unitech
because we care

Wired 2D Ring Scanner

- MS622 -

User's Manual

Version 1.3

Change Log

Date	Change Description	Version
20210802	first published version	1.0
20210907	Update 2.4, 3.27 and Appendix B	1.1
20211004	Update 2.4	1.2
20220316	Update 2.4 and Appendix B	1.3

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 Statement

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.

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

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.
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.

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

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 RED 2014/53/EU directive, the EMC 2014/30/EU directive and the Low Voltage 2014/35/EU directive.
The declaration of conformity is available for download at :
https://portal.unitech.eu/public/Safetyregulatorystatement

CE RF Exposure Compliance

This device meets EU requirements (2014/53/EU) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.
For body-worn operation, this device has been tested and meets the ICNIRP guidelines and the European Standard EN 62209-2, for use with dedicated accessories, SAR is measured with this device at a separation of 0.5 cm to the body, while transmitting at the highest certified output power level in all frequency bands of this device. Use of other accessories which contain metals may not ensure compliance with ICNIRP exposure guidelines.

CE Mark Warning

This equipment complies with the requirements of Directive 2014/53/EU of the European Parliament and Commission from 24 May, 2014 governing Radio and Telecommunications Equipment and mutual recognition of conformity.

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.

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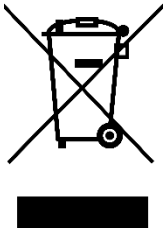
Waste electrical and electronic equipment (WEEE)



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

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。
前項合法通信，指依電信法規定作業之無線電通信。
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。
3. 減少電磁波影響，請妥適使用。

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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 your warranty.

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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.

CAUTION! To ensure the unit working properly, please keep all connectors away from the contaminants staying inside of them such as dust, grease, mud, and water. The negligence may cause the unit with no communication, short circuited, overheated and so on.

CAUTION! If the connector is damaged, please ensure the connector is being fully repaired before use the unit to avoid causing short circuited.

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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 **E-mail:** info@hq.ute.com **Address:** 5F, No. 136, Lane 235, Baoqiao Road, Xindian District, New Taipei City 231, Taiwan (R.O.C.) **Website:** http://www.ute.com	**Tel:** +31-13-4609292 **E-mail:** info@eu.ute.com **Address:** Kapitein Hatterasstraat 19, 5015 BB, Tilburg, the Netherlands **Website:** http://eu.ute.com
China	**Japan**
Tel: +86-59-2310-9966 **E-mail:** info@cn.ute.com **Address:** Room401C, 4F, RIHUA International Mansion, Xinfeng 3nd Road, Huoju Hi-tech District, Xiamen, Fujan , China **Website:** http://cn.ute.com	**Tel:** +81-3-35232766 **E-mail:** info@jp.ute.com **Address:** Kayabacho Nagaoka Building 8F.,1-5-19 Shinkawa, Chuo-Ku, Tokyo, 104-0033, Japan **Website:** http://jp.ute.com
Asia & Pacific / Middle East	**Latin America**
Tel: +886-2-27911556 **E-mail:** info@apac.ute.com info@india.ute.com info@mideast.ute.com **Address:** 4F., No. 236, ShinHu 2nd Rd., NeiHu Chiu, 114, Taipei,Taiwan **Website:** http://apac.ute.com / http://mideast.ute.com	**Tel:** +52-55-5171-0528 **E-mail:** info@latin.ute.com **Address:** 17171 Park Row, Suite 210 Houston, TX 77084USA (Rep.) **Website:** http://latin.ute.com
North America	**Please scan QR Code to visit us :**
Tel: +1-714-8926400 **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 MS622 gift box.
If something is missing or damaged, please contact your unitech representative.

The standard package contents:

- MS622 Wired 2D Ring Scanner
- Micro USB to Type-C Cable
- Spare Velcro Strap
- Quick Start Guide

*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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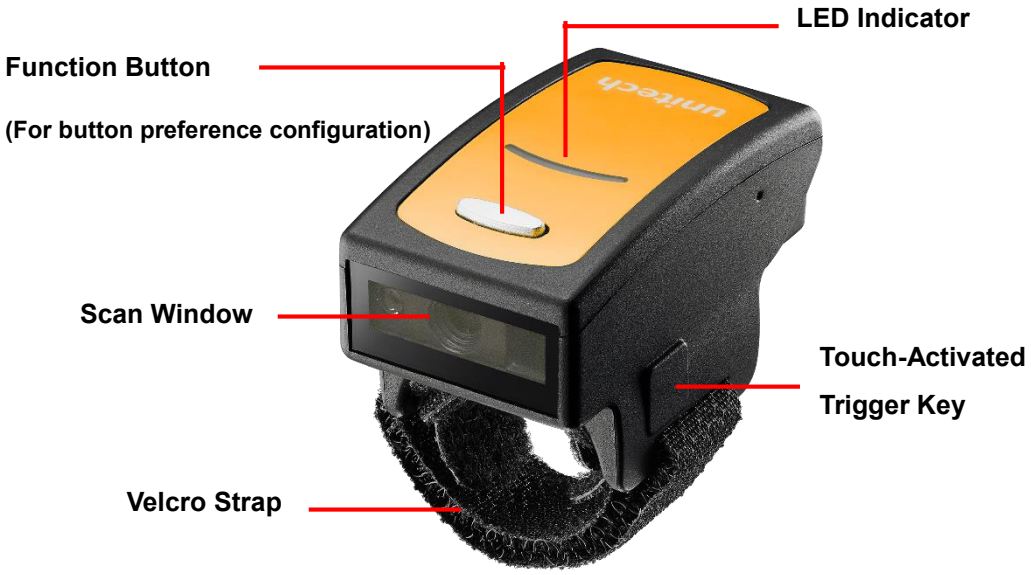
1.2 Product Detail

■ Introduction

The MS622 is a single finger wearable scanner, combining lightweight design with superior 2D scanning performance that transforms the way you work and empowers you to verify tasks accuracy with hands-free scanning.

The MS622 connects via a USB cable to the wearable terminal, which delivers power and ready to streamline work processes.

■ Scanner Detail



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Micro USB port

(with protective cover)

Micro USB to Type-C Cable

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1.3 Specifications

Optical & Performance	
Sensor	CMOS Sensor (640 x 480 pixels)
Aiming Element	White LED Red LED (625nm)
Ambient Light	100,000 Lux (Sunlight)
Scan Rate	60 Frames/Sec
Skew Angle	± 60°
Pitch Angle Sensor	± 60°
Roll Angle	360°
Optical Resolution	≥ 5mil
Printing Contrast Scale	40%
Depth of Field	(Environment : 800 lux) 5 Mil Code 39 : 45 ~ 145 mm 13 Mil UPC/EAN: 65 ~ 345 mm 6.67 Mil PDF417 : 55 ~ 120 mm 15 Mil QR Code : 35 ~ 165 mm 10 Mil Data Matrix : 50 ~ 115 mm
Communication	
Host Interface supported	USB VCP / USB HID
Mechanical	
Dimension	27.6 x 46.2 x 26.8 mm
Weight	14g (w/o cable)
Trigger Switch Life	100000
Symbologies	

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1D Barcodes	UPC-A/UPC-E, EAN-8/EAN-13, Industrial 2 of 5, Codabar, Matrix 2 of 5, Code 11, Code 93, Code 32, Code 128, Standard Code 39, Full ASCII Code 39, Interleaved 2 of 5, China Postal Code, MSI Plessey Code, UK Plessey Code, EAN/UCC 128, Telepen Code, IATA Code, GS1 Databar
2D Barcodes	QR Code, Micro QR Code, PDF417, Data Matrix, Aztec
Electrical	
Operation Voltage	DC 5 V± 5%
Current Consumption	working current: < 135mA ; standby current: < 15mA
Indicator	LED, Buzzer
Environmental	
ESD Protection	Functional after 4KV contact, 8KV Air discharge
Mechanical Shock	1.5M onto concrete (scanner only)
Operating Temperature	-20 ~ 55℃
Storage Temperature	-40 ~ 70℃
Relative Humidity	0% ~ 95%RH (Non-condensing)
IP Rating	IP42
Regulatory Approvals	
Regulatory Approvals	FCC, CE

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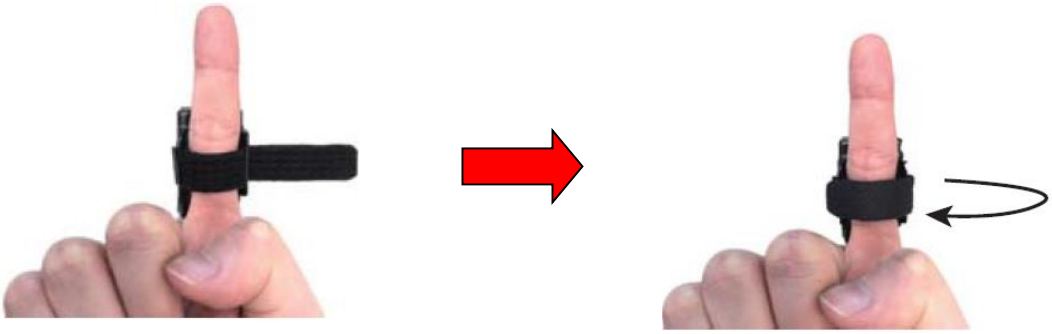
1.4 Getting Started

1.4.1 How to put on MS622

Step 1. Pull open the long strap and insert your index finger through the loop.
Step 2. Adjust and tighten the finger strap for a comfortable fit.



Step 3. Connect the USB Cable to the Micro USB Port on the MS622. Connect the other end of the USB Cable to a Type-C USB port on the mobile device.

Step 4. Use your thumb to tap the touch-activated trigger button.

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Step 5. Aim at the barcode you wish to scan.

For hand preference, there are two trigger keys for left click or right click.

Right handed users
(trigger key is on the left)

Left handed users
(trigger key is on the right)

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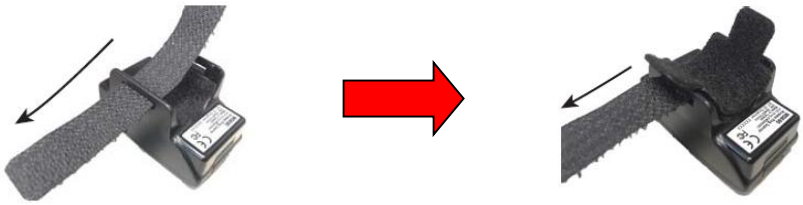
1.4.2 How to install Velcro strap

▪ For right handed user :

Step 1. Insert the long strap through the left slot, with velcro side facing downwards.

Step 2. Pull the long strap to the end.



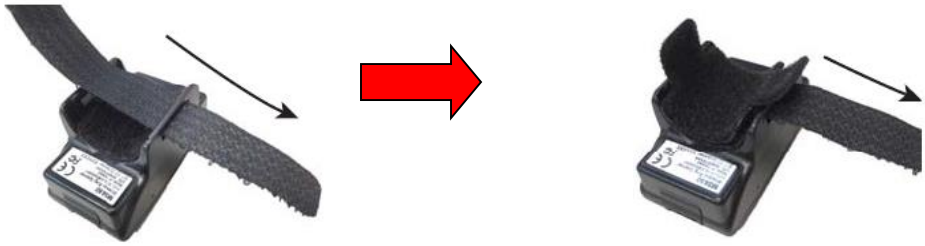
Step 3. Insert the long strap through the other slot, with velcro side facing downwards.

Step 4. Attach the long strap to itself to close.

▪ For left handed user :

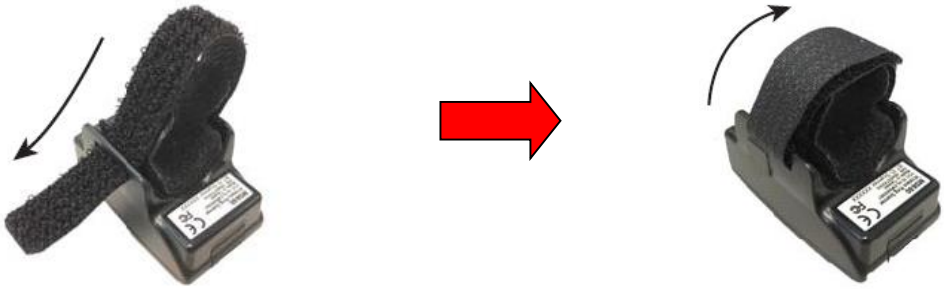
Step 1. Insert the long strap through the right slot, with velcro side facing downwards.

Step 2. Pull the long strap to the end.



Step 3. Insert the long strap through the other slot, with velcro side facing downwards.

Step 4. Attach the long strap to itself to close.



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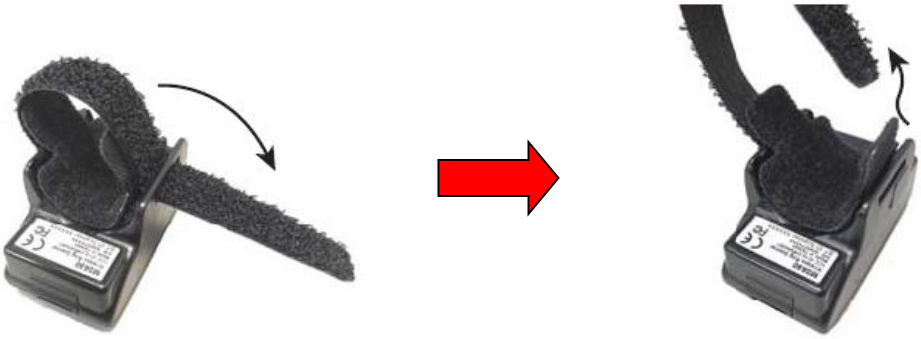
1.4.3 How to remove Velcro strap

Step 1. Pull open the long strap.

Step 2. Pull out the long strap through the slot.



Step 3. Pull open the short strap on the other side.

Step 4. Keep pulling the short strap until the whole velcro strap is removed from the scanner.

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1.4.4 Operating with Glove

Please be noted that there are many types of gloves in the market, some of gloves can be used with MS650 but some don't. Please test it before using.

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1.5 LED Indicator / Beeper Sequence

1.5.1 LED Indicator

Pressing on function button allows user to quickly configure preference for Touch-Activated Trigger Button, with the change of LED indicator color representing different configurations:

LED Indication	Description
Red	**Enable Left Button Only (Right-handed User)**
Blue	**Enable Right Button Only (Left-handed User)**
Purple	**Enable Both Buttons**

1.5.2 Beeper Sequence

Beeper	Description
Single beep	**i. Good read on non-configuration barcode** **ii. Bad read on configuration barcode**
Three beeps	**Good read on configuration barcode**
Four beeps	**Power-up**

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Chapter 2 - Installation

2.1 Barcode Programming

2.1.1 Introduction

MS622 can be configured by scanning programming barcodes. All user programmable features/options are described along with their programming barcodes/commands in the following sections. This programming method is most straightforward. However, it requires manually scanning barcodes. As a result, errors are more likely to occur.

2.1.2 Programming Barcode/ Programming Command / Function

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

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

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2.1.3 Use of Programming Barcodes

Before starting scanning any setting barcode, please do follow the instruction below. Scanning the Enter Setup barcode can enable the engine to enter the setup mode. Then you can scan a number of programming barcodes to configure your engine. To exit the setup mode, scan the Exit Setup barcode.

Enter Setup

Exit Setup*

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

Do Not Transmit Programming Barcode Data *

Transmit Programming Barcode Data

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2.2 General Setting

2.2.1 Default

Scan below bar code to restore the factory setting.

Factory Defaults

2.2.2 Display F/W Version

Scan below bar code to display F/W version.

Display F/W Version

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2.3 USB Device Type

USB HID Keyboard *	When the engine is connected to the USB port on a host device, you can enable the USB HID Keyboard feature by scanning the barcode below. Then engine's transmission will be simulated as USB keyboard input. The Host receives keystrokes on the virtual keyboard. It works on a Plug and Play basis and no driver is required.
USB CDC	If your engine is connected to the USB port on a host device, the USB CDC feature allows the host device to receive data in the way as a serial port does. A driver is needed when using this feature.
USB HID-POS	The HID-POS interface is recommended for new application programs. It can send up to 56 characters in a single USB report and appears more efficient than keyboard emulation. Features: ■ HID based, no custom driver required. ■ Way more efficient in communication than keyboard emulation and traditional TTL-232 interface.

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IBM SurePOS (Tabletop) **IBM SurePOS (Handheld)**	It conforms to IBM (now Toshiba Global Commerce Solutions) 4698 USB scanner interface specifications.

2.4 USB Interface

2.4.1 USB Country Keyboard Types

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

U.S. (English) *

Belgium

Brazil

Canada (French)

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Czechoslovakia

Denmark

Finland (Swedish)

France

Germany/Austria

Greece

Hungary

Israel (Hebrew)

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Italy

Latin America/ South America

Netherlands (Dutch)

Norway

Poland

Portugal

Romania

Russia

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Slovakia

Spain

Sweden

Switzerland (German)

Turkey_F

Turkey_Q

UK

Japan

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2.4.2 Beep on Unknown Character

Due to the differences in keyboard layouts, some characters contained in barcode data may be unavailable on the selected keyboard. As a result, the engine fails to transmit the unknown characters.
Scan the appropriate barcode below to enable or disable the emission of beep when an unknown character is detected.

Do Not Beep on Unknown Character *

Beep on Unknown Character

Note: Supposing French keyboard (Country Code: 7) is selected and barcode data "AĐF" is being dealted with, the keyboard will fail to locate the "Đ" (0xD0) character and the engine will ignore the character and continue to process the next one.

Do Not Beep on Unknown Character: The engine does not beep and the Host receives "AF".

Beep on Unknown Character: The engine beeps and the Host still receives "AF".

Note: If **Emulate ALT+Keypad ON** is selected, **Beep on Unknown Character** does not function.

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2.4.3 Emulate ALT+Keypad

When **Emulate ALT+Keypad** is turned on, ASCII characters (0x20 - 0xFF) are sent over the numeric keypad no matter which keyboard type is selected.

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

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

Emulate ALT+Keypad OFF *

Emulate ALT+Keypad ON

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

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

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

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

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

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2.4.4 Code Page

Code pages define the mapping of character codes to characters. If the data received does not display with the proper characters, it may be because the barcode being scanned was created using a code page that is different from the one the host program is expecting. If this is the case, select the code page with which the barcodes were created by scanning the appropriate barcode below. For PDF417, QR Code, Aztec and Data Matrix, besides setting the code page, you also need to set the character encoding in the "Character Encoding" section in Chapter 3. This feature is only effective when **Emulate ALT+Keypad** is turned on.

Note: Code Page 932, Code Page 936 and Code Page 950 are selectable and respectively supported by different software versions.

Code Page 950 (Traditional Chinese, Big5) *

Code Page 1252 (West European Latin)

Code Page 1251 (Cyrillic)

Code Page 1250
(Central and East European Latin)

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Code Page 1253 (Greek)

Code Page 1254 (Turkish)

Code Page 1255 (Hebrew)

Code Page 1256 (Arabic)

Code Page 1257 (Baltic)

Code Page 1258 (Vietnamese)

Code Page 874 (Thai)

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2.4.5 Unicode Encoding

Different host program may use different character encodings for handling incoming barcode data. For instance, Microsoft Office Word uses Unicode encoding and therefore you should turn **Unicode Encoding** on, whereas Microsoft Office Excel or Notepad uses Code Page encoding and therefore you should turn **Unicode Encoding** off. This feature is only effective when **Emulate ALT+Keypad** is turned on.

Off *

On

2.4.6 Emulate Keypad with Leading Zero

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

On *

Off

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2.4.7 Function Key Mapping

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

Disable *

Ctrl+ASCII Mode

Alt+Keypad Mode

Note:

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

"A" - Keystroke "A".

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

"F" - Keystroke "F".

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

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

"A" - Keystroke "A".

<HT> - "Alt Make" + Keystrokes "009" + "Alt Break".

"F" - Keystroke "F".

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2.4.8 ASCII Function Key Mapping Table

ASCII Function	ASCII Value (HEX)	Function Key Mapping Disabled	Ctrl+ASCII
NUL	00	Null	Ctrl+@
SOH	01	Keypad Enter	Ctrl+A
STX	02	Caps Lock	Ctrl+B
ETX	03	ALT	Ctrl+C
EOT	04	Null	Ctrl+D
ENQ	05	CTRL	Ctrl+E
ACK	06	Null	Ctrl+F
BEL	07	Enter	Ctrl+G
BS	08	Left Arrow	Ctrl+H
HT	09	Horizontal Tab	Ctrl+I
LF	0A	Down Arrow	Ctrl+J
VT	0B	Vertical Tab	Ctrl+K
FF	0C	Delete	Ctrl+L
CR	0D	Enter	Ctrl+M
SO	0E	Insert	Ctrl+N
SI	0F	Esc	Ctrl+O
DLE	10	F11	Ctrl+P
DC1	11	Home	Ctrl+Q
DC2	12	PrintScreen	Ctrl+R
DC3	13	Backspace	Ctrl+S
DC4	14	tab+shift	Ctrl+T
NAK	15	F12	Ctrl+U
SYN	16	F1	Ctrl+V
ETB	17	F2	Ctrl+W

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CAN	18	F3	Ctrl+X
EM	19	F4	Ctrl+Y
SUB	1A	F5	Ctrl+Z
ESC	11	F6	Ctrl+[
FS	1C	F7	Ctrl+\
GS	1D	F8	Ctrl+]
RS	1E	F9	Ctrl+6
US	1F	F10	Ctrl+-

ASCII Function Key Mapping Table (Continued)

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

Country	Ctrl+ASCII					
United States	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-	
Belgium	Ctrl+[	Ctrl+<	Ctrl+]	Ctrl+6	Ctrl+-	
Scandinavia	Ctrl+8	Ctrl+<	Ctrl+9	Ctrl+6	Ctrl+-	
France	Ctrl+^	Ctrl+8	Ctrl+$	Ctrl+6	Ctrl+=	
Germany		Ctrl+Ã	Ctrl++	Ctrl+6	Ctrl+-	
Italy		Ctrl+\	Ctrl++	Ctrl+6	Ctrl+-	
Switzerland		Ctrl+<	Ctrl+..	Ctrl+6	Ctrl+-	
United Kingdom	Ctrl+[	Ctrl+ ¢	Ctrl+]	Ctrl+6	Ctrl+-	
Denmark	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-	
Norway	Ctrl+8	Ctrl+\	Ctrl+9	Ctrl+6	Ctrl+-	
Spain	Ctrl+[	Ctrl+\	Ctrl+]	Ctrl+6	Ctrl+-	

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2.4.9 Inter-Keystroke Delay

This parameter specifies the delay between emulated keystrokes.

No Delay

Long Delay (40ms)

Short Delay (20ms) *

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2.4.10 Caps Lock

The **Caps Lock On** options can invert upper and lower case characters contained in barcode data. This inversion occurs regardless of the state of Caps Lock key on the host device's keyboard. To disable this feature, scan the appropriate **Caps Lock OFF** barcode below based on your keyboard. Please use Caps Lock configuration barcodes in this section to replace Caps Lock of physical keyboard when using MS622.

Caps Lock OFF, Non-Japanese Keyboard *

Caps Lock ON, Non-Japanese Keyboard

Caps Lock OFF, Japanese Keyboard

Caps Lock ON, Japanese Keyboard

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

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

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2.4.11 Convert Case

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

No Case Conversion *

Convert All to Upper Case

Convert All to Lower Case

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

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

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2.4.12 Emulate Numeric Keypad

Do Not Emulate Numeric Keypad 1:

Sending a number (0-9) is emulated as keystroke(s) on main keyboard.

Emulate Numeric Keypad 1:

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

Do Not Emulate Numeric Keypad 2:

Sending "+", "-", "*" and "/" is emulated as keystroke(s) on main keyboard.

Emulate Numeric Keypad 2:

Sending "+", "-", "*" and "/" is emulated as keystroke(s) on numeric keypad.

Do Not Emulate Numeric Keypad 1 *

Emulate Numeric Keypad 1

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Do Not Emulate Numeric Keypad 2 *

Emulate Numeric Keypad 2

Note: **Emulate ALT+Keypad ON** prevails over **Emulate Numeric Keypad**.

Note:
Supposing the **Emulate Numeric Keypad 1** feature is enabled:
if Num Lock on the host device is ON, "A4.5" is transmitted as "A4.5";
if Num Lock on the host device is OFF, "A4.5" is transmitted as ".A":
1. "A" is sent on main keyboard;
2. "4" is sent as the function key "Cursor Move to Left";
3. "." is sent on main keyboard;
4. "5" is not sent as it does not correspond to any function key.

2.4.13 Fast Mode

When **Fast Mode On** is selected, MS622 sends characters to the Host faster. If the Host drops characters, turn the Fast Mode off or change the polling rate to a bigger value. This function is supported by Windows only.

Fast Mode Off *

Fast Mode On

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2.4.14 Polling Rate

This parameter specifies the polling rate for a USB keyboard. If the Host drops characters, change the polling rate to a bigger value. This function is supported by Windows only.

8ms *

1ms

2ms

3ms

4ms

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5ms

6ms

7ms

9ms

10ms

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2.4.15 USB CDC

If your engine is connected to the USB port on a host device, the USB CDC feature allows the host device to receive data in the way as a serial port does. A driver is needed when using this feature. Please contact your local distributor for driver.

USB CDC

2.4.16 HID POS (POS HID Barcode Scanner)

Introduction

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

Features:

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

USB HID-POS

Access the Engine with Your Program

Use CreateFile to access MS622 as a HID device and then use ReadFile to deliver the scanned data to the application program. Use WriteFile to send data to MS622.

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

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2.4.17 Acquire Scanned Data

Acquire Scanned Data

After a barcode is decoded, MS622 sends an input report as below:

	Bit							
Byte	7	6	5	4	3	2	1	0
0	Report ID = 0x02							
1	Barcode Length							
2-57	Decoded Data (1-56)							
58-61	Reserved							
62	MS622 Symbology Identifier or N/C: 0x00							
63	-	-	-	-	-	-	-	Decoded data continued

Send Command to the Engine

This output report is used to send commands to MS622. All programming commands can be used.

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

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2.4.18 IBM SurePOS

IBM SurePOS (Tabletop)

IBM SurePOS (Tabletop)

IBM SurePOS (Handheld)

IBM SurePOS (Handheld)

2.4.19 VID/PID

USB uses VID (Vendor ID) and PID (Product ID) to identify and locate a device. The VID is assigned by USB Implementers Forum. MS622's vendor ID is 1EAB (Hex). Every PID contains a base number and interface type (keyboard, COM port, etc.).

Product	Interface	PID(Hex)	PID(Dec)
MS622	USB HID Keyboard	2C0	1126
	USB CDC	2C0	1127
	HID POS	2C1	1128
	IBM SurePOS (Tabletop)	2C2	1129
	IBM SurePOS(Handheld)	2C2	1129

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2.5 Scan Mode

Level Mode *	A trigger pull activates a decode session. The decode session continues until a barcode is decoded or you release the trigger.
Sense Mode	The engine activates a decode session every time it detects a barcode presented to it. The decode session continues until a barcode is decoded or the decode session timeout expires. **Reread Timeout** can avoid undesired rereading of same barcode in a given period of time. **Sensitivity** can change the Sense Mode's sensibility to changes in images captured. **Image Stabilization Timeout** gives the engine time to adapt to ambient environment after it decodes a barcode and "looks" for another.
Continuous Mode	The engine automatically starts one decode session after another. To suspend/resume barcode reading, simply press the trigger. Reread Timeout can avoid undesired rereading of same barcode in a given period of time. Note that when switching to this mode by scanning the Continuous Mode barcode, the engine will stop barcode reading for 3 seconds before starting scanning continuously.

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2.5.1 Decode Session Timeout

Pulse Mode	When the trigger is pulled and released, scanning is activated until a barcode is decoded or the decode session timeout expires (The decode session timeout begins when the trigger is released).
Batch Mode	A trigger pull activates a round of multiple decode sessions. This round of multiple scans continues until you release the trigger. Rereading the same barcode is not allowed in the same round.

This parameter sets the maximum time decode session continues during a scan attempt. It is programmable in 1ms increments from 1ms to 3,600,000ms. The default setting is 3,000ms. Do not set timeout to less than 200 to avoid malfunction.

Decode Session Timeout

Note: Set the decode session timeout to 1,500ms:

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

**** Exit Setup**

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2.5.2 Image Stabilization Timeout (Sense Mode)

This parameter defines the amount of time MS622 will spend adapting to ambient environment after it decodes a barcode and "looks" for another. It is programmable in 1ms increments from 0ms to 3,000ms. The default setting is 500ms.

Image Stabilization Timeout

Note: Set the image stabilization timeout to 800ms:

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

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2.5.3 Reread Timeout

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

Enable Reread Timeout: Do not allow MS622 to reread same barcode before the reread timeout expires.

Disable Reread Timeout: Allow MS622 to reread same barcode.

Enable Reread Timeout

Disable Reread Timeout *

The following parameter sets the time interval between two successive reads on same barcode. It is programmable in 1ms increments from 0ms to 3,600ms. When it is set to a value greater than 3,000, the timeout for rereading same programming barcode is limited to 3,000ms. The default setting is 1500ms.

Set Reread Timeout

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Note: Set the reread timeout to 1,000ms:

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

You may wish to restart the reread timeout when MS622 encounters the same barcode that was decoded in the last scan session before the reread timeout expires. To enable this feature, scan the **Reread Timeout Reset On** barcode. This feature is only effective when **Reread Timeout** is enabled.

Reread Timeout Reset On

Reread Timeout Reset Off *

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2.5.4 Image Decoding Timeout

Image Decoding Timeout specifies the maximum time MS622 will spend decoding an image. This parameter is programmable in 1ms increments from 1ms to 3,000ms. The default timeout is 500ms. Do not set timeout to less than 50 to avoid malfunction.

Image Decoding Timeout

Note: Set the image decoding timeout to 1,000ms:

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

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2.5.5 Good Read Delay

Good Read Delay sets the minimum amount of time before MS622 can read another barcode. This parameter is programmable in 1ms increments from 1ms to 3,600,000ms. The default setting is 500ms. Scan the appropriate barcode below to enable or disable the delay.

Enable Good Read Delay

Disable Good Read Delay *

To set the good read delay, scan the barcode below, then set the delay (from 1 to 3,600,000ms) by scanning the digit barcode(s) then scanning the **Save** barcode from the Appendix.

Good Read Delay

Note: Set the good read delay to 1,000ms:

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

**** Exit Setup**

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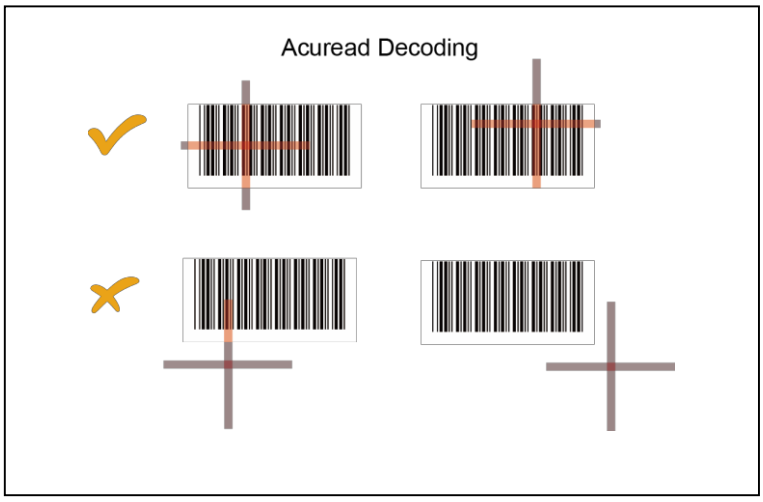
2.6 Decode Area

Whole Area Decoding: The engine attempts to decode barcode(s) within its field of view, from the center to the periphery, and transmits the barcode that has been first decoded.

Acuread Decoding: The engine only decodes the barcode aimed squarely by the aiming pattern. For those using a crosshair aiming pattern, only the barcode aimed by the center of crosshair will be decoded.



Whole Area Decoding *

Acuread Decoding

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2.6.1 Operating Modes

Auto Sleep

Auto Sleep allows MS622 to automatically enter the sleep mode if no operation or communication is performed for a time period (user programmable). Sending trigger signal can awake MS622.

Disable Auto Sleep *

Enable Auto Sleep

The following parameter sets how long MS622 remains idle (no operation or communication occurs) before it is put into sleep mode. It is programmable in 1s increments from 1s to 36000s. The default setting is 15s.

Time Period from Idle to Sleep

***Note*:** Set the time period from idle to sleep to 1,000s:

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

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2.6.2 Default Settings

Factory Defaults

Scanning the following barcode can restore MS622 to the factory defaults.

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

- ✧ MS622 is not properly configured so that it fails to decode barcodes.
- ✧ You forget previous configuration and want to avoid its impact.

Restore All Factory Defaults

2.6.3 Query Product Information

Query Firmware Version

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2.7 Sensitivity (Sense Mode)

Sensitivity specifies the degree of acuteness of MS622's response to changes in images captured. There are 20 levels to choose from. The smaller the value, the higher the sensitivity and the lower requirement in image change to trigger MS622's You can select an appropriate degree of sensitivity that fits the application environment. This feature is only applicable to the Sense mode.

Low Sensitivity

Medium Sensitivity

High Sensitivity

Enhanced Sensitivity *

Custom Sensitivity (Level 1-20)

Note: Set the sensitivity to Level 10:

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

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2.7.1 Surround GS1 Application Identifiers (AI's) with Parentheses

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

Do Not Surround GS1 AI's with Parentheses *

Surround GS1 AI's with Parentheses

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

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

If **Do Not Surround GS1 AI's with Parentheses** is selected, the barcode above is output as 0100614141999996101 0ABCEDF123456.

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2.7.2 Scanning Preference

Normal Mode: Select this mode when reading barcodes on paper.

Screen Mode: Select this mode when reading barcodes on the screen.

Barcode Pay Mode: Select this mode when reading barcodes to perform payment transactions, such as Alipay, WeChat Pay barcodes.

Normal Mode *

Screen Mode

Barcode Pay Mode

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2.8 Illumination

2.8.1 Internal Illumination

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

Normal: Illumination LEDs are turned on during image capture.

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

OFF: Illumination LEDs are OFF all the time.

Normal *

Off

Always ON

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2.8.2 Aiming

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

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

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

OFF: Aiming pattern is OFF all the time.

Normal *

Off

Always On

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2.9 Beep & LED Notifications

2.9.1 Good Read LED

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

On *

Off

2.9.2 Good Read LED Duration

This parameter sets the amount of time that the Good Read LED to remain on following a good read. It is programmable in 1ms increments from 1ms to 2,500ms.

Short (20ms) *

Medium (120ms)

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Long (220ms)

Prolonged (320ms)

Custom (1-10000ms)

Note:

Set the Good Read LED duration to 800ms:

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

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2.9.3 Power On Beep

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

On *

Off

2.9.4 Good Read Beep

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

On *

Off

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2.9.5 Good Read Beep Duration

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

Short (40ms)

Medium (80ms) *

Long (120ms)

Custom (20 – 300ms)

Note:

Set the Good Read Beep duration to 200ms:

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

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2.9.6 Good Read Beep Frequency

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

Extra Low (800Hz)

Low (1600Hz)

Medium (2730Hz)

High (4200Hz) *

Custom (20-20,000Hz)

Note:

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

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

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2.9.7 Good Read Beep Volume

There are 20 volume levels to choose from. The bigger the value, the louder the Good Read Beep.

Loud *

Medium

Low

Custom Volume (Level 1-20)

Note:

Set the Good Read Beep volume to Level 8:

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

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2.10 Prefix & Suffix

A 1D barcode could contain digits, letters, symbols, etc. A 2D barcode could contain more data, such as Chinese characters and other multi-byte characters. However, in real applications, they do not and should not have all information we need, such as barcode type, data acquisition time and delimiter, in order to keep the barcodes short and flexible.
Preffix and suffix are how to fulfill the needs mentioned above. They can be added, removed and modified while the original barcode data remains intact.

Barcode processing procedure:

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

2.10.1 Global Settings

Enable/Disable All Prefixes/Suffixes

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

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

Enable All Prefixes/Suffixes

Disable All Prefixes/Suffixes

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Prefix Sequence

Code ID+ Custom +AIM ID *

Custom + Code ID + AIM ID

2.10.2 Custom Prefix

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

Enable/Disable custom prefix

Enable Custom Prefix

Disable Custom Prefix *

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Set Custom Prefix

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

Note: A custom prefix cannot exceed 10 characters.

Set Custom Prefix

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

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

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2.10.3 AIM ID Prefix

AIM (Automatic Identification Manufacturers) ID defines symbology identifier (For the details, see the "AIM ID Table" section in Appendix). If AIM ID prefix is enabled, MS622 will add the symbology identifier before the scanned data after decoding.

Enable/Disable AIM ID Prefix

Enable AIM ID Prefix

Disable AIM ID Prefix *

***Note*:** AIM ID is not user programmable.

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2.10.4 Code ID Prefix

Code ID can also be used to identify barcode type. Unlike AIM ID, Code ID is user programmable. Code ID can only consist of one or two English letters.

Enable/Disable Code ID Prefix

Enable Code ID Prefix

Disable Code ID Prefix *

2.10.5 Restore All Default Code IDs

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

Restore All Default Code IDs

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2.10.6 Modify Code ID

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

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

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

Note: Restore the default Code IDs of all symbologies:

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

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2.10.7 Custom Suffix

Enable/Disable Custom Suffix

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

Enable Custom Suffix

Disable Custom Suffix *

Set Custom Suffix

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

***Note*:** A custom suffix cannot exceed 10 characters.

Set Custom Suffix

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

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

**** Exit Setup**

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2.10.8 Data Packing

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

Data Packing Options

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

Enable Data Packing, Format 1:

Transmit decoded data with the packet format 1 defined below.

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

STX: 0x02

ATTR: 0x00

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

AL_TYPE: 0x36

DATA: Raw barcode data.

LRC: Check digit.

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

Enable Data Packing, Format 2:

Transmit decoded data with the packet format 2 defined below.

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

STX: 0x02

ATTR: 0x00

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

AL_TYPE: 0x3B

Symbology_ID: The ID number of symbology, 1 byte.

DATA: Raw barcode data.

LRC: Check digit.

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

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Disable Data Packing *

Enable Data Packing, Format 1

Enable Data Packing, Format 2

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2.10.9 Terminating Character Suffix

Enable/Disable Terminating Character Suffix

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

Enable Terminating Character Suffix *

Disable Terminating Character Suffix

Set Terminating Character Suffix

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

***Note*:** A terminating character suffix cannot exceed 2 characters.

Set Terminating Character Suffix

Set Terminating Character to CR (0x0D) *

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

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Chapter 3 – Symbology

3.1 Global Setting

3.1.1 Enable/Disable All Symbologies

If the **Disable All Symbologies** feature is enabled, MS622 will not be able to read any non-programming barcodes except the programming barcodes.

Enable All Symbologies

Disable All Symbologies

3.1.2 Enable/Disable 1D Symbologies

Enable 1D Symbologies

Disable 1D Symbologies

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3.1.3 Enable/Disable 2D Symbologies

Enable 2D Symbologies

Disable 2D Symbologies

3.1.4 1D Twin Code

1D twin code is two 1D barcodes of a symbology or of different symbologies paralleled vertically. Both barcodes must have similar specifications and be placed closely together.

Single 1D Code Only: Read either 1D code.

Single 1D Code Only *

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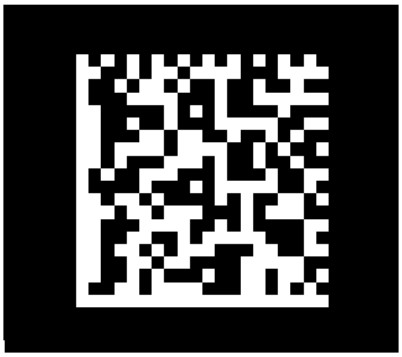
3.1.5 Video Reverse

Regular barcode: Dark image on a bright background.
Inverse barcode: Bright image on a dark background.
The examples of regular barcode and inverse barcode are shown as below.

Regular Barcode

Inverse Barcode



Video Reverse allows MS622 to read barcodes that are inverted.

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

Video Reverse OFF: Read regular barcodes only.

MS622 shows a slight decrease in scanning speed when Video Reverse is ON.

Video Reverse ON

Video Reverse OFF *

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3.2 Code 128

3.2.1 Restore Factory Defaults

Restore the Factory Defaults of Code 128

3.2.2 Enable/Disable Code 128

Enable Code 128 *

Disable Code 128

Note: If MS622 fails to identify Code 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 128** barcode.

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3.2.3 Set Length Range for Code 128

MS622 can be configured to only decode Code 128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Code 128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 128 barcodes with that length are to be decoded.

Note: Set MS622 to decode Code 128 barcodes containing between 8 and 12 characters:

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

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3.3 EAN-8

3.3.1 Restore Factory Defaults

Restore the Factory Defaults of EAN-8

3.3.2 Enable/Disable EAN-8

Enable EAN-8 *

Disable EAN-8

Note: If MS622 fails to identify EAN-8 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable EAN-8** barcode.

3.3.3 Transmit Check Character

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

Transmit EAN-8 Check Character *

Do Not Transmit EAN-8 Check Character

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3.3.4 2-Digit Add-On Code

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

Disable 2-Digit Add-On Code *

Enable 2-Digit Add-On Code

Note:

Disable 2-Digit Add-On Code: MS622 decodes EAN-8 and ignores the add-on code when presented with an EAN-8 plus 2-digit add-on barcode. It can also decode EAN-8 barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MS622 decodes a mix of EAN-8 barcodes with and without 2-digit add-on codes.

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3.3.5 5-Digit Add-On Code

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

Disable 5-Digit Add-On Code *

Enable 5-Digit Add-On Code

Note:

Disable 5-Digit Add-On Code: MS622 decodes EAN-8 and ignores the add-on code when presented with an EAN-8 plus 5-digit add-on barcode. It can also decode EAN-8 barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MS622 decodes a mix of EAN-8 barcodes with and without 5-digit add-on codes.

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3.3.6 Add-On Code Required

When **EAN-8 Add-On Code Required** is selected, MS622 will only read EAN-8 barcodes that contain add-on codes.

EAN-8 Add-On Code Required

EAN-8 Add-On Code Not Required *

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3.4 EAN-13

3.4.1 Restore Factory Defaults

Restore the Factory Defaults of EAN-13

3.4.2 Enable/Disable EAN-13

Enable EAN-13 *

Disable EAN-13

Note: If MS622 fails to identify EAN-13 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable EAN-13** barcode.

3.4.3 Transmit Check Character

Transmit EAN-13 Check Character *

Do Not Transmit EAN-13 Check Character

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3.4.4 2-Digit Add-On Code

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

Disable 2-Digit Add-On Code *

Enable 2-Digit Add-On Code

Note:

Disable 2-Digit Add-On Code: MS622 decodes EAN-13 and ignores the add-on code when presented with an EAN-13 plus 2-digit add-on barcode. It can also decode EAN-13 barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MS622 decodes a mix of EAN-13 barcodes with and without 2-digit add-on codes.

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3.4.5 5-Digit Add-On Code

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

Disable 5-Digit Add-On Code *

Enable 5-Digit Add-On Code

Note:

Disable 5-Digit Add-On Code: MS622 decodes EAN-13 and ignores the add-on code when presented with an EAN-13 plus 5-digit add-on barcode. It can also decode EAN-13 barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MS622 decodes a mix of EAN-13 barcodes with and without 5-digit add-on codes.

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3.4.6 Add-On Code Required

When **EAN-13 Add-On Code Required** is selected, MS622 will only read EAN-13 barcodes that contain add-on codes.

EAN-13 Add-On Code Required

EAN-13 Add-On Code Not Required *

3.4.7 EAN-13 Beginning with 290 Add-On Code Required

This setting programs MS622 to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with "290". The following settings can be programmed:

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

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

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Require Add-On Code

Do Not Require Add-On Code *

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

This setting programs MS622 to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a "378" or "379". The following settings can be programmed:

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

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

Require Add-On Code

Do Not Require Add-On Code *

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

This setting programs MS622 to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a "414" or "419". The following settings can be programmed:

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

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

Require Add-On Code

Do Not Require Add-On Code *

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

This setting programs MS622 to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with a "434" or "439". The following settings can be programmed:

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

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

Require Add-On Code

Do Not Require Add-On Code *

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3.4.11 EAN-13 Beginning with 977 Add-On Code Required

This setting programs MS622 to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with "977". The following settings can be programmed:

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

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

Require Add-On Code

Do Not Require Add-On Code *

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3.4.12 EAN-13 Beginning with 978 Add-On Code Require

This setting programs MS622 to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with "978". The following settings can be programmed:

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

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

Require Add-On Code

Do Not Require Add-On Code *

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3.4.13 EAN-13 Beginning with 979 Add-On Code Require

This setting programs MS622 to require an add-on code (2-digit or 5-digit) on EAN-13 barcodes that begin with "979". The following settings can be programmed:

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

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

Require Add-On Code

Do Not Require Add-On Code *

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3.5 UPC-E

3.5.1 Restore Factory Default

Restore the Factory Defaults of UPC-E

3.5.2 Enable/Disable UPC-E

Enable UPC-E *

Disable UPC-E

Note: If MS622 fails to identify UPC-E barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-E** barcode.

3.5.3 Transmit Check Character

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

Transmit UPC-E Check Character *

Do Not Transmit UPC-E Check Character

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3.5.4 2-Digit Add-On Code

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

Disable 2-Digit Add-On Code *

Enable 2-Digit Add-On Code

Note:

Disable 2-Digit Add-On Code: MS622 decodes UPC-E and ignores the add-on code when presented with a UPC-E plus 2-digit add-on barcode. It can also decode UPC-E barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MS622 decodes a mix of UPC-E barcodes with and without 2-digit add-on codes.

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3.5.5 5-Digit Add-On Code

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

Disable 5-Digit Add-On Code *

Enable 5-Digit Add-On Code

Note:

Disable 5-Digit Add-On Code: MS622 decodes UPC-E and ignores the add-on code when presented with a UPC-E plus 5-digit add-on barcode. It can also decode UPC-E barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MS622 decodes a mix of UPC-E barcodes with and without 5-digit add-on codes.

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3.5.6 Add-On Code Required

When **UPC-E Add-On Code Required** is selected, MS622 will only read **UPC-E** barcodes that contain add-on codes.

UPC-E Add-On Code Not Required *

UPC-E Add-On Code Required

3.5.7 Transmit Preamble Character

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

System Character *

No Preamble

System Character & Country Code

**** Exit Setup**

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3.6 UPC-A

3.6.1 Restore Factory Defaults

Restore the Factory Defaults of UPC-A

3.6.2 Enable/Disable UPC-A

Enable UPC-A *

Disable UPC-A

Note: If MS622 fails to identify UPC-A barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable UPC-A barcode**.

3.6.3 Transmit Check Character

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

Transmit UPC-A Check Character *

Do Not Transmit UPC-A Check Character

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3.6.4 2-Digit Add-On Code

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

Disable 2-Digit Add-On Code *

Enable 2-Digit Add-On Code

Note:

Disable 2-Digit Add-On Code: MS622 decodes UPC-A and ignores the add-on code when presented with a UPC-A plus 2-digit add-on barcode. It can also decode UPC-A barcodes without 2-digit add-on codes.

Enable 2-Digit Add-On Code: MS622 decodes a mix of UPC-A barcodes with and without 2-digit add-on codes.

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3.6.5 5-Digit Add-On Code

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

Disable 5-Digit Add-On Code *

Enable 5-Digit Add-On Code

Note:

Disable 5-Digit Add-On Code: MS622 decodes UPC-A and ignores the add-on code when presented with a UPC-A plus 5-digit add-on barcode. It can also decode UPC-A barcodes without 5-digit add-on codes.

Enable 5-Digit Add-On Code: MS622 decodes a mix of UPC-A barcodes with and without 5-digit add-on codes.

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3.6.6 Add-On Code Required

When **UPC-A Add-On Code Required** is selected, MS622 will only read **UPC-A** barcodes that contain add-on codes.

UPC-A Add-On Code Not Required *

UPC-A Add-On Code Required

3.6.7 Transmit Preamble Character

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

No Preamble *

System Character

System Character & Country Code

**** Exit Setup**

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3.7 Interleaved 2 of 5

3.7.1 Restore Factory Defaults

Restore the Factory Defaults of Interleaved 2 of 5

3.7.2 Enable/Disable Interleaved 2 of 5

Enable Interleaved 2 of 5 *

Disable Interleaved 2 of 5

Note: If MS622 fails to identify Interleaved 2 of 5 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Interleaved 2 of 5** barcode.

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3.7.3 Set Length Range for Interleaved 2 of 5

MS622 can be configured to only decode Interleaved 2 of 5 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 6)

Set the Maximum Length (Default: 80)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Interleaved 2 of 5 maximum length, barcodes with either the minimum or maximum length. If minimum length is same as only Interleaved 2 of 5 barcodes with that length are to be decoded.

Note: Set MS622 to decode Interleaved 2 of 5 barcodes containing between 8 and 12 characters:

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

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3.7.4 Check Character Verification

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

Disable: MS622 transmits Interleaved 2 of 5 barcodes as is.

Do Not Transmit Check Character After Verification: MS622 checks the integrity of all Interleaved 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MS622 checks the integrity of all Interleaved 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

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

Disable *

Do Not Transmit Check Character After Verification

Transmit Check Character After Verification

**** Exit Setup**

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

3.7.5 Febraban

Disable/Enable Febraban

Disable Febraban *

Enable Febraban, Do Not Expand

Enable Febraban, Expand

3.7.6 Transmit Delay per Character

Transmit Delay per Character applies to both Expanded and Unexpanded Febraban. This feature is available only when USB HID Keyboard is enabled.

Disable Transmit Delay per Character *

Enable Transmit Delay per Character

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

0ms

5ms

10ms

15ms

20ms

25ms

30ms

35ms

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40ms

45ms

50ms

55ms

60ms

65ms

70ms *

75ms

** Exit Setup

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3.7.7 Transmit Delay per 12 Characters

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

Disable Transmit Delay per 12 Characters *

Enable Transmit Delay per 12 Characters

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

0ms

300ms

400ms

500ms *

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600ms

700ms

800ms

900ms

** Exit Setup

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3.8 ITF-14

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

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

3.8.1 Restore Factory Defaults

Restore the Factory Defaults of ITF-14

3.8.2 Enable/Disable ITF-14

Disable ITF-14 *

Enable ITF-14 But Do Not Transmit Check Character

Enable ITF-14 and Transmit Check Character

Note: An example of the ITF-14 priority principle: when ITF-14 is enabled and Interleaved 2 of 5 is disabled, MS622 only decodes Interleaved 2 of 5 barcodes with a length of 14 characters and the last character as the check character.

**** Exit Setup**

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3.9 ITF-6

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

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

3.9.1 Restore Factory Defaults

Restore the Factory Defaults of ITF-6

3.9.2 Enable/Disable ITF-6

Disable ITF-6 *

Enable ITF-6 But Do Not Transmit Check Character

Enable ITF-6 and Transmit Check Character

Note: An example of the ITF-6 priority principle: when ITF-6 is enabled and Interleaved 2 of 5 is disabled, MS622 only decodes Interleaved 2 of 5 barcodes with a length of 6 characters and the last character as the check character.

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3.10 Matrix 2 of 5

3.10.1 Restore Factory Defaults

Restore the Factory Defaults of Matrix 2 of 5

3.10.2 Enable/Disable Matrix 2 of 5

Enable Matrix 2 of 5 *

Disable Matrix 2 of 5

Note: If MS622 fails to identify Matrix 2 of 5 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Matrix 2 of 5** barcode.

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3.10.3 Set Length Range for Matrix 2 of 5

MS622 can be configured to only decode Matrix 2 of 5 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 4)

Set the Maximum Length (Default: 80)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Matrix 2 of 5 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Matrix 2 of 5 barcodes with that length are to be decoded.

Note:

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

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3.10.4 Check Character Verification

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

Disable: MS622 transmits Matrix 2 of 5 barcodes as is.

Do Not Transmit Check Character After Verification:
MS622 checks the integrity of all Matrix 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification:
MS622 checks the integrity of all Matrix 2 of 5 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

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

Disable *

Do Not Transmit Check Character After Verification

Transmit Check Character After Verification

**** Exit Setup**

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

3.11 Code 39

3.11.1 Restore Factory Defaults

Restore the Factory Defaults of Code 39

3.11.2 Enable/Disable Code 39

Enable Code 39 *

Disable Code 39

Note: If MS622 fails to identify Code 39 barcodes, you may first try this solution by scanning the Enter Setup barcode and then **Enable Code 39** barcode.

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3.11.3 Set Length Range for Code 39

MS622 can be configured to only decode Code 39 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Code 39 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 39 barcodes with that length are to be decoded.

Note: Set MS622 to decode Code 39 barcodes containing between 8 and 12 characters:

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

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3.11.4 Check Character Verification

A check character is optional for Code 39 and can be added as the last character. It is a calculated value used to verify the integrity of the data.

Disable: MS622 transmits Code 39 barcodes as is.

Do Not Transmit Check Character After Verification: MS622 checks the integrity of all Code 39 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MS622 checks the integrity of all Code 39 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

Disable *

Do Not Transmit Check Character After Verification

Transmit Check Character After Verification

Note:

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

**** Exit Setup**

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3.11.5 Transmit Start/Stop Character

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

Transmit Start/Stop Character

Do Not Transmit Start/Stop Character *

3.11.6 Enable/Disable Code 39 Full ASCII

MS622 can be configured to identify all ASCII characters by scanning the appropriate barcode below.

Enable Code 39 Full ASCII

Disable Code 39 Full ASCII *

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3.11.7 Enable/Disable Code 32 (Italian Pharma Code)

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

Enable Code 32

Disable Code 32 *

3.12 Code 32 Prefix

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

Enable Code 32 Prefix

Disable Code 32 Prefix *

**** Exit Setup**

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3.12.1 Transmit Code 32 Start/Stop Character

Code 32 must be enabled for this parameter to function.

Transmit Code 32 Start/Stop Character

Do Not Transmit Code 32 Start/Stop Character *

3.12.2 Transmit Code 32 Check Character

Code 32 must be enabled for this parameter to function.

Transmit Code 32 Check Character

Do Not Transmit Code 32 Check Character *

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3.13 Codabar

3.13.1 Restore Factory Defaults

Restore the Factory Defaults of Codabar

3.13.2 Enable/Disable Codabar

Enable Codabar *

Disable Codabar

Note: If MS622 fails to identify Codabar barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Codabar** barcode.

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3.13.3 Set Length Range for Codabar

MS622 can be configured to only decode Codabar barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 2)

Set the Maximum Length (Default: 60)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Codabar barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Codabar barcodes with that length are to be decoded.

Note:

Set MS622 to decode Codabar barcodes containing between 8 and 12 characters:

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

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3.13.4 Check Character Verification

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

Disable: MS622 transmits Codabar barcodes as is.

Do Not Transmit Check Character After Verification:
MS622 checks the integrity of all Codabar barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification:
MS622 checks the integrity of all Codabar barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

Disable *

Do Not Transmit Check Character After Verification *

Transmit Check Character After Verification

**** Exit Setup**

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

3.13.5 Start/Stop Character

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

Do Not Transmit Start/Stop Character *

Transmit Start/Stop Character

ABCD/ABCD as the Start/Stop Character *

ABCD/TN*E as the Start/Stop Character

abcd/abcd as the Start/Stop Character

abcd/tn*e as the Start/Stop Character

**** Exit Setup**

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3.14 Code 93

3.14.1 Restore Factory Defaults

Restore the Factory Defaults of Code 93

3.14.2 Enable/Disable Code 93

Enable Code 93

Disable Code 93 *

Note:

If MS622 fails to identify Code 93 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 93** barcode.

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3.14.3 Set Length Range for Code 93

MS622 can be configured to only decode Code 93 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Code 93 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 93 barcodes with that length are to be decoded.

Note: Set MS622 to decode Code 93 barcodes containing between 8 and 12 characters:

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

**** Exit Setup**

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3.14.4 Check Character Verification

Check characters are optional for Code 93 and can be added as the last two characters, which are calculated values used to verify the integrity of the data.

Disable: MS622 transmits Code 93 barcodes as is.

Do Not Transmit Check Character After Verification: MS622 checks the integrity of all Code 93 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted except the last two digits, whereas those failing them will not be transmitted.

Transmit Check Character After Verification: MS622 checks the integrity of all Code 93 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted, whereas those failing them will not be transmitted.

Disable

Do Not Transmit Check Character After Verification *

Transmit Check Character After Verification

**** Exit Setup**

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

3.15 GS1-128 (UCC/EAN-128)

3.15.1 Restore Factory Defaults

Restore the Factory Defaults of GS1-128

3.15.2 Enable/Disable GS1-128

Enable GS1-128 *

Disable GS1-128

Note: If MS622 fails to identify GS1-128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable GS1-128** barcode.

**** Exit Setup**

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3.15.3 Set Length Range for GS1-128

MS622 can be configured to only decode GS1-128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes GS1-128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only GS1-128 barcodes with that length are to be decoded.

Note:

Set MS622 to decode GS1-128 barcodes containing between 8 and 12 characters:

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

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3.16 GS1 Databar (RSS)

3.16.1 Restore Factory Defaults

Restore the Factory Defaults of GS1 Databar

3.16.2 Enable/Disable GS1 Databar

Enable GS1 Databar *

Disable GS1 Databar

Note: If MS622 fails to identify GS1 Databar barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable GS1 Databar** barcode.

3.16.3 Transmit Application Identifier "01"

Transmit Application Identifier "01" *

Do Not Transmit Application Identifier "01"

**** Exit Setup**

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3.17 Code 11

3.17.1 Restore Factory Defaults

Restore the Factory Defaults of Code 11

3.17.2 Enable/Disable Code 11

Enable Code 11

Disable Code 11 *

Note: If MS622 fails to identify Code 11 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Code 11** barcode.

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3.17.3 Set Length Range for Code 11

MS622 can be configured to only decode Code 11 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 4)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Code 11 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Code 11 barcodes with that length are to be decoded.

Note: Set MS622 to decode Code 11 barcodes containing between 8 and 12 characters:

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

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3.17.4 Check Character Verification

Check characters are optional for Code 11 and can be added as the last one or two characters, which are calculated values used to verify the integrity of the data.
If the **Disable** option is enabled, MS622 transmits Code 11 barcodes as is.

Disable

One Check Character, MOD11 *

Two Check Characters, MOD11/MOD11

Two Check Characters, MOD11/MOD9

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

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

**** Exit Setup**

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3.17.5 Transmit Check Character

Do Not Transmit Code 11 Check Character

Transmit Code 11 Check Character *

Note:

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

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3.18 ISBN

3.18.1 Restore Factory Defaults

Restore the Factory Defaults of ISBN

3.18.2 Enable/Disable ISBN

Enable ISBN

Disable ISBN *

Note: If MS622 fails to identify ISBN barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable ISBN** barcode.

3.18.3 Set ISBN Format

ISBN-10 *

ISBN-13

**** Exit Setup**

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3.19 ISSN

3.19.1 Restore Factory Defaults

Restore the Factory Defaults of ISSN

3.19.2 Enable/Disable ISSN

Enable ISSN

Disable ISSN *

Note: If MS622 fails to identify ISSN barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable ISSN** barcode.

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3.20 Industrial 25

3.20.1 Restore Factory Defaults

Restore the Factory Defaults of Industrial 25

3.20.2 Enable/Disable Industrial 25

Enable Industrial 25

Disable Industrial 25 *

Note: If MS622 fails to identify Industrial 25 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Industrial 25** barcode.

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3.20.3 Set Length Range for Industrial 25

MS622 can be configured to only decode Industrial 25 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 6)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Industrial 25 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Industrial 25 barcodes with that length are to be decoded.

Note: Set MS622 to decode Industrial 25 barcodes containing between 8 and 12 characters:

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

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3.20.4 Check Character Verification

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

Disable: MS622 transmits Industrial 25 barcodes as is.

Do Not Transmit Check Character After Verification: MS622 checks the integrity of all Industrial 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MS622 checks the integrity of all Industrial 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

Disable *

Do Not Transmit Check Character After Verification

Transmit Check Character After Verification

**** Exit Setup**

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

3.21 Standard 25

3.21.1 Restore Factory Defaults

Restore the Factory Defaults of Standard 25

3.21.2 Enable/Disable Standard 25

Enable Standard 25

Disable Standard 25 *

Note: If MS622 fails to identify Standard 25 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Standard 25** barcode.

**** Exit Setup**

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3.21.3 Set Length Range for Standard 25

MS622 can be configured to only decode Standard 25 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 6)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Standard 25 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Standard 25 barcodes with that length are to be decoded.

Note: Set MS622 to decode Standard 25 barcodes containing between 8 and 12 characters:

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

**** Exit Setup**

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3.21.4 Check Character Verification

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

Disable: MS622 transmits Standard 25 barcodes as is.

Do Not Transmit Check Character After Verification: MS622 checks the integrity of all Standard 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted except the last digit, whereas those failing it will not be transmitted.

Transmit Check Character After Verification: MS622 checks the integrity of all Standard 25 barcodes to verify that the data complies with the check character algorithm. Barcodes passing the check will be transmitted, whereas those failing it will not be transmitted.

Disable *

Do Not Transmit Check Character After Verification

Transmit Check Character After Verification

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

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3.22 Plessey

3.22.1 Restore Factory Defaults

Restore the Factory Defaults of Plessey

3.22.2 Enable/Disable Plessey

Enable Plessey

Disable Plessey *

Note: If MS622 fails to identify Plessey barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Plessey** barcode.

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3.22.3 Set Length Range for Plessey

MS622 can be configured to only decode Plessey barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 4)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes Plessey barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only Plessey barcodes with that length are to be decoded.

Note: Set MS622 to decode Plessey barcodes containing between 8 and 12 characters:

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

**** Exit Setup**

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3.22.4 Check Character Verification

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

Disable: MS622 transmits Plessey barcodes as is.

Do Not Transmit Check Character After Verification: MS622 checks the integrity of all Plessey barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted except the last two digits, whereas those failing them will not be transmitted.

Transmit Check Character After Verification: MS622 checks the integrity of all Plessey barcodes to verify that the data complies with the check character algorithm. Barcodes passing the checks will be transmitted, whereas those failing them will not be transmitted.

Disable *

Do Not Transmit Check Character After Verification

Transmit Check Character After Verification

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

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3.23 MSI-Plessey

3.23.1 Restore Factory Defaults

Restore the Factory Defaults of MSI-Plessey

3.23.2 Enable/Disable MSI-Plessey

Enable MSI-Plessey

Disable MSI-Plessey *

Note: If MS622 fails to identify MSI-Plessey barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable MSI-Plessey** barcode.

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3.23.3 Set Length Range for MSI-Plessey

MS622 can be configured to only decode MSI-Plessey barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 4)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes MSI-Plessey barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only MSI-Plessey barcodes with that length are to be decoded.

Note: Set MS622 to decode MSI-Plessey barcodes containing between 8 and 12 characters:

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

**** Exit Setup**

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3.23.4 Check Character Verification

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

If the **Disable** option is enabled, MS622 transmits MSI-Plessey barcodes as is.

Disable

One Check Character, MOD10 *

Two Check Characters, MOD10/MOD10

Two Check Characters, MOD10/MOD11

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3.23.5 Transmit Check Character

Transmit MSI-Plessey Check Character

Do Not Transmit MSI-Plessey Check Character *

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

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3.24 AIM 128

3.24.1 Restore Factory Defaults

Restore the Factory Defaults of AIM 128

3.24.2 Enable/Disable AIM 128

Enable AIM 128

Disable AIM 128 *

Note: If MS622 fails to identify AIM 128 barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable AIM 128** barcode.

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3.24.3 Set Length Range for AIM 128

MS622 can be configured to only decode AIM 128 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 48)

Note: If minimum length is set to be greater than maximum length, MS622 only decodes AIM 128 barcodes with either the minimum or maximum length. If minimum length is same as maximum length, only AIM 128 barcodes with that length are to be decoded.

Note: Set MS622 to decode AIM 128 barcodes containing between 8 and 12 characters:

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

**** Exit Setup**

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3.25 PDF417

3.25.1 Restore Factory Default

Restore the Factory Defaults of PDF417

3.25.2 Enable/Disable PDF417

Enable PDF417 *

Disable PDF417

Note: If MS622 fails to identify PDF417 barcodes, you may first try this solution by scanning the Enter Setup barcode and then **Enable PDF417** barcode.

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3.25.3 Set Length Range for PDF417

MS622 can be configured to only decode PDF417 barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 2710)

Note: Minimum length is not allowed to be greater than maximum length. If you only want to read PDF417 barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Note: Set MS622 to decode PDF417 barcodes containing between 8 and 12 characters:

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

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3.25.4 PDF417 Twin Code

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

There are 3 options for reading PDF417 twin codes:

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

Single PDF417 Only *

Twin PDF417 Only

Both Single & Twin

**** Exit Setup**

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3.25.5 Character Encoding

Default Character Encoding *

UTF-8

3.25.6 PDF417 ECI Output

Disable PDF417 ECI Output

Enable PDF417 ECI Output *

**** Exit Setup**

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3.26 QR Code

3.26.1 Restore Factory Default

Restore the Factory Defaults of QR Code

3.26.2 Enable/Disable QR Code

Enable QR Code *

Disable QR Code

Note: If MS622 fails to identify QR Code barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable QR Code** barcode.

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3.26.3 Set Length Range for QR Code

MS622 can be configured to only decode QR Code barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 7089)

Note: Minimum length is not allowed to be greater than maximum length. If you only want to read QR Code barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Note: Set MS622 to decode QR Code barcodes containing between 8 and 12 characters:

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

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3.27 QR Twin Code

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

There are 3 options for reading QR twin codes:

- **Single QR Only:** Read either QR code.
- **Twin QR Only:** Read both QR codes. Transmission sequence: left (upper) QR code followed by right (lower) QR code.
- **Both Single & Twin:** Read both QR codes. If successful, transmit as twin QR only. Otherwise, try single QR only.

Single QR Only *

Twin QR Only

Both Single & Twin

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3.27.1 Character Encoding

Default Character Encoding

UTF-8

BIG 5 and UTF-8 *

3.27.2 QR ECI Output

Disable QR ECI Output

Enable QR ECI Output *

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3.28 Micro QR Code

3.28.1 Restore Factory Default

Restore the Factory Defaults of Micro QR Code

3.28.2 Enable/Disable Micro QR Code

Enable Micro QR Code *

Disable Micro QR Code

Note: If MS622 fails to identify Micro QR barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Micro QR** barcode.

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3.28.3 Set Length Range for Micro QR Code

MS622 can be configured to only decode Micro QR barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 35)

Note: Minimum length is not allowed to be greater than maximum length. If you only want to read Micro QR barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Note: Set MS622 to decode Micro QR Code barcodes containing between 8 and 12 characters:

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

**** Exit Setup**

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3.29 Aztec Code

3.29.1 Restore Factory Default

Restore the Factory Defaults of Aztec Code

3.29.2 Enable/Disable Aztec Code

Enable Aztec Code

Disable Aztec Code *

Note: If MS622 fails to identify Aztec Code barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Aztec Code** barcode.

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3.29.3 Set Length Range for Aztec Code

MS622 can be configured to only decode Aztec barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 6144)

Note: Minimum length is not allowed to be greater than maximum length. If you only want to read Aztec barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Note: Set MS622 to decode Aztec barcodes containing between 8 and 12 characters:

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

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3.29.4 Character Encoding

Default Character Encoding *

UTF-8

3.29.5 Aztec ECI Output

Disable Aztec ECI Output

Enable Aztec ECI Output *

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3.30 Data Matrix

3.30.1 Restore Factory Default

Restore the Factory Defaults of Data Matrix

3.30.2 Enable/Disable Data Matrix

Enable Data Matrix *

Disable Data Matrix

Note: If MS622 fails to identify Data Matrix barcodes, you may first try this solution by scanning the **Enter Setup** barcode and then **Enable Data Matrix** barcode.

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3.30.3 Set Length Range for Data Matrix

MS622 can be configured to only decode Data Matrix barcodes with lengths that fall between (inclusive) the minimum and maximum lengths. To accomplish it, you need to set the minimum and maximum lengths.

Set the Minimum Length (Default: 1)

Set the Maximum Length (Default: 3116)

Note: Minimum length is not allowed to be greater than maximum length. If you only want to read Data Matrix barcodes with a specific length, set both minimum and maximum lengths to be that desired length.

Note: Set MS622 to decode Data Matrix barcodes containing between 8 and 12 characters:

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

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3.31 Data Matrix Twin Code

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

There are 3 options for reading Data Matrix twin codes:

- **Single Data Matrix Only:** Read either Data Matrix code.
- **Twin Data Matrix Only:** Read both Data Matrix codes. Transmission sequence: left (upper) Data Matrix code followed by right (lower) Data Matrix code.
- **Both Single & Twin:** Read both Data Matrix codes. If successful, transmit as twin Data Matrix only. Otherwise, try single Data Matrix only.

Single Data Matrix Only *

Twin Data Matrix Only

Both Single & Twin

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3.31.1 Rectangular Barcode

Data Matrix has two formats:

Square barcodes having the same amount of modules in length and width: 10*10, 12*12.... 144*144.

Rectangular barcodes having different amounts of models in length and width: 6*16, 6*14...14*22.

Enable Rectangular Barcode *

Disable Rectangular Barcode

3.31.2 Character Encoding

Default Character Encoding *

UTF-8

3.31.3 Data Matrix ECI Output

Disable Data Matrix ECI Output

Enable Data Matrix ECI Output *

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Chapter 4 – Data Formatter

Introduction

You may use the Data Formatter to modify MS622 output. For example, you can use the Data Formatter to insert characters at certain points in barcode data or to suppress/ replace/ send certain characters in barcode data as it is scanned.
Normally, when you scan a barcode, it gets outputted automatically; however, when you create a format, you must use a "send" command (see the "Send Commands" section in this chapter) within the format programming to output data.
Multiple data formats can be programmed into MS622. The maximum size of all data formats created is 2048 characters. By default, the data formatter is disabled. Enable it when required. If you have changed data format settings, and wish to clear all formats and return to the factory defaults, scan the **Default Data Format** code below.

Default Data Format

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4.1 Add a Data Format

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

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

4.1.1 Programming with Barcodes

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

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

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

Add Data Format

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

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

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Step 4: Select formatter command type.

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

Step 5: Set interface type

Scan **999** for any interface type.

Step 6: Set Symbology ID Number

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

Step 7: Set barcode data length

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

Step 8: Enter formatter command

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

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

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

1. Scan the **Enter Setup** barcode	Enter the Setup mode
2. Scan the **Add Data Format** barcode	Add a data format
3. Scan the **0** barcode	Select Format_0 as the label
4. Scan the **6** barcode	Select formatter command type 6
5. Scan the **9** barcode three times	All interface types applicable
6. Scan the barcodes **002**	Only Code 128 applicable
7. Scan the barcodes **0010**	Only a length of 10 characters Applicable
8. Scan the alphanumeric barcodes **F141**	Send all characters followed by "A" (HEX: 41)
9. Scan the **Save** barcode	Save the data format

To streamline the programming process, you may as well generate a batch barcode by inputting the command (e.g., **@DFMADD069990020010F141;**) used to create a data format. See the "Use Batch Barcode" section in Chapter 9 to learn how to put a batch barcode into use.

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

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4.1.2 Enable/Disable Data Formatter

When Data Formatter is disabled, the data format you have enabled becomes invalid.

Disable Data Formatter *

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

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

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

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

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

Enable Data Formatter, Required, Keep Prefix/Suffix

Enable Data Formatter, Required, Drop Prefix/Suffix

Enable Data Formatter, Not Required, Keep Prefix/Suffix

Enable Data Formatter, Not Required, Drop Prefix/Suffix

**** Exit Setup**

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4.2 Non-Match Error Beep

If Non-Match Error Beep is turned ON, MS622 generates an error beep when a barcode is encountered that does not match your required data format.

Non-Match Error Beep Off

Non-Match Error Beep On *

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4.3 Data Format Selection

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

Format_0 *

Format_1

Format_2

Format_3

**** Exit Setup**

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4.3.1 Change Data Format for a Single Scan

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

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

Note: This setting will be lost by removing power from MS622, or turning off/ rebooting the device.

Single Scan – Format_0

Single Scan – Format_1

Single Scan – Format_2

Single Scan – Format_3

**** Exit Setup**

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4.3.2 Clear Data Format

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

Delete one data format: Scan the **Clear One** barcode, a numeric barcode (0-3) and the **Save** barcode. For example, to delete Format_2, you should scan the **Clear One** barcode, the **2** barcode and the **Save** barcode.

Delete all data formats: Scan the **Clear All** barcode.

Clear All

Clear One

4.3.3 Query Data Formats

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

Query Current Data Formats

Query Preset Data Formats

**** Exit Setup**

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Chapter 5 – Batch Programming

Introduction

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

Listed below are batch programming rules:

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

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

1. Input the commands:

@ILLSCN2;SCNMOD2;ORTSET2000;

2. Generate a batch barcode.

When setting up MS622 with the above configuration, scan the **Enable Batch Barcode** barcode and then the batch barcode generated.

Enable Batch Barcode

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5.1 Create a Batch Barcode

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

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

1. Input the following commands:

@ILLSCN2;SCNMOD2;ORTSET2000;

2. Generate a PDF417 batch barcode.

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5.2 Use Batch Barcode

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

Enter Setup

Enable Batch Barcode

Batch Barcode

Exit Setup

**** Exit Setup**

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Appendix A – Digit Barcodes

A.1 Numbers

0~9

0

1

2

3

4

5

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6

7

8

9

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A.2 Alphabets

A~F

A

B

C

D

E

F

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A.3 Save/Cancel Barcodes

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

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

- ✧ **Delete the Last Digit**: The last digit "3" will be removed.
- ✧ **Delete All Digits**: All digits "123" will be removed.
- ✧ **Cancel:** The maximum length configuration will be cancelled. And MS622 is still in the setup mode.

Save

Cancel

Delete the Last Digit

Delete All Digits

**** Exit Setup**

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Appendix B – Factory Defaults Table

Parameter	Factory Default	Remark
System Settings		
Barcode Programming	Disabled (Exit Setup)	
Programming Barcode Data	Do not transmit	
Internal Illumination	Normal	
Aiming	Normal	
Good Read LED	On	
Good Read LED Duration	Short (20ms)	
Power On Beep	On	
Good Read Beep	On	
Good Read Beep Duration	Medium (80ms)	
Good Read Beep Frequency	High (4200Hz)	
Good Read Beep Volume	Loud	
Scan Mode	Level Mode	
Decode Session Timeout	3,000ms.	1-3,600,000ms; 0: Infinite
Image Stabilization Timeout (Sense Mode)	500ms	0-3,000ms
Reread Timeout	Disabled	
	1500ms	0-3,600ms
Reread Timeout Reset	Off	
Image Decoding Timeout	500ms	1-3000ms
Good Read Delay	Disabled, 500ms	1-3,600,000ms
Sensitivity	Sensitivity 5	
Scanning Preference	Normal Mode	

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Read Barcode	On	
Decode Area	Whole Area Decoding	
Bad Read Message	Off	
	NG	1-7 characters
Auto Sleep	Disabled	
Time Period from Idle to Sleep	15s	
Default Interface	USB HID Keyboard	
USB Interface		
USB Country Keyboard	US keyboard	USB HID Keyboard
Beep on Unknown Character	Off	USB HID Keyboard
Emulate ALT+Keypad	Off	USB HID Keyboard
Code Page	Code Page 950 (Traditional Chinese, Big5)	USB HID Keyboard
Unicode Encoding	Off	USB HID Keyboard
Emulate Keypad with Leading Zero	On	USB HID Keyboard
Function Key Mapping	Disable	USB HID Keyboard
Inter-Keystroke Delay	Short Delay (20ms)	USB HID Keyboard
Caps Lock	Caps Lock OFF, non-Japanese Keyboard	USB HID Keyboard
Convert Case	No Case Conversion	USB HID Keyboard
Emulate Numeric Keypad 1	Off	USB HID Keyboard
Emulate Numeric Keypad 2	Off	USB HID Keyboard
Fast Mode	Off	USB HID Keyboard
Polling Rate	8ms	USB HID Keyboard
Symbologies		
Global Settings		
Surround GS1 AI's with Parentheses	Do Not Surround GS1 AI's with Parentheses	
Code 128		
Code 128	Enabled	
Maximum Length	48	

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Minimum Length	1	
EAN-8		
EAN-8	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	
EAN-13		
Disabled		
EAN-13	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	
EAN-13 Beginning with 290 Add-On Code	Do Not Require Add-On Code	
EAN-13 Beginning with 378/379 Add-On	Do Not Require Add-On Code	
EAN-13 Beginning with 414/419 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 434/439 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 977 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 978 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 979 Add-On Code Required	Do Not Require Add-On Code	
EAN-13 Beginning with 290 Add-On Code Required	Do Not Require Add-On Code	
UPC-E		
UPC-E	Enabled	
Check Character	Transmit	

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2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	
Transmit Preamble Character	System Character	
UPC-A		
UPC-A	Enabled	
Check Character	Transmit	
2-Digit Add-On Code	Disabled	
5-Digit Add-On Code	Disabled	
Add-On Code	Not Required	
Transmit Preamble Character	No Preamble	
Interleaved 2 of 5	Enabled	
Maximum Length	80	
Minimum Length	6	
Check Character Verification	Disabled	
Febraban		
Febraban	Disabled	
Transmit Delay per Character	Disabled 70ms	
Transmit Delay per 12 Characters	Disabled 500m	
ITF-14		
ITF-14	Disabled	
ITF-6		
ITF-6	Disabled	
Matrix 2 of 5		
Matrix 2 of 5	Enabled	
Maximum Length	80	
Minimum Length	4	No less than 4
Check Character Verification	Disabled	
Code 39		

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Code 39	Enabled	
Maximum Length	48	
Minimum Length	1	
Check Character Verification	Disabled	
Start/Stop Character	Do not transmit	
Code 39 Full ASCII	Disabled	
Code 32 Pharmaceutical (PARAF)	Disabled	
Code 32 Prefix	Disabled	
Code 32 Start/Stop Character	Do not transmit	
Code 32 Check Character	Do not transmit	
Codabar		
Maximum Length	60	
Minimum Length	2	
Check Character Verification	Disabled	
Start/Stop Character	Do not transmit	
	ABCD/ABCD	
Code 93		
Code 93	Disabled	
Maximum Length	48	
Minimum Length	1	
Check Character Verification	Do Not Transmit Character After	
GS1-128 (UCC/EAN-128)		
GS1-128	Enabled	
Maximum Length	48	
Minimum Length	1	
GS1 Databar		
GS1 Databar	Enabled	
Application Identifier "01"	Transmit	
Code 11		

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Code 11	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	One Check Character, MOD11	
Check Character	Transmit	
ISBN		
ISBN	Disabled	
Set ISBN Format	ISBN-10	
ISSN		
ISSN	Disabled	
Industrial 25		
Industrial 25	Disabled	
Maximum Length	48	
Minimum Length	6	No less than 4
Check Character Verification	Disabled	
Standard 25		
Standard 25	Disabled	
Maximum Length	48	
Minimum Length	6	No less than 4
Check Character Verification	Disabled	
Plessey		
Plessey	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4
Check Character Verification	Disabled	
MSI-Plessey		
MSI-Plessey	Disabled	
Maximum Length	48	
Minimum Length	4	No less than 4

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Check Character Verification	One Check Character, MOD10	
Check Character	Do Not Transmit	
AIM 128		
AIM 128	Disabled	
Maximum Length	48	
Minimum Length	1	
PDF417		
PDF417	Enabled	
Maximum Length	2710	
Minimum Length	1	
PDF417 Twin Cod	Single PDF417 Only	
Character Encoding	Big5 and UTF-8	
PDF417 ECI Output	Enabled	
QR Code		
QR Code	Enabled	
Maximum Length	7089	
Minimum Length	1	
QR Twin Code	Single QR Only	
QR Inverse	Decode Regular QR Barcodes Only	
Character Encoding	Big5 and UTF-8	
QR ECI Output	Enabled	
Micro QR Code		
Micro QR	Enabled	
Maximum Length	35	
Minimum Length	1	
Aztec		

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Aztec Code	Disabled	
Maximum Length	6144	
Minimum Length	1	
Character Encoding	Default Character Encoding	
Aztec ECI Output	Enabled	
Data Matrix		
Data Matrix	Enabled	
Maximum Length	3116	
Minimum Length	1	
Data Matrix Twin Code	Single Data Matrix Only	
Rectangular Barcode	Enabled	
Character Encoding	Default Character Encoding	
Data Matrix ECI Output	Enabled	
Data Formatter		
Data Formatter	Disabled	
Non-Match Error Beep	on	
Data Format Selection	Format_0	
Prefix & Suffix		
All Prefixes/Suffixes	Disabled	
Prefix Sequence	Code ID+ Custom +AIM ID	
Custom Prefix	Disabled	
AIM ID Prefix	Disabled	
Code ID Prefix	Disabled	
Custom Suffix	Disabled	
Data Packing	Disable Data Packing	
Terminating Character Suffix	Enabled 0x0D (Carriage Return)	

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Appendix C – AIM ID Table

Symbology	AIM ID	Possible AIM ID Modifiers (m)
Code128	]C0	
GS1-128 (UCC/EAN-128)	]C1	
EAN-8	]E4	
EAN-8 with Addon	]E3	
EAN-13	]E0	
EAN-13 with Addon	]E3	
UPC-E	]E0	
UPC-E with Addon	]E3	
UPC-A	]E0	
UPC-A with Addon	]E3	0, 1, 3
Interleaved 2 of 5,	]Im	1, 3
ITF-14	]Im	1, 3
ITF-6	]Im	
Matrix 2 of 5	]X0	0, 1, 3, 4, 5, 7
Code 39, Code 32	]Am	0, 2, 4
Codabar	]Fm	
Code 93	]G0	
AIM 128	]C2	
ISSN	]X0	
ISBN	]X0	
Industrial 25	]S0	
Standard 25	]R0	
Plessey	]P0	0, 1, 3
Code 11	]Hm	0, 1
MSI Plessey	]Mm	
GS1 Databar (RSS)	]e0	

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PDF417	]Lm	0-2
QR Code	]Qm	0-6
Aztec	]zm	0
Data Matrix	]dm	0-6
Micro QR	]Q1	

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

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Appendix D – Code ID Table

Symbology	Code ID
Code128	j
GS1-128 (UCC/EAN-128)	j
EAN-8	d
EAN-13	d
UPC-E	c
UPC-A	c
Interleaved 2 of 5,	e
ITF-14	e
ITF-6	e
Matrix 2 of 5	v
Code 39, Code 32	b
Codabar	a
Code 93	i
AIM 128	X
ISSN	g
ISBN	B
Industrial 25	I
Standard 25	f
Plessey	n
Code 11	H
MSI Plessey	m
GS1 Databar (RSS)	R
PDF417	r
QR Code	s
Aztec	z
Data Matrix	u
Micro QR	X

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Appendix E – Symbology ID Number

Symbology	ID Number
Code 128	002
GS1-128 (UCC/EAN-128)	003
EAN-8	004
EAN-13	005
UPC-E	006
UPC-A	007
Interleaved 2 of 5,	008
ITF-14	009
ITF-6	010
Matrix 2 of 5	011
Code 39, Code 32	013
Codabar	015
Code 93	017
AIM 128	020
ISSN	023
ISBN	024
Industrial 25	025
Standard 25	026
Plessey	027
Code11	028
MSI-Plessey	029
GS1 Databar (RSS)	031
PDF417	032
QR Code	033
Aztec	034
Data Matrix	035
Micro QR	043

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Appendix F – ASCII Table

Hex	Dec	Char
00	0	NUL (Null char.)
01	1	SOH (Start of Header)
02	2	STX (Start of Text)
03	3	ETX (End of Text)
04	4	EOT (End of Transmission)
05	5	ENQ (Enquiry)
06	6	ACK (Acknowledgment)
07	7	BEL (Bell)
08	8	BS (Backspace)
09	9	HT (Horizontal Tab)
0a	10	LF (Line Feed)
0b	11	VT (Vertical Tab)
0c	12	FF (Form Feed)
0d	13	CR (Carriage Return)
0e	14	SO (Shift Out)
0f	15	SI (Shift In)
10	16	DLE (Data Link Escape)
11	17	DC1 (XON) (Device Control 1)
12	18	DC2 (Device Control 2)
13	19	DC3 (XOFF) (Device Control 3)
14	20	DC4 (Device Control 4)
15	21	NAK (Negative Acknowledgment)
16	22	SYN (Synchronous Idle)
17	23	ETB (End of Trans. Block)
18	24	CAN (Cancel)
19	25	EM (End of Medium)
1a	26	SUB (Substitute)
1b	27	ESC (Escape)
1c	28	FS (File Separator)
1d	29	GS (Group Separator)

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

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3d	61	= (Equal Sign)

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

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5b	91	[(Left/ Opening Bracket)
5c	92	\ (Back Slash)
5d	93	] (Right/ Closing Bracket)

Hex	Dec	Char
5e	94	^ (Caret/ Circumflex)
5f	95	_ (Underscore)
60	96	' (Grave Accent)
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q
72	114	r
73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x

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79	121	y
7a	122	z
7b	123	{ (Left/ Opening Brace)
7c	124	| (Vertical Bar)
7d	125	} (Right/ Closing Brace)
7e	126	~ (Tilde)
7f	127	DEL (Delete)

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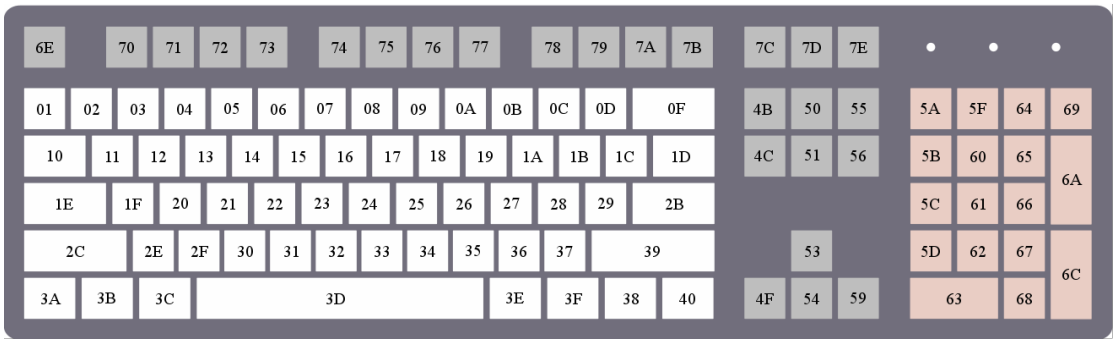
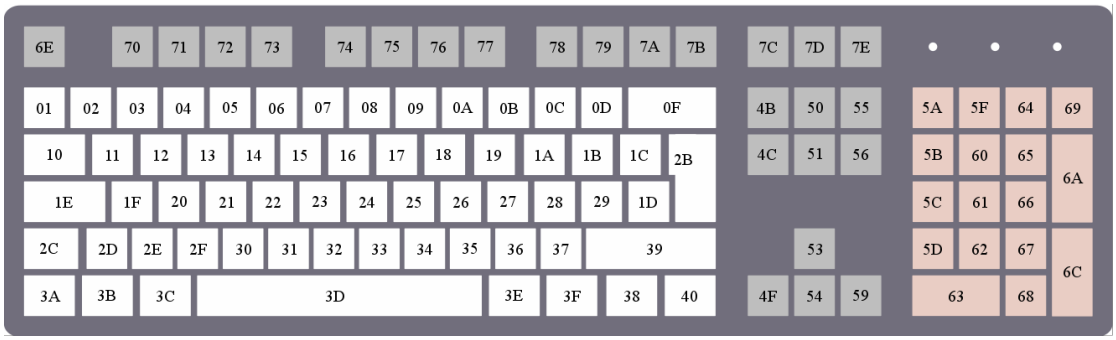
Appendix G – Unicode Key Maps

104 Key U.S. Style Keyboard



105 Key European Style Keyboard



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