



Newland

SCANNING MADE SIMPLE



HR20 RF Panga cordless handheld scanner user guide

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Revision History

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| V1.0.0 | Initial release. | January 3, 2019 |
| V1.0.1 | Added the ECI Output, Set Length Range for Code 128/ UCC/EAN-128/ AIM 128/ Interleaved 2 of 5/ Matrix 2 of 5/ Industrial 25/ Standard 25/ Code 39/ Codabar/ Code 93/ Code 11/ Plessey/ MSI-Plessey , and Febraban features in Chapter 5. Note: You must have firmware version V2.06B or later to use the new features above. | May 17, 2019 |
| V1.0.2 | Updated the description of entering the sleep mode in Chapter 1. | May 27, 2019 |

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Chapter 1 Getting Started

Introduction

The NLS-HR20-RF wireless barcode scanner (hereinafter referred to as “**HR20 scanner**” or “**the scanner**”), armed with the world-leading Newland patented **UIMG**[®], a computerized image recognition system-on-chip, bring about a new era of 2D barcode scanner.

The HR20's 2D barcode decoder chip ingeniously blends **UIMG**[®] technology and advanced chip design & manufacturing, which significantly simplifies application design and delivers superior performance and solid reliability with low power consumption.

The HR20 supports all mainstream 1D and standard 2D barcode symbologies (e.g., PDF417, QR Code, Data Matrix and Chinese Sensible Code) as well as GS1-DataBar[™](RSS) (Limited/Stacked/Expanded versions). It can read barcodes on virtually any medium - paper, plastic card, mobile phones and LCD displays.

About This Guide

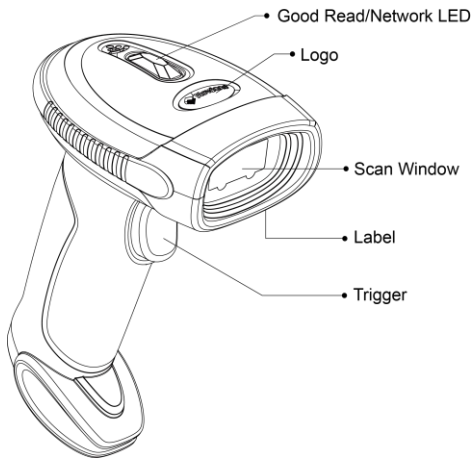
This guide provides programming instructions for the HR20. Users can configure the HR20 by scanning the programming barcodes included in this manual.

The HR20 has been properly configured for most applications and can be put into use without further configuration. Users may check the “Factory Defaults Table” in Appendix for reference. Throughout the manual, asterisks (**) indicate factory default values.

Unpacking

Open the package and take out HR20 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.

HR20 Scanner



Good Read/Network LED:

Red LED On – Charging in progress.

Red LED Off – Fully charged.

Blue LED On - Connection established.

Blue LED flashes - Data transmission in progress.

Green LED flashes once - Good read in Real-time mode.

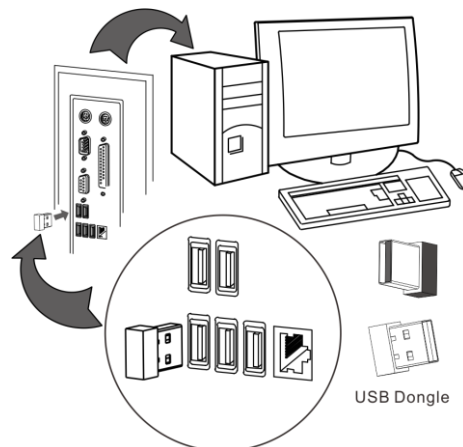
Blue LED flashes once - Good read in Inventory mode.

Charging the Scanner Battery

To charge the scanner battery, connect the scanner to your computer with the supplied cable. You can check the charge status with the Good Read/Network LED (red) on the scanner.

Plug and Play

The scanner that comes with a USB dongle is already paired with it and can work out of the box through plug and play. Only one scanner can be paired to one dongle at a time. If you want to pair your scanner to another dongle, follow the instructions described in the “Pairing the Scanner to a Dongle” section in Chapter 3.



Power On, Sleep

Power on the scanner

Plug the supplied dongle into the USB port of a host device, and pull the trigger on the scanner. Then the scanner will be turned on and the connection will be automatically established.

Enter the sleep mode

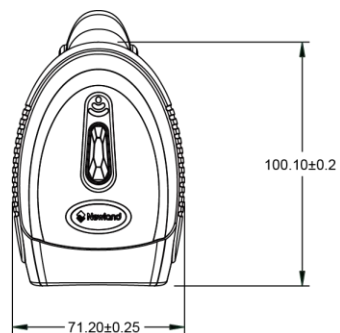
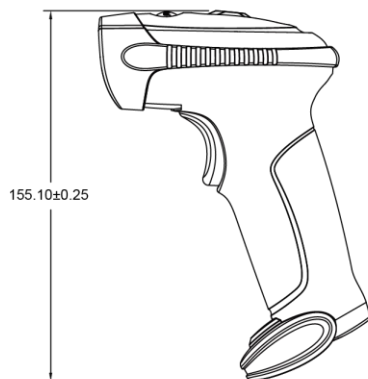
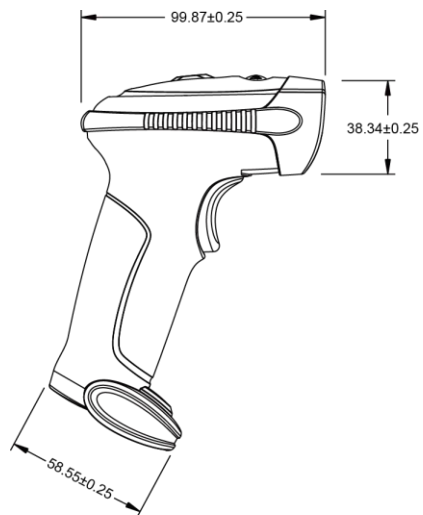
If no operation is performed on the scanner for 5 seconds, it will automatically enter the sleep state.

Maintenance

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

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

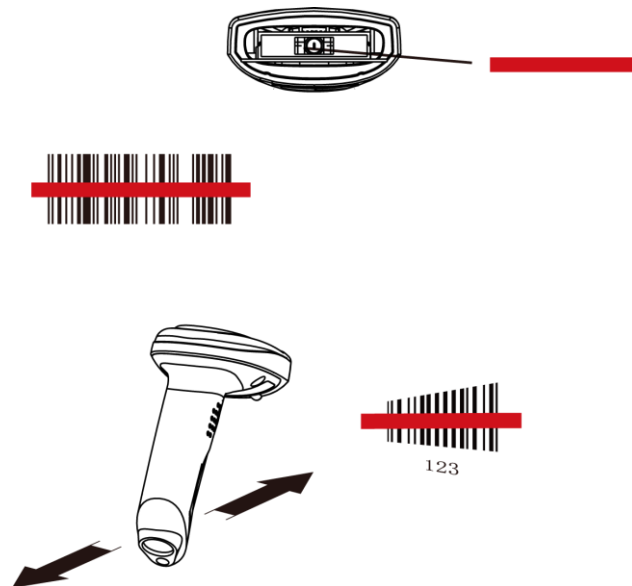
Dimensions (unit: mm)



Scanning Instructions

When the scanner is in the default 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 pattern.
2. Center the aiming pattern on the barcode, as shown in the figure below.
3. Release the trigger when the aiming beam goes off. If the barcode is decoded successfully, the scanner will emit a good decode beep and the decoded data will be sent to the host device.



Wireless Communications

The scanner can communicate with a remote host by pairing with a USB dongle that supports HID Keyboard and COM Port Emulation. For wireless communication parameters and dongle pairing instructions, see Chapter 3.

Chapter 2 System Settings

Factory Defaults

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

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

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



Restore All Factory Defaults

Illumination

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

Normal (default): Illumination LED is turned on during image capture.

Always On: Illumination LED keeps on after the scanner is powered on.

Off: Illumination LED is off all the time.



Aiming

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

Normal: The scanner projects an aiming pattern 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.



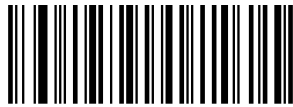
AMLENA1

**** Normal**



AMLENA0

Off



AMLENA2

Always On

Mute Mode

Scanning the **Enable Mute Mode** can turn off all notification beeps.



W400000

Enable Mute Mode



W400040

**** Disable Mute Mode**

Good Read Beep Frequency/Duration



WFF098D

Low Frequency



WFF0971

**** Medium Frequency**



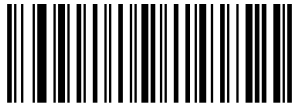
WFF094B

High Frequency



WFF0A1F

40ms



WFF0A3E

**** 80ms**



WFF0A5D

120ms

Scan Mode

Manual Mode

Manual Mode (default): A trigger pull activates a decode session. The decode session continues until the barcode is decoded or the trigger is released.



Continuous Mode

Continuous Mode: The scanner automatically starts one decode session after another at specific intervals (i.e. timeout between decodes). The decode session continues until the barcode is decoded or the decode session timeout expires.

In the Continuous mode, a trigger pull can enable the scanner to work temporarily in the Manual mode and back to the Continuous mode in 30 seconds.



Decode Session Timeout sets the maximum time decode session continues during a scan attempt. It is programmable in 0.1s increments from 0.1s to 25.5s. The default timeout is 5.0s. To set the timeout, scan the **Decode Session Timeout** barcode, then the two numeric barcodes corresponding to the desired timeout in hexadecimal.



Decode Session Timeout

Example: Set the decode session timeout to 5.0s (50 in hex is 32)

1. Scan the **Decode Session Timeout** barcode.
2. Scan the numeric barcodes "3" and "2" from the "Digit Barcodes" section in Appendix.

Timeout between Decodes 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 0.1s increments from 0s to 25.5s. The default timeout is 1.0s. To set the timeout, scan the **Timeout between Decodes** barcode, then the two numeric barcodes corresponding to the desired timeout in hexadecimal.



Timeout between Decodes

Example: Set the timeout between decodes to 5.0s (50 in hex is 32)

1. Scan the **Timeout between Decodes** barcode.
2. Scan the numeric barcodes "3" and "2" from the "Digit Barcodes" section in Appendix.

Query Product Serial Number

After scanning the barcode below, the serial number of the scanner will be sent to the host device.



WFFD982

Query Product Serial Number

Chapter 3 Wireless Communications

Pairing the Scanner to a Dongle

The scanner that comes with a USB dongle is already paired with it and can work out of the box through plug and play. You simply plug the dongle into the USB port of your computer, pull the trigger on the scanner, and the connection will be automatically established with a beep from the scanner. If the scanner within service range fails to connect to the dongle, you may re-establish pairing by following the steps below: unplug the dongle, scan the **Enter Pairing Mode** barcode and the **Pair** barcode with the scanner, and then plug the dongle into your computer.



WFFD9E1

Enter Pairing Mode



WFFD9E0

Pair

Communication Modes

Real-time Mode: The scanner attempts to transmit every barcode you scan. When you are out of service range, the scanned data will be lost.

Inventory Mode: Scanned data will be stored in the flash memory no matter whether you are in service range or not. You may send the stored data to the host by scanning the **Transmit Stored Data** barcode. **Do not change the interface before starting data transmission operation, otherwise all data previously stored in the flash memory will be lost.**



WFFD9E8

**** Real-time Mode**



WFFD9E9

Inventory Mode

Transmit Stored Data

You may scan the barcode below to send the stored data in the flash memory to the host.



WFFD9E7

Transmit Stored Data

Clear Stored Data in Flash

To clear stored data in flash, you need to scan the **Clear Stored Data** then the **Confirm Clear Operation** barcodes.



WFFD9E6

Clear Stored Data



WFFD9E5

Confirm Clear Operation

Interface Selection

The scanner can communicate with a remote host via a USB dongle that supports HID Keyboard and COM Port Emulation. You may select the desired interface by scanning the appropriate barcode below.



WFFD9E3

**** HID Keyboard**



WFFD9E4

COM Port Emulation

HID Keyboard Parameters

Characters can be represented by key values of a keyboard or by numeric representations in a code page. The former method should only be used when scanning barcodes containing single-byte characters.

Keyboard Types

If you want barcode data to be represented by key values of a keyboard, you may select the keyboard type by scanning the appropriate barcode below. This feature should not be used when barcodes contain multi-byte characters. The default setting is U.S. keyboard.



WFF6B00

**** U.S. (English)**



WFF6B01

Belgium



WFF6B02

Brazil



WFF6B03

Canada (French)



WFF6B04

Czechoslovakia



Finland (Swedish)



Germany/Austria



Hungary



Italy



Denmark



France



Greece



Israel (Hebrew)



Netherlands (Dutch)



Poland



Romania



Slovakia



Latin America/South America



Norway



Portugal



Russia



WFF6B16

Sweden



WFF6B18

Turkey_F



WFF6B1A

UK



WFF6B15

Spain



WFF6B17

Switzerland (German)



WFF6B19

Turkey_Q



WFF6B1B

Japan

Standard Keyboard

When **Standard Keyboard** is enabled, characters are sent as corresponding keys on the selected keyboard. This feature is only effective when a keyboard type is enabled.



**** Standard Keyboard**

Function Key Mapping

When **Function Key Mapping** is enabled, function characters (0x00 - 0x1F) are sent as ASCII sequences. This feature is only effective when a keyboard type is enabled.

1. CTRL Make
2. Press function key (Refer to the **ASCII Function Key Mapping Table** below)
3. CTRL Break



Function Key Mapping

ASCII Function Key Mapping Table

| ASCII Value (HEX) | Function Key | ASCII Value (HEX) | Function Key |
|-------------------|--------------|-------------------|--------------|
| 00 | @ | 10 | P |
| 01 | A | 11 | Q |
| 02 | B | 12 | R |
| 03 | C | 13 | S |
| 04 | D | 14 | T |
| 05 | E | 15 | U |
| 06 | F | 16 | V |
| 07 | G | 17 | W |
| 08 | H | 18 | X |
| 09 | I | 19 | Y |
| 0A | J | 1A | Z |
| 0B | K | 1B | [|
| 0C | L | 1C | \ |
| 0D | M | 1D |] |
| 0E | N | 1E | 6 |
| 0F | O | 1F | . |

Emulate ALT+Keypad

When **Emulate ALT+Keypad** is enabled, any ASCII character (0x00 - 0xFF) is sent over the numeric keypad. This feature is only effective when a keyboard type is enabled.

1. ALT Make
2. Enter the number corresponding to the ASCII character on the keypad.
3. ALT Break



Emulate ALT+Keypad

Convert Case

You may scan the appropriate barcode below to convert all barcode data to your desired case. This feature is only effective when a keyboard type is enabled.



**** No Case Conversion**



Convert All to Upper Case



Convert All to Lower Case



Invert Upper and Lower Case Characters

Example: When **Invert Upper and Lower Case Characters** is enabled, barcode data "AbC" is transmitted as "aBc".

Code Page

If you want barcode data to be represented by numeric representations in a code page, you may select the code page by scanning the appropriate barcode below.



WFF6B80

Code Page 1252 (West European Latin)



WFF6B81

Code Page 1251 (Cyrillic)



WFF6B82

Code Page 1250 (Central and East European Latin)



WFF6B83

Code Page 1253 (Greek)



WFF6B84

Code Page 1254 (Turkish)



WFF6B85

Code Page 1255 (Hebrew)



Code Page 1256 (Arabic)



Code Page 1257 (Baltic)



Code Page 1258 (Vietnamese)



Code Page 936 (Simplified Chinese, GB2312, GBK)



Code Page 950 (Traditional Chinese, Big5)



Code Page 874 (Thai)



Code Page 932 (Japanese, Shift-JIS)

Character Encoding

You should select the character encoding with which the barcodes were created.



Direct Character Transfer

When a code page is enabled, any character is sent over the numeric keypad.

1. ALT Make
2. Enter the number corresponding to the code point in selected code page on the keypad.
3. ALT Break

Different host program may use different character encodings for handling incoming barcode data. For instance, Microsoft Office Word uses Unicode encoding and therefore you should enable **Unicode Encoding**, whereas Microsoft Office Excel or Notepad uses ANSI encoding and therefore you should enable **ANSI Encoding**.



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 applicable to Direct Character Transfer.



Inter-Keystroke Delay

This parameter specifies the delay between emulated keystrokes.



Chapter 4 Prefix & Suffix

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

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

Prefix Sequence



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



Custom + Code ID + AIM ID

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 5 characters. For example, if the custom prefix is "AB" and the barcode data is "123", the Host will receive "AB123".



**** Disable Custom Prefix**



Enable Custom Prefix

Set Custom Prefix

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

Note: A custom prefix cannot exceed 5 characters.



Set Custom Prefix

Example: Set the custom prefix to “CODE” (HEX: 0x43/0x4F/0x44/0x45):

1. Scan the **Set Custom Prefix** barcode.
2. Scan the numeric barcodes “4”, “3”, “4”, “F”, “4”, “4”, “4” and “5” from the “Digit Barcodes” section in Appendix.
3. Scan the **Enable Custom Prefix** barcode.

AIM ID Prefix

AIM (Automatic Identification Manufacturers) IDs 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.



Enable AIM ID Prefix



**** Disable AIM ID Prefix**

Code ID Prefix

Code ID can also be used to identify barcode type. For more information, refer to the “Code ID Table” in Appendix.



W800280

Enable Code ID Prefix



W800200

**** Disable Code ID Prefix**

You can choose to transmit original Code ID or visible Code ID by scanning the appropriate barcode below.



W018A00

**** Original Code ID**



W018A01

Visible Code ID

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 5 characters. For example, if the custom suffix is “AB” and the barcode data is “123”, the Host will receive “123AB”.



**** Disable Custom Suffix**



Enable Custom Suffix

Set Custom Suffix

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

Note: A custom suffix cannot exceed 5 characters.



Set Custom Suffix

Example: Set the custom suffix to “CODE” (HEX: 0x43/0x4F/0x44/0x45):

1. Scan the **Set Custom Suffix** barcode.
2. Scan the numeric barcodes “4”, “3”, “4”, “F”, “4”, “4”, “4” and “5” from the “Digit Barcodes” section in Appendix.
3. Scan the **Enable Custom Suffix** barcode.

Terminating Character Suffix

A terminating character such as carriage return (CR) or carriage return/line feed pair (CRLF) or horizontal tab (TAB) can be used to mark the end of data.



W616000

**** Disable Terminating Character Suffix**



W616001

Append CR



W616021

Append CRLF



W616041

Append TAB

Chapter 5 Symbologies

Global Settings

Video Reverse

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

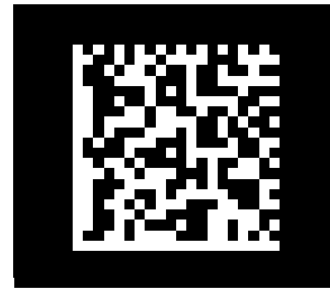
Regular barcode: Dark image on a bright background.

Inverse barcode: Bright image on a dark background.

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



Regular Barcode



Inverse Barcode

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

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

Video Reverse OFF (default): Read regular barcodes only.

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



Video Reverse ON



**** Video Reverse OFF**

ECI Output



W406100

**** Disable ECI Output**



W406140

Enable ECI Output

Code 128

Enable/Disable Code 128



W011601

**** Enable Code 128**



W011600

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.



A010000

Set the Minimum Length (Default: 1)



A010100

Set the Maximum Length (Default: 80)

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

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

UCC/EAN-128 (GS1-128)

Enable/Disable UCC/EAN-128

When disabled, UCC/EAN-128 is identified as Code 128.



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



Disable UCC/EAN-128

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.



Set the Minimum Length (Default: 1)



Set the Maximum Length (Default: 80)

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

1. Scan the **Set the Minimum Length** barcode.
 2. Scan the numeric barcodes “0” and “8” from the “Digit Barcodes” section in Appendix.
 3. Scan the **Set the Maximum Length** barcode.
 4. Scan the numeric barcodes “0” and “C” from the “Digit Barcodes” section in Appendix.
-

AIM 128

Enable/Disable AIM 128

When disabled, AIM 128 is identified as Code 128.



**** Enable AIM 128**



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.



Set the Minimum Length (Default: 1)



Set the Maximum Length (Default: 80)

Example: Set the scanner to decode AIM 128 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

EAN-8

Enable/Disable EAN-8



W011301
**** Enable EAN-8**



W011300
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.



W041304
**** Transmit EAN-8 Check Character**



W041300
Do Not Transmit EAN-8 Check Character

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.



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 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.

EAN-8 Extension

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

Enable EAN-8 Zero Extend: Add five leading zeros to decoded EAN-8 barcodes to extend to 13 digits.



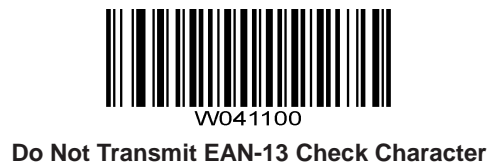
EAN-13

Enable/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.



Add-On Code

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



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 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.

ISSN

When disabled, ISSN is identified as EAN-13.



W401140
Enable ISSN



W401100
**** Disable ISSN**

ISBN

Enable/Disable ISBN

When disabled, ISBN is identified as EAN-13.



W011201
**** Enable ISBN**



W011200
Disable ISBN

Set ISBN Format



W041200
**** ISBN-13**



W041204
ISBN-10

UPC-E

Enable/Disable UPC-E



W011501
**** Enable UPC-E**



W011500
Disable UPC-E

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.



W041504
**** Transmit UPC-E Check Character**



W041500
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. In the examples below, the part surrounded by blue dotted line is a UPC-E barcode while the part circled by red dotted line is add-on code.



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 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.

Transmit System Character

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



W081508

Transmit System Character "0"



W081500

**** 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.



W801580

Enable UPC-E Extend



W801500

**** Disable UPC-E Extend**

UPC-A

Enable/Disable UPC-A

When disabled, UPC-A is identified as EAN-13.



W011401
**** Enable UPC-A**



W011400
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.



W041404
**** Transmit UPC-A Check Character**



W041400
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. In the examples below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is add-on code.



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 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.

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).



System Character & Country Code



**** System Character**

Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5



** Enable Interleaved 2 of 5



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.



** Disable



Do Not Transmit Check Character After Verification



Transmit Check Character After Verification

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.



Set the Minimum Length (Default: 6)



Set the Maximum Length (Default: 100)

Example: Set the scanner to decode Interleaved 2 of 5 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

Febraban

Disable/Enable Febraban



A012600

** Disable Febraban



A012601

Enable Febraban

Expand Febraban



A022600

** Do Not Expand Febraban



A022602

Expand Febraban

Transmit Delay per Character

Transmit Delay per Character applies to both expanded and unexpanded Febraban. This feature is available only when USB HID Keyboard is enabled. The transmit delay per character is 75ms and is NOT user programmable.



A042600

** Disable Transmit Delay per Character



A042604

Enable Transmit Delay per Character

Transmit Delay per 12 Characters

Transmit Delay per 12 Characters applies to expanded Febraban only. This feature is available only when USB HID Keyboard is enabled.



A082600

**** Disable Transmit Delay per 12 Characters**



A082608

Enable Transmit Delay per 12 Characters

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



A012700

Set Transmit Delay per 12 Characters

Example: Set the transmit delay per 12 characters to 600ms:

1. Scan the **Set Transmit Delay per 12 Characters** barcode.
2. Scan the numeric barcodes “0” and “4” from the “Digit Barcodes” section in Appendix.

ITF-6

When disabled, ITF-6 is identified as Interleaved 2 of 5.



W011900

**** Disable ITF-6**



W051901

Enable ITF-6 But Do Not Transmit Check Character



W051905

Enable ITF-6 and Transmit Check Character

ITF-14

When disabled, ITF-14 is identified as Interleaved 2 of 5.



W201800

Disable ITF-14



WA01820

Enable ITF-14 But Do Not Transmit Check Character



WA018A0

**** Enable ITF-14 and Transmit Check Character**

Matrix 2 of 5

Enable/Disable Matrix 2 of 5



WO11A01

**** Enable Matrix 2 of 5**



WO11A00

Disable Matrix 2 of 5

Check Character Verification

A check character is optional for Matrix 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 Matrix 2 of 5 barcodes as is.

Do Not Transmit Check Character After Verification: The scanner checks the integrity of all Matrix 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 Matrix 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.



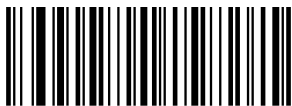
WO41A00

**** Disable**



WOC1A04

Do Not Transmit Check Character After Verification



WOC1A0C

Transmit Check Character After Verification

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.



Set the Minimum Length (Default: 6)



Set the Maximum Length (Default: 80)

Example: Set the scanner to decode Matrix 2 of 5 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

Industrial 25

Enable/Disable Industrial 25



W081908

**** Enable Industrial 25**



W081900

Disable Industrial 25

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.



W201900

**** Disable**



W601920

Do Not Transmit Check Character After Verification



W601960

Transmit Check Character After Verification

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.



Set the Minimum Length (Default: 6)



Set the Maximum Length (Default: 80)

Example: Set the scanner to decode Industrial 25 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

Standard 25

Enable/Disable Standard 25



W101A10

**** Enable Standard 25**



W101A00

Disable Standard 25

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.



W401A00

**** Disable**



WC01A40

Do Not Transmit Check Character After Verification



WC01AC0

Transmit Check Character After Verification

Set Length Range for Standard 25

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



Set the Minimum Length (Default: 6)



Set the Maximum Length (Default: 80)

Example: Set the scanner to decode Standard 25 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

Code 39

Enable/Disable Code 39



W011C01

**** Enable Code 39**

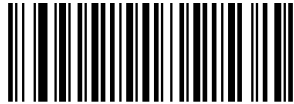


W011C00

Disable Code 39

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.



W041C04

Transmit Start/Stop Character



W041C00

**** 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.



W201C20

Enable Code 39 Full ASCII



W201C00

**** Disable Code 39 Full ASCII**

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.



W081C00

** Disable



W181C08

Do Not Transmit Check Character After Verification



W181C18

Transmit Check Character After Verification

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.



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 50)

Example: Set the scanner to decode Code 39 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

Codabar

Enable/Disable Codabar



W011E01
**** Enable Codabar**



W011E00
Disable Codabar

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.

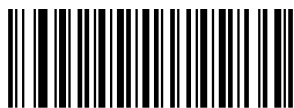
Transmit Check Character After Verification: The scanner checks the integrity of all Codabar barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.



W101E00
**** Disable**



W301E10
Do Not Transmit Check Character After Verification



W301E30
Transmit Check Character After Verification

Transmit Start/Stop Character



**** Transmit Start/Stop Character**



Do Not Transmit Start/Stop Character

Start/Stop Character Format



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



ABCD/TN*E as the Start/Stop Character



abcd/abcd as the Start/Stop Character



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.



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 60)

Example: Set the scanner to decode Codabar barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

Code 93

Enable/Disable Code 93



W081208

**** Enable Code 93**



W081200

Disable Code 93

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.

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.



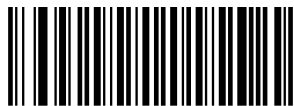
W201200

Disable



W601220

**** Do Not Transmit Check Character After Verification**



W601260

Transmit Check Character After Verification

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.



Set the Minimum Length (Default: 2)



Set the Maximum Length (Default: 80)

Example: Set the scanner to decode Code 93 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

Code 11

Enable/Disable Code 11



W011D01

** Enable Code 11



W011D00

Disable Code 11

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.



W1C1D00

Disable



W1C1D04

** One Check Character, MOD11



W1C1D08

Two Check Characters, MOD11/MOD11



W1C1D0C

Two Check Characters, MOD11/MOD9



W1C1D10

One Check Character, MOD11 (Len <= 11)
Two Check Characters, MOD11/MOD11 (Len > 11)



W1C1D14

One Check Character, MOD11 (Len <= 11)
Two Check Characters, MOD11/MOD9 (Len > 11)



W201D20

** Transmit Check Character



W201D00

Do Not Transmit Check Character

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.



A012200

Set the Minimum Length (Default: 4)



A012300

Set the Maximum Length (Default: 80)

Example: Set the scanner to decode Code 11 barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
 2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
 3. Scan the **Set the Maximum Length** barcode.
 4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.
-

Plessey

Enable/Disable Plessey



Enable Plessey



** Disable Plessey

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.



Disable



** Do Not Transmit Check Character After Verification



Transmit Check Character After Verification

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.



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 60)

Example: Set the scanner to decode Plessey barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

MSI-Plessey

Enable/Disable MSI-Plessey



W081F08

**** Enable MSI-Plessey**



W081F00

Disable MSI-Plessey

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.



W301F00

Disable



W301F10

**** One Check Character, MOD10**



W301F20

Two Check Characters, MOD10/MOD10



W301F30

Two Check Characters, MOD10/MOD11

Transmit Check Character



**** Transmit Check Character**



Do Not Transmit Check Character

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.



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 60)

Example: Set the scanner to decode MSI-Plessey barcodes containing between 8 and 12 characters:

1. Scan the **Set the Minimum Length** barcode.
2. Scan the numeric barcodes "0" and "8" from the "Digit Barcodes" section in Appendix.
3. Scan the **Set the Maximum Length** barcode.
4. Scan the numeric barcodes "0" and "C" from the "Digit Barcodes" section in Appendix.

RSS-14

Enable/Disable RSS-14



W011B01

**** Enable RSS-14**



W011B00

Disable RSS-14

Transmit Application Identifier "01"



W041B04

**** Transmit Application Identifier "01"**



W041B00

Do Not Transmit Application Identifier "01"

RSS-Limited

Enable/Disable RSS-Limited



W081B08

** Enable RSS-Limited



W081B00

Disable RSS-Limited

Transmit Application Identifier "01"



W201B20

** Transmit Application Identifier "01"



W201B00

Do Not Transmit Application Identifier "01"

RSS-Expand

Enable/Disable RSS-Expand



W401B40

** Enable RSS-Expand



W401B00

Disable RSS-Expand

PDF417

Enable/Disable PDF417



W010C01

** Enable PDF417



W010C00

Disable PDF417

Data Matrix

Enable/Disable Data Matrix



W080C08

**** Enable Data Matrix**



W080C00

Disable Data Matrix

Rectangular Barcodes



W034B03

**** Decode Rectangular Barcodes**



W034B00

Do Not Decode Rectangular Barcodes

Mirror Images



W0C4A0C

Decode Mirrored DM



W0C4A00

**** Do Not Decode Mirrored DM**

QR Code

Enable/Disable QR Code



W800D80

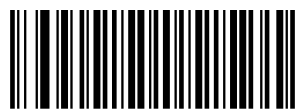
**** Enable QR Code**



W800D00

Disable QR Code

Micro QR



W049904

Enable Micro QR



W049900

**** Disable Micro QR**

Chinese Sensible Code



W01C001

Enable Chinese Sensible Code



W01C000

**** Disable Chinese Sensible Code**

Appendix

Digit Barcodes

0 - 5



D000000

0



D000001

1



D000002

2



D000003

3



D000004

4



D000005

5

6 - 9



D000006

6



D000007

7



D000008

8



D000009

9

A - F



D00000A

A



D00000B

B



D00000C

C



D00000D

D



D00000E

E



D00000F

F

Factory Defaults Table

| Parameter | Factory Default | Remark |
|----------------------------------|-------------------------|-------------------------------|
| System Settings | | |
| Illumination | Normal | |
| Aiming | Normal | |
| Mute Mode | Disabled | |
| Good Read Beep Frequency | Medium | |
| Good Read Beep Duration | 80ms | |
| Scan Mode | Manual Mode | |
| Decode Session Timeout | 3.0s | 0.1-25.5s |
| Timeout between Decodes | 1.0s | 0-25.5s |
| Wireless Communications | | |
| Communication Mode | Real-time Mode | |
| Interface Selection | HID Keyboard | |
| Keyboard Type | U.S. (English) | HID Keyboard Parameter |
| Standard Keyboard | Enabled | HID Keyboard Parameter |
| Convert Case | No Case Conversion | HID Keyboard Parameter |
| Code Page | | |
| Character Encoding | Code Page | HID Keyboard Parameter |
| Direct Character Transfer | ANSI Encoding | HID Keyboard Parameter |
| Emulate Keypad with Leading Zero | On | HID Keyboard Parameter |
| Inter-Keystroke Delay | No Delay | HID Keyboard Parameter |
| Prefix & Suffix | | |
| Prefix Sequence | Code ID+ Custom +AIM ID | |
| Custom Prefix | Disabled | |
| AIM ID Prefix | Disabled | |
| Code ID Prefix | Disabled | |
| Code ID Type | Original Code ID | |
| Custom Suffix | Disabled | |
| Terminating Character Suffix | Disabled | |
| Symbologies | | |
| Global Settings | | |
| Video Reverse | Disabled | Applicable to 2D symbologies. |

| | | |
|------------------------------|-----------------|--|
| ECI Output | Disabled | |
| Code 128 | | |
| Code 128 | Enabled | |
| Maximum Length | 80 | |
| Minimum Length | 1 | |
| UCC/EAN-128 (GS1-128) | | |
| UCC/EAN-128 | Enabled | |
| Maximum Length | 80 | |
| Minimum Length | 1 | |
| AIM 128 | | |
| AIM 128 | Enabled | |
| Maximum Length | 80 | |
| Minimum Length | 1 | |
| EAN-8 | | |
| EAN-8 | Enabled | |
| Check Character | Transmit | |
| 2-Digit Add-On Code | Disabled | |
| 5-Digit Add-On Code | Disabled | |
| Extend to EAN-13 | Disabled | |
| EAN-13 | | |
| EAN-13 | Enabled | |
| Check Character | Transmit | |
| 2-Digit Add-On Code | Disabled | |
| 5-Digit Add-On Code | Disabled | |
| ISSN | | |
| ISSN | Disabled | |
| ISBN | | |
| ISBN | Enabled | |
| Set ISBN Format | ISBN-13 | |
| UPC-E | | |
| UPC-E | Enabled | |
| Check Character | Transmit | |
| 2-Digit Add-On Code | Disabled | |
| 5-Digit Add-On Code | Disabled | |
| System Character "0" | Do not transmit | |

| | | |
|----------------------------------|------------------|----------------|
| Extend to UPC-A | Disabled | |
| UPC-A | | |
| UPC-A | Enabled | |
| Check Character | Transmit | |
| 2-Digit Add-On Code | Disabled | |
| 5-Digit Add-On Code | Disabled | |
| Transmit Preamble Character | System Character | |
| Interleaved 2 of 5 | | |
| Interleaved 2 of 5 | Enabled | |
| Check Character Verification | Disabled | |
| Maximum Length | 100 | |
| Minimum Length | 6 | No less than 1 |
| Febraban | | |
| Febraban | Disabled | |
| Expand Febraban | Do not expand | |
| Transmit Delay per Character | Disabled, 75ms | |
| Transmit Delay per 12 Characters | Disabled, 500ms | |
| ITF-6 | | |
| ITF-6 | Disabled | |
| ITF-14 | | |
| ITF-14 | Enabled | |
| Check Character | Transmit | |
| Matrix 2 of 5 | | |
| Matrix 2 of 5 | Enabled | |
| Check Character Verification | Disabled | |
| Maximum Length | 80 | |
| Minimum Length | 6 | No less than 1 |
| Industrial 25 | | |
| Industrial 25 | Enabled | |
| Check Character Verification | Disabled | |
| Maximum Length | 80 | |
| Minimum Length | 6 | No less than 1 |
| Standard 25 | | |
| Standard 25 | Enabled | |
| Check Character Verification | Disabled | |

| | | |
|------------------------------|--|----------------|
| Maximum Length | 80 | |
| Minimum Length | 6 | No less than 1 |
| Code 39 | | |
| Code 39 | Enabled | |
| Check Character Verification | Disabled | |
| Start/Stop Character | Do not transmit | |
| Code 39 Full ASCII | Disabled | |
| Maximum Length | 50 | |
| Minimum Length | 4 | No less than 1 |
| Codabar | | |
| Codabar | Enabled | |
| Check Character Verification | Disabled | |
| Start/Stop Character | Transmit | |
| | ABCD/ABCD | |
| Maximum Length | 60 | |
| Minimum Length | 4 | No less than 1 |
| Code 93 | | |
| Code 93 | Enabled | |
| Check Character Verification | Do Not Transmit Check Character After Verification | |
| Maximum Length | 80 | |
| Minimum Length | 2 | No less than 1 |
| Code 11 | | |
| Code 11 | Enabled | |
| Check Character Verification | One Check Character, MOD11 | |
| Check Character | Transmit | |
| Maximum Length | 80 | |
| Minimum Length | 4 | No less than 1 |
| Plessey | | |
| Plessey | Disabled | |
| Check Character Verification | Do Not Transmit Check Character After Verification | |
| Maximum Length | 60 | |
| Minimum Length | 4 | No less than 1 |
| MSI-Plessey | | |
| MSI-Plessey | Enabled | |
| Check Character Verification | One Check Character, MOD10 | |

| | | |
|------------------------------|----------|----------------|
| Check Character | Transmit | |
| Maximum Length | 60 | |
| Minimum Length | 4 | No less than 1 |
| RSS-14 | | |
| RSS-14 | Enabled | |
| AI (Application Identifier) | Transmit | |
| RSS-Limited | | |
| RSS-Limited | Enabled | |
| AI (Application Identifier) | Transmit | |
| RSS-Expand | | |
| RSS-Expand | Enabled | |
| PDF417 | | |
| PDF417 | Enabled | |
| Data Matrix | | |
| Data Matrix | Enabled | |
| Rectangular Barcodes | Enabled | |
| Mirror Images | Disabled | |
| QR Code | | |
| QR Code | Enabled | |
| Micro QR | Disabled | |
| Chinese Sensible Code | | |
| Chinese Sensible Code | Disabled | |

AIM ID Table

| Symbology | AIM ID | Remark |
|--------------------------|---------------|---|
| Code 128 |]C0 | Standard Code 128 |
| UCC/EAN 128 (GS1-128) |]C1 | FNC1 is the character right after the start character |
| AIM 128 |]C2 | FNC1 is the 2nd character after the start character |
| EAN-8 |]E4 | Standard EAN-8 |
| |]E4....]E1... | EAN-8 + 2-Digit Add-On Code |
| |]E4....]E2... | EAN-8 + 5-Digit Add-On Code |
| EAN-13 |]E0 | Standard EAN-13 |
| |]E3 | EAN-13 + 2/5-Digit Add-On Code |
| ISSN |]X5 | Standard ISSN |
| ISBN |]X4 | Standard ISBN |
| 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 |
| Interleaved 2 of 5 |]I0 | No check character verification |
| |]I1 | Transmit check character after verification |
| |]I3 | Do not transmit check character after verification |
| ITF-6 |]I1 | Transmit check character |
| |]I3 | Do not transmit check character |
| ITF-14 |]I1 | Transmit check character |
| |]I3 | Do not transmit check character |
| Matrix 2 of 5 |]X1 | No check character verification |
| |]X2 | Transmit check character after verification |
| |]X3 | Do not transmit check character after verification |
| Industrial 25 |]S0 | Not specified |
| Standard 25 |]R0 | No check character verification |
| |]R8 | One check character, MOD 7; do not transmit check character |
| |]R9 | One check character, MOD 7; transmit check character |
| Code 39 |]A0 | Transmit barcodes as is; Full ASCII disabled; no check character verification |

| Symbology | AIM ID | Remark |
|-------------------------------------|--------|--|
| | JA1 | One check character, MOD 43; transmit check character |
| | JA3 | One check character, MOD 43; do not transmit check character |
| | JA4 | Full ASCII enabled; no check character verification |
| | JA5 | Full ASCII enabled; MOD43; transmit check character |
| | JA7 | Full ASCII enabled; MOD43; do not transmit check character |
| Codabar | JF0 | Standard Codabar |
| | JF2 | Transmit check character after verification |
| | JF4 | Do not transmit check character after verification |
| Code 93 | JG0 | Not specified |
| Code 11 | JH0 | One check character, MOD11; transmit check character |
| | JH1 | Two check characters, MOD11/MOD11; transmit check character |
| | JH3 | Do not transmit check character after verification |
| | JH8 | Two check characters, MOD11/MOD9; transmit check character |
| | JH9 | No check character verification |
| Plessey | JP0 | Not specified |
| MSI Plessey | JM0 | One check character, MOD10; transmit check character |
| | JM1 | One check character, MOD10; do not transmit check character |
| | JM7 | Two check characters, MOD10 /MOD11; do not transmit check character |
| | JM8 | Two check characters, MOD10 /MOD11; transmit check character |
| | JM9 | No check character verification |
| RSS-14 RSS-Limited RSS-Expand | Je0 | |
| PDF417 | JL0 | Comply with 1994 PDF417 specifications |
| Data Matrix | jd0 | ECC 000 - 140 |
| | jd1 | ECC 200 |
| | jd2 | ECC 200; FNC1 is the 1st or 5th character after the start character |
| | jd3 | ECC 200; FNC1 is the 2nd or 6th character after the start character |
| | jd4 | ECC 200, ECI protocol supported |
| | jd5 | ECC 200; FNC1 is the 1st or 5th character after the start character; ECI supported |
| | jd6 | ECC 200; FNC1 is the 2nd or 6th character after the start character; ECI supported |

| Symbology | AIM ID | Remark |
|-----------------------|--------|--|
| QR Code |]Q0 | QR1 (comply with AIM ISS 97-001 specifications) |
| |]Q1 | QR2 (2005 symbol), ECI protocol not supported |
| |]Q2 | QR2 (2005 symbol), ECI protocol supported |
| |]Q3 | QR2 (2005 symbol), ECI protocol not supported; FNC1 is the character right after the start character |
| |]Q4 | QR2 (2005 symbol), ECI protocol supported; FNC1 is the character right after the start character |
| |]Q5 | QR2 (2005 symbol), ECI protocol not supported; FNC1 is the 2nd character right after the start character |
| |]Q6 | QR2 (2005 symbol), ECI protocol supported; FNC1 is the 2nd character right after the start character |
| Chinese Sensible Code |]h0 | ECI protocol not supported |
| |]h1 | ECI protocol supported |

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

Code ID Table

| Symbology | Original Code ID | Visible Code ID |
|-----------------------|------------------|-----------------|
| Code 128 FNC3 | 1 | A(0x41) |
| Code 128 | 2 | B(0x42) |
| UCC/EAN 128 | 3 | C(0x43) |
| EAN-8 | 4 | D(0x44) |
| EAN-13 | 5 | E(0x45) |
| UPC-E | 6 | F(0x46) |
| UPC-A | 7 | G(0x47) |
| Interleaved 2 of 5 | 8 | H(0x48) |
| ITF-14 | 9 | I(0x49) |
| ITF-6 | 10 | J(0x4A) |
| Code 39 | 13 | M(0x4D) |
| Codabar | 15 | O(0x4F) |
| Standard 25 | 16 | P(0x50) |
| Code 93 | 17 | Q(0x51) |
| AIM 128 | 21 | U(0x55) |
| MSI Plessey | 22 | V(0x56) |
| ISBN | 23 | W(0x57) |
| Industrial 25 | 24 | X(0x58) |
| Matrix 2 of 5 | 25 | Y(0x59) |
| RSS-14 | 26 | Z(0x5A) |
| RSS Limited | 27 | [(0x5B) |
| RSS Expand | 28 | \(0x5C) |
| Code 11 | 29 |] (0x5D) |
| Plessey | 30 | ^(0x5E) |
| ISSN | 31 | _(0x5F) |
| PDF417 | 32 | `(0x60) |
| QR | 33 | a(0x61) |
| Data Matrix | 35 | c(0x63) |
| Chinese Sensible Code | 39 | g(0x67) |

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) |



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