



HR15 Wahoo BT SD cordless handheld scanner

user guide

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Fujian Newland Auto-ID Tech. Co., Ltd.
No.1, Rujiang West Rd., Mawei, Fuzhou, Fujian, China 350015
http://www.newlandaidc.com

Revision History

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V1.0.2	Added "Host Acknowledgment", "Make a Beeping Sound" and "Surround GS1 Application Identifiers (Al's) with Parentheses"	Sep 30, 2019
	Deleted "Modify Code ID ISBT 128" in Chapter 9	
V1.0.3	Added notes of Bluetooth HID Keyboard in Chapter 4	June 19, 2020
	2. Added Battery Off (for long-term storage/shipping) in Chapter 3	
	3. Added Example in Set Scanner Name in Chapter 4	
	4. Added Datalogic Magellan Aux-RS232 in Chapter 5	
	5. Added Query Bluetooth Hardware Version and Query Cradle Bluetooth Hardware Version in Chapter 3	
	6. Revised the minimum length default setting of Code 39 as 2	
	7. Added Comparison Command in Chapter 8	
	Note: Firmware version HR15-BT_V1.01.015 or later is required for the new feature above.	
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	Note: Firmware version HR15-BT_V1.01.017 or later is required for the new feature above.	
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Preface

Introduction

This manual provides detailed instructions for setting up and using the NLS-HR1580 wireless 1D barcode scanner (hereinafter referred to as "the HR15" or "the scanner") and NLS-CD15 cradle (hereinafter referred to as "the CD15" or "the cradle").

Chapter Description

Chapter 1 Getting Started : Gives a general description of HR15 scanner and CD15 cradle.

Chapter 2 EasySet : Introduces a useful tool you can use to set up HR15 scanner and develop

new applications.

Chapter 3 System Settings : Introduces three configuration methods and describes how to configure

general parameters of HR15 scanner.

Chapter 4 Wireless Communications : Describes how to configure the parameters necessary for wireless

communication between the scanner, cradle and host device.

Chapter 5 RS-232 Interface : Describes how to configure RS-232 communication parameters.

Chapter 6 USB Interface : Describes how to configure USB communication parameters.

Chapter 7 Symbologies : Lists all compatible symbologies and describes how to configure the

relevant parameters.

Chapter 8 Data Formatter : Explains how to customize scanned data with the data formatter.

Chapter 9 Prefix & Suffix : Describes how to use prefix and suffix to customize scanned data.

Chapter 10 Batch Programming : Explains how to integrate a complex programming task into a single

barcode.

Appendix : Provides factory defaults table and a bunch of frequently used

programming barcodes.

Explanation of Icons



This icon indicates something relevant to this manual.



This icon indicates this information requires extra attention from the reader.



This icon indicates handy tips that can help you use or configure the scanner with ease.



This icon indicates practical examples that can help you to acquaint yourself with operations

Chapter 1 Getting Started

Introduction

The HR15 wireless 1D barcode scanner reads a 1D barcode by capturing its image. Adopting the advanced technology independently developed by Newland Auto-ID Tech, it provides five scan modes, including Level mode, Sense mode and Continuous mode, tailored to different scanning needs.

An illustrated introduction to the HR15 is included in this chapter. If you have an HR15 scanner at hand, make good use of it to develop a better understanding of this manual. This chapter is written for normal users, maintenance staff and software developers.

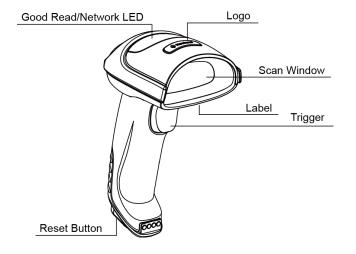
Features of the HR15

- ★ More reliable, more versatile, more efficient scanning solution
- ★ Bluetooth 5.0 radio
- ★ User-friendly illumination
- ★ Ultra-rugged construction

Unpacking

Open the package and take out HR15 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.

HR15 Scanner



Good Read/Network LED:

Red LED flashes - Low battery alert.

Red LED on - Scanner not paired to cradle.

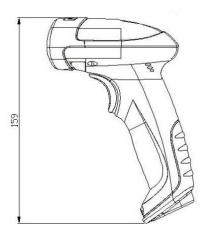
Blue LED flashes slowly - Paired but no connection established.

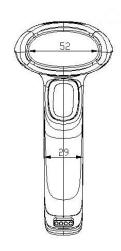
Blue LED on - Connection established.

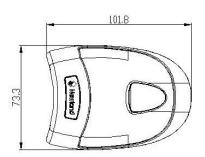
Blue LED flashes quickly - Batch transmission in progress.

Green LED flashes once - Good read.

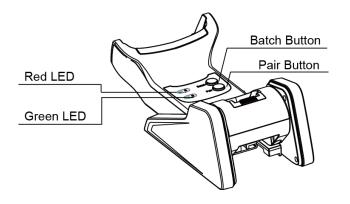
Dimensions of the Scanner (unit: mm)







CD15 Cradle



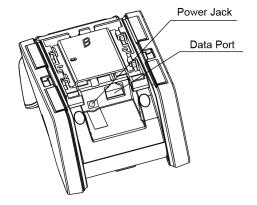
Red/Green LEDs:

Red LED on - No scanner placed on cradle.

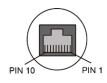
Red LED flashes - Charging in progress, low battery level.

Green LED flashes - Charging in progress, medium battery level.

Green LED on - Fully charged.

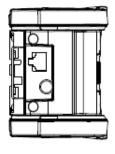


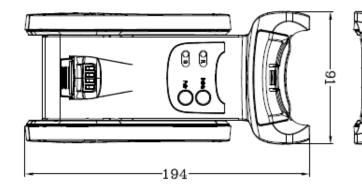
Data Port Pinouts:



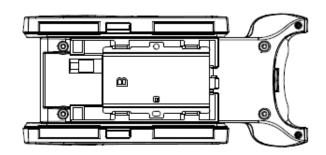
PIN	Signal	Туре	Function
1	NC	-	No connection
2	NC	-	No connection
3	VCC	Р	Power+ (+5V)
4	TXD	0	RS-232 output
5	RXD	I	RS-232 input
6	CTS	I	Flow central signal
7	RTS	0	Flow control signal
8	GND	Р	Ground
9	D-	I/O	LICD signal
10	D+	I/O	USB signal

Dimensions of the Cradle (unit: mm)









Connecting the Cradle to a Host

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

USB

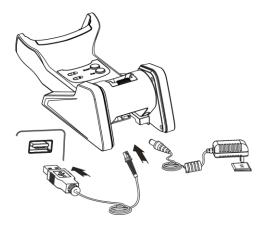


RS-232



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

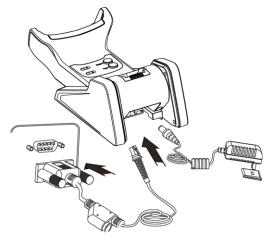
Using USB Cable



Connect the cradle to a Host using a USB cable with RJ45 and USB connectors:

- 1. Plug the RJ45 connector of the cable into the data port on the cradle.
- 2. Plug the USB connector of the cable into the USB port on the Host.
- 3. Plug the supplied power adapter into the power jack on the cradle.

Using RS-232 Cable



Connect the cradle to a Host using an RS-232 cable with RJ45 and RS-232 connectors:

- 1. Plug the RJ45 connector of the cable into the data port on the cradle.
- 2. Plug the RS-232 connector of the cable into the RS-232 port on the Host.
- 3. Plug the supplied power adapter into the power jack on the cradle.

Charging the Scanner Battery

To charge the scanner battery, insert the scanner in a powered cradle. You can check the charge status with the red and green LEDs on the cradle.

Red LED steady on	No scanner placed on cradle
Red LED flashes	Charging in progress, low battery level
Green LED flashes	Charging in progress, medium battery level
Green LED steady on	Fully charged

Pairing the Scanner to a Cradle

Before configuring or using the scanner, you must pair it to a cradle first. A cradle can pair with up to seven scanners if Multipoint-to-Point mode is enabled.

You need to perform the pairing operation manually: After the scanner and cradle are turned on, insert the scanner in the cradle and then press the Pair button on the cradle. The scanner beeps on a successful pairing.

To unpair them, you may pair the scanner to another cradle, or scan the **Clear Pairing Info on Cradle** or **Clear Pairing Info on Scanner** barcode in Chapter 4.

Searching Paired Scanner(s)

After the scanner(s) and cradle are turned on, press the Pair button on the cradle and the paired scanner(s) will beep.

Wireless Communications

The scanner can communicate with a remote host by pairing with a CD15 cradle that supports the following interfaces:

- Standard RS-232 connection to a host. For the cable connection instructions, see the "Using RS-232 Cable" section in this chapter. To learn how to configure RS-232 communication parameters, see Chapter 5.
- USB connection to a host. For the cable connection instructions, see the "Using USB Cable" section in this chapter.

 To learn how to configure USB communication parameters, see Chapter 6.

For wireless communication parameters, see Chapter 4.

Power On, Power Off, Reboot

Power on the scanner

Hold down the trigger on the scanner until it beeps.

Note: When using the scanner for the first time or after scanning the **Battery Off** barcode in Chapter 3, you MUST insert the scanner in a powered cradle to exit battery protection mode before turning it on.

Power off the scanner

Method 1: When in the Level scan mode, the scanner will automatically power off after a specific period of inactivity (default: 5 minutes, programmable). To change the period, see the "Auto Power-Off Timeout" section in Chapter 3.

Method 2: Scan the Power Off Scanner barcode in Chapter 3.

Reboot the scanner

If the scanner stops responding to input or runs abnormally, press and hold the Reset button on the bottom of the scanner with a straightened paperclip to reboot it.

Maintenance

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



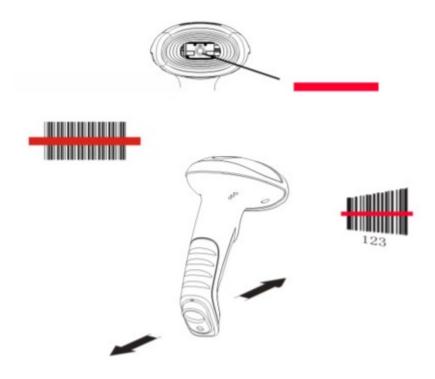
The warranty DOES NOT cover damages caused by inappropriate care and maintenance.

Scanning Instructions

When the scanner is in the Level 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. Aim the aiming pattern across the center of barcode.
- 3. Release the Trigger when the aiming pattern goes off. If the barcode is decoded successfully, the scanner will emit a good read beep and the decoded data will be sent to the Host.

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



Chapter 2 Easyset

EasySet, developed by Fujian Newland Auto-ID Tech. Co., Ltd., is a configuration tool for Newland's 1D/2D handheld barcode scanner, fixed mount barcode scanners and OEM scan engines. Its main features include:

- ❖ View device & configuration information of online device
- Configure device
- Update firmware of online device
- Create/print/save programming barcodes to a PDF or Word file
- → View/edit/save image stored on online device in the original image/BMP/JPG/TIFF format
- Send serial commands to online device and receive device response
- Supported languages: Chinese and English.

EasySet supports 32-bit/64-bit Microsoft WinXP/Win7/Win 8/Win 8.1/Win 10 operating systems.

EasySet can communicate with device via one of the following interface: RS-232, USB COM Port Emulation (UFCOM driver required), USB CDC (UFCOM driver required), USB DataPipe (UFCOM driver required), USB HID-POS.



Chapter 3 System Setting

Introduction

There are three ways to configure the HR15: Barcode programming, command programming and Easyset programming.

Barcode Programming

The HR15 can be configured by scanning programming barcodes. All user programmable features/options are described along with their programming barcodes/commands in the following sections.

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

Command Programming

The HR15 can also be configured by serial commands (HEX) sent from the host device.

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

EasySet Programming

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



Before programming the scanner, you need to pair it to a cradle first. When programming the scanner with serial commands or EasySet, you need to insert it in the paired cradle.



Programming Barcode/ Programming Command/Function



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

- 1. The No Case Conversion barcode.
- 2. The No Case Conversion command.
- 3. The description of feature/option.
- 4. ** indicates factory default settings.

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

** Exit Setup



Enter Setup

Use of Programming Barcodes

Scanning the **Enter Setup** barcode can enable the scanner to enter the setup mode. Then you can scan a number of programming barcodes to configure your scanner. To exit the setup mode, scan the **Exit Setup** barcode or a non-programing barcode, or reboot the scanner.





Programming barcode data (i.e. the characters under programming barcode) can be transmitted to the host device. You may scan the appropriate barcode below to enable or disable the transmission of programming barcode data to the host device.



** Do Not Transmit Programming Barcode Data



Transmit Programming Barcode Data



@SETUPE0



Enter Setup

Illumination





Good Read LED

The green LED can be programmed to be On or Off to indicate good read.







Enter Setup

Good Read LED Duration

This parameter sets the amount of time the Good Read LED remains on following a good read.



** Short (20ms)



Medium (120ms)





Prolonged (320ms)



Custom (1 - 2,500ms)

Example

Set the Good Read LED duration to 800ms:

- 1. Scan the Enter Setup barcode.
- 2. Scan the Custom barcode.
- 3. Scan the numeric barcodes "8", "0" and "0" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Exit Setup** barcode.



@SETUPE0

** Exit Setup



Enter Setup

Power On Beep

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





Good Read Beep

Scanning the **Off** barcode can turn off the beep that indicates successful decode; scanning the **On** barcode can turn it back on.





@SETUPE0

19



Enter Setup

Good Read Beep Duration

This parameter sets the length of the beep the scanner emits on a good read. It is programmable in 1ms increments from 20ms to 300ms.



Short (40ms)



** Medium (80ms)



@GRBDUR

Custom (20 - 300ms)

Example

Set the Good Read Beep duration to 200ms:

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



@SETUPE0

** Exit Setup



Enter Setup

Good Read Beep Frequency

This parameter is programmable in 1Hz increments from 20Hz to 20,000Hz.



Extra Low (800Hz)



Low (1600Hz)



** Medium (2730Hz)



High (4200Hz)



Custom (20 - 20,000Hz)

zample

Set the Good Read Beep frequency to 2,000Hz:

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



** Exit Setup



Enter Setup

Good Read Beep Volume









** Exit Setup



Enter Setup

Scan Mode

Level Mode: A trigger pull activates a decode session. The decode session continues until a barcode is decoded or you release the trigger.

Sense Mode: The scanner activates a decode session every time it detects a barcode presented to it. The decode session continues until a barcode is decoded or the decode session timeout expires. **Reread Timeout** can avoid undesired rereading of same barcode in a given period of time. **Sensitivity** can change the Sense Mode's sensibility to changes in images captured. **Image Stabilization Timeout** gives the scanner time to adapt to ambient environment after it decodes a barcode and "looks" for another.

Continuous Mode: The scanner automatically starts one decode session after another. To suspend/resume barcode reading, simply press the trigger. **Reread Timeout** can avoid undesired rereading of same barcode in a given period of time.



** Level Mode



Sense Mode



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.



Decode Session Timeout

Example

Set the decode session timeout to 1,500ms:

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



** Exit Setup



Enter Setup

Image Stabilization Timeout (Sense Mode)

This parameter defines the amount of time the scanner will spend adapting to ambient environment after it decodes a barcode and "looks" for another. It is programmable in 1ms increments from 0ms to 3,000ms. The default setting is 200ms.



Image Stabilization Timeout



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Set the image stabilization timeout to 800ms:

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Image Stabilization Timeout barcode.
- 3. Scan the numeric barcodes "8", "0" and "0" from the "Digit Barcodes" section in Appendix.
- 4. Scan the Save barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Exit Setup barcode.



Enter Setup

Reread Timeout

Reread Timeout can avoid undesired rereading of same barcode in a given period of time. This feature is only applicable to the Sense and Continuous modes.

Enable Reread Timeout: Do not allow the scanner to reread same barcode before the reread timeout expires.

Disable Reread Timeout: Allow the scanner to reread same barcode.



Enable Reread Timeout



** Disable Reread Timeout

The following parameter sets the time interval between two successive reads on same barcode. It is programmable in 1ms increments from 0ms to 3,600,000ms. When it is set to a value greater than 3,000, the timeout for rereading same programming barcode is limited to 3,000ms. The default setting is 1,500ms.



Set Reread Timeout

Xample

Set the reread timeout to 1,000ms:

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



@SETUPE0

** Exit Setup



Enter Setup

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



Reread Timeout Reset On



** Reread Timeout Reset Off

Image Decoding Timeout

Image Decoding Timeout specifies the maximum time the scanner will spend decoding an image. This parameter is programmable in 1ms increments from 1ms to 3,000ms. The default timeout is 500ms.



Image Decoding Timeout



Set the image decoding timeout to 1,000ms:

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



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Enter Setup

Sensitivity (Sense Mode)

This specifies the degree of acuteness of the scanner's response to changes in images captured. There are 20 levels to choose from. The smaller the value, the higher the sensitivity and the lower requirement in image change to trigger the scanner. You can select an appropriate degree of sensitivity that fits your application environment. This feature is only applicable to the Sense mode.



Low Sensitivity



** Medium Sensitivity



High Sensitivity



Enhanced Sensitivity



Custom Sensitivity (Level 1-20)

Set the sensitivity to Level 10:

C xamnle

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



@SETUPE

** Exit Setup



Enter Setup

Read Barcode On/Off

Sending the Read Barcode Off command ~<SOH>0000#SCNENA0;<ETX> to the scanner can disable it from reading barcode, and the scanner is unable to scan barcode unless you send the Read Barcode On command ~<SOH>0000#SCNENA1;<ETX> to it or power cycle it. By default, Read Barcode is On.

Make a Beeping Sound

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

BEEPONxxxFyyyT (xxx: The desired frequency, 1-20,000Hz; yyy: The desired duration, 1-10,000ms)

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

Enter: 7E 01 30 30 30 30 40 42 45 45 50 4F 4E 32 30 30 30 46 35 30 54 3B 03

(~<SOH>0000#BEEPON2000F50T;<ETX>)

Response: 02 01 30 30 30 30 40 42 45 45 50 4F 4E 32 30 30 30 46 35 30 54 06 3B 03

(<STX><SOH>0000#BEEPON2000F50T<ACK>;<ETX>)



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Enter Setup

Smart Stand Mode

After this feature is turned on, the scanner will switch from its current scan mode to the Sense mode when it is inserted in the stand, and it will operate in its previous scan mode when it is removed from the stand.





Bad Read Message

You may scan the appropriate barcode below to select whether or not to send a bad read message (user-programmable) when a good read does not occur before trigger release, or the decode session timeout expires.



** Bad Read Message OFF



Bad Read Message ON

Set Bad Read Message

A bad read message can contain up to 7 characters (HEX values from 0x00 to 0xFF). To set a bad read message, scan the **Set Bad Read Message** barcode, the numeric barcodes representing the hexadecimal values of desired character(s) and the **Save** barcode. The default setting is "NG".



** Exit Setup



Enter Setup



Set Bad Read Message

Xample xample

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Set the bad read message to "F" (HEX: 0x46):

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





Enter Setup

Auto Power-Off Timeout

Auto Power-Off Timeout specifies the amount of time it takes before the scanner automatically powers off from inactivity.













Disable Auto Power Off



** Exit Setup



Enter Setup

Power Off/Battery Off



Power Off Scanner



Battery Off

(For Long-term Storage/Shipping)

Note: After scanning the **Battery Off** barcode, you MUST insert the scanner in a powered cradle to exit battery protection mode before turning it on.

Default Settings

Factory Defaults

Scanning the Reset Scanner/Reset Cradle barcode can restore the scanner/cradle to the factory defaults.

You may need to reset your scanner/cradle when:

- 1. Scanner/cradle is not properly configured so that the scanner fails to decode barcodes or to communicate with the cradle.
- 2. You forget previous configuration and want to avoid its impact.
- 3. Functions that are rarely used have been enabled for the time being.



Reset Scanner



Reset Cradle



33



Enter Setup

Custom Defaults

Scanning the **Restore All Custom Defaults** barcode can reset all parameters on the scanner to the custom defaults. Scanning the **Save as Custom Defaults** barcode can set the current settings as custom defaults.

Custom defaults are stored in the non-volatile memory.



Save as Custom Defaults



Restore All Custom Defaults



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



** Exit Setup



Enter Setup

Query Scanner Information

After scanning the barcode below, the scanner information (including product name, firmware version, decoder version, hardware version, product serial number, OEM serial number and manufacturing date) will be sent to the host device.



Query Scanner Information

Query Product Name



Query Product Name

Query Firmware Version



Query Firmware Version

Query Decoder Version



Query Decoder Version



** Exit Setup



Query Bluetooth Hardware Version



Query Bluetooth Hardware Version

Query Data Formatter Version



Query Data Formatter Version

Query Hardware Version



Query Hardware Version

Query Serial Number



Query Serial Number

Query Manufacturing Date



** Exit Setup



Enter Setup



Query Manufacturing Date





Query OEM Serial Number



Query OEM Serial Number

Query Cradle Information

After scanning the barcode below, the cradle information (including model number, firmware version, hardware information, product serial number, and manufacturing date) will be sent to the host device.



Query Cradle Information

Query Model Number



Query Model Numer

Query Firmware Version



Query Firmware Version



@SETUPE0



Enter Setup

Query Hardware Information



Query Hardware Information

Query Serial Number



Query Serial Number

Query Cradle Bluetooth Hardware Version



Query Cradle Bluetooth Hardware Version

Query OEM Serial Number (ESN)



Query OEM Serial Number



** Exit Setup



Enter Setup

Query Manufacturing Date



Query Manufacturing Date



** Exit Setup



Enter Setup

Query Remaining Battery of Scanner

After scanning the barcode below, the percentage of battery power remaining will be sent to the host device.



Query Remaining Battery of Scanner



Chapter 4 Wireless Communication

Operating Modes

The scanner provides the following two operating modes:

Bluetooth HID Mode allows your scanner to communicate with a remote host using Bluetooth. You must first pair your scanner to the host before these two Bluetooth devices can communicate with each other. All features available for USB HID Keyboard are applicable to Bluetooth HID. Pressing the trigger twice can turn on/off iPhone and iPad's virtual keyboard.

Note: The pairing information in the scanner and the current host need to be cleared before connecting with other Bluetooth devices.

Scanner scan Clear Pairing Info on Scanner barcode, and the host delete the pairing information.

In **Bluetooth HID/BLE Mode**, when you have many scanners to pair, you can pair the exact one via scan the barcode in the EasyConnect to communicate with the host.

Cradle Mode allows your scanner to communicate with a remote host by pairing with a cradle.



** Cradle Mode



Bluetooth HID Mode



Batch Mode

Batch Mode Options

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



Enter Setup

Automatic Batch Mode: When in service range, the scanner attempts to transmit every barcode you scan. When out of range, the scanner stores the scanned data in the flash memory. Once you are back to service range, the scanner will automatically transmit the stored data and then remove it from the flash memory after transmission is done.

Manual Batch 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 in either of the following ways: (i) press the Batch button on the cradle after inserting the scanner in cradle; or (ii) scan the Transmit Stored Data barcode. The scanner will automatically remove the stored data from the flash memory after transmission is done if the Auto Clear Stored Data after Transmission feature is turned on.



** Exit Setup





@WLSBAT2

Manual Batch Mode

Prevent Same Barcode Storage

This feature is available only when scanning barcodes in the Automatic or Manual Batch mode.

On: The scanner discards the data and generates an error beep when encountering a barcode that has existed in the flash memory.

Off: The scanner stores the data when encountering a barcode that has existed in the flash memory.







Enter Setup

Batch Mode Transmit Delay

Sometimes when multiple barcodes stored in the flash memory are sent to the host, the transmission of those barcodes is too fast for the application to process. To program a transmit delay between barcodes, scan one of the following delays.



** No Transmit Delay (0ms)



Short Transmit Delay (50ms)



Medium Transmit Delay (100ms)



Long Transmit Delay (150ms)



Custom Transmit Delay (0-10,000ms)

. .

Set the batch mode transmit delay to 200ms:

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



** Exit Setup



Enter Setup

End of Transmission Message for Batch Mode

You may scan the appropriate barcode below to select whether or not to send an end of transmission message (user-programmable) to notify the host when transmission of all stored data is done. This feature is only available to data transmission initiated manually under the Manual Batch mode.



** End of Transmission Message Off



End of Transmission Message On

An end of transmission message can contain up to 10 characters (HEX values from 0x00 to 0xFF). To set an end of transmission message, scan the **Set End of Transmission Message** barcode, the numeric barcodes representing the hexadecimal values of desired character(s) and the **Save** barcode. The default setting is "EOT".



Set End of Transmission Message

Kample xample

Set the end of transmission message to "END" (HEX: 0x45, 0x4E, 0x44):

- 1. Scan the Enter Setup barcode.
- 2. Scan the **Set End of Transmission Message** barcode.
- 3. Scan the numeric barcodes "4", "5", "4", "E", "4" and "4" from the "Digit Barcodes" section in Appendix.
- 4. Scan the Save barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Exit Setup barcode.





Enter Setup

Transmit Stored Data

You may scan the barcode below to send the stored data in the flash memory to the host. This feature is only available to the Manual Batch mode.



Transmit Stored Data

Auto Clear Stored Data after Transmission

You may scan the appropriate barcode below to choose whether to clear or keep the stored data in the flash memory after transmission. This feature is only available to the Manual Batch mode.





Query/Clear Stored Data in Flash



Query the Number of Stored Barcodes



Clear All Stored Data



** Exit Setup



Enter Setup

Scanner(s) to Cradle Support

Wireless Communication Modes

Point-to-Point Mode: Only one scanner can be paired to one cradle at a time.

Multi-Point to Single-Point Mode: Up to seven scanners can be paired to one cradle.



** Point-to-Point Mode



Multi-Point to Single-Point Mode

Clear Pairing Info on Scanner/Cradle



Clear Pairing Info on Cradle



Clear Pairing Info on Scanner



** Exit Setup

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Enter Setup

Set Scanner Name

You may scan the below barcode to set the name of your scanner. The maximum length is 5 characters (HEX values from 0x20 to 0x7E). The default scanner name is "00000".



Scanner Name



If setting the scanner name as "0AB00":

- I. Scan the Enter Setup barcode
- 2. Scan the Scanner Name barcode
- 3. Scan the numeric barcode "3" "0" "4" "1" "4" "2" from the "Digit Barcodes" section in Appendix
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix
- 5. Scan the Exit Setup barcode



** Exit Setup



Enter Setup

Set Date and Time



Set Date and Time

Set Date and Time to "20201021010101":

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





Enter Setup

Query Current Date and Time

After scanning the barcode below, the current date and time in YYYYMMDDHHMMSS format will be sent to the host device. For example, query result "20180205103011" means February 5th 2018 10:30:11.



Query Current Date and Time

Time Stamp

51

You can select whether or not to send date & time before each scanned data by scanning the appropriate barcode below.



** Do Not Send Time Stamp



Send Time Stamp



** Exit Setup



Enter Setup

Set Time Stamp Format



** Format 1: (YYYY/MM/DD,HH:MM:SS)

(example: 2018/01/23,10:30:20)

Format 2: (DD/MM/YYYY,HH:MM:SS)

(example: 23/01/2018,10:30:20)

@WISTSF2

Format 3: (MM/DD/YYYY,HH:MM:SS)

(example: 01/23/2018,10:30:20)





Enter Setup

Host Acknowledgment

This feature is only applicable when Batch Mode is disabled. The green LED flashes once and makes the right beep to indicate the right result, and the host will send 0x06 to the scanner. The red LED flashes three times and make the wrong beep to indicate the wrong result, and the host will send 0x15 to the scanner.





Host Acknowledgment Timeout



** 1 Second



5 Seconds



** Exit Setup



Enter Setup

Host Acknowledgment Beep Volume











** Exit Setup 54



Enter Setup

Chapter 5 RS-232 Interface

Introduction

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



RS-232

Datalogic Magellan Aux-RS232

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



Datalogic Magellan AUX-RS232

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



Enter Setup

Baud Rate

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



** 115200



57600



@232BAD5

19200





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Enter Setup



4800



@232BAD0 **1200**

Parity Check

Set the parity type to match the host requirements.

Odd Parity: If the data contains an odd number of 1 bits, the parity bit value is set to 0.

Even Parity: If the data contains an even number of 1 bits, the parity bit value is set to 0.

None: Select this option when no parity bit is required.



** None



Even Parity



Odd Parity



** Exit Setup



Enter Setup

Data Bit

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



7 Data Bits



** 8 Data Bits

Stop Bit

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



** 1 Stop Bit



2 Stop Bits



** Exit Setup

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Enter Setup

Hardware Auto Flow Control

If CTS flow control is enabled, the cradle determines whether to transmit data based on CTS signal level. When CTS signal is at low level which means the serial port's cache memory of receiving device (such as PC) is full, the cradle stops sending data through serial port until CTS signal is set to high level by receiving device. If RTS flow control is enabled, whether the cradle receives data or not is dependent on RTS signal level. If the cradle is not ready for receiving, it will set RTS signal to low level. When sending device (such as PC) detects it, it will not send data to the cradle any more to prevent data loss.

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



** No Flow Control



RTS Flow Control



CTS Flow Control



CTS/RTS Flow Control



Before enabling this feature, make sure that RTS/CTS signal lines are contained in RS-232 cable. Without the signal lines, RS-232 communication errors will occur.



** Exit Setup



Enter Setup

Chapter 6 USB Interface

Introduction

There are four options for USB connection between the cradle and host device:

- → USB HID Keyboard: The cradle's transmission is simulated as USB keyboard input with no need for command configuration or a driver. Barcode data could be entered by the virtual keyboard directly and it is also convenient for the host device to receive data.
- → USB CDC: It is compliant with the standard USB CDC class specifications defined by the USB-IF and allows the host device to receive data in the way as a serial port does. A driver is needed when using this feature.
- → HID POS (POS HID Barcode Scanner): It is based on the HID interface, with no need for a custom driver. It excels virtual keyboard and traditional RS-232 interface in transmission speed.
- → IBM SurePOS: It conforms to IBM (now Toshiba Global Commerce Solutions) 4698 USB scanner interface specifications.

When the cradle is connected to both USB and RS-232 ports on a host device, it will select the USB connection by default.



** Exit Setup

60



Enter Setup

USB HID Keyboard

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



** USB HID Keyboard



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If the host device allows keyboard input, then no extra software is needed for HID Keyboard input.





Enter Setup

USB Country Keyboard Types

Keyboard layouts vary from country to country. The default setting is U.S. keyboard.



** U.S. (English)



Belgium



Brazil



Canada (French)



Czechoslovakia



Denmark



Finland (Swedish)





@SETUPE1

Enter Setup



@KBWCTY7
France

@KBWCTY8

Germany/ Austria



Greece



Hungary



Israel (Hebrew)



Italy



Latin America/ South America



Netherlands (Dutch)



** Exit Setup



Enter Setup



Norway



Poland



Portugal



Romania



Russia



Slovakia



Spain



Sweden





Enter Setup



Switzerland (German)



Turkey_F



Turkey_Q



ØKBIWCTV28

Japan



** Exit Setup



Enter Setup

Emulate ALT+Keypad

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

- 1. **ALT Make**
- 2. Enter the number corresponding to a desired character on the keypad.
- **ALT Break**

After Emulate ALT+Keypad ON is selected, you need to choose the code page with which the barcodes were created and to turn Unicode Encoding On or Off depending on the encoding used by the application software.



** Emulate ALT+Keypad OFF



Emulate ALT+Keypad ON



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



Supposing Emulate ALT+Keypad is ON, Unicode Encoding is Off, Code Page 1252 (West European Latin) is selected, and Emulate Keypad with Leading Zero is Off, barcode data "AĐF" (65/208/70) is sent as below:

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

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

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



** Exit Setup



Enter Setup

Code Page

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



** Code Page 1252 (West European Latin)



Code Page 1251 (Cyrillic)



Code Page 1250 (Central and East European Latin)



Code Page 1253 (Greek)



Code Page 1254 (Turkish)

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Code Page 1255 (Hebrew)





Enter Setup



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)



@SETOFE0



Enter Setup

Unicode Encoding

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 turn **Unicode Encoding** on, whereas Microsoft Office Excel or Notepad uses Code Page encoding and therefore you should turn **Unicode Encoding** off. This feature is only effective when **Emulate ALT+Keypad** is turned on.





Emulate Keypad with Leading Zero

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





@SETUPE0



Enter Setup

Function Key Mapping

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







Kample

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

```
"A" - Keystroke "A".

<HT> - "Ctrl Make" + Keystroke "I" + "Ctrl Break"

"F" - Keystroke "F"
```

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

If **Alt+Keypad Mode** is selected and other parameters of USB HID Keyboard adopt factory defaults, the data above is sent as below:

```
"A" - Keystroke "A".
<HT> - "Alt Make" + Keystrokes "009" + "Alt Break"
"F" - Keystroke "F"
```



** Exit Setup



Enter Setup

ASCII Function Key Mapping Table

NUL 00 Null Ctrl+@ SOH 01 Keypad Enter Ctrl+A STX 02 Caps Lock Ctrl+B ETX 03 ALT Ctrl+C EOT 04 Null Ctrl+D ENQ 05 CTRL Ctrl+E ACK 06 Null Ctrl+E ACK 06 Null Ctrl+E BEL 07 Enter Ctrl+G BS 08 Left Arrow Ctrl+H HT 09 Horizontal Tab Ctrl+H LF 0A Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+K FF 0C Delete Ctrl+K FF 0C Delete Ctrl+N SI 0F Esc Ctrl+N DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q	ASCII Function	ASCII Value (HEX)	Function Key Mapping Disabled	Ctrl+ASCII
STX 02 Caps Lock Ctrl+B ETX 03 ALT Ctrl+C EOT 04 Null Ctrl+D ENQ 05 CTRL Ctrl+E ACK 06 Null Ctrl+E ACK 06 Null Ctrl+F BEL 07 Enter Ctrl+G BS 08 Left Arrow Ctrl+G BS 08 Left Arrow Ctrl+H HT 09 Horizontal Tab Ctrl+I LF 0A Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+K FF 0C Delete Ctrl+K CR 0D Enter Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F111 Ctrl+P DC1 11 Home Ctrl+Q	NUL	00	Null	Ctrl+@
ETX 03 ALT CtrI+C EOT 04 Null CtrI+D ENQ 05 CTRL CtrI+E ACK 06 Null CtrI+F BEL 07 Enter CtrI+G BS 08 Left Arrow CtrI+H BS 08 Left Arrow CtrI+H HT 09 Horizontal Tab CtrI+H LF 0A Down Arrow CtrI+J LF 0C Delete CtrI+J CR 0D Enter CtrI+M SO 0E Insert CtrI+N SI 0F Esc <t< td=""><td>SOH</td><td>01</td><td>Keypad Enter</td><td>Ctrl+A</td></t<>	SOH	01	Keypad Enter	Ctrl+A
EOT 04 Null Ctrl+D ENQ 05 CTRL Ctrl+E ACK 06 Null Ctrl+F BEL 07 Enter Ctrl+G BS 08 Left Arrow Ctrl+H HT 09 Horizontal Tab Ctrl+I LF 0A Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+J CT 0Delete Ctrl+K CR 0D Enter Ctrl+K CR 0D Enter Ctrl+K SO 0E Insert Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+D DLE 10 F11 Ctrl+Ctrl+Q	STX	02	Caps Lock	Ctrl+B
ENQ 05 CTRL Ctrl+E ACK 06 Null Ctrl+F BEL 07 Enter Ctrl+F BS 08 Left Arrow Ctrl+H HT 09 Horizontal Tab Ctrl+I LF 0A Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+L CR 0D Enter Ctrl+L CR 0D Enter Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V	ETX	03	ALT	Ctrl+C
ACK 06 Null Ctrl+F BEL 07 Enter Ctrl+G BS 08 Left Arrow Ctrl+H HT 09 Horizontal Tab Ctrl+I LF 0A Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+K FF 0C Delete Ctrl+L CR 0D Enter Ctrl+M SO 0E Insert Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+P DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+R DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V <td>EOT</td> <td>04</td> <td>Null</td> <td>Ctrl+D</td>	EOT	04	Null	Ctrl+D
BEL 07 Enter Ctrl+G BS 08 Left Arrow Ctrl+H HT 09 Horizontal Tab Ctrl+I LF 0A Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+L CR 0D Enter Ctrl+M SO 0E Insert Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X	ENQ	05	CTRL	Ctrl+E
BS 08 Left Arrow Ctrl+H HT 09 Horizontal Tab Ctrl+J LF 0A Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+L CR 0D Enter Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+V EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z	ACK	06	Null	Ctrl+F
HT	BEL	07	Enter	Ctrl+G
LF OA Down Arrow Ctrl+J VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+K FF 0C Delete Ctrl+L CR 0D Enter Ctrl+M SO 0E Insert Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+R DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+V EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Y	BS	08	Left Arrow	Ctrl+H
VT 0B Vertical Tab Ctrl+K FF 0C Delete Ctrl+L CR 0D Enter Ctrl+M SO 0E Insert Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+V F	HT	09	Horizontal Tab	Ctrl+I
FF OC Delete Ctrl+L CR 0D Enter Ctrl+M SO 0E Insert Ctrl+M SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+I F5 Ctrl+I Ctrl+I F8 1D F8 Ctrl+I RS 1E	LF	0A	Down Arrow	Ctrl+J
CR 0D Enter Ctrl+M SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+I FS 1C F7 Ctrl+I GS 1D F8 Ctrl+I RS 1E F9 Ctrl+6	VT	0B	Vertical Tab	Ctrl+K
SO 0E Insert Ctrl+N SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+I GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	FF	0C	Delete	Ctrl+L
SI 0F Esc Ctrl+O DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+E FS 1C F7 Ctrl+I GS 1D F8 Ctrl+I RS 1E F9 Ctrl+6	CR	0D	Enter	Ctrl+M
DLE 10 F11 Ctrl+P DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+E FS 1C F7 Ctrl+I GS 1D F8 Ctrl+B RS 1E F9 Ctrl+6	SO	0E	Insert	Ctrl+N
DC1 11 Home Ctrl+Q DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	SI	0F	Esc	Ctrl+O
DC2 12 PrintScreen Ctrl+R DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Y ESC 11 F6 Ctrl+I FS 1C F7 Ctrl+I GS 1D F8 Ctrl+J RS 1E F9 Ctrl+6	DLE	10	F11	Ctrl+P
DC3 13 Backspace Ctrl+S DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+I GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	DC1	11	Home	Ctrl+Q
DC4 14 tab+shift Ctrl+T NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	DC2	12	PrintScreen	Ctrl+R
NAK 15 F12 Ctrl+U SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+Z FS 1C F7 Ctrl+I GS 1D F8 Ctrl+J RS 1E F9 Ctrl+6	DC3	13	Backspace	Ctrl+S
SYN 16 F1 Ctrl+V ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	DC4	14	tab+shift	Ctrl+T
ETB 17 F2 Ctrl+W CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	NAK	15	F12	Ctrl+U
CAN 18 F3 Ctrl+X EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	SYN	16	F1	Ctrl+V
EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	ETB	17	F2	Ctrl+W
EM 19 F4 Ctrl+Y SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	CAN	18	F3	Ctrl+X
SUB 1A F5 Ctrl+Z ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	EM	19	F4	Ctrl+Y
ESC 11 F6 Ctrl+[FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	SUB	1A	F5	Ctrl+Z
FS 1C F7 Ctrl+\ GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6				
GS 1D F8 Ctrl+] RS 1E F9 Ctrl+6	FS	1C	F7	
RS 1E F9 Ctrl+6	GS	1D		Ctrl+]
				-
	US	1F	F10	Ctrl+-





Enter Setup

ASCII Function Key Mapping Table (Continued)

The last five characters (0x1B~0x1F) in the table above apply to US keyboard layout only. The following chart provides the equivalents of these five characters for other countries.

Country	Ctrl+ASCII						
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+-		





Enter Setup

Inter-Keystroke Delay

This parameter specifies the delay between emulated keystrokes.



** No Delay



Long Delay (40ms)



Short Delay (20ms)



Custom (0-100)



** Exit Setup



Enter Setup

Caps Lock

The **Caps Lock ON** option can invert upper and lower case characters contained in barcode data. This inversion occurs regardless of the state of Caps Lock key on the host device's keyboard.



** Caps Lock OFF (Non-Japanese keyboard)



Caps Lock ON (Non-Japanese keyboard)



Caps Lock OFF (Japanese keyboard)



Caps Lock ON (Japanese keyboard)



Emulate ALT+Keypad ON/ Convert All to Upper Case/ Convert All to Lower Case prevails over Caps Lock ON.



When the Caps Lock ON feature is selected, barcode data "AbC" is transmitted as "aBc".



** Exit Setup



Enter Setup

Convert Case

You may scan the appropriate barcode below to convert all barcode data to your desired case.



** No Case Conversion



Convert All to Upper Case



Convert All to Lower Case



When the Convert All to Lower Case feature is enabled, barcode data "AbC" is transmitted as "abc".



If Emulate ALT+Keypad ON is selected, Convert All to Lower Case and Convert All to Upper Case do not function.



** Exit Setup



Enter Setup

Emulate Numeric Keypad



Do Not Emulate Numeric Keypad 1: Sending a number (0-9) is emulated as keystroke(s) on main keyboard.

Emulate Numeric Keypad 1: Sending a number (0-9) is emulated as keystroke(s) on numeric keypad. The state of Num Lock on the simulated numeric keypad is determined by its equivalent on the host device. If Num Lock on the host device is turned off, the output of simulated numeric keypad is function key instead of number.

Do Not Emulate Numeric Keypad 2: Sending "+", "-", "*" and "/" is emulated as keystroke(s) on main keyboard.

Emulate Numeric Keypad 2: Sending "+", "-", "*" and "/" is emulated as keystroke(s) on numeric keypad.

** Do Not Emulate Numeric Keypad 1

@KBWNUM1

Emulate Numeric Keypad 1

@SETUPE0



Enter Setup



** Do Not Emulate Numeric Keypad 2



Emulate Numeric Keypad 2



Emulate ALT+Keypad ON prevails over Emulate Numeric Keypad.



Supposing the **Emulate Numeric Keypad 1** feature is enabled:

if Num Lock on the host device is ON, "A4.5" is transmitted as "A4.5";

if Num Lock on the host device is OFF, "A4.5" is transmitted as ".A":

- 1. "A" is sent on main keyboard;
- 2. "4" is sent as the function key "Cursor Move to Left";
- 3. "." is sent on main keyboard;
- 4. "5" is not sent as it does not correspond to any function key.



Enter Setup

Polling Rate

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



1ms













7ms





Enter Setup



8ms



9ms



10ms



** Exit Setup



Enter Setup

USB CDC

If your cradle is connected to the USB port on a host device, the USB CDC feature allows the host device to receive data in the way as a serial port does. A driver is needed when using this feature. You may download it from our website at www.newlandaidc.com.



USB CDC





Enter Setup

HID POS (POS HID Barcode Scanner)

Introduction

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

Features:

- 1. HID based, no custom driver required.
- 2. Way more efficient in communication than keyboard emulation and traditional RS-232 interface.



USB HID-POS

Access the Cradle with Your Program

Use CreateFile to access the cradle as a HID device and then use ReadFile to deliver the scanned data to the application program. Use WriteFile to send data to the cradle.

For detailed information about USB and HID interfaces, go to www.USB.org.





Enter Setup

Acquire Scanned Data

After a barcode is decoded, the cradle sends an input report as below:

	Bit							
Byte	7	6	5	4	3	2	1	0
0		Report ID = 0x02						
1		Barcode Length						
2-57		Decoded Data (1-56)						
58-61	Reserved							
62	Newland Symbology Identifier or N/C: 0x00							
63	-	-	-	-	-	-	-	Decoded data continued

Send Command to the Cradle

This output report is used to send commands to the cradle. All programming commands can be used.

	Bit						
Byte	7 6 5 4 3 2 1 0						
0	Report ID = 0x04						
1	Length of command						
2-63	Command (1-62)						

** Exit Setup



Enter Setup

IBM SurePOS (Tabletop)



IBM SurePOS (Tabletop)

IBM SurePOS (Handheld)



IBM SurePOS (Handheld)

VID/PID

USB uses VID (Vendor ID) and PID (Product ID) to identify and locate a device. The VID is assigned by USB Implementers Forum. Newland's vendor ID is 1EAB (Hex). A range of PIDs are used for each Newland product family. Every PID contains a base number and interface type (keyboard, COM port, etc.).

Product	Interface	PID (Hex)	PID (Dec)
	USB HID Keyboard	1403	5123
	USB CDC	1406	5126
CD15	HID POS	1410	5136
	IBM SurePOS (Tabletop)	1420	5152
	IBM SurePOS(Handheld)	1421	5153



Chapter 7 Symbologies

Introduction

Every symbology (barcode type) has its own unique attributes. This chapter provides programming barcodes for configuring the scanner so that it can identify various symbologies. It is recommended to disable those that are rarely used to increase the efficiency of the scanner.

Global Settings

Enable/Disable All Symbologies

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



Enable All Symbologies



Disable All Symbologies

Enable/Disable 1D Symbologies



Enable 1D Symbologies



Disable 1D Symbologies



Enter Setup

Video Reverse

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 allows the scanner to read barcodes that are inverted.

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

Video Reverse OFF: Read regular barcodes only.

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



** Video Reverse Off



Video Reverse On



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Enter Setup

Surround GS1 Application Identifiers (Al's) with Parentheses

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

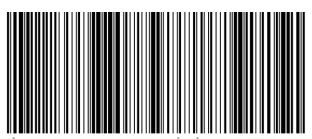


** Do Not Surround GS1 Al's with Parentheses



Surround GS1 Al's with Parentheses

xample



(01) 0 0614141 99999 6 (10) 10ABCEDF123456

If **Surround GS1 Al's with Parentheses** is selected, the barcode above is output as (01)00614141999996(10)10ABCEDF123456.

If **Do Not Surround GS1 Al's with Parentheses** is selected, the barcode above is output as 01006141419999961010ABCEDF123456.

Transmit GS1 Check Character



** Exit Setup

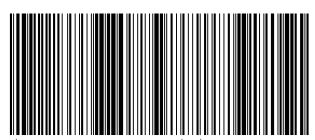


Enter Setup









(01) 0 0614141 99999 6 (10) 10ABCEDF123456

If **Transmit GS1 Check Character** is enabled, the barcode above is output as 01006141419999961010ABCEDF123456.

If **Transmit GS1 Check Character** is disabled, the barcode above is output as 0100614141999991010ABCEDF123456.



Enter Setup

Code 128

Restore Factory Defaults



Restore the Factory Defaults of Code 128

Enable/Disable Code 128



** Enable Code 128



Disable Code 128



If the scanner fails to identify Code 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 128** barcode.





Enter Setup

Set Length Range for Code 128

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



Set the Minimum Length (Default: 1)



Set the Maximum Length (Default: 48)



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

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



- 1. Scan the Enter Setup barcode.
- 2. Scan the **Set the Minimum Length** barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Set the Maximum Length barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the **Exit Setup** barcode.



** Exit Setup



Enter Setup

EAN-8

Restore Factory Defaults



Restore the Factory Defaults of EAN-8

Enable/Disable EAN-8



** Enable EAN-8



Disable EAN-8



If the scanner fails to identify EAN-8 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable EAN-8** barcode.

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.



** Transmit EAN-8 Check Character



Do Not Transmit EAN-8 Check Character





Enter Setup

2-Digit Add-On Code

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





** Disable 2-Digit Add-On Code



Enable 2-Digit Add-On Code



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

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



** Exit Setup



Enter Setup

5-Digit Add-On Code

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





** Disable 5-Digit Add-On Code



Enable 5-Digit Add-On Code



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

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



** Exit Setup



Enter Setup

Convert EAN-8 to EAN-13

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

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



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



Convert EAN-8 to EAN-13



** Exit Setup



Enter Setup

EAN-13

Restore Factory Defaults



Restore the Factory Defaults of EAN-13

Enable/Disable EAN-13



** Enable EAN-13



Disable EAN-13



If the scanner fails to identify EAN-13 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable EAN-13** barcode.



@SETOFE0



Enter Setup

Transmit Check Character



** Transmit EAN-13 Check Character



Do Not Transmit EAN-13 Check Character

2-Digit Add-On Code

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





** Disable 2-Digit Add-On Code



Enable 2-Digit Add-On Code



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

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





Enter Setup

5-Digit Add-On Code

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





** Disable 5-Digit Add-On Code



Enable 5-Digit Add-On Code



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

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

** Exit Setup



Enter Setup

UPC-E

Restore Factory Defaults



Restore the Factory Defaults of UPC-E

Enable/Disable UPC-E







If the scanner fails to identify UPC-E barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-E** barcode.





Enter Setup

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.



** Transmit UPC-E Check Character



Do Not Transmit UPC-E Check Character

2-Digit Add-On Code

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





** Disable 2-Digit Add-On Code



Enable 2-Digit Add-On Code

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

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



** Exit Setup



Enter Setup

5-Digit Add-On Code

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





** Disable 5-Digit Add-On Code



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

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





Enter Setup

Transmit Preamble Character

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



System Character



** No Preamble



System Character & Country Code

Convert UPC-E to UPC-A

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

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



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



Convert UPC-E to UPC-A



** Exit Setup



Enter Setup

UPC-A

Restore Factory Defaults



Restore the Factory Defaults of UPC-A

Enable/Disable UPC-A



** Enable UPC-A



Disable UPC-A



If the scanner fails to identify UPC-A barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-A** barcode.

Transmit Check Character

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



** Transmit UPC-A Check Character



Do Not Transmit UPC-A Check Character





Enter Setup

2-Digit Add-On Code

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





** Disable 2-Digit Add-On Code



Enable 2-Digit Add-On Code



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

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



** Exit Setup 102



Enter Setup

5-Digit Add-On Code

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





** Disable 5-Digit Add-On Code



Enable 5-Digit Add-On Code



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

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





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, transmit system character and country code ("0" for USA), or transmit no preamble.



No Preamble



** System Character



System Character & Country Code





Enter Setup

Interleaved 2 of 5

Restore Factory Defaults



Restore the Factory Defaults of Interleaved 2 of 5

Enable/Disable Interleaved 2 of 5



** Enable Interleaved 2 of 5



Disable Interleaved 2 of 5



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





Enter Setup

Set Length Range for Interleaved 2 of 5

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



Set the Minimum Length (Default: 6)



Set the Maximum Length (Default: 80)



If minimum length is set to be greater than maximum length, the scanner only decodes Interleaved 2 of 5 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Interleaved 2 of 5 barcodes with that length are to be decoded.

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



- 1. Scan the **Enter Setup** barcode.
- 2. Scan the **Set the Minimum Length** barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Set the Maximum Length** barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the Save barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.





Enter Setup

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 d5 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.

Since Interleaved 2 of 5 must always have an even number of digits, a zero may need to be added as the first digit when the check character is added. The check character is automatically generated when making Interleaved 2 of 5 barcodes.



Disable



** Do Not Transmit Check Character After Verification



Transmit Check Character After Verification



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



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Enter Setup

Febraban

Disable/Enable Febraban



Disable Febraban



** Enable Febraban, Do Not Expand



Enable Febraban, Expand

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.



** Disable Transmit Delay per Character



Enable Transmit Delay per Character





Enter Setup

You may select an appropriate delay value from the options below as per your actual needs.



0ms



5ms















** Exit Setup



Enter Setup



40ms



60ms















Enter Setup

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.



** Disable Transmit Delay per 12 Characters



Enable Transmit Delay per 12 Characters

You may select an appropriate delay value from the options below as per your actual needs.











Enter Setup



** 500ms













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.

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

Restore Factory Defaults



Restore the Factory Defaults of ITF-14

Enable/Disable ITF-14



** Disable ITF-14



Enable ITF-14 But Do Not Transmit Check Character



Enable ITF-14 and Transmit Check Character



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





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.

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

Restore Factory Defaults



Restore the Factory Defaults of ITF-6

Enable/Disable ITF-6



** Disable ITF-6



Enable ITF-6 But Do Not Transmit Check Character



Enable ITF-6 and Transmit Check Character



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





Enter Setup

Matrix 2 of 5

Restore Factory Defaults



Restore the Factory Defaults of Matrix 2 of 5

Enable/Disable Matrix 2 of 5



** Enable Matrix 2 of 5



Disable Matrix 2 of 5



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



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Enter Setup

Set Length Range for Matrix 2 of 5

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



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 80)



If minimum length is set to be greater than maximum length, the scanner only decodes Matrix 2 of 5 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Matrix 2 of 5 barcodes with that length are to be decoded.

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



- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Set the Maximum Length** barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup 116



Enter Setup

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 baccesto 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 very that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

Since Matrix 2 of 5 must always have an even number of digits, a zero may need to be added as the first digit when the check character is added. The check character is automatically generated when making Matrix 2 of 5 barcodes.



** Disable



Do Not Transmit Check Character After Verification



Transmit Check Character After Verification



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





Enter Setup

Code 39

Restore Factory Defaults



Restore the Factory Defaults of Code 39

Enable/Disable Code 39



** Enable Code 39



Disable Code 39



If the scanner fails to identify Code 39 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 39** barcode.





Enter Setup

Set Length Range for Code 39

The scanner can be configured to only decode Code 39 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



Set the Minimum Length (Default: 2)



Set the Maximum Length (Default: 48)



If minimum length is set to be greater than maximum length, the scanner only decodes Code 39 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 39 barcodes with that length are to be decoded.



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

- 1. Scan the Enter Setup barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the Save barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Set the Maximum Length** barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup



Enter Setup

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.



** Disable



Do Not Transmit Check Character After Verification



Transmit Check Character After Verification



If the **Do Not Transmit Check Character After Verification** option is enabled, Code 39 barcodes with a length that is less than the configured minimum length after having the check character excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Code 39 barcodes with a total length of 4 characters including the check character cannot be read.)





Enter Setup

Transmit Start/Stop Character

Code 39 uses an asterisk (*) for both the start and the stop characters. You can choose whether or not to transmit the start/stop characters by scanning the appropriate barcode below.



** Do Not Transmit Start/Stop Character



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.



** Disable Code 39 Full ASCII



Enable Code 39 Full ASCII



121 ** Exit Setup



Enter Setup

Enable/Disable Code 32 (Italian Pharma Code)

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



** Disable Code 32



Enable Code 32

Code 32 Prefix

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



** Disable Code 32 Prefix



Enable Code 32 Prefix





Enter Setup

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





Enter Setup

Transmit Code 32 Check Character

Code 32 must be enabled for this parameter to function.



** Do not Transmit Code 32 Check Character



Transmit Code 32 Check Character

Codabar

Restore Factory Defaults



Restore the Factory Defaults of Codabar

Enable/Disable Codabar



** Enable Codabar



** Exit Setup



Enter Setup



Disable Codabar



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



** Exit Setup



Enter Setup

Set Length Range for Codabar

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



Set the Minimum Length (Default: 2)



Set the Maximum Length (Default: 60)



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

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



- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Set the Maximum Length barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the ${\bf Save}$ barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup



Enter Setup

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.



** Disable



Do Not Transmit Check Character After Verification



Transmit Check Character After Verification



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





Enter Setup

Start/Stop Character

You can set the start/stop characters and choose whether or not to transmit the start/stop characters by scanning the appropriate barcode below.



** Do Not Transmit Start/Stop Character



Transmit Start/Stop Character



** 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



** Exit Setup 128



Enter Setup

Code 93

Restore Factory Defaults



Restore the Factory Defaults of Code 93

Enable/Disable Code 93



** Enable Code 93



Disable Code 93



If the scanner fails to identify Code 93 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 93** barcode.



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Enter Setup

Set Length Range for Code 93

The scanner can be configured to only decode Code 93 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



Set the Minimum Length (Default: 1)



Set the Maximum Length (Default: 48)

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If minimum length is set to be greater than maximum length, the scanner only decodes Code 93 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 93 barcodes with that length are to be decoded.



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

- 1. Scan the Enter Setup barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Set the Maximum Length** barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup



Enter Setup

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.



Disable



** Do Not Transmit Check Character After Verification



Transmit Check Character After Verification



If the **Do Not Transmit Check Character After Verification** option is enabled, Code 93 barcodes with a length that is less than the configured minimum length after having the two check characters excluded will not be decoded. (For example, when the **Do Not Transmit Check Character After Verification** option is enabled and the minimum length is set to 4, Code 93 barcodes with a total length of 4 characters including the two check characters cannot be read.)



** Exit Setup



Enter Setup

GS1-128 (UCC/EAN-128)

Restore Factory Defaults



Restore the Factory Defaults of GS1-128

Enable/Disable GS1-128



** Enable GS1-128



Disable GS1-128



If the scanner fails to identify GS1-128 barcodes, you may first try this solution by scanning the **EnterSetup** barcode and then **Enable GS1-128** barcode.





Enter Setup

Set Length Range for GS1-128

The scanner can be configured to only decode GS1-128 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: 48)



133

If minimum length is set to be greater than maximum length, the scanner only decodes GS1-128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only GS1-128 barcodes with that length are to be decoded.

11a

Set the scanner to decode GS1-128 barcodes containing between 8 and 12 characters:

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Set the Maximum Length** barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup



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



If the scanner fails to identify GS1 Databar barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable GS1 Databar** barcode.

Transmit Application Identifier "01"



** Transmit Application Identifier "01"



Do Not Transmit Application Identifier "01"



** Exit Setup



Enter Setup

Code 11

Restore Factory Defaults



Restore the Factory Defaults of Code 11

Enable/Disable Code 11



Enable Code 11



** Disable Code 11



If the scanner fails to identify Code 11 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 11** barcode.





Enter Setup

Set Length Range for Code 11

The scanner can be configured to only decode Code 11 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 48)



If minimum length is set to be greater than maximum length, the scanner only decodes Code 11 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 11 barcodes with that length are to be decoded.

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

- 1. Scan the Enter Setup barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Set the Maximum Length barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.





Enter Setup

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.



Disable



** One Check Character, MOD11



Two Check Characters, MOD11/MOD11



Two Check Characters, MOD11/MOD9



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



One Check Character, MOD11 (Len<=10)

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





Enter Setup

Transmit Check Character



Do Not Transmit Code 11 Check Character



** Transmit Code 11 Check Character



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





Enter Setup

ISBN

Restore Factory Defaults



Restore the Factory Defaults of ISBN

Enable/Disable ISBN



Enable ISBN



** Disable ISBN



139

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





Enter Setup

Set ISBN Format



** ISBN-10



ISBN-13





Enter Setup

ISSN

Restore Factory Defaults



Restore the Factory Defaults of ISSN

Enable/Disable ISSN



Enable ISSN



** Disable ISSN



141

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



** Exit Setup



Enter Setup

Industrial 25

Restore Factory Defaults



Restore the Factory Defaults of Industrial 25

Enable/Disable Industrial 25



** Enable Industrial 25



Disable Industrial 25



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





Enter Setup

Set Length Range for Industrial 25

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



Set the Minimum Length (Default: 6)



Set the Maximum Length (Default: 48)



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

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

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Set the Maximum Length barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup



Enter Setup

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.



** Disable



Do Not Transmit Check Character After Verification



Transmit Check Character After Verification



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





Enter Setup

Standard 25

Restore Factory Defaults



Restore the Factory Defaults of Standard 25

Enable/Disable Standard 25



** Enable Standard 25



Disable Standard 25



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



** Exit Setup



Enter Setup

Set Length Range for Standard 25

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



Set the Minimum Length (Default: 6)



Set the Maximum Length (Default: 48)



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

Kample xample

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

- 1. Scan the Enter Setup barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Set the Maximum Length barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.





Enter Setup

Check Character Verification

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

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



** Disable



Do Not Transmit Check Character After Verification



Transmit Check Character After Verification



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





Enter Setup

Plessey

Restore Factory Defaults



Restore the Factory Defaults of Plessey

Enable/Disable Plessey



Enable Plessey



** Disable Plessey



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





Enter Setup

Set Length Range for Plessey

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



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 48)



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

E xample

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

- 1. Scan the Enter Setup barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Set the Maximum Length** barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup



Enter Setup

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



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





Enter Setup

MSI-Plessey

Restore Factory Defaults



Restore the Factory Defaults of MSI-Plessey

Enable/Disable MSI-Plessey



Enable MSI-Plessey



** Disable MSI-Plessey



If the scanner fails to identify MSI-Plessey barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable MSI-Plessey** barcode.





Enter Setup

Set Length Range for MSI-Plessey

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



Set the Minimum Length (Default: 4)



Set the Maximum Length (Default: 48)



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



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

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the Set the Maximum Length barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.





Enter Setup

Check Character Verification

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

If the Disable option is enabled, the scanner transmits MSI-Plessey barcodes as is.



Disable



** One Check Character, MOD10



Two Check Characters, MOD10/MOD10



Two Check Characters, MOD10/MOD11



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Enter Setup

Transmit Check Character



** Transmit MSI-Plessey Check Character



Do Not Transmit MSI-Plessey Check Character



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





Enter Setup

AIM 128

Restore Factory Defaults



Restore the Factory Defaults of AIM 128

Enable/Disable AIM 128



Enable AIM 128



** Disable AIM 128



If the scanner fails to identify AIM 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable AIM 128** barcode.



** Exit Setup

155



Enter Setup

Set Length Range for AIM 128

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



Set the Minimum Length (Default: 1)



Set the Maximum Length (Default: 48)



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



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

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Set the Minimum Length barcode.
- 3. Scan the numeric barcode "8" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Set the Maximum Length** barcode.
- 6. Scan the numeric barcodes "1" and "2" from the "Digit Barcodes" section in Appendix.
- 7. Scan the Save barcode from the "Save/Cancel Barcodes" section in Appendix.
- 8. Scan the Exit Setup barcode.



** Exit Setup 156



Enter Setup

ISBT 128

Restore Factory Defaults



Restore the Factory Defaults of ISBT 128

Enable/Disable ISBT 128



Enable ISBT 128



** Disable ISBT 128



If the scanner fails to identify ISBT 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable ISBT 128** barcode.





Enter Setup

Chapter 8 Data Formatter

Introduction

You may use the Data Formatter to modify the scanner's output. For example, you can use the Data Formatter to insert characters at certain points in barcode data or to suppress/ replace/ send certain characters in barcode data as it is scanned.

Normally, when you scan a barcode, it gets outputted automatically; however, when you create a format, you must use a "send" command (see the "Send Commands" section in this chapter) within the format programming to output data. Multiple data formats can be programmed into the scanner. The maximum size of all data formats created is 2048 characters. By default, the data formatter is disabled. Enable it when required. If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** barcode below.



Default Data Format

Add a Data Format

Data format is used to edit barcode data. When you create a data format, you must select one of the four labels (Format_0, Format_1, Format_2 and Format_3) for your data format, specify the application scope of data format (such as barcode type and data length) and include formatter commands. Multiple data formats may be created using the same label. When scanned data does not match your data format requirements, you will hear the non-match error beep (if the non-match error beep is ON).

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

Programming with Barcodes

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

Step 1: Scan the Enter Setup barcode.

Step 2: Scan the Add Data Format barcode.





Enter Setup



Add Data Format

Step 3: Select a label (Format_0 or Format_1 or Format_2 or Format_3).

Scan a numeric barcode 0 or 1 or 2 or 3 to label this data format Format_0 or Format_1 or Format_2 or Format_3.

Step 4: Select formatter command type.

Specify what type of formatter commands will be used. Scan a numeric barcode "6" to select formatter command type 6. (See the "Formatter Command Type 6" section in this chapter for more information)

Step 5: Set interface type

Scan 999 for any interface type.

Step 6: Set Symbology ID Number

Refer to the "Symbology ID Number" section in Appendix and find the ID number of the symbology to which you want to apply the data format. Scan three numeric barcodes for the symbology ID number. If you wish to create a data format for all symbologies, scan **999**.

Step 7: Set barcode data length

Specify what length of data will be acceptable for this symbology. Scan the four numeric barcodes that represent the data length. 9999 is a universal number, indicating all lengths. For example, 32 characters should be entered as 0032.

Step 8: Enter formatter command

Refer to the "Formatter Command Type 6" section in this chapter. Scan the alphanumeric barcodes that represent the command you need to edit data. For example, when a command is F141, you should scan F141.

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



** Exit Setup



Enter Setup

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

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

2. Scan the **Add Data Format** barcode Add a data format

3. Scan the **0** barcode Select Format_0 as the label

4. Scan the 6 barcode Select formatter command type 6

5. Scan the **9** barcode three times All interface types applicable

6. Scan the barcodes **002** Only Code 128 applicable

7. Scan the barcodes **0010** Only a length of 10 characters applicable

8. Scan the alphanumeric barcodes **F141** Send all characters followed by "A" (HEX: 41)

9. Scan the **Save** barcode Save the data format

To streamline the programming process, you may as well generate a batch barcode by inputting the command (e.g. @DFMADD069990020010F141;) used to create a data format. See the "Use Batch Barcode" section in Chapter 10 to learn how to put a batch barcode into use.

When creating multiple data formats sharing a label, the formats are separated from each other by a vertical bar (|) in the batch command, e.g. @DFMADD069990029999F141|069990039999F142|169990049999F143;.

@SETUPEO



Enter Setup

Enable/Disable Data Formatter

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



** Disable Data Formatter

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

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

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

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

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

@SETUPE0



Enter Setup



Enable Data Formatter, Required, Keep Prefix/Suffix



Enable Data Formatter, Required, Drop Prefix/Suffix



Enable Data Formatter, Not Required, Keep Prefix/Suffix



Enable Data Formatter, Not Required, Drop Prefix/Suffix

Non-Match Error Beep

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



Non-Match Error Beep Off



** Non-Match Error Beep On



@SETUPE0



Enter Setup

Data Format Selection

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



** Format_0



Format_1



Format_2



Format_3



** Exit Setup



Enter Setup

Change Data Format for a Single Scan

You can switch between data formats for a single scan. The next barcode is scanned using the data format selected here, then reverts to the format you have selected above.

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

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



Single Scan - Format_0



Single Scan - Format_1



Single Scan - Format_2



Single Scan - Format_3



** Exit Setup

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Enter Setup

Clear Data Format

There are two methods to remove data format created from your scanner:

Delete one data format: Scan the **Clear One** barcode, a numeric barcode (0-3) and the **Save** barcode. For example, to delete Format 2, you should scan the **Clear One** barcode, the **2** barcode and the **Save** barcode

Delete all data formats: Scan the Clear All barcode.



Clear All



Clear One

Query Data Formats

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You may scan the appropriate barcode below to get the information of data format(s) created by you or preset by manufacturer. For instance, if you have added Format_0 as per the example in the "Add a Data Format" section in this chapter, scanning the **Query Current Data Formats** barcode, you will get the result: **Data Format0:069990020010F141**;



Query Current Data Formats



Query Preset Data Formats





Enter Setup

Formatter Command Type 6

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

Send Commands

F1 Send all characters

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

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

F2 Send a number of characters

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

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

F2 Example: Send a number of characters



Send the first 10 characters from the barcode above, followed by a carriage return.

Command string: F2100D

F2 is the "Send a number of characters" command

10 is the number of characters to send

0D is the hex value for a CR

The data is output as: 1234567890

<CR>





Enter Setup

F3 Send all characters up to a particular character

Syntax=F3ssxx (ss: The particular character's hex value; xx: The insert character's hex value)

Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the particular character "ss," followed by character "xx." The cursor is moved forward to the "ss" character.

F3 Example: Send all characters up to a particular character



1234567890ABCDEFGHI.

Using the barcode above, send all characters up to but not including "D," followed by a carriage return.

Command string: F3440D

F3 is the "Send all characters up to a particular character" command

44 is the hex value for a "D"

0D is the hex value for a CR

The data is output as: 1234567890ABC

<CR>



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Enter Setup

B9 Send all characters up to a particular string

Syntax=B9nnnns...s (nnnn: The length of the particular string; s...s: The hex value of each character in the particular string)

Include in the output message all characters from the input message, starting with the character at the current cursor position and continuing to, but not including, the particular string "s...s." The cursor is moved forward to the beginning of the "s...s" string.

B9 Example: Send all characters up to a particular string



1234567890ABCDEFGHIJ

Using the barcode above, send all characters up to but not including "AB."

Command string: B900024142

B9 is the "Send all characters up to a particular string" command

0002 is the length of the particular string (2 characters)

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

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

The data is output as: 1234567890

E9 Send all but the last characters

Syntax=E9nn (nn: The numeric value (00-99) for the number of characters that will not be sent at the end of the message)

Include in the output message all but the last "nn" characters, starting from the current cursor position. The cursor is moved forward to one position past the last input message character included.

F4 Insert a character multiple times

Syntax=F4xxnn (xx: The insert character's hex value; nn: The numeric value (00-99) for the number of times it should be sent)

Send "xx" character "nn" times in the output message, leaving the cursor in the current position.



** Exit Setup

168



Enter Setup

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

1234567890ABCDEFGHIJ

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

Command string: E908F40902

E9 is the "Send all but the last characters" command

08 is the number of characters at the end to ignore

F4 is the "Insert a character multiple times" command

09 is the hex value for a horizontal tab

02 is the number of time the tab character is sent

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

B3 Insert symbology name

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

B4 Insert barcode length

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

@SETUPE0

** Exit Setup



Enter Setup

B3 and B4 Example: Insert the symbology name and length

1234567890ABCDEFGHIJ

Send the symbology name and length before the barcode data from the barcode above. Break up these insertions with spaces. End with a carriage return.

Command string: B3F42001B4F42001F10D

B3 is the "Insert symbology name" command

F4 is the "Insert a character multiple times" command

20 is the hex value for a space

01 is the number of time the space character is sent

B4 is the "Insert barcode length" command

F4 is the "Insert a character multiple times" command

20 is the hex value for a space

01 is the number of time the space character is sent

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: Code128 20 1234567890ABCDEFGHIJ

<CR>

Move Commands

F5 Move the cursor forward a number of characters

Syntax=F5nn (nn: The numeric value (00-99) for the number of characters the cursor should be moved ahead)

Move the cursor ahead "nn" characters from current cursor position.



** Exit Setup



Enter Setup

F5 Example: Move the cursor forward and send the data

1234567890ABCDEFGHIJ

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

Command string: F503F10D

F5 is the "Move the cursor forward a number of characters" command

03 is the number of characters to move the cursor

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: 4567890ABCDEFGHIJ

<CR>

F6 Move the cursor backward a number of characters

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

Move the cursor back "nn" characters from current cursor position.

F7 Move the cursor to the beginning

Syntax=F7

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

EA Move the cursor to the end

Syntax=EA

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





Enter Setup

Search Commands

F8 Search forward for a character

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

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

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



1234567890ABCDEFGHIJ

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

Command string: F844F10D

F8 is the "Search forward for a character" command

44 is the hex value for "D"

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: **DEFGHIJ**

<CR>

F9 Search backward for a character

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

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

@SETUPE0



Enter Setup

B0 Search forward for a string

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

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

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



1234567890ABCDEFGHIJ

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

Command string: B00003464748F10D

B0 is the "Search forward for a string" command

0003 is the string length (3 characters)

46 is the hex value for "F"

47 is the hex value for "G"

48 is the hex value for "H"

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: FGHIJ

<CR>

B1 Search backward for a string

Syntax=B1nnnnS (nnnn: The string length (up to 9999); S: The ASCII hex value of each character in the string)

Search backward for "S" string from the current cursor position, leaving cursor pointing to "S" string. For example, B1000454657374 will search backward for the first occurrence of the 4-character string "Test."



** Exit Setup



Enter Setup

E6 Search forward for a non-matching character

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

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

E6 Example: Remove zeros at the beginning of barcode data



0000123abc

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

Command string: E630F10D

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

30 is the hex value for 0

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: 123abc

<CR>

E7 Search backward for a non-matching character

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

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

@SETUPE0



Enter Setup

Comparison Command

B2 string comparison

Syntax= B2nnnnSS1SSn (nnnn: the length of character string, SS1- SSn: the hex value of character string)

The comparison starts from the right side of the current cursor position, and the cursor moves nnnn characters to the right. If the string within the cursor movement range is equal to SS1SSn, the instruction continues to execute; otherwise, it exits.

B2 example: Send data after the specified string of character



Test123456

The above barcode starts with the "Test" string and requires the content of the Test string to be sent, and finally a carriage return.

Command string: B2000454657374F10D

B2 is the comparison of the character string" command

0004 is the string length (4 characters)

54 is the hex value for T

65 is the hex value for e

73 is the hex value for s

74 is the hex value for t

F1 is the "Send all characters" command

0D is the hex value of carriage return

The data is output as 123456<CR>

EC Check if the character to the right of the cursor is number

This command takes no parameters. If the right side of the cursor is a non-numeric, the current command is exited, otherwise execution continues.

EC example: Send barcode data that starts with number characters



0000123abc

The above barcode starts with number characters, requires send barcode data, and finally sends a carriage return

Command string: ECF10D

EC is the "Check if the character to the right of the cursor is a number" command

F1 is the "Send All Characters "command

0D is the hex value for CR

The data is output as 0000123abc<CR>





Enter Setup

ED Check if the character to the right of the cursor is non-numeric

This command takes no parameters. If the right side of the cursor is a number, the current command is exited, otherwise execution continues.

ED example: Send barcode data that starts with non-numeric characters



Test123456

The above barcode starts with non-numeric characters, requires send barcode data, and finally sends a carriage return

Command string: EDF10D

EC is the "Check if the character to the right of the cursor is a number" command

F1 is the "Send All Characters "command

0D is the hex value of carriage return

The data is output as Test123456 <CR>

FE Character Comparison

Syntax = FExx (xx is the hex value of the character)

If the character to the right of the current cursor position is xx, execution continues; otherwise exit.

FE example: The example is a barcode that starts with the character "1" and send the first 6 bytes of the barcode.



1234567890ABCDEFGHI I

The above barcode starts with the character "1", and requires send the character "1" and the next 5 characters

Command string: FE31F7F2060D

FE is the "Character Compare" command

31 is the hex of the character "1"

F7 is the "Move cursor to starting position" command

F2 is the "Send several characters" command

06 is the "Send character length"

0D is the hex value of carriage return

The data is output as 123456 <CR>

Miscellaneous Commands

FB Suppress characters

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



@SETUPE0



Enter Setup

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

FB Example: Remove spaces in barcode data



12 34_5*6 78

This example shows a barcode that has spaces in the data. You may want to remove the spaces before sending the data. Using the barcode above:

Command string: FB0120F10D

FB is the "Suppress characters" command

01 is the number of the characters to be suppressed

20 is the hex value for a space

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: 1234_5*678

<CR>

E4 Replace characters

Syntax = E4nnx $x_1xx_2yy_1yy_2...z_1zz_2$ (nn: The total count of the number of characters (characters to be replaced plus replacement characters; xx_1 : The characters to be replaced, xx_2 : The replacement characters, continuing through zz_1 and zz_2)

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





Enter Setup

E4 Example: Replace zeros with CRs in barcode data



12304560780AB

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

Command string: E402300DF10D

E4 is the "Replace characters" command

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

30 is the hex value for 0

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

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as: 123

456

78

AΒ

<CR>

@SETUPE0



Enter Setup

BA Replace a string with another

 $Syntax = BAnnNN_1SS_1NN_2SS_2$

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

NN₁: The length of the string to be replaced, NN₁>0.

SS₁: The ASCII hex value of each character in the string to be replaced.

 NN_2 : The length of replacement string, $NN_2 >= 0$. To replace string "SS₁" with NUL (i.e. delete string "SS₁"), you should set NN_2 to 00 and leave out SS₂.

SS₂: The ASCII hex value of each character in the replacement string.

From the current cursor position, search forward for the occurrence of "SS₁" string (of length "NN₁") and replace the string with "SS₂" string (of length "NN₂") in the output message until every "SS₁" stringis replaced or the count of replacements made reaches "nn" times, without moving the cursor.

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



1234Abc23R0123U

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

Command string: BA0002323303414243F100

BA is the "Replace a string with another" command

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

02 is the length of the string to be replaced

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

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

03 is the length of the replacement string





Enter Setup

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

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

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

F1 is the "Send all characters" command

00 is the hex value for a NUL

The data is output as: 1ABC4AbcABCR01ABCU

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

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

Command string: BA0102323300F100

BA is the "Replace a string with another" command

01 is the count of replacements to be made

02 is the length of the string to be replaced

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

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

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

F1 is the "Send all characters" command

00 is the hex value for a NUL

The data is output as: 14Abc23R0123U

** Exit Setup



Enter Setup

EF Insert a delay

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

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

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

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

Command string: F20500EF0200E900

F2 is the "Send a number of characters" command

05 is the number of characters to send

00 is the hex value for a Null character

EF is the "Insert a delay" command

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

E9 is the "Send all but the last characters" command

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

@SETUPE0

** Exit Setup



Enter Setup

B5 Insert key strokes

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

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

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

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

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

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

@SETUDEO



Enter Setup

Chapter 9 Prefix & Suffix

Introduction

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

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



Barcode processing procedure:

- 1. Edit data with Data Formatter
- 2. Append prefix/suffix
- 3. Pack data
- 4. Append terminating character



** Exit Setup



Enter Setup

Global Settings

Enable/Disable All Prefixes/Suffixes

Disable All Prefixes/Suffixes: Transmit barcode data with no prefix/suffix.

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



** Disable All Prefixes/Suffixes



Enable All Prefixes/Suffixes

Prefix Sequence



** Code ID+ Custom +AIM ID



Custom + Code ID + AIM ID



** Exit Setup 168



Enter Setup

Custom Prefix

Enable/Disable Custom Prefix

If custom prefix is enabled, you are allowed to append to the data a user-defined prefix that cannot exceed 10 characters. For example, if the custom prefix is "AB" and the barcode data is "123", the Host will receive "AB123".



** 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 then the **Save** barcode.

Note: A custom prefix cannot exceed 10 characters.



Set Custom Prefix

1,

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

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



185 ** Exit Setup



Enter Setup

AIM ID Prefix

AIM (Automatic Identification Manufacturers) ID defines symbology identifier (For the details, see the "AIM ID Table" section in Appendix). If AIM ID prefix is enabled, the scanner will add the symbology identifier before the scanned data after decoding.



** Disable AIM ID Prefix



Enable AIM ID Prefix



AIM ID is not user programmable.



** Exit Setup



Enter Setup

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.



** Disable Code ID Prefix



Enable Code ID Prefix

Restore All Default Code IDs

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



Restore All Default Code IDs

Modify Code ID

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See the examples below to learn how to modify a Code ID and restore the default Code IDs of all symbologies.



** Exit Setup



Enter Setup

Modify PDF417 Code ID to be "p" (HEX: 0x70):

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Modify PDF417 Code ID barcode.
- 3. Scan the numeric barcodes "7" and "0" from the "Digit Barcodes" section in Appendix.
- 4. Scan the Save barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Exit Setup** barcode.

Restore the default Code IDs of all symbologies:

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the Restore All Default Code IDs barcode.
- 3. Scan the **Exit Setup** barcode.





Enter Setup

1D symbologies:



Modify Code 128 Code ID



Modify GS1-128 Code ID



Modify EAN-8 Code ID



Modify EAN-13 Code ID



Modify UPC-E Code ID



Modify UPC-A Code ID



Modify Interleaved 2 of 5 Code ID



** Exit Setup



Enter Setup



Modify ITF-14 Code ID



Modify ITF-6 Code ID



Modify Matrix 2 of 5 Code ID



Modify Code 39 Code ID



Modify Codabar Code ID



Modify Code 93 Code ID



Modify GS1 Databar (RSS)



Modify AIM 128 Code ID





Enter Setup



Modify ISSN Code ID



Modify ISBN Code ID



Modify Industrial 25 Code ID



Modify Standard 25 Code ID



Modify Plessey Code ID



Modify Code 11 Code ID



Modify MSI-Plessy Code ID



** Exit Setup



Enter Setup

Custom Suffix

Enable/Disable Custom Suffix

If custom suffix is enabled, you are allowed to append to the data a user-defined suffix that cannot exceed 10 characters. For example, if the custom suffix is "AB" and the barcode data is "123", the Host will receive "123AB".



** 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 then the **Save** barcode.

Note: A custom suffix cannot exceed 10 characters.



Set Custom Suffix



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

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



** Exit Setup



Enter Setup

Data Packing

Introduction

Data packing is designed for a specific group of users who want to have the data packed before transmission. Data packing influences data format, so it is advised to disable this feature when it is not required.

Data Packing Options

Disable Data Packing: Transmit decoded data in raw format (unpacketed).

Enable Data Packing, Format 1: Transmit decoded data with the packet format 1 defined below.

Packet format 1: [STX + ATTR + LEN] + [AL_TYPE + DATA] + [LRC]

STX: 0x02

ATTR: 0x00

LEN: Barcode data length is expressed in 2 bytes ranging from 0x0000 (0) to 0xFFFF (65535).

AL_TYPE: 0x36

DATA: Raw barcode data.

LRC: Check digit.

LRC calculation algorithm: computation sequence: 0xFF+LEN+AL_TYPE+DATA; computation method is XOR, byte by byte.

Enable Data Packing, Format 2: Transmit decoded data with the packet format 2 defined below.

Packet format 2: [STX + ATTR + LEN] + [AL_TYPE] + [Symbology_ID + DATA] + [LRC]

STX: 0x02

ATTR: 0x00

LEN: Barcode data length is expressed in 2 bytes ranging from 0x0000 (0) to 0xFFFF (65535).

AL TYPE: 0x3B

Symbology_ID: The ID number of symbology, 1 byte.

DATA: Raw barcode data.

LRC: Check digit.

 $LRC\ calculation\ algorithm:\ computation\ sequence:\ 0xFF+LEN+AL_TYPE+Symbology_ID+DATA;\ computation$

method is XOR, byte by byte.



** Exit Setup



Enter Setup



** Disable Data Packing



Enable Data Packing, Format 1



Enable Data Packing, Format 2





Enter Setup

Terminating Character Suffix

Enable/Disable Terminating Character Suffix

A terminating character such as carriage return (CR) or carriage return/line feed pair (CRLF) can only be used to mark the end of data, which means nothing can be added after it.



Disable Terminating Character Suffix



** Enable Terminating Character Suffix

Set Terminating Character Suffix

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

Note: A terminating character suffix cannot exceed 2 characters.



Set Terminating Character Suffix



** Set Terminating Character to CR (0x0D)



Set Terminating Character to CRLF (0x0D,0x0A)





Enter Setup



Set the terminating character suffix to 0x0A:

- 1. Scan the **Enter Setup** barcode.
- 2. Scan the **Set Terminating Character Suffix** barcode.
- 3. Scan the numeric barcodes "0" and "A" from the "Digit Barcodes" section in Appendix.
- 4. Scan the **Save** barcode from the "Save/Cancel Barcodes" section in Appendix.
- 5. Scan the **Enable Terminating Character Suffix** barcode.
- 6. Scan the **Exit Setup** barcode.





Enter Setup

Chapter 10 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 **Normal Illumination**, **Sense Mode**, **Decode Session Timeout** = 2s, **Disable Interleaved 2 of 5**:

1. Input the commands:

@ILLSCN1;SCNMOD2;ORTSET2000;I25ENA0;

2. Generate a batch barcode.

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



Enable Batch Barcode



Enter Setup

Create a Batch Command

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

For more information, refer to the "Use of Programming Command" section in Chapter 3.

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 **Normal Illumination**, **Sense Mode**, **Decode Session Timeout** = 2s, **Disable Interleaved 2 of 5**:

1. Input the following commands:

@ILLSCN1;SCNMOD2;ORTSET2000;I25ENA0;

2. Generate a PDF417 batch barcode.







Enter Setup

Use Batch Barcode

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



Enter Setup





Enable Batch Barcode





Batch Barcode



Exit Setup



** Exit Setup



Enter Setup

Appendix

Digit Barcodes

0~9



@DIGIT2











** Exit Setup











Enter Setup

A~F















** Exit Setup

Save/Cancel Barcodes

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

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

- ❖ Delete the Last Digit: The last digit "3" will be removed.
- → Delete All Digits: All digits "123" will be removed.
- → Cancel: The maximum length configuration will be cancelled. And the scanner is still in the setup mode.



Save



@DICDE!

Delete the Last Digit

203

Delete All Digits





Enter Setup

Factory Defaults Table

Parameter	Factory Default	Remark
System Settings		
Barcode Programming	Disabled (Exit Setup)	
Programming Barcode Data	Do not transmit	
Illumination	On	
Good Read LED	On	
Good Read LED Duration	Short (20ms)	
Power On Beep	On	
Good Read Beep	On	
Good Read Beep Duration	Medium (80ms)	
Good Read Beep Frequency	Medium (2730Hz)	
Good Read Beep Volume	Loud	
Scan Mode	Level Mode	
Decode Session Timeout	3,000ms	1-3,600,000ms; 0: Infinite
Image Stabilization Timeout (Sense Mode)	200ms	0-3,000ms
David Timesut	Disabled	
Reread Timeout	1,500ms	1-3,600,000ms
Reset Reread Timeout	Off	
Image Decoding Timeout	500ms	1-3,000ms
Sensitivity	Medium (11)	
Read Barcode	On	
Smart Stand Mode	On	
Bad Read Message	Off	
	NG	
Auto Power-Off Timeout	5 minutes	
Default Interface	USB HID Keyboard	
Wireless Communications		
Operating Mode	Cradle Mode	
Batch Mode Option	Off	
Prevent Same Barcode Storage	Off	
Batch Mode Transmit Delay	No Transmit Delay (0ms)	
End of Transmission Message	Off, EOT	
Auto Clear Stored Data after Transmission	Off	
Wireless Communication Mode	Point-to-Point Mode	

Time Stamp Format Format 1: (YYYY/MM/DD,HH:MM:SS) Host Acknowledgment Off Host Acknowledgment Timeout 1 Second Host Acknowledgment Beep Volume Loud RS-232 Interface Baud Rate 115200 Parity Check None Data Bits 8 Stop Bits 1 Hardware Auto Flow Control Disabled USB Interface USB Country Keyboard US keyboard Emulate ALT+Keypad Off USB HID Keyboard Emulate ALT+Keypad Off USB HID Keyboard Unicode Encoding Off USB HID Keyboard Unicode Encoding Off USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay No Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off	Time Stamp	Do Not Send	
Host Acknowledgment Timeout Loud Loud RS-322 Interface RS-322 Interface Saud Rate Saud R	Time Stamp Format	Format 1: (YYYY/MM/DD,HH:MM:SS)	
Host Acknowledgment Beep Volume Loud RS-232 Interface	Host Acknowledgment	Off	
RS-232 Interface	Host Acknowledgment Timeout	1 Second	
Baud Rate	Host Acknowledgment Beep Volume	Loud	
Parity Check None Data Bits 8 8 Stop Bits 1 1 Hardware Auto Flow Control Disabled USB Interface USB Country Keyboard US keyboard USB HID Keyboard Emulate ALT+Keypad Off USB HID Keyboard Code Page Code Page 1252 (West European Latin) USB HID Keyboard Unicode Encoding Off USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Inter-Keystroke Delay No Delay USB HID Keyboard Inter-Keystroke Delay No Case Conversion USB HID Keyboard Caps Lock Off Emulate Numeric Keypad 1 USB HID Keyboard Polling Rate 4ms USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Maximum Length 48 Minimum Length I I	RS-232 Interface		
Data Bits 8 Stop Bits 1 Hardware Auto Flow Control Disabled USB Interface USB Country Keyboard US keyboard USB HID Keyboard Emulate ALT+Keypad Off USB HID Keyboard Code Page Code Page 1252 (West European Latin) USB HID Keyboard Unicode Encoding Off USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay No Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard Emulate Numeric Keypad 1 Off Emulate Numeric Keypad 2 Off Symbologies Global Settings To Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Baud Rate	115200	
Stop Bits 1 Hardware Auto Flow Control Disabled USB Interface USB Country Keyboard US keyboard USB HID Keyboard Emulate ALT+Keypad Off USB HID Keyboard Code Page Code Page 1252 (West European Latin) USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay No Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard Caps Lock Off Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Emulate Numeric Keypad 5 Off USB HID Keyboard Dolling Rate 4ms USB HID Keyboard Dolling Rate USB HID Keyboard Dolling HID Keyboard Dolling Rate USB HID Keyboard Dolling Rate USB HID Keyboard Dolling	Parity Check	None	
Hardware Auto Flow Control USB Interface USB Country Keyboard USB Country Keyboard Emulate ALT+Keypad Off Code Page Code Page Code Page 1252 (West European Latin) USB HID Keyboard US	Data Bits	8	
USB Interface USB Country Keyboard US keyboard USB HID Keyboard Emulate ALT+Keypad Off USB HID Keyboard Code Page Code Page 1252 (West European Latin) USB HID Keyboard Unicode Encoding Off USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay No Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Maximum Length 48 Minimum Length 1 EAN-8	Stop Bits	1	
USB Country Keyboard Emulate ALT+Keypad Off Code Page Code Page Code Page 1252 (West European Latin) USB HID Keyboard Unicode Encoding Off USB HID Keyboard US	Hardware Auto Flow Control	Disabled	
Emulate ALT+Keypad Off USB HID Keyboard Code Page Code Page 1252 (West European Latin) USB HID Keyboard Unicode Encoding Off USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard Caps Lock Off Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Polling Rate 4ms USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Maximum Length 48 Minimum Length 1 EAN-8	USB Interface		
Code Page Code Page 1252 (West European Latin) USB HID Keyboard Unicode Encoding Off USB HID Keyboard Emulate Keypad with Leading Zero On USB HID Keyboard Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard Caps Lock Off Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Polling Rate 4ms USB HID Keyboard Symbologies Global Settings ID Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	USB Country Keyboard	US keyboard	USB HID Keyboard
Unicode Encoding Emulate Keypad with Leading Zero On USB HID Keyboard USB	Emulate ALT+Keypad	Off	USB HID Keyboard
Emulate Keypad with Leading Zero On USB HID Keyboard Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay No Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard Caps Lock Off Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Polling Rate 4ms USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Maximum Length 48 Minimum Length 1 EAN-8	Code Page	Code Page 1252 (West European Latin)	USB HID Keyboard
Function Key Mapping Disable USB HID Keyboard Inter-Keystroke Delay USB HID Keyboard USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard USB HID	Unicode Encoding	Off	USB HID Keyboard
Inter-Keystroke Delay No Delay USB HID Keyboard Convert Case No Case Conversion USB HID Keyboard	Emulate Keypad with Leading Zero	On	USB HID Keyboard
Convert Case No Case Conversion USB HID Keyboard Caps Lock Off Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Polling Rate 4ms USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Cade 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Function Key Mapping	Disable	USB HID Keyboard
Caps Lock Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard VISB HID Keyboard USB HID Keyboard USB HID Keyboard USB HID Keyboard VISB HID Keyboard VI	Inter-Keystroke Delay	No Delay	USB HID Keyboard
Emulate Numeric Keypad 1 Off USB HID Keyboard Emulate Numeric Keypad 2 Off USB HID Keyboard Polling Rate 4ms USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Convert Case	No Case Conversion	USB HID Keyboard
Emulate Numeric Keypad 2 Off USB HID Keyboard Polling Rate 4ms USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Caps Lock	Off	
Polling Rate 4ms USB HID Keyboard Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Emulate Numeric Keypad 1	Off	USB HID Keyboard
Symbologies Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Emulate Numeric Keypad 2	Off	USB HID Keyboard
### Global Settings 1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character #### Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 ###################################	Polling Rate	4ms	USB HID Keyboard
1D Twin Code Single 1D Code Only Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Symbologies		
Video Reverse Off Surround GS1 Al's with Parentheses Do Not Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Global Settings		
Surround GS1 Al's with Parentheses Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	1D Twin Code	Single 1D Code Only	
Transmit GS1 Check Character Do Not Transmit GS1 Check Character Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Video Reverse	Off	
Code 128 Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Surround GS1 Al's with Parentheses	Do Not Surround GS1 Al's with Parentheses	
Code 128 Enabled Maximum Length 48 Minimum Length 1 EAN-8	Transmit GS1 Check Character	Do Not Transmit GS1 Check Character	
Maximum Length 48 Minimum Length 1 EAN-8	Code 128		
Minimum Length 1 EAN-8	Code 128	Enabled	
EAN-8	Maximum Length	48	
	Minimum Length	1	
EAN-8 Enabled	EAN-8		
	EAN-8	Enabled	





Enter Setup

Check Character	Transmit		
2-Digit Add-On Code	Disabled		
5-Digit Add-On Code	Disabled		
Convert EAN-8 to EAN-13	Disabled		
EAN-13			
EAN-13	Enabled		
Check Character	Transmit		
2-Digit Add-On Code	Disabled		
5-Digit Add-On Code	Disabled		
Add-On Code	Not Required		
UPC-E			
UPC-E	Enabled		
Check Character	Transmit		
2-Digit Add-On Code	Disabled		
5-Digit Add-On Code	Disabled		
Transmit Preamble Character	No Preamble		
Convert UPC-E 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		
Maximum Length	80		
Minimum Length	6		
Check Character Verification	Do not transmit		
Febraban			
Febraban	Enabled		
Transmit Delay per Character	Disabled		
	70ms		
Transmit Delay per 12 Characters	Disabled		
	500ms		
ITF-14			
ITF-14	Disabled		

ITF-6				
ITF-6	Disabled			
Matrix 2 of 5				
Matrix 2 of 5	Enabled			
Maximum Length	80			
Minimum Length	4			
Check Character Verification	Disabled			
Code 39				
Code 39	Enabled			
Maximum Length	48			
Minimum Length	2			
Check Character Verification	Disabled			
Start/Stop Character	Do not transmit			
Code 39 Full ASCII	Disabled			
Code32(Italian Pharma Code)				
Code32(Italian Pharma Code)	Disabled			
Code 32 Prefix	Disabled			
Code 32 Start/Stop character	Do not transmit			
Code 32 check character	Do not transmit			
Codabar				
Codabar	Enabled			
Maximum Length	60			
Minimum Length	2			
Check Character Verification	Disabled			
Start/Stop Character	Do not transmit			
	ABCD/ABCD	All Capital		
Code 93				
Code 93	Enabled			
Maximum Length	48			
Minimum Length	1	No less than 1		
Check Character Verification	Do Not Transmit Check Character After Verificat	ion		
GS1-128 (UCC/EAN-128)				
GS1-128	Enabled			
Maximum Length	48			
Minimum Length	1			
GS1 Databar				

@SETUPEO



Enter Setup

GS1 Databar	Enabled	
Application Identifier "01"	Transmit	
Code 11		
Code 11	Disabled	

Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	One Check Character, MOD11	
Check Character	Transmit	
ISBN		
ISBN	Disabled	
Set ISBN Format	ISBN-10	
ISSN		
ISSN	Disabled	
Industrial 25		
Industrial 25	Enabled	
Maximum Length	48	
Minimum Length	6	No less than 4
Check Character Verification	Disabled	
Standard 25		
Standard 25	Enabled	
Maximum Length	48	
Minimum Length	6	No less than 4
Check Character Verification	Disabled	
Plessey		
Plessey	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	Disabled	
MSI-Plessey		
MSI-Plessey	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	One Check Character, MOD10	
Check Character	Transmit	
AIM 128		
AIM 128	Disabled	
Maximum Length	48	
Minimum Length	1	
ISBT 128	·	
ISBT 128	Disabled	
	•	111 18 14 11181 11 18 18 18 18 1 1 1 1 1 1 1 1





Enter Setup

Data Formatter				
Data Formatter	Disabled			
Non-Match Error Beep	On			
Data Format Selection	Format_0			
Prefix & Suffix				
All Prefixes/Suffixes	Disabled			
Prefix Sequence	Code ID+ Custom +AIM ID			
Custom Prefix	Disabled			
AIM ID Prefix	Disabled			
Code ID Prefix	Disabled			
Custom Suffix	Disabled			
Data Packing	Disable Data Packing			
Terminating Character Suffix	Enabled			
	0x0D (Carriage Return)			

AIM ID Table

Symbology	AIM ID	Possible AIM ID Modifiers (m)
Code 128]C0	
GS1-128 (UCC/EAN-128)]C1	
EAN-8]E4	
EAN-8 with Addon]E3	
EAN-13]E0	
EAN-13 with Addon]E3	
UPC-E]E0	
UPC-E with Addon]E3	
UPC-A]E0	
UPC-A with Addon]E3	
Interleaved 2 of 5, Febraban]lm	0, 1, 3
ITF-14]lm	1, 3
ITF-6]lm	1, 3
Matrix 2 of 5]X0	
Code 39]Am	0, 1, 3, 4, 5, 7
Codabar]Fm	0, 2, 4
Code 93]G0	
AIM 128]C2	
ISBT 128]C4	
ISSN]X0	
ISBN]X0	
Industrial 25]S0	
Standard 25]R0	
Plessey]P0	
Code 11]Hm	0, 1, 3
MSI Plessey]Mm	0, 1
GS1 Databar (RSS)]e0	

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



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Code ID Table

Symbology	Code ID
Code 128	j
GS1-128 (UCC/EAN-128)	j
EAN-8	d
EAN-13	d
UPC-E	С
UPC-A	С
Interleaved 2 of 5, Febraban	е
ITF-14	е
ITF-6	е
Matrix 2 of 5	v
Code 39	b
Codabar	a
Code 93	i
AIM 128	X
ISBT 128	X
ISSN	g
ISBN	В
Industrial 25	I
Standard 25	f
Plessey	n
Code 11	Н
MSI Plessey	m
GS1 Databar (RSS)	R

Symbology ID Number

Symbology	ID Number
Code 128	002
GS1-128 (UCC/EAN-128)	003
EAN-8	004
EAN-13	005
UPC-E	006
UPC-A	007
Interleaved 2 of 5, Febraban	008
ITF-14	009
ITF-6	010
Matrix 2 of 5	011
Code 39	013
Codabar	015
Code 93	017
AIM 128	020
ISBT 128	021
ISSN	023
ISBN	024
Industrial 25	025
Standard 25	026
Plessey	027
Code11	028
MSI-Plessey	029
GS1 Databar (RSS)	031





Enter Setup

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 (l	Line Feed)
0b	11	VT (Vertical Tab)
0c	12	FF (I	Form Feed)
0d	13	CR (Carriage Return)
0e	14	SO (Shift Out)
Of	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 (I	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)



Enter Setup

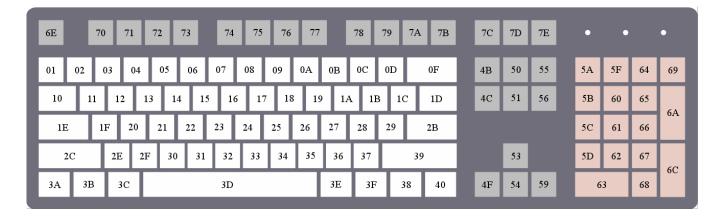
Hex	Dec	Char
3e	62	> (Greater Than)
3f	63	? (Question Mark)
40	64	@ (AT Symbol)
41	65	A
42	66	В
43	67	С
44	68	D
45	69	E
46	70	F
47	71	G
48	72	Н
49	73	1
4a	74	J
4b	75	К
4c	76	L
4d	77	M
4e	78	N
4f	79	0
50	80	Р
51	81	Q
52	82	R
53	83	S
54	84	Т
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[(Left/ 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	С
64	100	d
65	101	е
66	102	f
67	103	g
68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	I
6d	109	m
6e	110	n
6f	111	0
70	112	р
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	у
7a	122	Z
7b	123	{ (Left/ Opening Brace)
7c	124	(Vertical Bar)
7d	125	} (Right/ Closing Brace)
7e	126	~ (Tilde)
7f	127	DEL (Delete)

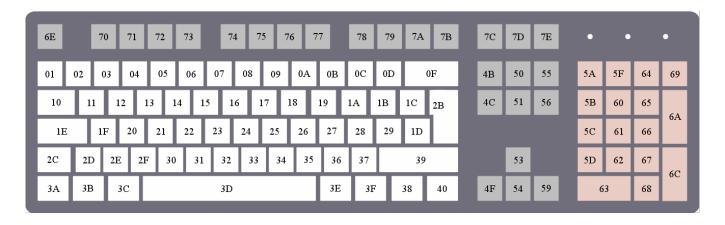


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Unicode Key Maps



104 Key U.S. Style Keyboard



105 Key European Style Keyboard

