

b) both the first and last characters are asterisks (*): Disable the transmission of start/stop characters of Code 39.

c) “a” transmitted as “+A”: Enable Code 39 Full ASCII.

Problem: Barcodes can be read, but cannot be displayed.

Solution: Verify that the serial port parameter (such as baud rate, data bit and stop bit) settings match the host requirements.

Problem: Illumination and aiming beams are OFF.

Solution:

1. Verify that the engine is properly powered up.
2. Send “?” to the engine. If the engine returns a reply of “!”, then send programming commands to turn on illumination and aimer.

Problem: Carriage Return/Line Feed settings.

Solution: See the **“Terminating Character Suffix”** section in Chapter 7.

Appendix

Appendix 1: AIM ID Table

Symbology	AIM ID	Remark
EAN-13	]E0	Standard EAN-13
	]E3	EAN-13 + 2/5-Digit Add-On Code
EAN-8	]E4	Standard EAN-8
	]E4…]E1…	EAN-8 + 2-Digit Add-On Code
	]E4…]E2…	EAN-8 + 5-Digit Add-On Code
UPC-E	]E0	Standard UPC-E
	]E3	UPC-E + 2/5-Digit Add-On Code
UPC-A	]E0	Standard UPC-A
	]E3	UPC-A + 2/5-Digit Add-On Code
Code 128	]C0	Standard Code 128
GS1-128 (UCC/EAN-128)	]C1	FNC1 is the character right after the start character
AIM-128	]C2	FNC1 is the 2nd character after the start character
ISBT-128	]C4	
Interleaved 2 of 5	]I0	No check digit verification
	]I1	Transmit check digit after verification
	]I3	Do not transmit check digit after verification
ITF-6	]I1	Transmit check digit
	]I3	Do not transmit check digit
ITF-14	]I1	Transmit check digit
	]I3	Do not transmit check digit
Industrial 2 of 5	]S0	Not specified
Standard 2 of 5	]R0	No check digit verification
	]R8	MOD10; do not transmit check digit
	]R9	MOD10; transmit check digit
Code 39	]A0	Transmit barcodes as is; Full ASCII disabled; no check digit verification
	]A1	MOD43; transmit check digit
	]A3	MOD43; do not transmit check digit
	]A4	Full ASCII enabled; no check digit verification
	]A5	Full ASCII enabled; transmit check digit

	]A7	Full ASCII enabled; do not transmit check digit
Codabar	]F0	Standard Codabar
	]F2	Transmit check digit after verification
	]F4	Do not transmit check digit after verification

Symbology	AIM ID	Remark
Code 93	]G0	Standard Code 93
Code 11	]H0	MOD11; transmit check digit
	]H1	MOD11/MOD11; transmit check digit
	]H3	Do not transmit check digit after verification
	]H9	No check digit verification
GS1-DataBar (RSS)	]e0	Standard GS1-DataBar
Plessey	]P0	Standard Plessey
MSI-Plessey	]M0	MOD10; transmit check digit
	]M1	MOD10; do not transmit check digit
	]M7	MOD10/ MOD11; do not transmit check digit
	]M8	MOD10/ MOD11; transmit check digit
	]M9	No check digit verification
Matrix 2 of 5	]X0	Specified by the manufacturer
	]X1	No check digit verification
	]X2	MOD10; transmit check digit
	]X3	MOD11; do not transmit check digit
ISBN	]X4	Standard ISBN
ISSN	]X5	Standard ISSN
PDF417	]L0	Comply with 1994 PDF417 specifications
Data Matrix	]d0	ECC000 - ECC140
	]d1	ECC200
	]d2	ECC200, FNC1 is the 1st or 5th character after the start character
	]d3	ECC200, FNC1 is the 2nd or 6th character after the start character
	]d4	ECC200, ECI included
	]d5	ECC200, FNC1 is the 1st or 5th character after the start character,ECI included
	]d6	ECC200, FNC1 is the 2nd or 6th character after the start character,ECI included
QR Code	]Q0	QR1
	]Q1	2005 version, ECI excluded
	]Q2	2005 version, ECI included
	]Q3	QR Code 2005, ECI excluded, FNC1 is the 1st character after the start character
	]Q4	QR Code 2005, ECI included, FNC1 is the 1st character after the start character
	]Q5	QR Code 2005,ECI excluded,FNC1 is the 2nd character after the start character
	]Q6	QR Code 2005, ECI included, FNC1 is the 2nd character after the start character
Chinese Sensible Code	]X0	

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

Appendix 2: Code ID Table

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

Appendix 3: 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)

Appendix 4: Parameter Programming Examples

The following examples show you how to program parameters by scanning programming barcodes.

a. Program the Decode Session Timeout

Example: Set the decode session timeout to 1500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Decode Session Timeout** barcode. (See the **"Decode Session Timeout"** section in Chapter 3)
3. Scan the numeric barcodes "1", "5", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

b. Program the Time Period from Idle to Sleep

Example: Set the time period from idle to sleep to 500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Time Period from Idle to Sleep** barcode. (See the **"Auto Sleep"** section in Chapter 3)
3. Scan the numeric barcodes "5", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

c. Program the Image Stabilization Timeout

Example: Set the image stabilization timeout to 500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Image Stabilization Timeout** barcode. (See the **"Image Stabilization Timeout"** section in Chapter 3)
3. Scan the numeric barcodes "5", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

d. Program the Timeout between Decodes (Same Barcode)

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

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes (Same Barcode)** barcode. (See the **"Timeout between Decodes (Same Barcode)"** section in Chapter 3)
3. Scan the numeric barcodes "1", "0", "0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

e. Program the Threshold Value of Illumination Change

Example: Set the threshold value of illumination change to 4

1. Scan the **Enter Setup** barcode.
2. Scan the **Threshold Value of Illumination Change** barcode. (See the **"Sensitivity"** section in Chapter 3)
3. Scan the numeric barcode "4".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

f. Program the Timeout between Decodes

Example: Set the timeout between decodes to 500ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Timeout between Decodes** barcode. (See the **"Timeout between Decodes"** section in Chapter 3)
3. Scan the numeric barcodes "5","0" and "0".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

g. Program the Decoding Area

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

1. Scan the **Enter Setup** barcode.
2. Scan the **Specific Area Decoding** barcode. (See the **"Specific Area Decoding"** section in Chapter 4)
3. Scan the **Top of Decoding Area** barcode. (See the **"Specify Decoding Area"** section in Chapter 4)
4. Scan the numeric barcodes "2" and "0".
5. Scan the **Save** barcode.
6. Scan the **Bottom of Decoding Area** barcode.
7. Scan the numeric barcodes "8" and "0".
8. Scan the **Save** barcode.
9. Scan the **Left of Decoding Area** barcode.
10. Scan the numeric barcodes "2" and "0".
11. Scan the **Save** barcode.
12. Scan the **Right of Decoding Area** barcode.
13. Scan the numeric barcodes "8" and "0".
14. Scan the **Save** barcode.
15. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

h. Program the Custom Prefix/Suffix

Example: Set the custom prefix to "CODE"

1. Check the hex values of "CODE" in the ASCII Table. ("CODE": 43, 4F, 44, 45)
2. Scan the **Enter Setup** barcode.
3. Scan the **Set Custom Prefix** barcode. (See the **"Set Custom Prefix"** section in Chapter 6)
4. Scan the numeric barcodes "4", "3", "4", "F", "4", "4", "4" and "5".
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

i. Program the Terminating Character Suffix

Example: Set the terminating character suffix to 0x0D

1. Scan the **Enter Setup** barcode.
2. Scan the **Set Terminating Character Suffix** barcode. (See the **"Set Terminating Character Suffix"** section in Chapter 6)
3. Scan the numeric barcodes "0" and "D".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

j. Program the Code ID

Example: Set the Code ID of PDF 417 to "p"

1. Check the hex value of "p" in the ASCII Table. ("p": 70)
2. Scan the **Enter Setup** barcode.
3. Scan the **Modify PDF417 Code ID** barcode. (See the **"Modify Code ID"** section in Chapter 6)
4. Scan the numeric barcodes "7" and "0".
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

k. Program the NGR Message

Example: Set the NGR message to "!ERR"

1. Check the hex values of "!ERR" in the ASCII Table. ("!ERR": 21, 45, 52, 52)
2. Scan the **Enter Setup** barcode.
3. Scan the **Edit NGR Message** barcode. (See the **"Edit NGR Message"** section in Chapter 5)
4. Scan the numeric barcodes "2", "1", "4", "5", "5", "2", "5" and "2".
5. Scan the **Save** barcode.
6. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

l. Program the Length Range (Maximum/Minimum Lengths) for a Symbology

Note: If minimum length is set to be greater than maximum length, the engine only decodes barcodes with either the minimum or maximum length. If you only want to read barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

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

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Minimum Length** barcode. (See the **"Set Length Range for Code 128"** section in Chapter 7)
3. Scan the numeric barcode "8".
4. Scan the **Save** barcode.
5. Scan the **Set the Maximum Length** barcode. (See the **"Set Length Range for Code 128"** section in Chapter 7)
6. Scan the numeric barcodes "1" and "2".
7. Scan the **Save** barcode.
8. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

m. Program the Code Page

Example: Set the code page to Windows 1251 (Cyrillic)

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Code Page** barcode. (See the **"Code Page"** section in Chapter 2)
3. Scan the numeric barcode "1".
4. Scan the **Save** barcode.
5. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

n. Program the Custom Inter-keystroke Delay

Example: Set the inter-keystroke delay to 5ms

1. Scan the **Enter Setup** barcode.
2. Scan the **Custom Delay** barcode. (See the **"Inter-Keystroke Delay"** section in Chapter 2)
3. Scan the numeric barcodes "0" and "5".
4. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

o. Program the engine to get proper output for Russian encoded with Windows 1251

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Code Page** barcode from the **"Code Page"** section in Chapter 2.
3. Scan the numeric barcode "1" from Appendix 6.
4. Scan the **Save** barcode from Appendix 7.
5. Scan the appropriate **Default Character Encoding** barcode according to the symbology your application needs from the **"Character Encoding"** section in Chapter 8.
6. Scan the **Mode 3** barcode from the **"Emulate ALT+Keypad"** section in Chapter 2.
7. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

p. Program the engine to get proper output for Russian encoded with UTF-8

1. Scan the **Enter Setup** barcode.
2. Scan the **Set the Code Page** barcode from the **"Code Page"** section in Chapter 2.
3. Scan the numeric barcode "1" from Appendix 6.
4. Scan the **Save** barcode from Appendix 7.
5. Scan the appropriate **UTF-8** barcode according to the symbology your application needs from the **"Character Encoding"** section in Chapter 8.
6. Scan the **Mode 3** barcode from the **"Emulate ALT+Keypad"** section in Chapter 2.
7. Scan the **Exit Setup** barcode. (If you still need to program other parameter/feature, skip this step.)

Appendix 5: Digit Barcodes

0-9

0

5

1

6

2

7

3

8

4

9

A-F

A

B

C

D

E

F

Appendix 6: Save/Cancel Barcodes

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

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

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

Save

Delete the Last Digit

Delete All Digits

Cancel

Appendix 7: ASCII Function Key Mapping Table

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

ASCII Function Key Mapping Table (Continued)

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

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

Appendix 8: Code Pages List

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