2D Imager Scanner

- MS842R -



User's Manual

Version 1.0

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Change Log.

Date	Change Description	Version

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Preface

About This Manual

Thank you for purchasing the unitech product.
This manual explains how to install, operate and maintain our product.
No part of this publication may be reproduced or used in any form, or by any electrical or mechanical means, such as photocopying, recording, or information storage and retrieval systems, without permission in writing from the manufacturer. The material in this manual is subject to change without notice.

Regulatory Compliance Statements

FCC Warning Statements

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

–Reorient or relocate the receiving antenna.
–Increase the separation between the equipment and receiver.
–Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
–Consult the dealer or an experienced radio/TV technician for help.

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1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure requirements, avoid direct contact to the transmitting antenna during transmitting.
3. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

Operation on the 5.15 - 5.25GHz frequency band is restricted to indoor use only. The FCC requires indoor use for the 5.15-5.25GHz band to reduce the potential for harmful interference to co-channel Mobile Satellite Systems. Therefore, it will only transmit on the 5.25-5.35 GHz, 5.47-5.725 GHz and 5.725–5.850 GHz band when associated with an access point (AP).

FCC Label Statement

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

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

RF Radiation Exposure Statement

For body contact during operation, this device has been tested and meets FCC RF exposure guidelines when used with an accessory that contains no metal and that positions the handset a minimum of 1.5 cm from the body.
Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

Canadian Compliance Statement

This Class B Digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe B respecte les exigences du Reglement sur le material broilleur du Canada.

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European Conformity Statement

unitech Electronics co., Ltd herewith declares that the unitech product is in compliance with the essential requirements and all other provisions of the R&TTE 1999/5/EC directive, the EMC 2004/108/EC directive and the Low Voltage 2006/95/EC directive.
The declaration of conformity is available for download at :
https://portal.unitech.eu/public/Safetyregulatorystatement

RoHS Statement

This device conforms to RoHS (Restriction of Hazardous Substances) European Union regulations that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

Waste electrical and electronic equipment (WEEE)



unitech has set up a policy and process to meet the EU directive 2002/96/EC and update 2003/108/EC concerning electronic waste disposal.

For more detailed information of the electronic waste disposal of the products you have purchased from unitech directly or via unitech's resellers, you shall either contact your local supplier or visit us at :
https://portal.unitech.eu/public/WEEE

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Taiwan NCC Warning Statement

交通部電信總局低功率電波輻射性電機管理辦法

第十二條：經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條：低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

低功率射頻電機需忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

注意事項:

1. 使用過度恐傷害視力。
2. 使用30分鐘請休息10分鐘；2歲以下幼兒不看螢幕，2歲以上每天看螢幕不要超過1小時。

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Laser Information

The unitech product is certified in the U.S. to conform to the requirements of DHHS/CDRH 21CFR Subchapter J and to the requirements of IEC 825-1. Class II and Class 2 products are not considered to be hazardous. The unitech product contains internally a Visible Laser Diode (VLD) whose emissions do not exceed the maximum limits as set forth in the above regulations. The scanner is designed so that there is no human access to harmful laser light during normal operation, user maintenance or prescribed service operations.

The laser safety warning label required by the DHHS/IEC for the unitech product's optional laser scanner module is located on the memory compartment cover, on the back of the unit.

* Laser information only applies to the products with laser components.

CAUTION! Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light. Use of optical instruments with the scanner, including binoculars, microscopes, and magnifying glasses, with will increase eye damage. This does not include eyeglasses worn by the user.

LED Information

The unitech product contains LED indicator(s) or LED ring whose luminance is not harmful to human eyes during normal operation, user maintenance or prescribed service operations.

*LED information only applies to the products with LED components.

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Battery Notice

1. To guarantee optimal performance, it is recommended that rechargeable batteries be replaced every year, or after 500 charging cycles are completed. It is normal for the battery to balloon or expand after one year or 500 cycles. Although it does not cause damage, it cannot be used again and must be disposed of according to the location's safe battery disposal procedures.
2. If a battery performance decreases more than 20%, the battery is at the end of its life cycle. Stop use and ensure the battery is disposed of properly.
3. The length of time that a battery lasts depends on the battery type and how the device is used. Conserve the battery life by doing the following:
   - Avoid fully uncharging the battery because this places additional strain on it. Several partial uncharges with frequent charges are better than a fully uncharged battery. Charging a partially charged battery does not cause harm to the unit.
   - Keep the battery cool. Avoid hot vehicles. For prolonged storage, keep the battery at a 40% charge level.
   - Do not leave the battery uncharged and unused for an extended period of time, the battery will wear out and the longevity of the battery will be at least half of one with frequent charges.
4. Protect battery life by not over or under charging the battery.
5. Please do not leave battery unused for long time without charging it. Despite unitech's safety precautions, the battery pack may begin to change shape. If so, stop using it immediately. Please check to see if you are using a proper power adapter to charge the battery or contact your service provider for service.
6. If you cannot charge the battery after it has been idle for an extended period of time and it begins to heat up, please do not try to charge it. It may not be functional anymore.
7. Please only use the original battery from unitech. Using a third party battery can damage our products. Please note that when such damage occurs, it is not covered by unitech's warranty policy

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CAUTION!

- RISK OF EXPLOSION IF BATTERY IS REPLACED INCORRECTLY.
  DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS..
- 如果更換不正確之電池行事會有爆炸的風險
  請依製造商說明書處理用過之電池
- 如果更换不正确之电池行事会有爆炸的风险
  请依制造商说明书处理用过之电池

Battery charge notice

It is important to consider temperature when the battery pack is charging. Charging is most efficient at normal room temperature or in a slightly cooler environment. It is essential that batteries are charged within the stated range of 0˚C to 40˚C. Charging batteries outside of the specified range could damage the batteries and shorten their life cycle.

CAUTION! Do not charge batteries at a temperature lower than 0˚C. This will and make the batteries unstable and dangerous. Please use a battery temperature detecting device for a charger to ensure a safe charging temperature range.

Storage and safety notice

Although charged batteries may be left unused for several months, their capacity may be depleted due to build up of internal resistance. If this happens, they will require recharging prior to use. Batteries may be stored at temperatures between -20°C to 60°C, however they may deplete more rapidly at higher temperatures. It is recommended to store batteries at room temperature.

** The message above only applies to the usage of the removable batteries. For the products with non-removable batteries / without batteries, please refer to the specification of each product.*

Product Operation and Storage Notice

The unitech product has applicable operation and storage temperature conditions. Please follow the limitation of suggested temperature conditions to avoid failure, damage or malfunction.

**For applicable temperature conditions, please refer to the specification of each product.*

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Adapter Notice

1. Please do not leave the power adapter in the socket when it is not connected to your unitech product for charging.
2. Please remove the power adapter when the battery is fully recharged.
3. The bundled power adapter that comes with your unitech product is not meant to be used outdoors. An adapter exposed to water or rain, or a very humid environment can cause damage to both the adapter and the product.
4. Please only use the bundled power adapter or same specification of adapter to charge your unitech product. Using the wrong power adapter can damage your unitech product.

** The message above only applies to the product connected to the adapter. For the products without using the adapters, please refer to the specification of each product.*

Hearing Damage Warning

Zx.3 Warning

The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:

- the symbol of Figure 1 with a minimum height of 5 mm; and
- the following wording, or similar :

To prevent possible hearing damage, do not listen at high volume levels for long periods.



Figure 1 – Warning label (IEC 60417-6044)

Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.

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Worldwide Support

unitech's professional support team is available to quickly answer questions or assist with technical-related issues. Should an equipment problem occur, please contact the nearest unitech regional service representative.
For complete contact information please visit the Web sites listed below:

Taipei, Taiwan – Headquarters		Europe	
Tel:	+886-2-89121122	**Tel:**	+31-13-4609292
E-mail:	info@hq.ute.com	**E-mail:**	info@eu.ute.com
Address:	5F, No. 136, Lane 235, Baoqiao Road, Xindian District, New Taipei City 231, Taiwan (R.O.C.)	**Address:**	Kapitein Hatterasstraat 19, 5015 BB, Tilburg, the Netherlands
Website:	http://www.ute.com	**Website:**	http://eu.ute.com
China		**Japan**	
Tel:	+86-59-2310-9966	**Tel:**	+81-3-35232766
E-mail:	info@cn.ute.com	**E-mail:**	info@jp.ute.com
Address:	Room401C, 4F, RIHUA International Mansion, Xinfeng 3nd Road, Huoju Hi-tech District, Xiamen, Fujan , China	**Address:**	Kayabacho Nagaoka Building 8F.,1-5-19 Shinkawa, Chuo-Ku, Tokyo, 104-0033, Japan
Website:	http://cn.ute.com	**Website:**	http://jp.ute.com
Asia & Pacific / Middle East		**Latin America**	
Tel:	+886-2-27911556	**Tel:**	+52-55-5171-0528
E-mail:	info@apac.ute.com info@india.ute.com info@mideast.ute.com	**E-mail:**	info@latin.ute.com
Address:	4F., No. 236, ShinHu 2nd Rd., NeiHu Chiu, 114, Taipei,Taiwan	**Address:**	17171 Park Row, Suite 210 Houston, TX 77084USA (Rep.)
Website:	http://apac.ute.com / http://mideast.ute.com	**Website:**	http://latin.ute.com
North America			
Tel:	+1-714-8916400		
E-mail:	info@us.ute.com / info@can.ute.com		
Address:	6182 Katella Ave, Cypress, CA 90630, USA		
Website:	http://us.ute.com		

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Warranty Policy

The items covered under the unitech Limited Warranty are free from defects during normal use.

The warranty period is varied from each country. Please consult with your supplier or unitech local office for actual length of warranty period to your purchased product.

Warranty becomes void if equipment is modified, improperly installed or used, damaged by accident or neglect, or if any parts are improperly installed or replaced by the user.

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Chapter 1 - Overview

1.1 Package

Please make sure the following contents are in the MS842R gift box.
If something is missing or damaged, please contact your unitech representative.

The standard package contents:

- MS842R Scanner
- Quick Start Guide
- Regulatory Compliance Statements
- USB Cable

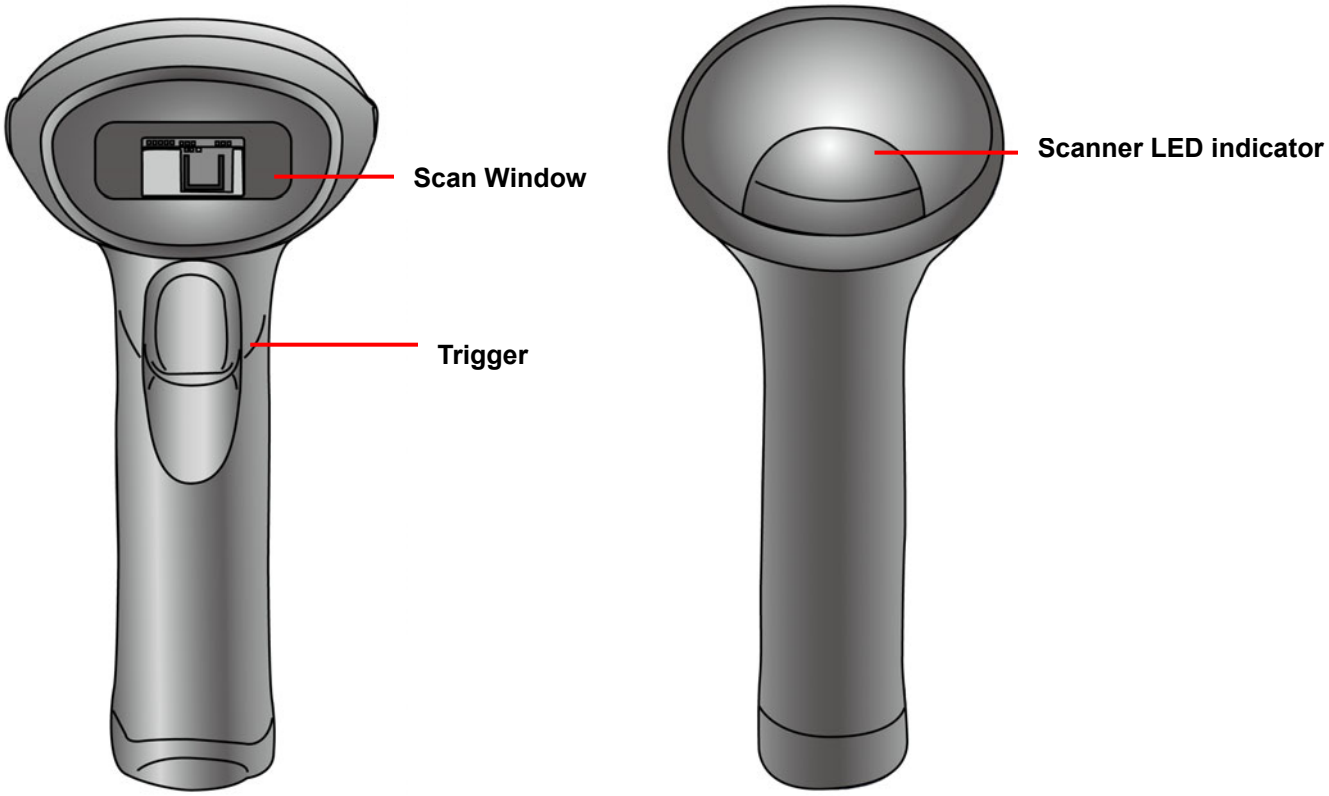
Note: *To scan a barcode, make sure the aiming beam crosses every bar and space of the barcode.*



Note: *The barcode with an asterisk (*) which appears in the following chapters indicates that it is the default option for the corresponding setting.*

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1.2 Scanner Detail



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1.3 Specifications

<table>
<tr><th colspan="2">Optical & Performance</th></tr>
<tr><td>Receiving Device</td><td>CMOS sensor with 640 x 480 pixel</td></tr>
<tr><td>Light Source</td><td>White LED with CCT 5000K</td></tr>
<tr><td>Ambient Light</td><td>0–100,000 lux (total darkness to bright sunlight</td></tr>
<tr><td>Motion Tolerance</td><td>Up to 100 cm/s (4 in/s) for13 mil UPC at optimal focus</td></tr>
<tr><td>Typical frame rate</td><td>30 frames per second</td></tr>
<tr><td>Skew Angle</td><td>±45degrees</td></tr>
<tr><td>Pitch Angle</td><td>±45degrees</td></tr>
<tr><td>Printing Contrast Scale</td><td>35% minimum print contrast ratio</td></tr>
<tr><td>Depth of Field
(DOF PCS=80%)</td><td>
<table>
<tr><th>SR</th><th>near</th><th>far</th></tr>
<tr><td>100% U.P.C.</td><td>55mm</td><td>280mm</td></tr>
<tr><td>Code 39, 5 mil</td><td>61mm</td><td>130mm</td></tr>
<tr><td>Code 39, 20 mil</td><td>60mm</td><td>380mm</td></tr>
<tr><td>PDF417, 6.7 mil</td><td>60mm</td><td>125mm</td></tr>
<tr><td>Data Matrix, 10 mil</td><td>60mm</td><td>130mm</td></tr>
<tr><td>QR, 20 mil</td><td>50mm</td><td>230mm</td></tr>
</table>
</td></tr>
<tr><th colspan="2">Communication</th></tr>
<tr><td>Interface</td><td>USB</td></tr>
<tr><th colspan="2">Mechanical</th></tr>
<tr><td>Dimensions</td><td>176 x 74 x 89 mm</td></tr>
<tr><td>Weight</td><td>200g w/o cable</td></tr>
<tr><td>Switch life</td><td>1,000,000 times</td></tr>
<tr><th colspan="2">Electrical</th></tr>
<tr><td>Operating Voltage</td><td>DC 5V</td></tr>
<tr><td>Current Consumption</td><td>Operation mode: <400mA ,
Standby mode: <160mA</td></tr>
</table>

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Functionality	
Symbologies	Linear: Codabar, Code 11, Code 128, Code 2 of 5, Code 39, Code 93 and 93i, EAN/JAN-13, EAN/JAN 8, IATA Code 2 of 5, Interleaved 2 of 5, Matrix 2 of 5, MSI, GS1 Databar, UPC-A, UPC E, UPC-A/EAN-13 with Extended coupon Code, Coupon GS1 Code 32(PARAF), EAN-UCC Emulation, GS1 Data bar 2D Stacked: Codablock A, Codablock F, PDF417, MicroPDF417 2D Matrix: Aztec Code, Data Matrix, MaxiCode, QR Code, Chinese Sensible(Han Xin) code Postal Codes: Australian Post, British Post, Canadian Post, China Post, Japanese Post, Korea Post, Netherlands Post, Planet Code, Postnet
Operation Mode	Trigger Mode, Presentation Mode
Environmental	
Mechanical Shock	1.8m onto concrete (scanner only)
IP Rate	IP42
ESD Protection	Functional after 8K Contact and 12K Air
Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to 70°C
Relative Humidity	95% non-condensing
Regulation Approvals	
CE, FCC, BSMI, VCCI	

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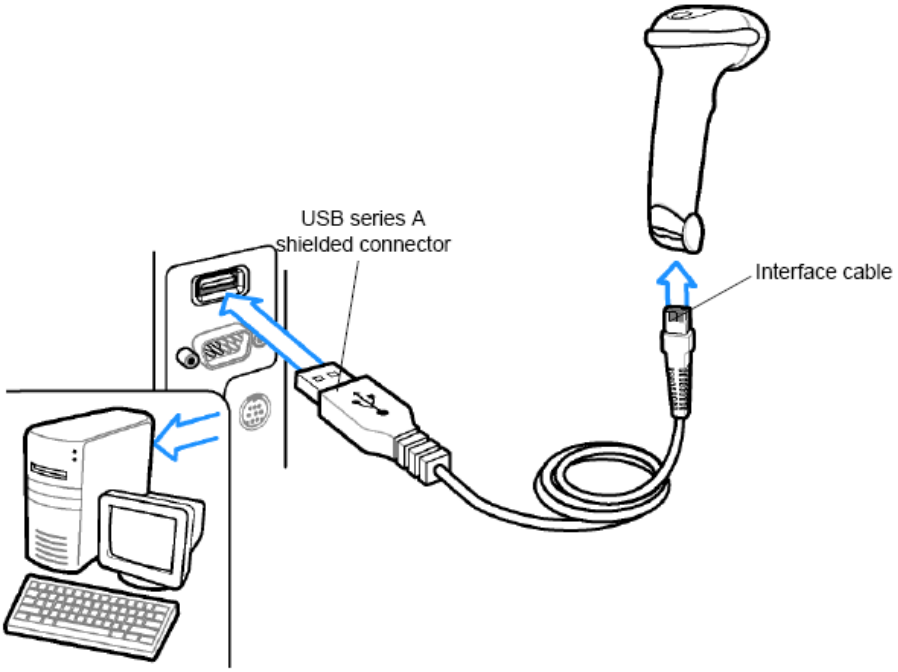
1.4 Getting Started

1.4.1 USB Interface

This chapter describes how to set up the digital scanner with a USB host. The digital scanner connects directly to a USB host, or a powered USB hub, which powers it. No additional power supply is required.

Note: *Most computer monitors allow scanning the bar codes directly on the screen. When scanning from the screen, be sure to set the document magnification to a level where you can see the bar code clearly, and bars and/or spaces are not merging.*

Connecting a USB Interface



The digital scanner also interfaces with other USB hosts which support USB Human Interface Devices (HID).

Note: *Interface cables vary depending on configuration. The connectors illustrated above are examples only. The connectors may be different than those illustrated, but the steps to connect the digital scanner are the same.*

1. Connect the modular connector of the USB interface cable to the cable interface port on the digital scanner.
2. Plug the series A connector in the USB host or hub, or plug the Plus Power connector in an available port of the IBM SurePOS terminal.
3. Select the USB device type by scanning the appropriate bar code from USB Device Type.

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4. On first installation when using Windows, the software prompts to select or install the Human Interface Device driver. To install this driver, provided by Windows, click Next through all the choices and click Finished on the last choice. The digital scanner powers up during this installation.
5. To modify any other parameter options, scan the appropriate bar codes in this manual.

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1.5 LED Indicator / Beeper Sequence

Action/Status	LED for Barcode reading & Communication	Beeper/ Tone
Power On	Green Light	Three beeps
Good read and transmitted	Green Light	One beep
Decode fail	Red Light	One beep
No decode	Red Light	No action
Programming	Green Light	Two beeps

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Chapter 2 –Configuration General

2.1 Factory Default Setting

Setting Custom Defaults

You have the ability to create a set of menu commands as your own, custom defaults. To do so, scan the Set Custom Defaults bar code below before scanning the menu commands for your custom defaults. If a menu command requires scanning numeric codes from the back cover, then a Save code, that entire sequence will be saved to your custom defaults. When you have entered all the commands you want to save for your custom defaults, scan the Save Custom Defaults bar code.

You may have a series of custom settings and want to correct a single setting. To do so, just scan the new setting to overwrite the old one. For example, if you had previously saved the setting for Beeper Volume at Low to your custom defaults, and decide you want the beeper volume set to High, just scan the Set Custom Defaults bar code, then scan the Beeper Volume High menu code, and then Save Custom Defaults. The rest of the custom defaults will remain, but the beeper volume setting will be updated.

Set Custom Defaults



Save Custom Defaults



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2.1.2 Resetting the Custom Defaults

If you want the custom default settings restored to your scan engine, scan the Activate Custom Defaults bar code below. This is the recommended default bar code for most users. It resets the scan engine to the custom default settings. If there are no custom defaults, it will reset the scan engine to the factory default settings. Any settings that have not been specified through the custom defaults will be defaulted to the factory default settings.

Factory Defaults



2.2 FW Version

2.2.1 Show Decoder Revision

Scan the bar code below to output the decoder revision.

Show Decoder Revision



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2.2.2 Show Scan Driver Revision

Scan the bar code below to output the scan driver revision. The scan driver controls image capture.

Show Scan Driver Revision



2.2.3 Show Software Revision

Scan the bar code below to output the current software revision, unit serial number, and other product information for both the scan engine and base.

Show Software Revision



2.2.4 Show Data Format

Scan the bar code below to show current data format settings.

Data Format Settings



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2.3 Test Menu

When you scan the Test Menu **On** code, then scan a programming code in this manual, the scan engine displays the content of a programming code.
The programming function will still occur, but in addition, the content of that programming code is output to the terminal.

Note: *This feature should not be used during normal scan engine operation.*

On



Off



2.4 Application Plug-Ins (Apps)

Any apps that you are using can be turned off or on by scanning the following bar codes. Apps are stored in groups: Decoding, and Formatting. You can enable and disable these groups of apps by scanning that group's **On** or **Off** bar code below. You can also scan the **List Apps** bar code to output a list of all your apps. ***Note:*** *You must reset your device in order for the apps setting to take effect.*

Decoding Apps On*



Decoding Apps Off



Formatting Apps On*



Formatting Apps Off



List Apps



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Chapter 3 –Symbology

3.1 All symbologies

If you want to decode all the symbologies allowable for your scanner, scan the **All Symbologies On** code. If on the other hand, you want to decode only a particular symbology, scan **All Symbologies Off** followed by the On symbol for that particular sym-bology.

Note: Scanner performance may reduce by scanning All Symobologies On.
Only scan All Symbologies On when needed.

Note : When All Symbologies On is scanned, 2D Postal Codes are not enabled.2D Postal Codes must be enabled separately.

All Symbologies On



All Symbologies Off



3.2 Message Length Description

You are able to set the valid reading length of some of the bar code symbologies. You may wish to set the same value for minimum and maximum length to force the scanner to read fixed length bar code data.
This helps reduce the chances of a misread.
EXAMPLE: Decode only those bar codes with a count of 9-20 characters.
Min. length = 09Max. length = 20
EXAMPLE: Decode only those bar codes with a count of 15 characters.
Min. length = 15Max. length = 15
For a value other than the minimum and maximum message length defaults, scan the bar codes included in the explanation of the symbology, then scan the digit value of the message length and Save bar codes on the Programming Chart. The minimum and maximum lengths and the defaults are included with the respective symbologies.

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3.3 1D

3.3.1 Codabar

Codabar On*



Default All Codabar Settings



Codabar Off



3.3.1.1 Codabar Start / Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/Stop characters.
Default = Don't Transmit.

Transmit



Don't Transmit*



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3.3.1.2 Codabar Check Characters

Codabar check characters are created using different "modulos." You can program the scanner to read only Codabar bar codes with Modulo 16 check characters. Default = No Check Character.

No Check Character indicates that the scanner reads and transmits bar code data with or without a check character.

When Check Character is set to **Validate and Transmit**, the scanner will only read Codabar bar codes printed with a check character, and will transmit this character at the end of the scanned data.

When Check Character is set to **Validate, but Don't Transmit**, the unit will only read Codabar bar codes printed with a check character, but will not transmit the check character with the scanned data.

No Check Character*



Validate Modulo 16, but Don't Transmit



Validate Modulo 16 and Transmit



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3.3.1.3 Codabar Concatenation

Codabar supports symbol concatenation. When you enable concatenation, the scanner looks for a Codabar symbol having a “D” start character, adjacent to a symbol having a “D” stop character. In this case the two messages are concatenated into one with the “D” characters omitted.



Select Require to prevent the scanner from decoding a single “D” Codabar symbol without its companion. This selection has no effect on Codabar symbols without Stop/Start D characters.

On



Off*



Require



3.3.1.4 Codabar Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information.

Minimum and Maximum lengths = 2-60.

Minimum Default = 4, Maximum Default = 60.

Minimum Message Length



Maximum Message Length



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3.3.2 Code 39

Code 39 On*



Default All Code 39 Settings



Code 39 Off



3.3.2.1 Code 39 Start / Stop Characters

Start/Stop characters identify the leading and trailing ends of the bar code. You may either transmit, or not transmit Start/ Stop characters.
Default = Don't Transmit.

Transmit



Don't Transmit*



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3.3.2.2 Code 39 Check Characters

No Check Character indicates that the scanner reads and transmits bar code data with or without a check character.
When Check Character is set to **Validate, but Don't Transmit**, the unit only reads Code 39 bar codes printed with a check character, but will not transmit the check character with the scanned data.
When Check Character is set to **Validate and Transmit,** the scanner only reads Code 39 bar codes printed with a check character, and will transmit this character at the end of the scanned data. Default = No Check Character.

No Check Character*



Validate , but Don't Transmit



Validate and Transmit



3.3.2.3 Code 39 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information.
Minimum and Maximum lengths = 0-48.
Minimum Default = 0, Maximum Default = 48.

Minimum Message Length



Maximum Message Length



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3.3.2.4 Code 39 Append

This function allows the scanner to append the data from several Code 39 bar codes together before transmitting them to the host computer. When the scanner encounters a Code 39 bar code with the append trigger character(s), it buffers Code 39 bar codes until it reads a Code 39 bar code that does not have the append trigger. The data is then transmitted in the order in which the bar codes were read (FIFO). Default = Off.

Off *



On



3.3.2.4 Code 32 Pharmaceutical (PARAF)

Code 32 Pharmaceutical is a form of the Code 39 symbology used by Italian pharmacies. This symbology is also known as PARAF.

Note: Trioptic Code must be turned off while scanning Code 32 Pharmaceutical codes.

Off *



On



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3.3.2.5 Full ASCIIf

Full ASCII Code 39 decoding is enabled, certain character pairs within the bar code symbol will be interpreted as a single character.
For example: $V will be decoded as the ASCII character SYN, and /C will be decoded as the ASCII character #. Default = Off.

NUL %U	DLE $P	SP	SPACE	0	0	@	%V	P	P	'	%W	p	+P
SOH $A	DC1 $Q	!	/A	1	1	A	A	Q	Q	a	+A	q	+Q
STX $B	DC2 $R	"	/B	2	2	B	B	R	R	b	+B	r	+R
ETX $C	DC3 $S	#	/C	3	3	C	C	S	S	c	+C	s	+S
EOT $D	DC4 $T	$	/D	4	4	D	D	T	T	d	+D	t	+T
ENQ $E	NAK $U	%	/E	5	5	E	E	U	U	e	+E	u	+U
ACK $F	SYN $V	&	/F	6	6	F	F	V	V	f	+F	v	+V
BEL $G	ETB $W	'	/G	7	7	G	G	W	W	g	+G	w	+W
BS $H	CAN $X	(	/H	8	8	H	H	X	X	h	+H	x	+X
HT $I	EM $Y	)	/I	9	9	I	I	Y	Y	i	+I	y	+Y
LF $J	SUB $Z	*	/J	:	/Z	J	J	Z	Z	j	+J	z	+Z
VT $K	ESC %A	+	/K	;	%F	K	K	[	%K	k	+K	{	%P
FF $L	FS %B	,	/L	<	%G	L	L	\	%L	l	+L	|	%Q
CR $M	GS %C	-	-	=	%H	M	M	]	%M	m	+M	}	%R
SO $N	RS %D	.	.	>	%I	N	N	^	%N	n	+N	~	%S
SI $O	US %E	/	/O	?	%J	O	O	_	%O	o	+O	DEL	%T

Character pairs /M and /N decode as a minus sign and period respectively.
Character pairs /P through /Y decode as 0 through 9.

Off *



On



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3.3.2.6 Code 39 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 bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

Code 39 Code Page



3.3.3 Interleaved 2 of 5

Interleaved 2 of 5 On*



Default All Interleaved 2 of 5 Settings



Interleaved 2 of 5 Off



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3.3.3.1 Check digit

No Check Digit indicates that the scanner reads and transmits bar code data with or without a check digit. When Check Digit is set to Validate, but Don't Transmit, the unit only reads Interleaved 2 of 5 bar codes printed with a check digit, but will not transmit the check digit with the scanned data. When Check Digit is set to Validate and Transmit, the scanner only reads Interleaved 2 of 5 bar codes printed with a check digit, and will transmit this digit at the end of the scanned data. Default = No Check Digit.

No Check Digit*



Validate , but Don't Transmit



Validate and Transmit



3.3.3.2 Interleaved 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information.
Minimum and Maximum lengths = 2-80.
Minimum Default = 4, Maximum Default = 80.

Minimum Message Length



Maximum Message Length



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3.3.4 Code 93

Code 93 On*



Default All Code 93 Settings



Code 93 Off



3.3.4.1 Code 93 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.

Minimum Message Length



Maximum Message Length



3.3.4.2 Code 93 Append

This function allows the scanner to append the data from several Code 93 bar codes together before transmitting them to the host computer. When this function is enabled, the scanner stores those Code 93 bar codes that start with a space (excluding the start and stop symbols), and does not immediately transmit the data. The scanner stores the data in the order in which the bar codes are read, deleting the first space from each. The scanner transmits the appended data when it reads a Code 93 bar code that starts with a character other than a space. Default = Off.

Off *



On



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3.3.4.3 Code 93 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 bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

Code 93 Code Page

3.3.5 Straight 2 of 5 Industrial (three-bar start/stop)

Straight 2 of 5
Industrial On

Default All Straight 2 of 5
Industrial Settings

Straight 2 of 5
Industrial Off*

3.3.5.1 Straight 2 of 5 Industrial Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.

Minimum Message Length

Maximum Message Length

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3.3.6 Straight 2 of 5 IATA (two-bar start/stop)

Straight 2 of 5 IATA Industrial On



Default All Straight 2 of 5 IATA Industrial Settings



Straight 2 of 5 IATA Industrial Off*



3.3.6.1 Straight 2 of 5 IATA Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-48. Minimum Default = 4, Maximum Default = 48.

Minimum Message Length



Maximum Message Length



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3.3.7 Matrix 2 of 5

Matrix 2 of 5 On



Default All Matrix 2 of 5 Settings



Matrix 2 of 5 Off*



3.3.7.1 Matrix 2 of 5 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.

Minimum Message Length



Maximum Message Length



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3.3.8 Code 11

Code 11 On



Default All Code 11 Settings



Code 11 Off*



3.3.8.1 Check Digits Required

This option sets whether 1 or 2 check digits are required with Code 11 bar codes. Default = Two Check Digits.

One Check Digit



Two Check Digits*



3.3.8.2 Code 11 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-80. Minimum Default = 4, Maximum Default = 80.

Minimum Message Length



Maximum Message Length



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3.3.9 Code 128

Code 128 On*



Default All Code 128 Settings



Code 128 Off



3.3.9.1 ISBT 128 Concatenation

In 1994 the International Society of Blood Transfusion (ISBT) ratified a standard for communicating critical blood information in a uniform manner. The use of ISBT formats requires a paid license. The ISBT 128 Application Specification describes 1) the critical data elements for labeling blood products, 2) the current recommendation to use Code 128 due to its high degree of security and its space-efficient design, 3) a variation of Code 128 that supports concatenation of neigh-boring symbols, and 4) the standard layout for bar codes on a blood product label. Use the bar codes below to turn concatenation on or off. Default =Off.

On



Off*



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3.3.9.2 Code 128 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 0-80. Minimum Default = 0, Maximum Default = 80.

Minimum Message Length



Maximum Message Length



3.3.9.3 Code 128 Append

This function allows the scanner to append the data from several Code 128 bar codes together before transmitting them to the host computer. When the scanner encounters a Code 128 bar code with the append trigger character(s), it buffers Code 128 bar codes until it reads a Code 128 bar code that does not have the append trigger. The data is then transmitted in the order in which the bar codes were read (FIFO). Default = On.

On*



Off



3.3.9.4 Code 128 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 bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

Code 128 Code Page



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3.3.10 UPC-A

Code UPC-A On*



Default All UPC-A Settings



Code UPC-A Off



Note: To convert UPC-A bar codes to EAN-13, see Convert UPC-A to EAN-13..

3.3.10.1 UPC-A Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

On*



Off



3.3.10.2 UPC-A Number System

The numeric system digit of a U.P.C. symbol is normally transmitted at the beginning of the scanned data, but the unit can be programmed so it will not transmit it. Default = On.

On*



Off



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3.3.10.3 UPC-A Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-A data. Default = Off for both 2 Digit and 5 Digit Addenda.

2 Digit Addenda Off*



2 Digit Addenda On



5 Digit Addenda Off*



5 Digit Addenda On



3.3.10.4 UPC-A Addenda Required

When Required is scanned, the scanner will only read UPC-A bar codes that have addenda. You must then turn on a 2 or 5 digit addenda. Default = Not Required.

Not Required*



Required



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3.3.10.5 UPC-A Addenda Separator

When this feature is on, there is a space between the data from the bar code and the data from the addenda. When turned off, there is no space. Default = On.

On *



Off



3.3.10.6 UPC-A/EAN-13 with Extended Coupon Code

Use the following codes to enable or disable UPC-A and EAN-13 with Extended Coupon Code. When left on the default setting (Off), the scanner treats Coupon Codes and Extended Coupon Codes as single bar codes. If you scan the Allow Concatenation code, when the scanner sees the coupon code and the extended coupon code in a single scan, it transmits both as one symbology. Otherwise, it transmits the first coupon code it reads. If you scan the Require Concatenation code, the scanner must see and read the coupon code and extended coupon code in a single read to transmit the data. No data is output unless both codes are read. Default = Off.

Off*



Allow Concatenation



Require Concatenation



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3.3.11 UPC-E0

Most U.P.C. bar codes lead with the 0 number system. To read these codes, use the UPC-E0 On selection. If you need to read codes that lead with the 1 number system, use UPC-E1. Default = On.

Code UPC-A On*



Default All UPC-E Settings



Code UPC-A Off



3.3.11.1 UPC-E0 Expand

UPC-E Expand expands the UPC-E code to the 12 digit, UPC-A format. Default = Off.

Off *



On



3.3.11.2 UPC-E0 Addenda Required

When Required is scanned, the scanner will only read UPC-E bar codes that have addenda. Default = Not Required.

Not Required *



Required



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3.3.11.3 UPC-E0 Addenda Separator

When this feature is On, there is a space between the data from the bar code and the data from the addenda. When turned Off, there is no space.
Default = On.

On*



Off



3.3.11.4 UPC-E0 Check Digit

Check Digit specifies whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

On*



Off



3.3.11.5 UPC-E0 Leading Zero

This feature allows the transmission of a leading zero (0) at the beginning of scanned data. To prevent transmission, scan Off. Default = On.

On*



Off



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3.3.11.6 UPC-E0 Addenda

This selection adds 2 or 5 digits to the end of all scanned UPC-E data. Default = Off for both 2 Digit and 5 Digit Addenda.

2 Digit Addenda Off*



2 Digit Addenda On



5 Digit Addenda Off*



5 Digit Addenda On



3.3.12 UPC-E1

Most U.P.C. bar codes lead with the 0 number system. For these codes, use UPC-E0. If you need to read codes that lead with the 1 number system, use the UPC-E1 On selection. Default = Off.

Off*



On



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3.3.13 EAN/JAN-13

EAN/JAN-13 On*



Default All EAN/JAN Settings



EAN/JAN-13 Off



3.3.13.1 Convert UPC-A to EAN-13

When UPC-A Converted to EAN-13 is selected, UPC-A bar codes are converted to 13 digit EAN-13 codes by adding a zero to the front. When Do not Convert UPC-A is selected, UPC-A codes are read as UPC-A.

Do not Convert UPC-A*



UPC-A Converted to EAN-13



3.3.13.2 EAN/JAN-13 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

On*



Off



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3.3.13.3 EAN/JAN-13 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-13 data. Default = Off for both 2 Digit and 5 Digit Addenda.

2 Digit Addenda Off*



2 Digit Addenda On



5 Digit Addenda Off*



5 Digit Addenda On



3.3.13.4 EAN/JAN-13 Addenda Required

When Required is scanned, the scanner will only read EAN/JAN-13 bar codes that have addenda. Default = Not Required.

Not Required*



Required



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3.3.13.5 EAN/JAN-13 Addenda Separator

When this feature is **On**, there is a space between the data from the bar code and the data from the addenda. When turned **Off**, there is no space. Default = On.

Note: If you want to enable or disable EAN13 with Extended Coupon Code, refer to UPC-A/EAN-13 with Extended Coupon Code.

On*



Off



3.3.14 EAN/JAN-8

EAN/JAN-8 On*



EAN/JAN-8 Off



Default All EAN/JAN-8 Settings



3.3.14.1 EAN/JAN-8 Check Digit

This selection allows you to specify whether the check digit should be transmitted at the end of the scanned data or not. Default = On.

On*



Off



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3.3.14.2 EAN/JAN-8 Addenda

This selection adds 2 or 5 digits to the end of all scanned EAN/JAN-8 data. Default = Off for both 2 Digit and 5 Digit Addenda.

2 Digit Addenda Off*



2 Digit Addenda On



5 Digit Addenda Off*



5 Digit Addenda On



3.3.14.3 EAN/JAN-8 Addenda Required

When Required is scanned, the scanner will only read EAN/JAN-8 bar codes that have addenda. Default = Not Required.

Not Required*



Required



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3.3.14.4 EAN/JAN-8 Addenda Separator

When this feature is On, there is a space between the data from the bar code and the data from the addenda. When turned Off, there is no space.
Default = On.

On*



Off



3.3.15 MSI

MSI On



MSI Off *



Default All MSI Settings



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3.3.15.1 MSI Check Character

Different types of check characters are used with MSI bar codes. You can program the scanner to read MSI bar codes with Type 10 check characters. Default = Validate Type 10, but Don't Transmit. When Check Character is set to Validate Type 10/11 and Transmit, the scanner will only read MSI bar codes printed with the specified type check character(s), and will transmit the character(s) at the end of the scanned data. When Check Character is set to Validate Type 10/11, but Don't Transmit, the unit will only read MSI bar codes printed with the specified type check character(s), but will not transmit the check character(s) with the scanned data.

Validate Type 10, but Don't Transmit*



Validate Type 10 and Transmit



Validate 2 Type 10 Characters, but Don't Transmit



Validate 2 Type 10 Characters and Transmit



Validate Type 11 then Type 10 Character, but Don't Transmit



Validate Type 11 then Type 10 Character and Transmit



Disable MSI Check Characters



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3.3.15.2 MSI Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 4-48. Minimum Default = 4, Maximum Default = 48.

Minimum Message Length



Maximum Message Length



3.3.16 GS1 DataBar Omnidirectional

GS1 DataBar Omnidirectional On*



GS1 DataBar Omnidirectional Off



Default All GS1 DataBar Omnidirectional Settings



3.3.17 GS1 DataBar Limited

GS1 DataBar Limited On*



GS1 DataBar Limited Off



Default All GS1 DataBar Limited Settings



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3.3.18 GS1 DataBar Expanded

GS1 DataBar Expanded On*



GS1 DataBar Expanded Off



Default All GS1 DataBar Expanded Settings



3.3.18.1 GS1 DataBar Expanded Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 4-74. Minimum Default = 4, Maximum Default = 74.

Minimum Message Length



Maximum Message Length



3.3.19 PDF 417

PDF 417 On*



PDF 417 Off



Default All PDF 417 Settings



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3.3.19.1 PDF417 Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-2750. Minimum Default = 1, Maximum Default = 2750.

Minimum Message Length



Maximum Message Length



3.3.20 QR Code

QR Code On*



QR Code Off



Default All QR Code Settings



3.3.20.1 QR Code Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-7089. Minimum Default = 1, Maximum Default = 7089.

Minimum Message Length



Maximum Message Length



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3.3.20.2 QR Code Append

This function allows the scanner to append the data from several QR Code bar codes together before transmitting them to the host computer. When the scanner encounters an QR Code bar code with the append trigger character(s), it buffers the number of QR Code bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. Default = On.

On*



Off



3.3.20.3 QR Code Page

QR 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 bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

QR Code Page



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3.3.21 Data Matrix

Data Matrix On*



Default All Data Matrix Settings



Data Matrix Off



3.3.21.1 Data Matrix Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-3116. Minimum Default = 1, Maximum Default = 3116.

Minimum Message Length



Maximum Message Length



3.3.21.2 Data Matrix Append

This function allows the scanner to append the data from several Data Matrix bar codes together before transmitting them to the host computer. When the scanner encounters an Data Matrix bar code with the append trigger character(s), it buffers the number of Data Matrix bar codes determined by information encoded in those bar codes. Once the proper number of codes is reached, the data is output in the order specified in the bar codes. Default = On.

On*



Off



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3.3.21.3 Data Matrix Code Page

Data Matrix 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 bar code being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, scan the bar code below, select the code page with which the bar codes were created (see ISO 2022/ISO 646 Character Replacements), and scan the value and the Save bar code from the Programming Chart. The data characters should then appear properly.

Data Matrix Code Page



3.3.22 MaxiCode

MaxiCode On



MaxiCode Off*



Default All MaxiCode Settings



3.3.22.1 MaxiCode Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-150. Minimum Default = 1, Maximum Default = 150..

Minimum Message Length



Maximum Message Length



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3.3.23 Chinese Sensible (Han Xin) Code

Han Xin On



Han Xin Off*



Default All Han Xin Settings



3.3.23.1 Han Xin Code Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 1-7833. Minimum Default = 1, Maximum Default = 7833.

Minimum Message Length



Maximum Message Length



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3.4 2D

3.4.1 Postal Codes - 2D

The following lists the possible 2D postal codes, and 2D postal code combinations that are allowed. Only one 2D postal code selection can be active at a time. If you scan a second 2D postal code selection, the first selection is overwritten. Default = 2D Postal Codes Off.

2D Postal Codes Off



3.4.1.1 Single 2D Postal Codes

Australian Post On



British Post On



Canadian Post On



Intelligent Mail Bar Code On



Japanese Post On



KIX Post On



Planet Code On



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Postal-4i On



Postnet On



Postnet with B and B' Fields On



InfoMail On



3.4.1.2 Combination 2D Postal Codes

InfoMail and British Post On



Postal-4i and Postnet with B and B' Fields On



Postnet and Postal-4i On



Planet Code and Postal-4i On



Postal-4i and Intelligent Mail Bar Code On



Planet Code, Postnet, and Postal-4i On



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Planet Code and Postnet On



Planet Code, Postal-4i, and Intelligent Mail Bar Code On



Intelligent Mail Bar Code and Postnet with B and B' Fields On



Planet Code, Postal-4i, and Postnet with B and B' Fields On



Postnet and Intelligent Mail Bar Code On



Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On



Planet Code and Postnet with B and B' Fields On



Planet Code, Postal-4i, Intelligent Mail Bar Code, and Postnet with B and B' Fields On



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Planet Code and Intelligent Mail Bar Code On



Planet Code, Postal-4i, Intelligent Mail Bar Code, and Postnet On



Planet Code, Postnet, and Intelligent Mail Bar Code On



Postnet, Postal-4i, and Intelligent Mail Bar Code On



Planet Code, Intelligent Mail Bar Code, and Postnet with B and B' Fields On



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3.4.1.3 China Post (Hong Kong 2 of 5)

China Post (Hong Kong 2 of 5) On



Default All China Post (Hong Kong 2 of 5) Settings



China Post (Hong Kong 2 of 5) Off*



3.4.1.4 China Post (Hong Kong 2 of 5) Message Length

Scan the bar codes below to change the message length. Refer to Message Length Description for additional information. Minimum and Maximum lengths = 2-80. Minimum Default = 4, Maximum Default = 80.

Minimum Message Length



Maximum Message Length



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Chapter 4 – Command Setting

4.1 Interface Selection

4.1.1 Laptop Direct Connect

For most laptops, scanning the **Laptop Direct Connect** bar code allows operation of the scan engine in parallel with the integral keyboard. The following **Laptop Direct Connect** bar code also programs a carriage return (CR) suffix and turns on Emulate External Keyboard.

Laptop Direct Connect with CR suffix



4.1.2 USB IBM SurePos

Scan one of the following "Plug and Play" codes to program the scan engine for an IBM SurePos (USB handheld scanner) or IBM SurePos (USB tabletop scanner) interface.

Note: After scanning one of these codes, you must power cycle the cash register.

USB IBM SurePos (USB Handheld Scanner) Interface



USB IBM SurePos (USB Tabletop Scanner) Interface



Each bar code above also programs the following suffixes for each symbology:

Symbology	Suffix	Symbology	Suffix
EAN 8	0C	Code 39	00 0A 0B
EAN 13	16	Interleaved 2 of 5	00 0D 0B
UPC A	0D	Code 128	00 18 0B
UPC E	0A	Code 39	00 0A 0B

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4.1.3 USB PC or Macintosh Keyboard

Scan one of the following codes to program the scan engine for USB PC Keyboard or USB Macintosh Keyboard. Scanning these codes also adds a CR suffix.

USB Keyboard (PC)



USB Keyboard (Mac)



USB Japanese Keyboard (PC)



4.1.4 USB HID

Scan the following code to program the scan engine for USB HID bar code scanners.

USB HID Bar Code Scanner



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4.2 Scan mode / Parameter Selection

4.2.1 Manual Trigger Mode

When in manual trigger mode, the scanner scans until a bar code is read, or until the trigger is released.

Manual Trigger - Normal



4.2.1.1 LED Illumination - Manual Trigger

If you wish to set the illumination LED brightness, scan one of the bar codes below. This sets the LED illumination for the scan engine when the trigger is pressed. Default = High.

Note: *The LEDs are like a flash on a camera. The lower the ambient light in the room, the brighter the LEDs need to be so the scan engine can "see" the bar codes.*

High*



Medium



Low



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4.2.2 Serial Trigger Mode

You can activate the scan engine by pressing the trigger. When in serial mode, the scan engine scans until a bar code has been read or until the deactivate command is sent. The scan engine can also be set to turn itself off after a specified time has elapsed.

4.2.2.1 Read Time-Out

Use this selection to set a time-out (in milliseconds) of the scan engine's trigger when using serial commands to trigger the scan engine. Once the scan engine has timed out, you can activate the scan engine either by pressing the trigger or using a serial trigger command. After scanning the Read Time-Out bar code, set the time-out duration (from 0-300,000 millisec-onds) by scanning digits on the Programming Chart, then scanning Save.
Default = 30,000 ms.

Read Time-Out



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4.2.3 Presentation Mode

Presentation Mode uses ambient light to detect bar codes. The LED dims until a bar code is presented to the scanner, then the LED brightens to read the code. If the light level in the room is not high enough, Presentation Mode may not work properly. Scan the following bar code to program your scanner for Presentation Mode.

Presentation Mode



4.2.3.1 Idle Illumination - Presentation Mode

Scan one of the bar codes below to set the LED illumination for the scanner when it is in an idle state in Presentation Mode. Default = High.

Note: If you use one of the lower Idle Illumination settings, and there is not enough ambient light, the scanner may have difficulty detecting when a bar code is presented to it. If the scanner has difficulty "waking up" to read bar codes, you may need to set the Idle Illumination to a brighter setting.

Note: LED Illumination - Presentation Mode does not apply to Poor Quality PDF Codes or Mobile Phone Read Mode.

High*



Medium



Low



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4.2.3.2 Presentation Sensitivity

Presentation Sensitivity is a numeric range that increases or decreases the scan engine's reaction time to bar code presentation. To set the sensitivity, scan the Sensitivity bar code, then scan the degree of sensitivity (from 0-20) from the inside back cover, and Save. 0 is the most sensitive setting, and 20 is the least sensitive. Default = 1.

Sensitivity



4.2.3.3 Centering

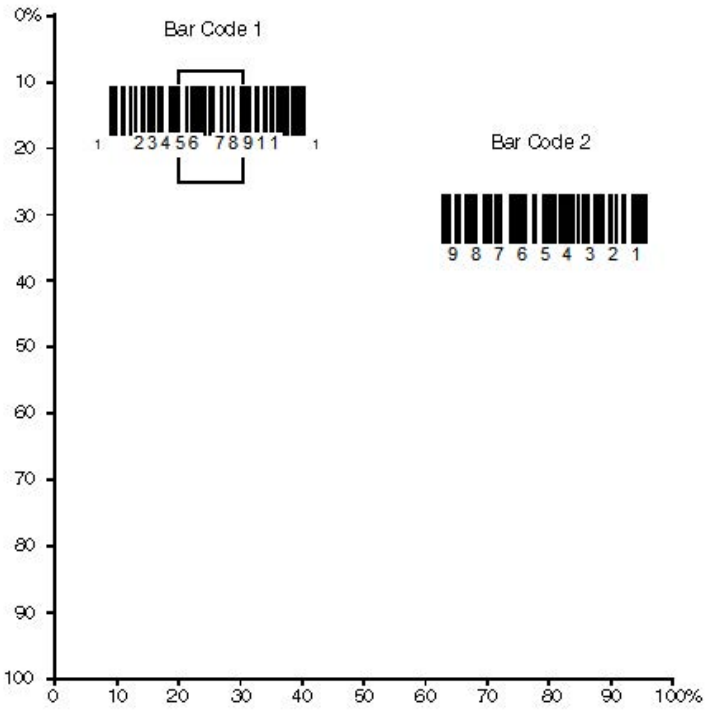
Use Centering to narrow the scan engine's field of view to make sure that when the scanner is hand-held, it reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, centering will insure that only the desired codes are read. (Centering can be used in conjunction with Aimer Delay, for the most error-free operation in applications where multiple codes are spaced closely together. Using the Aimer Delay and Centering features, the scanner can emulate the operation of older systems, such as linear laser bar code scanners.)If a bar code is not touched by a predefined window, it will not be decoded or output by the scan engine. If centering is turned on by scanning Centering On, the scan engine only reads codes that pass through the centering window you specify using the Top of Centering Window and Bottom of Centering Window bar codes.

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4.2.3.4 Presentation Centering

Use Presentation Centering to narrow the scanner's field of view when it is in the stand to make sure the scanner reads only those bar codes intended by the user. For instance, if multiple codes are placed closely together, Presentation Centering will insure that only the desired codes are read.
To adjust centering when the scanner is hand-held, see Centering.If a bar code is not touched by a predefined window, it will not be decoded or output by the scanner. If Presentation Centering is turned on by scanning Presentation Centering On, the scanner only reads codes that pass through the centering window you specify using the Top of Presentation Centering Window, Bottom of Presentation Centering Window, Left, and Right of Presentation Centering Window bar codes. In the example below, the white box is the centering window. The centering window has been set to 20% left, 30% right, 8% top, and 25% bottom. Since Bar Code 1 passes through he centering window, it will be read. Bar Code 2 does not pass through the centering window, so it will not be read.

Note: A bar code needs only to be touched by the centering window in order to be read. It does not need to pass completely through the centering window.



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Scan Presentation Centering On, then scan one of the following bar codes to change the top, bottom, left, or right of the centering window. Then scan the percent you want to shift the centering window using digits on the inside back cover of this manual. Scan Save. Default Presentation Centering = 40% for Top and Left, 60% for Bottom and Right.

Note: If you are taking images, you must set the In-Stand Sensor to Off. You may program a Streaming Presentation Mode (Normal, Enhanced, or Mobile Phone) you wish to use for in-stand scanning, and a Manual Trigger mode (Normal, Enhanced, or Mobile Phone) you wish to use for out-of-stand scanning. To do this, you must first scan the preferred Streaming Presentation mode (see below), then scan the Manual Trigger mode you want to use.

Presentation Centering On



Presentation Centering Off *



Top of Presentation Centering Window



Bottom of Presentation Centering Window



Left of Presentation Centering Window



Right of Presentation Centering Window



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4.2.4 Poor Quality Codes

4.2.4.1 Poor Quality 1D Codes

This setting improves the scanner's ability to read damaged or badly printed linear bar codes. When Poor Quality 1D Reading On is scanned, poor quality linear bar code reading is improved, but the scanner's snappiness is decreased, making it less aggressive when reading good quality bar codes. This setting does not affect 2D bar code reading. Default = Poor Quality 1D Reading Off.

Poor Quality 1D Reading Off*



Poor Quality 1D Reading On



4.2.4.2 Poor Quality PDF Codes

This setting improves the scanner's ability to read damaged or badly printed PDF codes by combining information from multiple images. When Poor Quality PDF On is scanned, poor quality PDF code reading is improved, but the scanner's snappiness is decreased, making it less aggressive when reading good quality bar codes. This setting does not affect 1D bar code reading. Default = Poor Quality PDF Reading Off.

Poor Quality PDF Reading Off*



Poor Quality PDF Reading On



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4.2.5 Mobile Phone Read Mode

When this mode is selected, your scanner is optimized to read bar codes from mobile phone or other LED displays. However, the speed of scanning printed bar codes may be slightly lower when this mode is enabled.

Note: To turn off Mobile Phone Read Mode, scan a Manual or Serial Trigger Mode bar code.

Hand Held Scanning - Mobile Phone



Presentation Scanning - Mobile Phone



4.2.6 Hands Free Time-Out

The Scan Stand and Presentation Modes are referred to as "hands free" modes. If the scanner's trigger is pulled when using a hands free mode, the scanner changes to manual trigger mode. You can set the time the scanner should remain in manual trigger mode by setting the Hands Free Time-Out. Once the time-out value is reached, (if there have been no further trigger pulls) the scanner reverts to the original hands free mode. Scan the **Hands Free Time-Out** bar code, then scan the time-out duration (from 0-300,000 milliseconds) from the inside back cover, and Save. Default = 5,000 ms.

Hands Free Time-Out



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4.2.7 Reread Delay

This sets the time period before the scan engine can read the same bar code a second time. Setting a reread delay protects against accidental rereads of the same bar code. Longer delays are effective in minimizing accidental rereads. Use shorter delays in applications where repetitive bar code scanning is required. Reread Delay only works when in a Presentation Mode.
Default = Medium.

Short (500 ms)



Medium (750 ms)*



Long (1000 ms)



Extra Long (2000 ms)



4.2.8 Aimer On/ Off

This feature allows you to turn the aimer on and off. When the Interlaced bar code is scanned, the aimer is interlaced with the illumination LEDs. Default = Interlaced.

Interlaced*



Off



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4.2.9 No Read

With No Read turned On, the scan engine notifies you if a code cannot be read. If using an EZConfig-Scanning Tool Scan Data Window, an "NR" appears when a code cannot be read. If No Read is turned Off, the "NR" will not appear. Default = Off.

If you want a different notation than "NR," for example, "Error," or "Bad Code," you can edit the output message (see Data Formatting). The hex code for the No Read symbol is 9C.

Off*



On



4.2.10 Video Reverse

Video Reverse is used to allow the scan engine to read bar codes that are inverted. The **Video Reverse Off** bar code below is an example of this type of bar code. Scan **Video Reverse Only** to read only inverted bar codes. Scan **Video Reverse and Standard Bar Codes** to read both types of codes.

*Note: After scanning **Video Reverse Only**, menu bar codes cannot be read. You must scan **Video Reverse Off** or **Video Reverse and Standard Bar Codes** in order to read menu bar codes.*

Note: Images downloaded from the unit are not reversed. This is a setting for decoding only.

Video Reverse Off *



Video Reverse and Standard Bar Codes



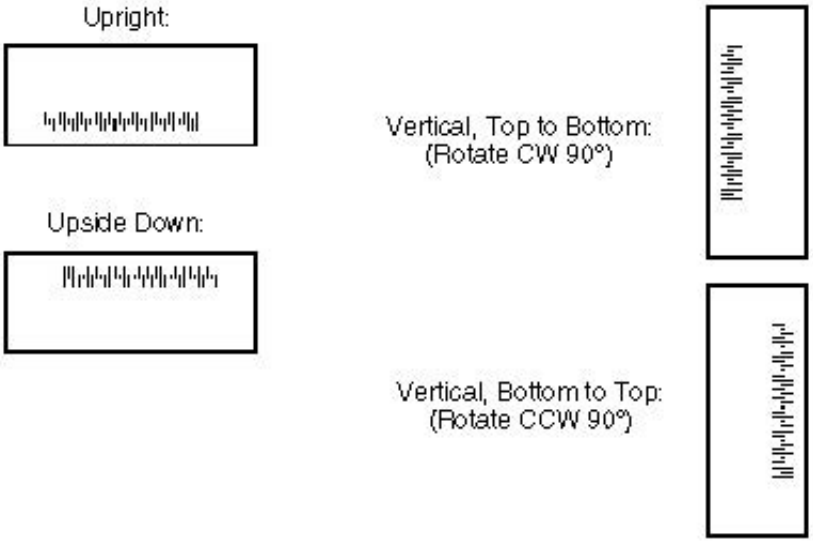
Video Reverse Only



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4.2.11 Working Orientation

Some bar codes are direction-sensitive. For example, KIX codes and OCR can misread when scanned sideways or upside down. Use the working orientation settings if your direction-sensitive codes will not usually be presented upright to the scanner. Default = Upright.



Upright *

Vertical, Bottom to Top

Upside Down

Vertical, Top to Bottom

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4.3 Keyboard Setting

Scan the appropriate country code below to program the keyboard layout for your country or language. As a general rule, the following characters are supported, but need special care for countries other than the United States:
@ | $ # { } [ ] = / ‘ \ < > ~

4.3.1 Language Selection

United States *



Albania



Azeri (Cyrillic)



Azeri (Latin)



Belarus



Belgium



Bosnia



Brazil



Brazil (MS)



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Bulgaria (Cyrillic)



Bulgaria (Latin)



Canada (French legacy)



Canada (French)



Canada (Multilingual)



Croatia



Czech



Czech (Programmers)



Czech (QWERTY)



Czech (QWERTZ)



Denmark



Dutch (Netherlands)



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Estonia



Faroese



Finland



France



Gaelic



Germany



Greek



Greek (220 Latin)



Greek (220)



Greek (319 Latin)



Greek (319)



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Greek (Latin)



Greek (MS)



Greek (Polytonic)



Hebrew



Hungarian (101 key)



Hungary



Iceland



Irish



Italian (142)



Italy



Japan ASCII



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Kazakh



Kyrgyz (Cyrillic)



Latin America



Latvia



Latvia (QWERTY)



Lithuania



Lithuania (IBM)



Macedonia



Malta



Norway



Mongolian (Cyrillic)



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Poland



Polish (214)



Polish (Programmers)



Portugal



Romania



Russia



Russian (MS)



Russian (Typewriter)



SCS



Serbia (Cyrillic)



Serbia (Latin)



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Slovakia



Slovakia (QWERTY)



Slovakia (QWERTZ)



Slovenia



Spain



Spanish variation



Sweden



Switzerland (French)



Switzerland (German)



Tatar



Turkey F



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Turkey Q



Ukrainian



United Kingdom



United States (Dvorak)



United States (Dvorak left)



United Stated (Dvorak right)



United States (International)



Uzbek (Cyrillic)



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4.3.2 Keyboard Style

This programs keyboard styles, such as Caps Lock and Shift Lock. If you have used Keyboard Conversion settings, they will override any of the following Keyboard Style settings. Default = Regular. Regular is used when you normally have the Caps Lock key off.

Regular *



Caps Lock

Caps Lock is used when you normally have the Caps Lock key on.



Shift Lock

Shift Lock is used when you normally have the Shift Lock key on (not common to U.S. keyboards).



Automatic Caps Lock

Automatic Caps Lock is used if you change the Caps Lock key on and off. The software tracks and reflects if you have Caps Lock on or off. This selection can only be used with systems that have an LED that notes the Caps Lock status (AT keyboards).



Autocaps via NumLock

Autocaps via NumLock bar code should be scanned in countries (e.g., Germany, France) where the Caps Lock key cannot be used to toggle Caps Lock. The NumLock option works similarly to the regular Autocaps, but uses the NumLock key to retrieve the current state of the Caps Lock.



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Emulate External Keyboard

Emulate External Keyboard should be scanned if you do not have an external keyboard (IBM AT or equivalent).

Note: After scanning the Emulate External Keyboard bar code, you must power cycle your computer.

4.3.3 Control Character Output

This selection sends a text string instead of a control character. For example, when the control character for a carriage return is expected, the output would display [CR] instead of the ASCII code of 0D. Refer to ASCII Conversion Chart (Code Page 1252). Only codes 00 through 1F are converted (the first column of the chart).

Note: *Control + X (Control + ASCII) Mode overrides this mode. Default = Off.*

Control Character Output Off *

Control Character Output On

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4.3.4 Keyboard Modifiers

This modifies special keyboard features, such as CTRL+ ASCII codes and Turbo Mode. Control + X (Control + ASCII) Mode On: The scan engine sends key combinations for ASCII control characters for values 00-1F. Windows is the preferred mode. All keyboard country codes are supported. DOS mode is a legacy mode, and it does not support all keyboard country codes. New users should use the Windows mode. Refer to Keyboard Function Relationships, for CTRL+ X Values. Windows Mode Prefix/Suffix Off: The scan engine sends key combinations for ASCII control characters for values 00-1F, but it does not translate any prefix or suffix information. Default = Control + X Mode Off.

Windows Mode Control + X Mode On



Control + X Mode Off *



DOS Mode Control + X Mode On



Windows Mode Prefix/ Suffix Off



Turbo Mode: The scan engine sends characters to a terminal faster.
If the terminal drops characters, do not use Turbo Mode. Default = Off

Turbo Mode Off *



Turbo Mode On



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Numeric Keypad Mode: Sends numeric characters as if entered from a numeric keypad. Default = Off

Numeric Keypad Mode Off *



Numeric Keypad Mode On



Automatic Direct Connect Mode: This selection can be used if you have an IBM AT style terminal and the system is dropping characters. Default = Off

Automatic Direct Connect Mode Off *



Automatic Direct Connect Mode On



4.3.5 Keyboard Conversion

Alphabetic keyboard characters can be forced to be all upper case or all lowercase. So if you have the following bar code: "abc569GK," you can make the output "ABC569GK" by scanning Convert All Characters to Upper Case, or to "abc569gk" by scanning Convert All Characters to Lower Case. These settings override Keyboard Style selections.

Note: If your interface is a keyboard wedge, first scan the menu code for Automatic Caps Lock. Otherwise, your output may not be as expected. Default = Keyboard Conversion Off.

Keyboard Conversion Off *



Convert All Characters to Upper Case



Convert All Characters to Lower Case



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4.4 Beeper / LED setting

Power Up Beeper

The scan engine can be programmed to beep when it's powered up. Scan the Off bar code(s) if you don't want a power up beep. Default = Power Up Beeper On - Scanner.

Power Up Beeper On – Scanner *

Power Up Beeper Off – Scanner

Beep on BEL Character

You may wish to force the scan engine to beep upon a command sent from the host. If you scan the Beep on BEL On bar code below, the scan engine will beep every time a BEL character is received from the host. Default = Beep on BEL Off.

Beep on BEL Off *

Beep on BEL On

Trigger Click

To hear an audible click every time the scanner trigger is pressed, scan the Trigger Click On bar code below. Scan the Trigger Click Off code if you don't wish to hear the click. (This feature has no effect on serial or automatic triggering.) Default = Trigger Click Off.

Trigger Click Off *

Trigger Click On

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4.4.1 Good Read and Error Indicators

Beeper – Good Read

The beeper may be programmed On or Off in response to a good read. Turning this option off only turns off the beeper response to a good read indication. All error and menu beeps are still audible. Default = Beeper - Good Read On.

Beeper - Good Read On *



Beeper - Good Read Off



Beeper Volume – Good Read

The beeper volume codes modify the volume of the beep the scan engine emits on a good read. Default = High

High *



Low



Medium



Off



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Beeper Pitch – Good Read

The beeper pitch codes modify the pitch (frequency) of the beep the scan engine emits on a good read. Default = Medium.

Medium (2700 Hz) *



Low (1600 Hz)



High (4200 Hz)



Beeper Pitch – Error

The beeper pitch codes modify the pitch (frequency) of the sound the scan engine emits when there is a bad read or error. Default = Razz.

Razz (250 Hz) *



Medium (3250 Hz)



High (4200 Hz)



Beeper Duration – Good Read

The beeper duration codes modify the length of the beep the scan engine emits on a good read. Default = Normal.

Normal Beep *



Short Beep



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LED – Good Read

The LED indicator can be programmed On or Off in response to a good read. Default = On.

LED - Good Read On *



LED - Good Read Off



Number of Beeps – Good Read

The number of beeps of a good read can be programmed from 1 - 9. The same number of beeps will be applied to the beeper and LED in response to a good read. For example, if you program this option to have five beeps, there will be five beeps and five LED flashes in response to a good read. The beeps and LED flashes are in sync with one another. To change the number of beeps, scan the bar code below and then scan a digit (1-9) bar code and the Save bar code on the Programming Chart . Default = 1.

Number of Good Read Beeps/LED Flashes



Number of Beeps – Error

The number of beeps and LED flashes emitted by the scan engine for a bad read or error can be programmed from 1 - 9. For example, if you program this option to have five error beeps, there will be five error beeps and five LED flashes in response to an error. To change the number of error beeps, scan the bar code below and then scan a digit (1-9) bar code and the Save bar code on the Programming Chart. Default = 1.

Number of Error Beeps/LED Flashes



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Good Read Delay

This sets the minimum amount of time before the scan engine can read another bar code. Default = 0 ms (No Delay).

No Delay *



Medium Delay (1,000 ms)



Short Delay (500 ms)



Long Delay (1,500 ms)



User-Specified Good Read Delay

If you want to set your own length for the good read delay, scan the bar code below, then set the delay (from 0-30,000 milli-seconds) by scanning digits from the inside back cover, then scanning Save.

User-Specified Good Read Delay



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4.5 Prefix/Suffix Selections

4.5.1 To Add a Prefix or Suffix

Step 1. Scan the Add Prefix or Add Suffix symbol.

Step 2. Determine the 2 digit Hex value from the Symbology Chart (included in the Symbology Charts) for the symbology to which you want to apply the prefix or suffix. For example, for Code 128, Code ID is "j" and Hex ID is "6A".

Step 3. Scan the 2 hex digits from the Programming Chart or scan 9, 9 for all symbologies.

Step 4. Determine the hex value from the ASCII Conversion Chart (Code Page 1252), , for the prefix or suffix you wish to enter.

Note: To add the Code I.D., scan 5, C, 8, 0.
To add AIM I.D., scan 5, C, 8, 1.
To add a backslash (\), scan 5, C, 5, C.
To add a backslash (\) as in Step 7, you must scan 5C twice – once to create the leading backslash and then to create the backslash itself.

Step 5. Scan the 2 digit hex value from the Programming Chart.

Step 6. Repeat Steps 4 and 5 for every prefix or suffix character.

Step 7. Scan Save to exit and save, or scan Discard to exit without saving.

Repeat Steps 1-6 to add a prefix or suffix for another symbology.

Example: Add a Tab Suffix to All Symbologies :

Step 1. Scan Add Suffix.

Step 2. Scan 9, 9 from the Programming Chart to apply this suffix to all symbologies.

Step 3. Scan 0, 9 from the Programming Chart. This corresponds with the hex value for a horizontal tab, shown in the ASCII Conversion Chart (Code Page 1252).

Scan Save, or scan Discard to exit without saving.

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4.5.2 To Clear One or All Prefixes or Suffixes

You can clear a single prefix or suffix, or clear all prefixes/suffixes for a symbology. If you have been entering prefixes and suffixes for single symbologies, you can use Clear One Prefix (Suffix) to delete a specific character from a symbology. When you Clear All Prefixes (Suffixes), all the prefixes or suffixes for a symbology are deleted.

Step 1. Scan the Clear One Prefix or Clear One Suffix symbol.

Step 2. Determine the 2 digit Hex value from the Symbology Chart (included in the Symbology Charts) for the symbology from which you want to clear the prefix or suffix.

Step 3. Scan the 2 digit hex value from the Programming Chart or scan 9, 9 for all symbologies.

Your change is automatically saved.

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4.5.3 To Add a Carriage Return Suffix to All Symbologies

Scan the following bar code if you wish to add a carriage return suffix to all symbologies at once. This action first clears all current suffixes, then programs a carriage return suffix for all symbologies.

Add CR SuffixAll Symbologies		
Prefix Selections		
Add Prefix		Clear All Prefixes
	Clear One Prefix	
Suffix Selections		
Add Suffix		Clear One Suffix
	Clear All Suffixes	

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4.5.4 Utilities

To Add a Test Code I.D. Prefix to All Symbologies

This selection allows you to turn on transmission of a Code I.D. before the decoded symbology. (See the Symbology Charts) for the single character code that identifies each symbology. This action first clears all current prefixes, then programs a Code I.D. prefix for all symbologies. This is a temporary setting that will be removed when the unit is power cycled.

Add Code I.D. Prefix toAll Symbologies (Temporary)



Show Decoder Revision

Scan the bar code below to output the decoder revision.

Show Decoder Revision



Show Scan Driver Revision

Scan the bar code below to output the scan driver revision.
The scan driver controls image capture.

Show Scan Driver Revision



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Show Software Revision

Scan the bar code below to output the current software revision, unit serial number, and other product information for both the scan engine and base.

Show Software Revision

Show Data Format

Scan the bar code below to show current data format settings.

Data Format Settings

4.6 Data formatting

4.6.1 Data Format Editor Introduction

You may use the Data Format Editor to change the scan engine's output. For example, you can use the Data Format Editor to insert characters at certain points in bar code data as it is scanned. The selections in the following pages are used only if you wish to alter the output. Default Data Format setting = None.Normally, when you scan a bar code, it is output automatically. However, when you create a format, you must use a "send" com-mand (see Send Commands) within the format program to output data.Multiple formats may be programmed into the scan engine. They are stacked in the order in which they are entered. However, the following list presents the order in which formats are applied:

1. Specific Terminal ID, Actual Code ID, Actual Length
2. Specific Terminal ID, Actual Code ID, Universal Length
3. Specific Terminal ID, Universal Code ID, Actual Length
4. Specific Terminal ID, Universal Code ID, Universal Length
5. Universal Terminal ID, Actual Code ID, Actual Length
6. Universal Terminal ID, Actual Code ID, Universal Length
7. Universal Terminal ID, Universal Code ID, Actual Length
8. Universal Terminal ID, Universal Code ID, Universal Length

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The maximum size of a data format configuration is 2000 bytes, which includes header information. If a bar code is read that fails the first data format, the next data format, if there is one, will be used on the bar code data. If there is no other data format, the raw data is output. If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** code below.

Default Data Format *



4.6.2 Add a Data Format

Step 1. Scan the Enter Data Format symbol.

Step 2. Select Primary/Alternate FormatDetermine if this will be your primary data format, or one of 3 alternate formats. This allows you to save a total of 4 different data formats. To program your primary format, scan 0 using the Programming Chart. If you are programming an alternate format, scan 1, 2, or 3, depending on which alternate format you are programming. (See "Primary/Alternate Data Formats" for further information.)

Step 3. Terminal TypeRefer to Terminal ID Table and locate the Terminal ID number for your PC. Scan three numeric bar codes on the inside back cover to program the scan engine for your terminal ID (you must enter 3 digits). For example, scan 0 0 3 for an AT wedge. Note:099 indicates all terminal types.

Step 4. Code I.D.In the Symbology Charts, find the symbology to which you want to apply the data format. Locate the Hex value for that symbology and scan the 2 digit hex value from the Programming Chart .If you wish to create a data format for all symbologies, with the exception of some specific symbologies, refer to B8.If you are creating a data format for Batch Mode Quantity, use 35 for the Code I.D.
Note:99 indicates all symbologies.

Step 5. Length
Specify what length (up to 9999 characters) of data will be acceptable for this symbology. Scan the four digit data length from the Programming Chart. For example, 50 characters is entered as 0050.

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Note: 9999 indicates all lengths.

Step 6. Editor Commands

Refer to Data Format Editor Commands. Scan the symbols that represent the command you want to enter.

Step 7. Scan Save to save your data format, or Discard to exit without saving your changes.

Enter Data Format



Discard



Save



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4.6.3 Other Programming Selections

Clear One Data Format

This deletes one data format for one symbology. If you are clearing the primary format, scan 0 from the Programming Chart . If you are clearing an alternate format, scan 1,2, or 3, depending on the format you are clearing. Scan the Terminal Type and Code I.D. (see Symbology Charts), and the bar code data length for the specific data format that you want to delete. All other formats remain unaffected.

Clear all Data Formats This clears all data formats.

Save to exit and save your data format changes.

Discard to exit without saving any data format changes.

Clear One Data Format



Clear All Data Formats



Save



Discard



Terminal ID Table

Terminal	Model(s)	Terminal ID
USB	PC keyboard (HID)	124
	Mac Keyboard	125
	PC Keyboard (Japanese)	134
	Serial (COM driver required)	130
	HID POS	131
	USB SurePOS Handheld	128
	USB SurePOS Tabletop	129
Serial	RS232 TTL	000
	RS232 True	000
	RS485 (IBM-HHBCR 1+2, 46xx)	051
Keyboard	PS2 compatibles	003
	AT compatibles	002

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4.6.4 Data Format Editor Commands

When working with the Data Format Editor, 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.

4.6.4.1 Send Commands

- **Send all characters**

F1 Include in the output message all of the characters from the input message, starting from current cursor position, followed by an insert character. Syntax = F1xx where xx stands for the insert character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

- **Send a number of characters**

F2 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." Syntax = F2nnxx where nn stands for the numeric value (00-99) for the number of characters, and xx stands for the insert character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

F2 Example: Send a number of characters



Send the first 10 characters from the bar code 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**

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F2 and F1 Example: Split characters into 2 lines

Send the first 10 characters from the bar code above, followed by a carriage return, followed by the rest of the characters.

Command string: **F2100DF10D**

F2 is the "Send a number of characters" command

10 is the number of characters to send for the first line

0D is the hex value for a CR

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as:

1234567890

ABCDEFGHIJ

<CR>

- **Send all characters up to a particular character**

F3 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 search character "ss," followed by an insert character. The cursor is moved forward to the "ss" character. Syntax = F3ssxx where ss stands for the search character's hex value for its ASCII code, and xx stands for the insert character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

F3 Example: Send all characters up to a particular character



Using the bar code 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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■ **Send all characters up to a string**

B9 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 search string "s...s." The cursor is moved forward to the beginning of the "s...s" string. Syntax = B9nnnns...s where nnnn stands for the length of the string, and s...s stands for the string to be matched. The string is made up of hex values for the characters in the string. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

B9 Example: Send all characters up to a defined string



Using the bar code above, send all characters up to but not including "AB."
Command string: **B900024142**
B9 is the "Send all characters up to a string" command
0002 is the length of the string (2 characters)
41 is the hex value for A
42 is the hex value for B
The data is output as: **1234567890**

■ **Send all characters up to a string**

E9 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. Syntax = E9nn where nn stands for the numeric value (00-99) for the number of characters that will not be sent at the end of the message.

■ **Insert a character multiple times**

F4 Send "xx" character "nn" times in the output message, leaving the cursor in the current position. Syntax = F4xxnn where xx stands for the insert character's hex value for its ASCII code, and nn is the numeric value (00-99) for the number of times it should be sent. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

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



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

Command string: **E908F40902**

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

08 is the number of characters at the end to ignore

F4 is the "Insert a character multiple times" command

09 is the hex value for a horizontal tab

02 is the number of times the tab character is sent

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

- **Insert a string**

BA Send "ss" string of "nn" length in the output message, leaving the cursor in the current position. Syntax = BAnnnns...s where nnnn stands for the length of the string, and s...s stands for the string. The string is made up of hex values for the characters in the string. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

B9 and BA Example: Look for the string "AB" and insert 2 asterisks (**)



Using the bar code above, send all characters up to but not including "AB." Insert 2 asterisks at that point, and send the rest of the data with a carriage return after.

Command string: **B900024142BA00022A2AF10D**

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

0002 is the length of the string (2 characters)

41 is the hex value for A

42 is the hex value for B

BA is the "Insert a string" command

0002 is the length of the string to be added (2 characters)

2A is the hex value for an asterisk (*)

2A is the hex value for an asterisk (*)

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as:

1234567890ABCDEFGHIJ**

<CR>

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■ **Insert symbology name**

B3 Insert the name of the bar code's symbology in the output message, without moving the cursor. Only symbologies with Symbology Charts. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

■ **Insert bar code length**

B4 Insert the bar code's length in the output message, without moving the cursor. The length is expressed as a numeric string and does not include leading zeroes.

B3 and B4 Example: Insert the symbology name and length



Send the symbology name and length before the bar code data from the bar code 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 times the space character is sent
B4 is the "Insert bar code length" command
F4 is the "Insert a character multiple times" command
20 is the hex value for a space
01 is the number of times 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>

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■ **Insert key strokes**

B5 Insert a key stroke or combination of key strokes. Key strokes are dependent on your keyboard . Any key can be inserted, including arrows and functions. Syntax = B5xxssnn where xx is the number of keys pressed (without key modifiers), ss is the key modifier from the table below, and nn is the key number.

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, B501021F inserts an “A” on a 104 key, U.S. style keyboard. B5 = the command, 01 = number of keys pressed (without the key modifier), 02 is the key modifier for Shift Right, and 1F is the “a” key. If a lower case “a” were to be inserted, B501001F would be entered.

If there are three keystrokes, the syntax would change from B5xxssnn for one keystroke to B5xxssnnssnnssnn. An example that would insert "abc" is as follows: B503001F00320030F833.

Note: Key modifiers can be added together when needed.

Example: Control Left+Shift Left = 11.

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4.6.4.2 Move Commands

■ **Move the cursor forward a number of characters**

F5 Move the cursor ahead "nn" characters from current cursor position. Syntax = F5nn where nn is the numeric value (00-99) for the number of characters the cursor should be moved ahead.

F5 Example: Move the cursor forward and send the data



Move the cursor forward 3 characters, then send the rest of the bar code data from the bar code 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>

■ **Move the cursor backward a number of characters**

F6 Move the cursor back "nn" characters from current cursor position. Syntax = F6nn where nn is the numeric value (00-99) for the number of characters the cursor should be moved back.

■ **Move the cursor to the beginning**

F7 Move the cursor to the first character in the input message. Syntax = F7.

FE and F7 Example: Manipulate bar codes that begin with a 1



Search for bar codes that begin with a 1. If a bar code matches, move the cursor back to the beginning of the data and send 6 characters followed by a carriage return. Using the bar code above:
Command string: **FE31F7F2060D**
FE is the "Compare characters" command
31 is the hex value for 1

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F7 is the "Move the cursor to the beginning" command
F2 is the "Send a number of characters" command
06 is the number of characters to send
0D is the hex value for a CR
The data is output as:
123456
<CR>

- **Move the cursor to the end**

EA Move the cursor to the last character in the input message. Syntax = EA.

4.6.4.3 Search Commands

- **Search forward for a character**

F8 Search the input message forward for "xx" character from the current cursor position, leaving the cursor pointing to the "xx" character. Syntax = F8xx where xx stands for the search character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

F8 Example: Send bar code data that starts after a particular character



Search for the letter "D" in bar codes and send all the data that follows, including the "D." Using the bar code 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>

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■ **Search backward for a character**

F9 Search the input message backward for "xx" character from the current cursor position, leaving the cursor pointing to the "xx" character. Syntax = F9xx where xx stands for the search character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

■ **Search forward for a string**

B0 Search forward for "s" string from the current cursor position, leaving cursor pointing to "s" string. Syntax = B0nnnnS where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B0000454657374 will search forward for the first occurrence of the 4 character string "Test." Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

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



Search for the letters "FGH" in bar codes and send all the data that follows, including "FGH." Using the bar code 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>

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■ **Search backward for a string**

B1 Search backward for "s" string from the current cursor position, leaving cursor pointing to "s" string. Syntax = B1nnnnS where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B1000454657374 will search backward for the first occurrence of the 4 character string "Test." Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

■ **Search forward for a non-matching character**

E6 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. Syntax = E6xx where xx stands for the search character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

E6 Example: Remove zeroes at the beginning of bar code data



This example shows a bar code that has been zero filled. You may want to ignore the zeroes 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 bar code above:

Command string: **E630F10D**

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

30 is the hex value for 0

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as:

37692

<CR>

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■ **Search backward for a non-matching character**

E7 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. Syntax = E7xx where xx stands for the search character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

4.6.4.4 Miscellaneous Commands

■ **Suppress characters**

FB Suppress all occurrences of up to 15 different characters, starting at the current cursor position, as the cursor is advanced by other commands. When the FC command is encountered, the suppress function is terminated. The cursor is not moved by the FB command. Syntax = FBnnxxyy . .zz where nn is a count of the number of suppressed characters in the list, and xxyy .. zz is the list of characters to be suppressed.

FB Example: Remove spaces in bar code data



This example shows a bar code that has spaces in the data. You may want to remove the spaces before sending the data. Using the bar code above:
Command string: **FB0120F10D**
FB is the "Suppress characters" command
01 is the number of character types to be suppressed
20 is the hex value for a space
F1 is the "Send all characters" command
0D is the hex value for a CR
The data is output as:
34567890
<CR>

■ **Stop suppressing characters**

FC Disables suppress filter and clear all suppressed characters. Syntax = FC.

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■ **Replace characters**

E4 Replaces up to 15 characters in the output message, without moving the cursor. Replacement continues until the E5 command is encountered. Syntax = E4nnxx1xx2yy1yy2...zz1zz2 where nn is the total count of the number of characters in the list (characters to be replaced plus replacement characters); xx1 defines characters to be replaced and xx2 defines replacement characters, continuing through zz1 and zz2.

E4 Example: Replace zeroes with CRs in bar code data



If the bar code 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 zeroes in the bar code above with carriage returns.

Command string: **E402300DF10D**

E4 is the "Replace characters" command

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

30 is the hex value for 0

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

F1 is the "Send all characters" command

0D is the hex value for a CR

The data is output as:

1234

5678

ABC

<CR>

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■ **Stop replacing characters**

E5 Terminates character replacement. Syntax = E5.

■ **Compare characters**

FE Compare the character in the current cursor position to the character "xx." If characters are equal, move the cursor forward one position. Syntax = FExx where xx stands for the comparison character's hex value for its ASCII code. Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

■ **Compare string**

B2 Compare the string in the input message to the string "s." If the strings are equal, move the cursor forward past the end of the string. Syntax = B2nnnnS where nnnn is the string length (up to 9999), and S consists of the ASCII hex value of each character in the match string. For example, B2000454657374 will compare the string at the current cursor position with the 4 character string "Test." Refer to the ASCII Conversion Chart (Code Page 1252), for decimal, hex and character codes.

■ **Check for a number**

EC Check to make sure there is an ASCII number at the current cursor position. The format is aborted if the character is not numeric.

EC Example: Only output the data if the bar code begins with a number

If you want only data from bar codes that begin with a number, you can use EC to check for the number.

Command string: **ECF10D**

EC is the "Check for a number" command

F1 is the "Send all characters" command

0D is the hex value for a CR

If this bar code is read, 

the next data format, if there is one, will be used on the data. If there is no other format, the format fails and the raw data is output as **AB1234**. If this bar code is read: 

the data is output as: **1234AB**

<CR>

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■ **Check for non-numeric character**

ED Check to make sure there is a non-numeric ASCII character at the current cursor position. The format is aborted if the character is numeric.

ED Example: Only output the data if the bar code begins with a letter

If you want only data from bar codes that begin with a letter, you can use ED to check for the letter.

Command string: **EDF10D**

ED is the "Check for a non-numeric character" command

F1 is the "Send all characters" command

0D is the hex value for a CR

If this bar code is read: 

the next data format, if there is one, will be used on this data. If there is no other format, the format fails and the raw data is output as **1234AB.** If this bar code is read: 

the data is output as: **AB1234 <CR>**

■ **Insert a delay**

EF Inserts a delay of up to 49,995 milliseconds (in multiples of 5), starting from the current cursor position. Syntax = EFnnnn where nnnn stands for the delay in 5ms increments, up to 9999. This command can only be used with keyboard emulation.a

■ **Discard Data**

B8 Discards types of data. For example, you may want to discard Code 128 bar codes that begin with the letter A. In step 4, select 6A (for Code 128), and in step 5, select 9999 (for all lengths). Enter FE41B8 to compare and discard Code 128 bar codes that begin with the letter A. Syntax = B8.

Note: The B8 command must be entered after all other commands. The Data Format must be Required in order for the B8 command to work. If Data Format is On, but Not Required , bar code data that meets the B8 format is scanned and output as usual. Because the data format needs to be On and Required for the B8 command, you must input data formats for all bar codes you wish to discard as well as all bar codes you wish to output. Other data format settings impact the B8 command. If Data Format Non-Match Error Tone is On , the scan engine emits an error tone. If Data format Non-Match Error Tone is Off, the code is disabled for reading and no tone is sounded.

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4.6.5 Data Formatter

When Data Formatter is turned Off, the bar code data is output to the host as read, including prefixes and suffixes.

Data Formatter Off



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

Data Formatter On, Not Required, Keep Prefix/Suffix

Scanned data is modified according to your data format, and prefixes and suffixes are transmitted.

Data Formatter On, Not Required, Drop Prefix/Suffix

Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted. If a data format is not found for that symbol, the prefixes and suffixes are transmitted.

Data Format Required, Keep Prefix/Suffix

Scanned data is modified according to your data format, and prefixes and suffixes are transmitted. Any data that does not match your data format requirements generates an error tone and the data in that bar code is not transmitted. If you wish to process this type of bar code without generating an error tone, see Primary/Alternate Data Formats.

Data Format Required, Drop Prefix/Suffix

Scanned data is modified according to your data format. If a data format is found for a particular symbol, those prefixes and suffixes are not transmitted. Any data that does not match your data format requirements generates an error tone. If you wish to process this type of bar code without generating an error tone, see Primary/Alternate Data Formats.

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Choose one of the following options.

Default = Data Formatter On, Not Required, Keep Prefix/Suffix.

Data Formatter On, Not Required, Keep Prefix/Suffix *



Data Formatter On, Not Required, Drop Prefix/Suffix



Data Format Required, Keep Prefix/Suffix



Data Format Required, Drop Prefix/Suffix



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4.6.6 Primary/Alternate Data Formats

You can save up to four data formats, and switch between these formats. Your primary data format is saved under 0. Your other three formats are saved under 1, 2, and 3. To set your device to use one of these formats, scan one of the bar codes below.

Primary Data Format



Data Format 1



Data Format 2



Data Format 3



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Appendix A – Symbology Charts

"m" represents the AIM modifier character. Refer to International Technical Specification, Symbology Identifiers, for AIM modifier character details.
Prefix/Suffix entries for specific symbologies override the universal (All Symbologies, 99) entry.
Refer to Data Editing and Data Formatting for information about using Code ID and AIM ID.

Linear Symbologies

	AIM		Honeywell	
Symbology	ID	Possible modifiers (*m*)	ID	Hex
All Symbologies				99
Codabar	]F*m*	0-1	a	61
Code 11	]H3		h	68
Code 128	]C*m*	0, 1, 2, 4	j	6A
Code 32 Pharmaceutical (PARAF)	]X0		<	3C
Code 39 (supports Full ASCII mode)	]A*m*	0, 1, 3, 4, 5, 7	b	62
TCIF Linked Code 39 (TLC39)	]L2		T	54
Code 93 and 93i	]G*m*	0-9, A-Z, a-m	i	69
EAN	]E*m*	0, 1, 3, 4	d	64
EAN-13 (including Bookland EAN)	]E0		d	64
EAN-13 with Add-On	]E3		d	64
EAN-13 with Extended Coupon Code	]E3		d	64
EAN-8	]E4		D	44
EAN-8 with Add-On	]E3		D	44
GS1				
GS1 DataBar	]e*m*	0	y	79
GS1 DataBar Limited	]e*m*		{	7B
GS1 DataBar Expanded	]e*m*		}	7D
GS1-128	]C1		I	49
2 of 5				
China Post (Hong Kong 2 of 5)	]X0		Q	51
Interleaved 2 of 5	]I*m*	0, 1, 3	e	65
Matrix 2 of 5	]X0		m	6D
NEC 2 of 5	]X0		Y	59
Straight 2 of 5 IATA	]R*m*	0, 1, 3	f	66
Straight 2 of 5 Industrial	]S0		f	66
MSI	]M*m*	0, 1	g	67
Telepen	]B*m*		t	74
UPC		0, 1, 2, 3, 8, 9, A, B, C		

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Symbology	AIM		Honeywell	
	ID	Possible modifiers (*m*)	ID	Hex
UPC-A	]E0		c	63
UPC-A with Add-On	]E3		c	63
UPC-A with Extended Coupon Code	]E3		c	63
UPC-E	]E0		E	45
UPC-E with Add-On	]E3		E	45
UPC-E1	]X0		E	45

Add Honeywell Code ID				5C80
Add AIM Code ID				5C81
Add Backslash				5C5C
Batch mode quantity			5	35

2D Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (*m*)	ID	Hex
All Symbologies				99
Aztec Code	]z*m*	0-9, A-C	z	7A
Chinese Sensible Code (Han Xin Code)	]X0		H	48
Codablock A	]O6	0, 1, 4, 5, 6	V	56
Codablock F	]O*m*	0, 1, 4, 5, 6	q	71
Code 49	]T*m*	0, 1, 2, 4	l	6C
Data Matrix	]d*m*	0-6	w	77
GS1	]e*m*	0-3	y	79
GS1 Composite	]e*m*	0-3	y	79
GS1 DataBar Omnidirectional	]e*m*		y	79
MaxiCode	]U*m*	0-3	x	78
PDF417	]L*m*	0-2	r	72
MicroPDF417	]L*m*	0-5	R	52
QR Code	]Q*m*	0-6	s	73
Micro QR Code	]Q*m*		s	73

Postal Symbologies

Symbology	AIM		Honeywell	
	ID	Possible modifiers (*m*)	ID	Hex
All Symbologies				99
Australian Post	]X0		A	41
British Post	]X0		B	42
Canadian Post	]X0		C	43
China Post	]X0		Q	51
InfoMail	]X0		,	2c
Intelligent Mail Bar Code	]X0		M	4D
Japanese Post	]X0		J	4A
KIX (Netherlands) Post	]X0		K	4B
Korea Post	]X0		?	3F
Planet Code	]X0		L	4C
Postal-4i	]X0		N	4E
Postnet	]X0		P	50

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ASCII Conversion Chart (Code Page 1252)

In keyboard applications, ASCII Control Characters can be represented in 3 different ways, as shown below. The CTRL+X function is OS and application dependent. The following table lists some commonly used Microsoft functionality. This table applies to U.S. style keyboards. Certain characters may differ depending on your Country Code/PC regional settings.

Non-printable characters ASCII control			Keyboard Control + ASCII (CTRL+X) Mode		
				Windows Mode Control + X Mode On (KBDCAS2)	
DEC	HEX	Char	Control + X Mode Off (KBDCAS0)	CTRL + X	CTRL + X function
0	00	NUL	Reserved	CTRL+ @	
1	01	SOH	NP Enter	CTRL+ A	Select all
2	02	STX	Caps Lock	CTRL+ B	Bold
3	03	ETX	ALT Make	CTRL+ C	Copy
4	04	EOT	ALT Break	CTRL+ D	Bookmark
5	05	ENQ	CTRL Make	CTRL+ E	Center
6	06	ACK	CTRL Break	CTRL+ F	Find
7	07	BEL	Enter / Ret	CTRL+ G	
8	08	BS	*(Apple Make)*	CTRL+ H	History
9	09	HT	Tab	CTRL+ I	Italic
10	0A	LF	*(Apple Break)*	CTRL+ J	Justify
11	0B	VT	Tab	CTRL+ K	hyperlink
12	0C	FF	Delete	CTRL+ L	list, left align
13	0D	CR	Enter / Ret	CTRL+ M	
14	0E	SO	Insert	CTRL+ N	New
15	0F	SI	ESC	CTRL+ O	Open
16	10	DLE	F11	CTRL+ P	Print
17	11	DC1	Home	CTRL+ Q	Quit
18	12	DC2	PrtScn	CTRL+ R	
19	13	DC3	Backspace	CTRL+ S	Save
20	14	DC4	Back Tab	CTRL+ T	
21	15	NAK	F12	CTRL+ U	
22	16	SYN	F1	CTRL+ V	Paste
23	17	ETB	F2	CTRL+ W	
24	18	CAN	F3	CTRL+ X	
25	19	EM	F4	CTRL+ Y	
26	1A	SUB	F5	CTRL+ Z	
27	1B	ESC	F6	CTRL+ [	
28	1C	FS	F7	CTRL+ \	
29	1D	GS	F8	CTRL+]	
30	1E	RS	F9	CTRL+ ^	
31	1F	US	F10	CTRL+ -	
127	7F	⌂	NP Enter		

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ISO 2022/ISO 646 Character Replacements

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 bar code being scanned was created using a code page that is different from the one the host pro-gram is expecting. If this is the case, select the code page with which the bar codes were created. The data characters should then appear properly.

Code Page Selection Method/Country	Standard	Keyboard Country	Honeywell Code Page Option
United States (standard ASCII)	ISO/IEC 646-IRV	n/a	1
Automatic National Character Replacement	ISO/IEC 2022	n/a	2 (default)
Binary Code page	n/a	n/a	3
Default "Automatic National Character replacement" will select the below Honeywell Code Page options for Code128, Code 39 and Code 93.			
United States	ISO/IEC 646-06	0	1
Canada	ISO /IEC 646-121	54	95
Canada	ISO /IEC 646-122	18	96
Japan	ISO/IEC 646-14	28	98
China	ISO/IEC 646-57	92	99
Great Britain (UK)	ISO /IEC 646-04	7	87
France	ISO /IEC 646-69	3	83
Germany	ISO/IEC646-21	4	84
Switzerland	ISO /IEC 646-CH	6	86
Sweden / Finland (extended Annex C)	ISO/IEC 646-11	2	82
Ireland	ISO /IEC 646-207	73	97
Denmark	ISO/IEC 646-08	8	88
Norway	ISO/IEC 646-60	9	94
Italy	ISO/IEC 646-15	5	85
Portugal	ISO/IEC 646-16	13	92
Spain	ISO/IEC 646-17	10	90
Spain	ISO/IEC 646-85	51	91

Dec			35	36	64	91	92	93	94	96	123	124	125	126
Hex			23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
US	0	1	#	$	@	[	\	]	^	`	{	|	}	~
CA	54	95	#	$	à	â	ç	ê	î	ô	é	ù	è	û
CA	18	96	#	$	à	â	ç	ê	É	ô	é	ù	è	û
JP	28	98	#	$	@	[	¥	]	^	`	{	|	}	¯
CN	92	99	#	¥	@	[	\	]	^	`	{	|	}	¯
GB	7	87	£	$	@	[	\	]	^	`	{	|	}	~
FR	3	83	£	$	à	°	ç	§	^	µ	é	ù	è	¨
DE	4	84	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
CH	6	86	ù	$	à	é	ç	ê	î	ô	ä	ö	ü	û
SE/FI	2	82	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
DK	8	88	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
NO	9	94	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
IE	73	97	£	$	Ó	É	Í	Ú	Á	ó	é	í	ú	á
IT	5	85	£	$	§	°	ç	é	^	ù	à	ò	è	ì
PT	13	92	#	$	§	Ã	Ç	Õ	^	`	ã	ç	õ	°
ES	10	90	#	$	§	¡	Ñ	¿	^	`	°	ñ	ç	~
ES	51	91	#	$	·	¡	Ñ	Ç	¿	`	´	ñ	ç	¨
COUNTRY	Country Keyboard	Honeywell CodePage	ISO / IEC 646 National Character Replacements											

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Appendix B – Programming Chart

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A



B



C



D



E



F



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