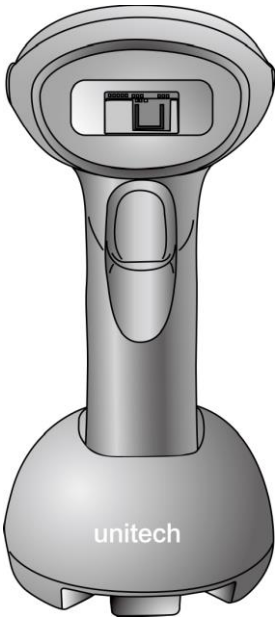
unitech
because we care

Wired 2D Ring Scanner

- MS840P (MS840-8UPBGN-QG) -

- MS840P (MS840-8UPBGO-LG) -





User's Manual

Version 1.0

unitech
because we care

Change Log

Date	Change Description	Version
20220117	first published version	1.0

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

CE

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.

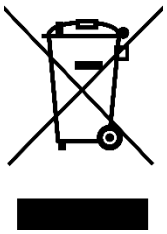
RoHS Statement

unitech Green Product

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	**Tel:**	+31-13-4609292
E-mail:	info@hq.ute.com	**E-mail:**	info@eu.ute.com
Address:	5F, No. 136, Lane 235, Baoqiao Road, Xindian District, New Taipei City 231, Taiwan (R.O.C.)	**Address:**	Kapitein Hatterasstraat 19, 5015 BB, Tilburg, the Netherlands
Website:	http://www.ute.com	**Website:**	http://eu.ute.com
China		**Japan**	
Tel:	+86-59-2310-9966	**Tel:**	+81-3-35232766
E-mail:	info@cn.ute.com	**E-mail:**	info@jp.ute.com
Address:	Room401C, 4F, RIHUA International Mansion, Xinfeng 3nd Road, Huoju Hi-tech District, Xiamen, Fujan , China	**Address:**	Kayabacho Nagaoka Building 8F.,1-5-19 Shinkawa, Chuo-Ku, Tokyo, 104-0033, Japan
Website:	http://cn.ute.com	**Website:**	http://jp.ute.com
Asia & Pacific / Middle East		**Latin America**	
Tel:	+886-2-27911556	**Tel:**	+52-55-5171-0528
E-mail:	info@apac.ute.com info@india.ute.com info@mideast.ute.com	**E-mail:**	info@latin.ute.com
Address:	4F., No. 236, ShinHu 2nd Rd., NeiHu Chiu, 114, Taipei,Taiwan	**Address:**	17171 Park Row, Suite 210 Houston, TX 77084USA (Rep.)
Website:	http://apac.ute.com / http://mideast.ute.com	**Website:**	http://latin.ute.com
North America		**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 MS840P gift box.
If something is missing or damaged, please contact your unitech representative.

The standard package contents:

- Cradle (PN#5500-900039G)
- Battery pack
- Power adapter
- Interface cable
- Dongle (USB) (PN#5500-900086G)

*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 MS840P is ideal for various solutions in warehousing, retail, and healthcare, where flexibility, durability, and reliability are essential. With an intuitive wireless design, the MS840P provides users with greater productivity without restrictions, while also supporting high comfort over long periods of use. Its durable functions and convenient wireless design makes the MS840P the ideal scanner for a variety of applications in warehousing, retail and healthcare field.

Features

- High-speed Mantis decoder
- Long life trigger design
- Plug and play
- Buffer mode for out-of-range reading
- Cradle is for charging and data transmission

F/W Version Report

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■ Scanner Detail



1	LED indicator	2	Scanner Grip
3	Laser Exit Window	4	Trigger
5	Scanner Contact Points for Charge	6	Power ON/OFF Switch

Radio Type Frequency and Maximum Power

Radio type / Description		Transmitter Frequency	Maximum Output Power
WLAN 2.4GHz	2.4G	2400-2483.5MHz	2dBm

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1.3 Specifications

Optical & Performance	
Sensor	Laser engine
Scan Rate	104 scans/Sec
Skew Angle	47°± 3° (typical), 35°± 3° (narrow)
Optical Resolution	4mil (0.1mm)
Printing Contrast Scale	20% Minimum
Depth of Field	(DOF PCS=80%) Decode Range | Near | Far Code 39, 4mil | 2.5cm | 13.9cm Code 39, 5mil | 3.18cm | 20.32cm Code 39, 7.5mil | 3.81cm | 33.02cm Code 39, 10mil | 3.81cm | 45.72cm Code 39, 13mil | 3.81cm | 60.96cm Code 39, 15mil | 3.81cm | 71.12cm Code 39, 20mil | 4.45cm | 83.82cm Code 39, 40mil | * | 91.44cm Code 39, 55mil | * | 114.3cm * dependent on width of barcode
Communication	
Host Interface supported	USB
Radio Frequency	Unlicensed 2.4GHz
Range	10M (line of sight)
Mechanical	
Dimension	H176*W74*L89mm

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Weight	206g (W/O cradle)
Symbologies	
1D Barcodes	Code 39, Full ASCII Code39, Interleave 2 of 5, Standard 2 of 5, China Postal, UPC, Delta Code, MSI, Plessy, Codabar, Code 11, EAN8/13, Code 93,Code 128, EAN128, Code32, Italian Pharmacy, Label Code,GS1 databarcode
Electrical	
Operation Voltage	DC 3V~5V
Current Consumption	Operation mode:<170mA; Standby mode:<30mmA
Battery Type	Lithium-ion
Battery Capacity	1600mAh charged via the cradle
Battery Charging time	Fully charged in 4.5 hours
Operating Time	Over 80 hours at condition of 1 scan/3 sec
Environmental	
ESD Protection	Functional after 8K contact and 12K Air
Mechanical Shock	1.8M onto concrete (scanner only)
Operating Temperature	0°C to 50°C
Storage Temperature	-30 to 70°C
Relative Humidity	5% ~ 90% (Non-condensing)
IP Rating	IP42
Regulatory Approvals	

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Regulatory Approvals	FCC, CE, BSMI

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1.4 Getting Started

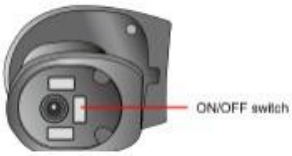
1.4.1 Connecting a USB Interface (Dongle Mode)

Dongle Mode (with SCM support)

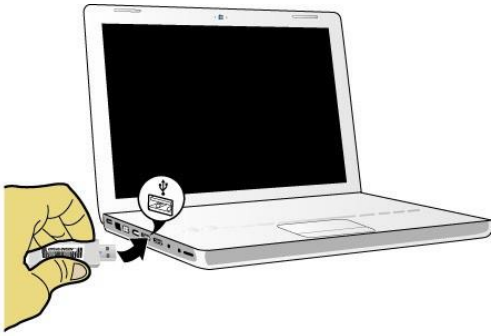
In order to establish a proper connection between your computer and a scanner through a dongle, we suggest that you follow these step-by-step instructions:

1. Turn on your computer or laptop PC.

2. Switch the MS840P on.



3. Insert a dongle into a USB port of the computer or laptop PC.



4. Scan the MAC address on the label by using the MS840P scanner.

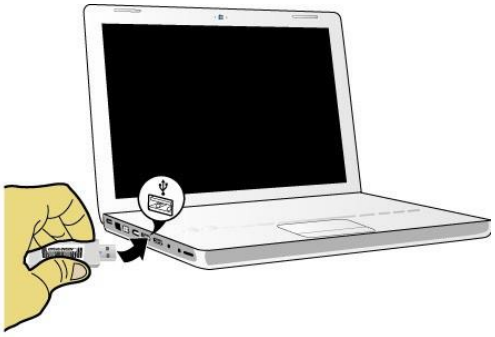


5. When being successfully connected to the dongle, the scanner will beep shortly once with a high tone.

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You can also connect the MS840P scanner optionally to another dongle by following the steps made below.

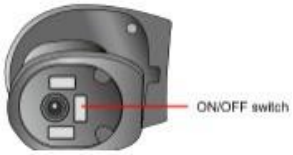
1. Insert another dongle into a USB port of the computer or laptop PC.



2. Scan the MAC address on the label by using the MS840P scanner.



3. Switch the MS840P off and power on again.



4. When being successfully connected to the dongle, the scanner will beep shortly one time with a high tone.

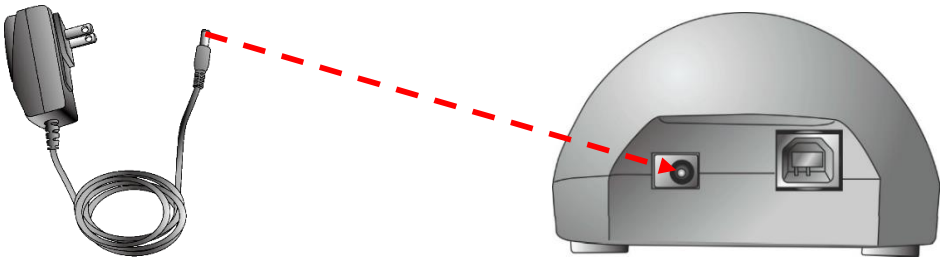
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1.4.2 Connecting a USB Interface (Cradle Mode)

Cradle Mode (without SCM support)

In order to establish a proper connection between your computer and a scanner through a cradle into which a dongle is inserted, we suggest that you follow these step-by-step instructions:

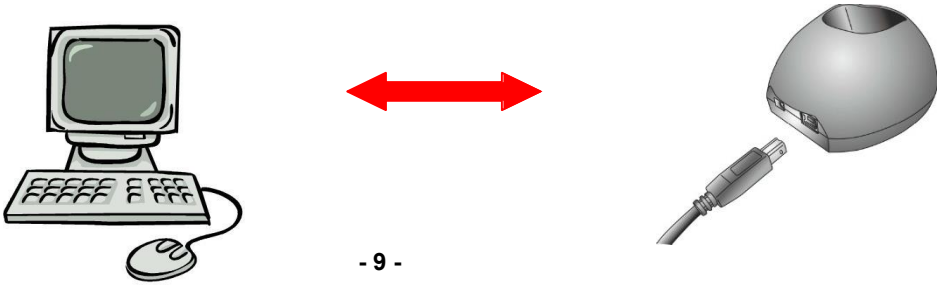
1. Turn on your computer or laptop PC.
2. Plug the adapter cable into the power socket on the cradle.



3. Plug the AC adapter cord into an electrical outlet.

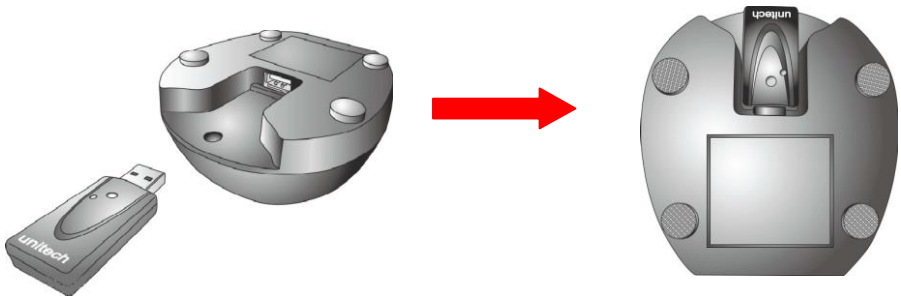


4. Connect the cradle to the USB port of your computer with a USB cable for transferring data to your computer by using the MS840P scanner.



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5. Insert a USB dongle into the USB port of the cradle.

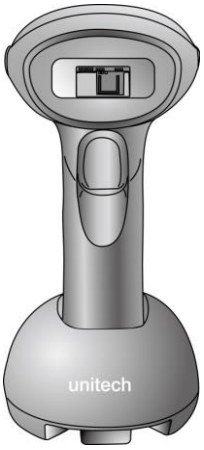


6. Scan the MAC address on the label by using the MS840P scanner.



7. When being successfully connected to the dongle, the scanner will beep shortly one time with a high tone.

When not in use, the scanner can also be set on the cradle for battery charging.



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1.5 LED Indicator / Beeper Sequence

1.5.1 LED Indicator

The LED lights on the MS840P scanner turn on to indicate the status of the battery, a successful read of a barcode, or the status of the wireless connection.
MS840P Lights: The status LED turns green, blue, or red to indicate the status of the battery and scanning.

LED Light State	Description
Blue LED blinks per 3 seconds	Trigger is pressed to power on the scanner.
Red LED flashes per 5 seconds	Low battery power
Red LED on	1. Barcode reading when the trigger is pressed 2. Battery charging when the scanner is set on the cradle
Green LED flashes	Successful barcode reading
Blue LED fast blinks and then turns off	Successful pairing/connection/reconnection (Cradle mode)
Blue LED turns off and Green LED blinks	Successful connection
Green LED turns off and Blue LED blinks	Disconnection caused by the radio connection lost
Blue LED slow blinks	Disconnect (out of range)
Green LED blinks	Entering barcode setting mode
Green LED on	1. Exiting barcode setting mode 2. Battery charging completion 3. Successful in-range reading in batch mode 4. Successful data transfer in batch mode 5. Successful in-range reading when the buffer mode is disabled
Green and blue LEDs blink	Pin code setting (waiting to enter a pin code)

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1.5.2 Beeper Sequence

The MS840P uses beeps to give you audio feedback when it performs some functions. For example, you hear a beep each time you scan a valid barcode.

Beep Sequence	Description
One long beep with a medium tone	Trigger is pressed to power on the scanner.
One short beep with a Hi tone	1. Successful barcode reading 2. Pin code setting (waiting to enter a pin code)
One beep with a Hi tone	Successful pairing/connection/reconnection (Cradle mode)
3 Hi-Low alarms	Disconnect (out of range) with 100ms delay from a high tone to a low tone or from a low tone to a high tone.
One long beep with a Hi tone	Successful connection
One short beep with a Hi-Low-Hi tone in setting mode	Entering barcode setting mode
One short beep with a Hi-Medium tone	Exiting barcode setting mode
2 short beeps with a Hi tone	Page calling
One short beep with a medium tone	Successful in-range reading in batch mode
One short beep with a medium tone	Buffer mode is disabled
One short beep with a Low-Hi tone	Data to buffer (out of range) in batch mode and inventory mode
One beep with a medium tone →one long beep with a medium tone	Successful data transfer in batch mode and inventory mode
4 short beeps with a Low-Hi tone	Out of range (buffer mode disabled / inventory mode / buffer mode when the memory buffer is full)

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Chapter 2 - Installation

2.1 Scanner Type

2.1.1 Wireless Communication Mode

SPP Setting

Scan the SPP setting barcode to do the SPP setting.

SPP



HID Setting

To make the scanner return to the HID mode, scan the HID barcode.

HID



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2.2 Scan Mode

2.2.1 Definition of Batch Mode

In range: Scanner will transmit each scanned data right after scanning the barcode.

Out range: Scanner is able to continue scanning and all scanned data are stored into the memory buffer.

Out range → in range:

Stored scanned data will be transmitted automatically right after the radio link is resumed.

(* You will hear 3 hi-low long beeps indicating the radio connection lost)

2.2.2 Definition of Inventory Mode

Scan below barcode to display F/W version.

In range/out range: All scanned barcode data will be stored in memory storage.

Transmit stored data: Scan the "Read Buffer" (change to "send data") to transmit all stored data.
(* When the radio link is resumed, the scanner will give one long & hi beep after data transmission is completed. When the data can't transmit (radio link is lost), the scanner will give three short low-hi beeps.)

Clear stored data: Scanner is preset to keep all stored data. You can clear all stored data by scan "Buffer Erasable" firstly and then scan "Erase Buffer" Change to "confirm Erase buffer".

2.2.3 Definition of Buffer Disable

In range: Scanner will transmit each scanned data right after scanning the barcode.

Out range: Scanner is unable to scan and you will hear 3 short low-hi beeps.

(* You will hear 3 hi-low long beeps indicating the radio connection lost.)

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2.3 Memory Buffer Setting

The collected data can be sent back to a host computer one by one via the WPAN connection as the scanner is set to the Batch Mode, or can be stored in the flash memory of the scanner being set to the Inventory Mode.

By default, the Batch Mode is enabled for use when the scanner is out of range. Upon reading a barcode successfully within range, the scanner responds with one short beep (high tone) and its LED indicator becomes solid green and goes off quickly. However, the host computer may not receive the data immediately if getting out of range. With the 2MB transmit buffer, the scanner can ignore the transmission status and keep on reading barcodes until the buffer is full.

When the Batch Mode is enabled and the scanner is out of range, the scanner will respond with two short beeps, high-low tone, upon reading a barcode successfully. When the memory buffer is full, the scanner will respond with one long beep (low tone) and its LED indicator will become solid red and go off quickly. You are advised to get back to range.

MS840P features 2 memory mode settings: Batch Mode and Inventory Mode
Note: The 2MB of memory buffer in the scanner can hold as approximately many as 1290555 scans based on EAN-13 barcodes. Data will be cleared out once the scanner is not powered.

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2.3.1 Batch Mode

Batch Mode is the default setting. In the Batch Mode, once you scan a barcode by using a scanner wirelessly connecting to the cradle (Cradle Mode) or a host PC (Cradle-less Mode) in a specified range, the scanner sends out the data. When the scanner is out of range of the cradle or the host and keeps trying to re-connect, the scanner will keep the data in its memory buffer until the buffer is full; when the scanner is again in range of the cradle or the host, the scanner will send out the data that it has in the memory buffer. When the buffer is full and the scanner is out of range, the scanner will respond with one long beep (low tone) and its LED indicator will become solid red and go off quickly. You are advised to get back to range.

Batch Mode

If you do not output the barcode data, the barcode data is always kept in the memory buffer. When being outputted, the 1D data is erased from the memory buffer. However, when being outputted, the 2D data is still kept in the memory buffer, and thus if you want to erase the 2D data from the memory buffer, scan the following barcodes in the order.

Enter Batch Buffer Erase → **Erase**

When the scanner is out of batch mode, the data will be temporarily stored in the RAM, which has 4K storage capacities; however, in the inventory mode, the data will be stored in the flash, which has 2MB storage capacities.

Note: If you tend to operate off line for long time, please set the scanner to the inventory mode. Otherwise, the data stored in the RAM will be lost when the scanner runs out of battery power.

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2.3.2 Inventory Mode

Inventory Mode is the mode in which the scanner keeps the scanned data in its memory buffer but not send out the data on the host automatically; you should scan Read Buffer barcode to order the scanner sent out the memorized data to the Host. To set the scanner to the Inventory Mode, scan the following barcodes in the order:

Inventory Mode



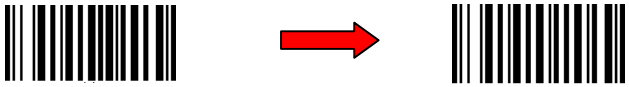
Bear in mind the fact that the scanner operating in the inventory mode does not send out the scanned data automatically but keeps the data in its memory buffer. If you want to make the scanner output the data it scanned before, please scan the Read Buffer barcode as shown below:

Read Buffer



Note: After scanning the Read Buffer barcode, the data is sent from the memory buffer.
If you do not output the barcode data, the barcode data is always kept in the memory buffer. When being outputted, the 1D data is erased from the memory buffer. However, when being outputted, the 2D data is still kept in the memory buffer, and thus if you want to erase the 2D data from the memory buffer, scan the following barcodes in the order.

Enter Inventory Buffer Erase **Erase**



If you are out of range of the cradle or the host PC when reading out the scanned data, the scanner will keep the data in its memory buffer until the buffer is full; only when the scanner is within the specified range of the cradle

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or the host, and you scan the Read Buffer barcode the data will be sent. When the buffer is disabled and the scanner is out of range, the scanner will respond with one long beep (low tone) and its LED indicator will become solid red and go off quickly. You are advised to get back to range.

2.3.3 Buffer Mode Disable

To disable the buffer mode, scan the barcode below.

Buffer Mode Disable



2.4 USB Host Parameters

USB Transmission Speed Parameters

Use the following parameters to speed USB data transmission:

- *USB Polling Interval* - When using more current USB systems, use this parameter to set a lower interval in order to increase data transmission speed.
- *Quick Keypad Emulation* - When configured as a USB HID keyboard device, use this parameter to increase the data transmission speed of a mix of both printable (7-bit) and full (8-bit) ASCII characters.

2.4.1 USB Polling Interval

This option speeds data transmission for all USB devices except CDC. Scan a barcode below to set the polling interval. The polling interval determines the rate at which data can be sent between the scanner and the host computer. A lower number indicates a faster data rate. The default value is 8 msec.

Changing the polling interval re-initializes the scanner.



CAUTION *Ensure your host machine can handle the selected data rate. Selecting a data rate that is too fast for the host can result in lost data.*

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8ms*



1ms



2ms



3ms



4ms



5ms



6ms



7ms



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9ms



2.4.2 Quick Keypad Emulation

This option applies only to the HID Keyboard Emulation Device and if Emulate Keypad below is enabled. This parameter enables a quicker method of keypad emulation where ASCII sequences are only sent for ASCII characters not found on the keyboard. The default value is Disable.
This option applies only to the HID keyboard emulation device when Emulate Keypad is enabled. This parameter enables a quicker method of emulation utilizing the numeric keypad. The default value is Disable.
NOTE: This feature is not compatible with Fast HID Keyboard mode.

Enable



Disable *



2.4.3 Emulate Keypad

Enable this to send all characters as ASCII sequences over the numeric keypad. For example ASCII A transmits as "ALT make" 0 6 5 "ALT Break".

Disable Keypad Emulation *



Enable Keypad Emulation



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2.4.4 Dongle HID Keyboard Numeric Keypad

Enable



Disable



2.4.5 Emulate Keypad with Leading Zero

Enable this 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" 0 0 6 5 "ALT BREAK".

Disable Keypad Emulation with Leading Zero *



Enable Keypad Emulation with Leading Zero



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2.4.6 USB Country Keyboard Types - Country Codes

Scan the barcode corresponding to the keyboard type. This setting applies only to the USB HID Keyboard Emulation device.

Note: When changing USB country keyboard types the decoder automatically resets and issues the standard startup beep sequences.

North American Standard USB Keyboard *



German Windows



French Windows



French Canadian Windows 95/98



French Canadian Windows 2000/XP



French Belgian Windows



Spanish Windows



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Italian Windows



Swedish Windows



UK English Windows



Japanese Windows (ASII)



Portuguese-Brazilian Windows



2.4.7 Dongle HID Keyboard Language

US English



UK English



Swiss



Swedish



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Spanish



Italian



German



French



Danish



Japanese (OADG109)



Partial ALT



ALT Mode



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2.4.8 Simulated Caps Lock

Enable this to invert upper and lower case characters on the barcode as if the Caps Lock state is enabled on the keyboard. This inversion occurs regardless of the keyboard's **Caps Lock** state. Note that this only applies to alpha characters.

Disable Simulated Caps Lock *



Enable Simulated Caps Lock



2.4.9 USB CAPS Lock Override

This option applies only to the HID Keyboard Emulation device. Enable this to preserve the case of the data regardless of the state of the Caps Lock key. This setting is always enabled for the Japanese, Windows (ASCII) keyboard type and cannot be disabled.

Override CAPS Lock Key
(Enable)



Do Not Override CAPS Lock Key
(Disable) *



Note: If both Simulated Caps Lock and Caps Lock Override are enabled, Caps Lock Override takes precedence.

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2.4.10 Dongle HID Keyboard Case

Auto Trace



To Lower



To Upper



2.4.11 Function Key Mapping

ASCII values under 32 are normally sent as a control-key sequences. Enable this parameter to send the keys in bold in place of the standard key mapping. Table entries that do not have a bold entry remain the same whether or not you enable this parameter.

Disable Function Key Mapping *



Enable Function Key Mapping



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2.4.12 ASCII Character Set for USB

USB Prefix/Suffix Values

Prefix/ Suffix Value	Full ASCII Code 39 Encode Char.acter	Keystroke
1000	%U	CTRL 2
1001	$A	CTRL A
1002	$B	CTRL B
1003	$C	CTRL C
1004	$D	CTRL D
1005	$E	CTRL E
1006	$F	CTRL F
1007	$G	CTRL G
1008	$H	CTRL H/**BACKSPACE**[1]
1009	$I	CTRL I/**HORIZONTAL TAB**[1]
1010	$J	CTRL J
1011	$K	CTRL K
1012	$L	CTRL L
1013	$M	CTRL M/**ENTER**[1]
1014	$N	CTRL N
1015	$O	CTRL O
1016	$P	CTRL P
1017	$Q	CTRL Q
1018	$R	CTRL R
1019	$S	CTRL S
1020	$T	CTRL T
1021	$U	CTRL U

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Prefix/ Suffix Value	Full ASCII Code 39 Encode Char.acter	Keystroke
1022	$V	CTRL V
1023	$W	CTRL W
1024	$X	CTRL X
1025	$Y	CTRL Y
1026	$Z	CTRL Z
1027	%A	CTRL [/**ESC**[1]
1028	%B	CTRL \
1029	%C	CTRL]
1030	%D	CTRL 6
1031	%E	CTRL -
1032	Space	Space
1033	/A	!
1034	/B	“
1035	/C	#
1036	/D	$
1037	/E	%
1038	/F	&
1039	/G	‘
1040	/H	(
1041	/I	)
1042	/J	*
1043	/K	+
1044	/L	,
1045	-	-
1046	.	.
1047	/O	/
1048	0	0

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1049	1	1
1050	2	2
1051	3	3
1052	4	4
1053	5	5
1054	6	6
1055	7	7
1056	8	8

Prefix/ Suffix Value	Full ASCII Code 39 Encode Char.acter	Keystroke
1057	9	9
1058	/Z	:
1059	%F	;
1060	%G	<
1061	%H	=
1062	%I	>
1063	%J	?
1064	%V	@
1065	A	A
1066	B	B
1067	C	C
1068	D	D
1069	E	E
1070	F	F
1071	G	G
1072	H	H
1073	I	I
1074	J	J
1075	K	K

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1076	L	L
1077	M	M
1078	N	N
1079	O	O
1080	P	P
1081	Q	Q
1082	R	R
1083	S	S
1084	T	T
1085	U	U
1086	V	V
1087	W	W
1088	X	X
1089	Y	Y
1090	Z	Z
1091	%K	[

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Prefix/ Suffix Value	Full ASCII Code 39 Encode Char.acter	Keystroke
1092	%L	\
1093	%M	]
1094	%N	^
1095	%O	_
1096	%W	`
1097	+A	a
1098	+B	b
1099	+C	c
1100	+D	d
1101	+E	e
1102	+F	f
1103	+G	g
1104	+H	h
1105	+I	i
1106	+J	j
1107	+K	k
1108	+L	l
1109	+M	m
1110	+N	n
1111	+O	o
1112	+P	p
1113	+Q	q
1114	+R	r
1115	+S	s
1116	+T	t
1117	+U	u
1118	+V	v
1119	+W	w

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1120	+X	x
1121	+Y	y
1122	+Z	z
1123	%P	{
1124	%Q	|
1125	%R	}
1126	%S	~

2.4.13 Dongle HID Keyboard Character Delay

1 ms



5 ms



10 ms



20 ms



50 ms



100 ms



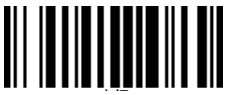
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2.4.14 Dongle HID Keyboard Block Delay

10 ms



50 ms



100 ms



500 ms



1 s



3 s



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2.5 MS840P Generate Setting tool

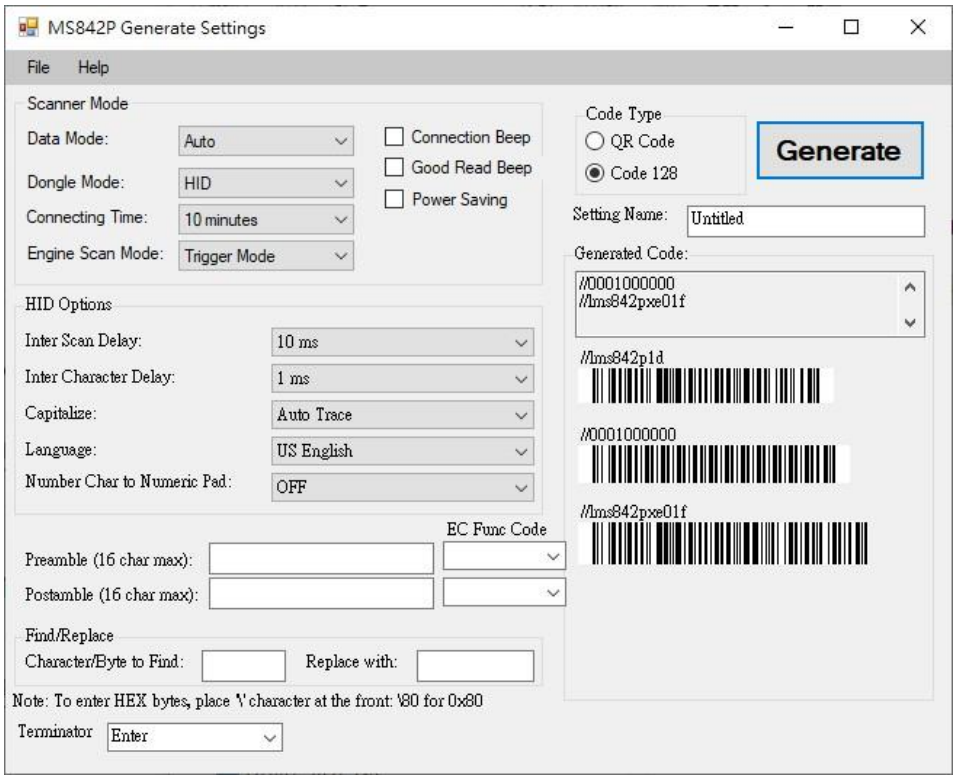
Please follow the instructions below for MS840P generate setting: (Please download the generate setting tool via download section from our website: https://www.ute.com/en/products/detail/MS840P)

A. Please use the HEX values of the function codes for PC in the setup utility by adding a '\' in front of the byte.

B. Click "**Genarate**" to get the setting barcode

C. Use MS840P to scan the setting code to complete the setting process.

For example the following will add a preamble of "Cursor Down" (0x9D) and "ABC" before each barcode is scanned:



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2.6 Barcode Setup Menu

2.6.1 Set Default Parameter

You can reset the digital scanner to factory defaults. Scan the barcode below to reset the digital scanner to its default settings.

Set Defaults (Factory Default)
Scan this barcode to reset all default parameters.

Factory Default



2.6.2 Parameter Scanning

To disable decoding of parameter barcodes, scan the Scanning barcode below. Note that the parameter barcode can still be decoded. To enable decoding of parameter barcodes, either scan Enable Parameter Scanning or Set All Defaults.

Enable Parameter Barcode Scanning *



Disable Parameter Barcode Scanning



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2.6.3 Beeper Volume& Tone

To select a beeper volume, scan the Low Volume, Medium Volume, or High Volume barcode. To select a beeper frequency (tone), scan the Low Frequency, Medium Frequency, or High Frequency barcode.

Low Volume

Low Frequency

High Volume *

*** Medium Frequency**

Medium Volume

High Frequency

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2.6.4 Suppress Power-up Beeps

Select whether or not to suppress the digital scanner's power-up beeps.

Suppress Power-up Beeps

Do Not Suppress Power-up Beeps *

2.6.5 Beeper Duration

To select the duration for the beeper, scan one of the following barcodes.

Short

Medium *

Long

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2.6.6 Trigger Modes

Select one of the following trigger modes for the digital scanner:

- ➢ **Standard (Level)** - A trigger pull activates decode processing. Decode processing continues until the barcode decodes, you release the trigger, or the Decode Session Timeout occurs.
- ➢ **Presentation (Blink)** - The digital scanner activates decode processing when it detects a barcode in its field of view. After a period of non-use, the digital scanner enters a low power mode, in which the LEDs turn off until the digital scanner senses motion.
- ➢ **Host** - A host command issues the triggering signal. The decoder interprets an actual trigger pull as a Level triggering option.
- ➢ **Auto Aim** - This trigger mode turns on the LED aiming dot when the scanner is lifted. A trigger pull activates decode processing. After 2 seconds of inactivity the aiming pattern shuts off.
- ➢ **Auto Aim with Illumination** - This trigger mode turns on the aiming pattern and internal illumination LEDs when the decoder senses motion. A trigger pull activates decode processing. After 2 seconds of inactivity the aiming pattern and internal illumination LEDs automatically shut off.

Standard (Level) *



Presentation (Blink)



Host



Auto Aim



Auto Aim with Illumination



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2.6.7 Low Power Mode

This parameter determines whether or not the digital scanner enters low power mode after a decode attempt. If disabled, power remains on after each decode attempt.

Disable Low Power Mode *

Enable Low Power Mode

2.6.8 Time Delay to Low Power Mode

This parameter sets the time the decoder remains active after decoding. After a scan session, the decoder waits this amount of time before entering Low Power Mode.

Note: This parameter only applies when **Power Mode** is set to Low.

1 Second *

5 Seconds

1 Minute

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5 Minutes



15 Minutes



1 Hour



2.6.9 Video Mode

In this mode the decoder behaves as a video camera as long as the trigger is active. Upon trigger release, the decoder returns to Decode Mode. Scan the **Video Mode** barcode to temporarily enter Video Capture Mode.

Snapshot Mode



Video Mode



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2.6.10 Image File Format Selector

Select an image format appropriate for the system (BMP, TIFF, or JPEG). The decoder stores captured images in the selected format.

BMP File Format



JPEG File Format *



TIFF File Format



2.6.11 Video View Finder

Select **Enable Video View Finder** to project the video view finder while in Image Mode, or **Disable Video View Finder** to turn the video view finder off.

Disable Video View Finder *



Enable Video View Finder



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2.6.12 Mirrored Image

Enable this to scan images in reverse, or mirrored, as if seen through a mirror. This mode is useful in applications requiring scanning through a mirror and using symbologies that do not decode in reverse.
Enabling this mode when using snapshot, video, or video viewfinder mode transmits images as mirrored images.

Disable Mirrored Image *

Enable Mirrored Image

2.6.13 Beep After Good Decode

Scan a barcode below to select whether or not the decoder issues a beep signal after a good decode. If selecting **Do Not Beep After Good Decode**, beeper signals still occur during parameter menu scanning and to indicate error conditions.

Beep After Good Decode (Enable) *

Do Not Beep After Good Decode (Disable)

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Chapter 3 – Symbology

3.1 UPC/EAN

3.1.1 UPC-A

To enable or disable UPC-A, scan the appropriate barcode below.

Enable UPC-A *

Disable UPC-A

3.1.2 UPC-E

To enable or disable UPC-E, scan the appropriate barcode below.

Enable UPC-E *

Disable UPC-E

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3.1.3 UPC-E1

To enable or disable UPC-E1, scan the appropriate barcode below.

✓ ***NOTE*** UPC-E1 is not a UCC (Uniform Code Council) approved symbology.

Enable UPC-E1

Disable UPC-E1 *

3.1.4 EAN-8

To enable or disable EAN-8, scan the appropriate barcode below.

Enable EAN-8 *

Disable EAN-8

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3.1.5 EAN-13

To enable or disable EAN-13, scan the appropriate barcode below.

Enable EAN-13 *



Disable EAN-13



3.1.6 Bookland EAN

To enable or disable Bookland EAN, scan the appropriate barcode below.

Enable Bookland EAN



Disable Bookland EAN *



✓ *NOTE* If you enable Bookland EAN, select a *Bookland ISBN Format*. Also select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in *Decode UPC/EAN Supplementals*.

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3.1.7 Bookland ISBN

If you enabled Bookland EAN using *Enable/Disable Bookland EAN*, select one of the following formats for Bookland data:

- **Bookland ISBN-10** - The scanner reports Bookland data starting with 978 in traditional 10-digit format with the special Bookland check digit for backward-compatibility. Data starting with 979 is not considered Bookland in this mode.
- **Bookland ISBN-13** - The scanner reports Bookland data (starting with either 978 or 979) as EAN-13 in 13-digit format to meet the 2007 ISBN-13 protocol.

Bookland ISBN-10 *



Bookland ISBN-13



✓ ***NOTE*** For Bookland EAN to function properly, first enable Bookland EAN using *Enable/Disable Bookland EAN.*

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3.1.8 Decode UPC/EAN Supplementals

Supplementals are barcodes appended according to specific format conventions (e.g., UPC A+2, UPC E+2, EAN 13+2). The following options are available:

- If you select **Ignore UPC/EAN with Supplementals**, and the scanner is presented with a UPC/EAN plus supplemental symbol, the scanner decodes UPC/EAN and ignores the supplemental characters.
- If you select **Decode UPC/EAN with Supplementals**, the scanner only decodes UPC/EAN symbols with supplemental characters, and ignores symbols without supplementals.
- If you select **Autodiscriminate UPC/EAN Supplementals**, the scanner decodes UPC/EAN symbols with supplemental characters immediately. If the symbol does not have a supplemental, the scanner must decode the barcode the number of times set via *Decode UPC/EAN Supplemental Redundancy* before transmitting its data to confirm that there is no supplemental.
- If you select one of the following **Supplemental Mode** options, the scanner immediately transmits EAN-13 barcodes starting with that prefix that have supplemental characters. If the symbol does not have a supplemental, the scanner must decode the barcode the number of times set via *Decode UPC/EAN Supplemental Redundancy* before transmitting its data to confirm that there is no supplemental. The scanner transmits UPC/EAN barcodes that do not have that prefix immediately.
  - **Enable 378/379 Supplemental Mode.**
  - **Enable 978/979 Supplemental Mode.**

✓ ***NOTE*** If you select 978/979 Supplemental Mode and are scanning Bookland EAN barcodes, see *Enable/Disable Bookland EAN* to enable Bookland EAN, and select a format using *Bookland ISBN Format*.

  - **Enable 977 Supplemental Mode.**
  - **Enable 414/419/434/439 Supplemental Mode.**
  - **Enable 491 Supplemental Mode.**

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- **Enable Smart Supplemental Mode** - applies to EAN-13 barcodes starting with any prefix listed previously.
- **Supplemental User-Programmable Type 1** - applies to EAN-13 barcodes starting with a 3-digit user-defined prefix. Set this 3-digit prefix using *User-Programmable Supplementals*.
- **Supplemental User-Programmable Type 1 and 2 -** applies to EAN-13 barcodes starting with either of two 3-digit user-defined prefixes. Set the 3-digit prefixes using *User-Programmable Supplementals***.**
- **Smart Supplemental Plus User-Programmable 1** - applies to EAN-13 barcodes starting with any prefix listed previously or the user-defined prefix set using *User-Programmable Supplementals*.
- **Smart Supplemental Plus User-Programmable 1 and 2 -** applies to EAN-13 barcodes starting with any prefix listed previously or one of the two user-defined prefixes set using *User-Programmable Supplementals*.

✓ ***NOTE*** To minimize the risk of invalid data transmission, select either to decode or ignore supplemental characters.

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3.1.8.1 Decode UPC/EAN With Supplementals

Decode UPC/EAN With Supplementals



3.1.8.2 Ignore UPC/EAN With Supplementals*

Ignore UPC/EAN With Supplementals*



3.1.8.3 Auto discriminate UPC/EAN Supplementals

Auto discriminate UPC/EAN Supplementals



3.1.8.4 Enable 378/379 Supplemental Mode

Enable 378/379 Supplemental Mode



3.1.8.5 Enable 978/979 Supplemental Mode

Enable 978/979 Supplemental Mode



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3.1.8.6 Enable 977 Supplemental Mode

Enable 977 Supplemental Mode



3.1.8.7 Enable 414/419/434/439 Supplemental Mode

Enable 414/419/434/439 Supplemental Mode



3.1.8.8 Enable 491 Supplemental Mode

Enable 491 Supplemental Mode



3.1.8.9 Enable Smart Supplemental Mode

Enable Smart Supplemental Mode



3.1.8.10 Supplemental User-Programmable Type 1

Supplemental User-Programmable Type 1



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3.1.8.11 Supplemental User-Programmable Type 1 and 2

Supplemental User-Programmable Type 1 and 2



Supplemental User-Programmable Type 1 and 2

3.1.8.12 Smart Supplemental Plus User-Programmable 1

Smart Supplemental Plus User-Programmable 1



3.1.8.13 Smart Supplemental Plus User-Programmable 1 and 2

Smart Supplemental Plus User-Programmable 1 and 2



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3.1.9 User-Programmable Supplementals

If you selected a Supplemental User-Programmable option from *Decode UPC/EAN Supplementals*, select **User-Programmable Supplemental 1** to set the 3-digit prefix. Then select the 3 digits using the numeric barcodes beginning. Select **User-Programmable Supplemental 2** to set a second 3-digit prefix. Then select the 3 digits using the numeric barcodes beginning.

User-Programmable Supplemental 1



User-Programmable Supplemental 2



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3.1.10 Decode UPC/EAN Supplemental Redundancy

With *Autodiscriminate UPC/EAN Supplementals* selected, this option adjusts the number of times a symbol without supplementals are decoded before transmission. The range is from 2 to 30 times. Five or above is recommended when decoding a mix of UPC/EAN symbols with and without supplementals, and the autodiscriminate option is selected.

Scan the barcode below to select a decode redundancy value. Next scan two numeric barcodes beginning on *Appendix B*. Single digit numbers must have a leading zero. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Decode UPC/EAN Supplemental Redundancy (Default: 7)

3.1.11 Transmit UPC-A Check Digit

Scan the appropriate barcode below to transmit the symbol with or without the UPC-A check digit.

Transmit UPC-A Check Digit *

Do not Transmit UPC-A Check Digit

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3.1.12 Transmit UPC-E Check Digit

Scan the appropriate barcode below to transmit the symbol with or without the UPC-E check digit.

Transmit UPC-E Check Digit *



Do not Transmit UPC-E Check Digit



3.1.13 Transmit UPC-E1 Check Digit

Scan the appropriate barcode below to transmit the symbol with or without the UPC-E1 check digit.

Transmit UPC-E1 Check Digit *



Do not Transmit UPC-E1 Check Digit



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3.1.14 UPC-A Preamble

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-A symbol.
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
(<DATA>)



System Character *
(<System Character> <DATA>)



System Character & Country Code
(<Country Code> <System Character> <DATA>)



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3.1.15 UPC-E Preamble

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-E symbol.
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.

No Preamble
(<DATA>)



System Character *
(<System Character> <DATA>)



System Character & Country Code
(<Country Code> <System Character> <DATA>)



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3.1.16 UPC-E1 Preamble

Preamble characters (Country Code and System Character) can be transmitted as part of a UPC-E1 symbol.
Select one of the following options for transmitting UPC-E1 preamble to the host device: transmit system character only, transmit system character and country code ("0" for USA), or transmit no preamble.

No Preamble
(<DATA>)



System Character *
(<System Character> <DATA>)



System Character & Country Code
(<Country Code> <System Character> <DATA>)



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3.1.17 Convert UPC-E to UPC-A

Enable this parameter to convert UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).
Scan DO NOT CONVERT UPC-E TO UPC-A to transmit UPC-E (zero suppressed) decoded data.

Convert UPC-E to UPC-A (Enable)



Do not Convert UPC-E to UPC-A (Disable) *



3.1.18 Convert UPC-E1 to UPC-A

Enable this parameter to convert UPC-E1 (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).
Scan DO NOT CONVERT UPC-E TO UPC-A to transmit UPC-E1 (zero suppressed) decoded data.

Convert UPC-E1 to UPC-A (Enable)



Do not Convert UPC-E1 to UPC-A (Disable) *



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3.1.19 EAN Zero Extend

When enabled, this parameter adds five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols.
Disable this parameter to transmit EAN-8 symbols as is.

Enable EAN Zero Extend



Disable EAN Zero Extend *



3.1.20 UCC Coupon Extended Code

The UCC Coupon Extended Code is an additional barcode adjacent to a UCC Coupon Code. To enable or disable UCC Coupon Extended Code, scan the appropriate barcode below.

Enable UCC Coupon Extended Code



Disable UCC Coupon Extended Code *



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3.2 Code 128

3.2.1 Code 128

To enable or disable Code 128, scan the appropriate barcode below.

Disable Code 128



Enable Code 128 *



3.2.2 GS1-128 (formerly UCC/EAN-128)

To enable or disable GS1-128, scan the appropriate barcode below. (See *Appendix A, Miscellaneous Code Information* for details on *GS1-128 (formerly UCC/EAN-128)*.)

Disable GS1-128



Enable GS1-128 *



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GS1-128 (formerly UCC/EAN-128)

GS1-128 is a convention for printing data fields with standard Code 128 barcode symbols. GS1-128 symbols are distinguished by a leading FNC 1 character as the first or second character in the symbol. Other FNC 1 characters are used to delineate fields.

When GS1-128 symbols are read, they are transmitted after special formatting strips off the leading FNC 1 character, and replaces other FNC 1 characters with the ASCII 29 (GS) control character.

When AIM symbology identifiers are transmitted, the modifier character indicates the position of the leading FNC 1 character according to AIM guidelines. For example, **]c1** indicates a GS1-128 symbol with a leading FNC1 character.

Standard Code 128 barcodes which do not have a leading FNC 1 may still be used, but are not encoded according to the GS1-128 convention. Standard Code 128 and GS1-128 may be mixed in an application. The scanner auto discriminates between these symbols, and can enable or disable one or both code types. *Table 3-1* indicates the behavior of the scanner in each of the four possible parameter settings.

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Table 3-1 *Reading Standard Code 128 & GS1-128*

Standard Code 128	GS1-128	Effect and Example
Disable	Disable	No Code 128 symbols can be read.
Disable	Enable	Read only symbols with leading FNC 1. Examples: ^{FNC1}ABCD^{FNC1}E are read as ABCD^{29}E A^{FNC1}BCD^{FNC1}E are read as ABCD^{29}E ^{FNC1FNC1}ABCD^{FNC1}E are read as ABCD^{29}E ABCD^{FNC1}E cannot be read ABCDE cannot be read
Enable	Disable	Read only symbols without leading FNC 1. Examples: ^{FNC1}ABCD^{FNC1}E cannot be read A^{FNC1}BCD^{FNC1}E cannot be read ^{FNC1FNC1}ABCD^{FNC1}E cannot be read ABCD^{FNC1}E is read as ABCD^{29}E ABCDE is read as ABCDE
Enable	Enable	Read both types of symbols. Examples: ^{FNC1}ABCD^{FNC1}E are read as ABCD^{29}E A^{FNC1}BCD^{FNC1}E are read as ABCD^{29}E ^{FNC1FNC1}ABCD^{FNC1}E are read as ABCD^{29}E ABCD^{FNC1}E is read as ABCD^{29}E ABCDE is read as ABCDE

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3.2.3 ISBT 128

To enable or disable ISBT 128, scan the appropriate barcode below.

Disable ISBT 128



Enable ISBT 128 *



3.3 Code 39

3.3.1 Code 39

To enable or disable Code 39, scan the appropriate barcode below.

Enable Code 39 *



Disable Code 39



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3.3.2 Trioptic Code 39

Trioptic Code 39 is a variant of Code 39 used in marking computer tape cartridges. Trioptic Code 39 symbols always contain six characters.
To enable or disable Trioptic Code 39, scan the appropriate barcode below.

Enable Trioptic Code 39

Disable Trioptic Code 39 *

✓ ***NOTE*** Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If an error beep sounds when enabling Trioptic Code 39, disable Code 39 Full ASCII and try again.

3.3.3 Convert Code 39 to Code 32

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate barcode below to enable or disable converting Code 39 to Code 32.

✓ ***NOTE*** Code 39 must be enabled in order for this parameter to function.

Enable Convert Code 39 to Code 32

Disable Convert Code 39 to Code 32

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3.3.4 Code 32 Prefix

Enable this parameter to add the prefix character "A" to all Code 32 barcodes. Convert Code 39 to Code 32 must be enabled for this parameter to function.

Enable Code 32 Prefix



Disable Code 32 Prefix *



3.3.5 Set Lengths for Code 39

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Code 39 may be set for any length, one or two discrete lengths, or lengths within a specific range. If Code 39 Full ASCII is enabled, **Length Within a Range** or **Any Length** are the preferred options.

✓ ***NOTE*** When setting lengths, single digit numbers must always be preceded by a leading zero.

One Discrete Length - This option limits decodes to only those Code 39 symbols containing a selected length. Lengths are selected from the numeric barcodes beginning on *Appendix B*. For example, to decode only Code 39 symbols with 14 characters, scan **Code 39 - One Discrete Length**, then scan **1** followed by **4**. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Code 39 - One Discrete Length



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Two Discrete Lengths - This option limits decodes to only those Code 39 symbols containing either of two selected lengths. Lengths are selected from the numeric barcodes beginning on *Appendix B*. For example, to decode only those Code 39 symbols containing either 2 or 14 characters, select **Code 39 - Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Code 39 - Two Discrete Lengths



Length Within Range - This option limits decodes to only those Code 39 symbols within a specified range. For example, to decode Code 39 symbols containing between 4 and 12 characters, first scan **Code 39 - Length Within Range**. Then scan **0**, **4**, **1,** and **2**. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Code 39 - Length Within Range



Any Length - Scan this option to decode Code 39 symbols containing any number of characters.

Code 39 - Any Length



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3.3.6 Code 39 Check Digit Verification

When this feature is enabled, the scan engine checks the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only those Code 39 symbols which include a modulo 43 check digit are decoded. Only enable this feature if your Code 39 symbols contain a module 43 check digit.

Verify Code 39 Check Digit



Do not Code 39 Check Digit *



3.3.7 Transmit Code 39 Check Digit

Scan this symbol to transmit the check digit with the data.

Transmit Code 39 Check Digit (Enable)



Scan this symbol to transmit data without the check digit.

Do not Transmit Code 39 Check Digit (Disable) *



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3.3.8 Code 39 Full ASCII

Code 39 Full ASCII is a variant of Code 39 which pairs characters to encode the full ASCII character set. To enable or disable Code 39 Full ASCII, scan the appropriate barcode below.

See *Table 3-2* for the mapping of Code 39 characters to ASCII values.

Enable Code 39 Full ASCII

Disable Code 39 Full ASCII *

✓ ***NOTE*** Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If you get an error beep when enabling Code 39 Full ASCII, disable Trioptic Code 39 and try again.

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Table 3-2 *Character Equivalents*

Scan Value	Full ASCII Code 39 Encode Char.
1000	%U
1001	$A
1002	$B
1003	$C
1004	$D
1005	$E
1006	$F
1007	$G
1008	$H
1009	$I
1010	$J
1011	$K
1012	$L
1013	$M
1014	$N
1015	$O
1016	$P
1017	$Q
1018	$R
1019	$S
1020	$T
1021	$U
1022	$V
1023	$W
1024	$X
1025	$Y
1026	$Z
1027	%A
1028	%B
1029	%C

Scan Value	Full ASCII Code 39 Encode Char.
1030	%D
1031	%E
1032	Space
1033	/A
1034	/B
1035	/C
1036	/D
1037	/E
1038	/F
1039	/G
1040	/H
1041	/I
1042	/J
1043	/K
1044	/L
1045	-
1046	.
1047	/
1048	0
1049	1
1050	2
1051	3
1052	4
1053	5
1054	6
1055	7
1056	8
1057	9
1058	/Z
1059	%F

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Scan Value	Full ASCII Code 39 Encode Char.
1060	%G
1061	%H
1062	%I
1063	%J
1064	%V
1065	A
1066	B
1067	C
1068	D
1069	E
1070	F
1071	G
1072	H
1073	I
1074	J
1075	K
1076	L
1077	M
1078	N
1079	O
1080	P
1081	Q
1082	R
1083	S
1084	T
1085	U
1086	V
1087	W
1088	X
1089	Y
1090	Z

Scan Value	Full ASCII Code 39 Encode Char.
1091	%K
1092	%L
1093	%M
1094	%N
1095	%O
1096	%W
1097	+A
1098	+B
1099	+C
1100	+D
1101	+E
1102	+F
1103	+G
1104	+H
1105	+I
1106	+J
1107	+K
1108	+L
1109	+M
1110	+N
1111	+O
1112	+P
1113	+Q
1114	+R
1115	+S
1116	+T
1117	+U
1118	+V
1119	+W
1120	+X
1121	+Y

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Scan Value	Full ASCII Code 39 Encode Char.
1122	+Z
1123	%P
1124	%Q
1125	%R
1126	%S
1127	

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3.4 Code 93

3.4.1 Code 93

To enable or disable Code 93, scan the appropriate barcode below.

Enable Code 93



Disable Code 93 *



3.4.2 Set Lengths for Code 93

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Code 93 may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands*.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **Code 93 One Discrete Length**, then scan **1**, **4**, to limit the decoding to only Code 93 symbols containing 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Code 93 - One Discrete Length



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Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **Code 93 Two Discrete Lengths**, then scan **0**, **2**, **1**, **4**, to limit the decoding to only Code 93 symbols containing 2 or 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Code 93 - Two Discrete Lengths



Length Within Range - This option sets the unit to decode a code type within a specified range. For example, to decode Code 93 symbols containing between 4 and 12 characters, first scan **Code 93 Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must always be preceded by a leading zero).

Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Code 93 - Length Within Range



Any Length - Scan this option to decode Code 93 symbols containing any number of characters.

Code 93 - Any Length



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3.5 Code 11

3.5.1 Code 11

To enable or disable Code 11, scan the appropriate barcode below.

Enable Code 11



Disable Code 11 *



3.5.2 Set Lengths for Code 11

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 11 to any length, one or two discrete lengths, or lengths within a specific range.

- **One Discrete Length** - Select this option to decode only Code 11 symbols containing a selected length. Select the length using the numeric barcodes beginning on *Appendix B*. For example, to decode only Code 11 symbols with 14 characters, scan **Code 11 - One Discrete Length**, then scan **1** followed by **4**. To correct an error or to change the selection, scan *Cancel on Appendix B*.
- **Two Discrete Lengths** - Select this option to decode only Code 11 symbols containing either of two selected lengths. Select lengths using the numeric barcodes beginning on *Appendix B*. For example, to decode only those Code 11 symbols containing either 2 or 14 characters, select **Code 11 - Two Discrete Lengths**, then scan **0**, **2**, **1**, and then **4**. To correct an error or to change the selection, scan *Cancel on Appendix B*.

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- **Length Within Range** - Select this option to decode a Code 11 symbol with a specific length range. Select lengths using numeric barcodes beginning on *Appendix B*. For example, to decode Code 11 symbols containing between 4 and 12 characters, first scan **Code 11 - Length Within Range**. Then scan **0**, **4**, **1,** and **2** (single digit numbers must always be preceded by a leading zero). To correct an error or change the selection, scan *Cancel on Appendix B*.
- **Any Length** - Scan this option to decode Code 11 symbols containing any number of characters within the scan engine capability.

Code 11 - One Discrete Length



Code 11 - Two Discrete Lengths



Code 11 - Length Within Range



Code 11 - Any Length



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3.5.3 Code 11 Check Digit Verification

This feature allows the scan engine to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm. This selects the check digit mechanism for the decoded Code 11 barcode. The options are to check for one check digit, check for two check digits, or disable the feature.

To enable this feature, scan the barcode below corresponding to the number of check digits encoded in your Code 11 symbols.

Disable *



One Check Digit



Two Check Digit



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3.5.4 Transmit Code 11 Check Digits

This feature selects whether or not to transmit the Code 11 check digit(s).

Transmit Code 11 Check Digit(s) (Enable)



Do not Transmit Code 11 Check Digit(s) (Disable) *

✓ ***NOTE*** Code 11 Check Digit Verification must be enabled for this parameter to function.



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3.6 Interleaved 2 of 5

3.6.1 Interleaved 2 of 5

To enable or disable Interleaved 2 of 5, scan the appropriate barcode below.

Enable Interleaved 2 of 5*



Disable Interleaved 2 of 5



3.6.2 Set Lengths for Interleaved 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for I 2 of 5 may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands.*

✓ ***NOTE*** When setting lengths, single digit numbers must always be preceded by a leading zero.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **I 2 of 5 One Discrete Length**, then scan **1**, **4**, to decode only I 2 of 5 symbols containing 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel* on *Appendix B*.

I 2 of 5 - One Discrete Length



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Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **I 2 of 5 Two Discrete Lengths**, then scan **0**, **6**, **1**, **4**, to decode only I 2 of 5 symbols containing 6 or 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

I 2 of 5 - Two Discrete Lengths

Length Within Range - Select this option to decode only codes within a specified range. For example, to decode I 2 of 5 symbols containing between 4 and 12 characters, first scan **I 2 of 5 Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must always be preceded by a leading zero). Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

I 2 of 5 - Length Within Range

Any Length - Scan this option to decode I 2 of 5 symbols containing any number of characters.

✓ ***NOTE*** Selecting this option may lead to misdecodes for I 2 of 5 codes.

I 2 of 5 - Any Length

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3.6.3 I 2 of 5 Check Digit Verification

When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm, either USS (Uniform Symbology Specification), or OPCC (Optical Product Code Council).

Disable *



USS Check Digit



OPCC Check Digit



3.6.4 Transmit I 2 of 5 Check Digit

Scan this symbol to transmit the check digit with the data.

Transmit I 2 of 5 Check Digit (Enable)



Scan this symbol to transmit data without the check digit.

Do not Transmit I 2 of 5 Check Digit (Disable) *



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3.6.5 Convert I 2 of 5 to EAN-13

This parameter converts a 14 character I 2 of 5 code into EAN-13, and transmits to the host as EAN-13. To accomplish this, I 2 of 5 must be enabled, one length must be set to 14, and the code must have a leading zero and a valid EAN-13 check digit.

Convert I 2 of 5 to EAN-13 (Enable)

Do not Convert I 2 of 5 to EAN-13 (Disable) *

3.7 Discrete 2 of 5

3.7.1 Discrete 2 of 5

To enable or disable Discrete 2 of 5, scan the appropriate barcode below.

Enable Discrete 2 of 5

Disable Discrete 2 of 5 *

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3.7.2 Set Lengths for Discrete 2 of 5

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for D 2 of 5 may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands*.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **D 2 of 5 One Discrete Length**, then scan **1**, **4**, to decode only D 2 of 5 symbols containing 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

D 2 of 5 - One Discrete Length



Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **D 2 of 5 Two Discrete Lengths**, then scan **0**, **2**, **1**, **4**, to decode only D 2 of 5 symbols containing 2 or 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

D 2 of 5 - Two Discrete Lengths



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Length Within Range - Select this option to decode codes within a specified range. For example, to decode D 2 of 5 symbols containing between 4 and 12 characters, first scan **D 2 of 5 Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must be preceded by a leading zero). Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

D 2 of 5 - Length Within Range



Any Length - Scan this option to decode D 2 of 5 symbols containing any number of characters.

✓ ***NOTE*** Selecting this option may lead to misdecodes for D 2 of 5 codes.

D 2 of 5 - Any Length



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3.8 Chinese 2 of 5

3.8.1 Chinese 2 of 5

To enable or disable Chinese 2 of 5, scan the appropriate barcode below.

Enable Chinese 2 of 5

Disable Chinese 2 of 5 *

3.9 Codabar

3.9.1 Codabar

To enable or disable Codabar, scan the appropriate barcode below.

Enable Codabar

Disable Codabar *

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3.9.2 Set Lengths for Codabar

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Codabar may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands*.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **Codabar One Discrete Length**, then scan **1**, **4**, to decode only Codabar symbols containing 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Codabar - One Discrete Length



Two Discrete Lengths - This option sets the unit to decode only those codes containing two selected lengths. For example, select **Codabar Two Discrete Lengths**, then scan **0**, **2**, **1**, **4**, to decode only Codabar symbols containing 6 or 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Codabar - Two Discrete Lengths



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Length Within Range - Select this option to decode a code within a specified range. For example, to decode Codabar symbols containing between 4 and 12 characters, first scan **Codabar Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must always be preceded by a leading zero). Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

Codabar - Length Within Range

Any Length - Scan this option to decode Codabar symbols containing any number of characters.

Codabar - Any Length

3.9.3 CLSI Editing

When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol.

✓ ***NOTE*** Symbol length does not include start and stop characters.

Enable CLSI Editing

Disable CLSI Editing *

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3.9.4 NOTIS Editing

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol.

Enable NOTIS Editing



Disable NOTIS Editing *



3.10 MSI

3.10.1 MSI

To enable or disable MSI, scan the appropriate barcode below.

Enable MSI



Disable MSI *



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3.10.2 Set Lengths for MSI

The length of a code refers to the number of characters (i.e., human readable characters) the code contains, and includes check digits. Lengths for MSI can be set for any length, one or two discrete lengths, or lengths within a specific range. See *Table 3-2* for ASCII equivalents. To set lengths via serial commands, see *Setting Code Lengths Via Serial Commands*.

One Discrete Length - Select this option to decode only those codes containing a selected length. For example, select **MSI Plessey One Discrete Length**, then scan **1**, **4**, to decode only MSI Plessey symbols containing 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

MSI - One Discrete Length



Two Discrete Lengths - Select this option to decode only those codes containing two selected lengths. For example, select **MSI Plessey Two Discrete Lengths**, then scan **0**, **6**, **1**, **4**, to decode only MSI Plessey symbols containing 6 or 14 characters. Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

MSI - Two Discrete Lengths



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Length Within Range - Select this option to decode codes within a specified range. For example, to decode MSI symbols containing between 4 and 12 characters, first scan **MSI Length Within Range**, then scan **0**, **4**, **1** and **2** (single digit numbers must always be preceded by a leading zero). Numeric barcodes begin on *Appendix B*. To change the selection or cancel an incorrect entry, scan *Cancel on Appendix B*.

MSI - Length Within Range



Any Length - Scan this option to decode MSI Plessey symbols containing any number of characters.

✓ ***NOTE*** Selecting this option may lead to misdecodes for MSI codes.

MSI - Any Length



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3.10.3 MSI Check Digits

These check digits at the end of the barcode verify the integrity of the data. At least one check digit is always required. Check digits are not automatically transmitted with the data.

One MSI Check Digit *



If two check digits are selected, also select an *MSI Check Digit Algorithm.*

Two MSI Check Digit



3.10.4 Transmit MSI Check Digit

Scan this symbol to transmit the check digit with the data.

Transmit MSI Check Digit (Enable)



Scan this symbol to transmit data without the check digit.

Do not Transmit MSI Check Digit (Disable) *



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3.10.5 MSI Check Digit Algorithm

When the Two MSI check digits option is selected, an additional verification is required to ensure integrity.

Select one of the following algorithms.

MOD 10/ MOD 11



MOD 10/ MOD 10



3.11 GS1 DataBar

3.11.1 GS1 DataBar-14

To enable or disable GS1 DataBar-14, scan the appropriate barcode below.

Enable GS1 DataBar-14



Disable GS1 DataBar-14 *



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3.11.2 GS1 DataBar Limited

To enable or disable GS1 DataBar Limited, scan the appropriate barcode below.

Enable GS1 DataBar Limited



Disable GS1 DataBar Limited *



3.11.3 GS1 DataBar Expanded

To enable or disable GS1 DataBar Expanded, scan the appropriate barcode below.

Enable GS1 DataBar Expanded



Disable GS1 DataBar Expanded *



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3.11.4 Convert GS1 DataBar to UPC/EAN

This parameter only applies to GS1 DataBar-14 and GS1 DataBar Limited symbols. When this conversion is enabled, GS1 DataBar-14 and GS1 DataBar Limited symbols encoding a single zero as the first digit have the leading '010' stripped and the barcode reported as EAN-13.

Barcodes beginning with two or more zeros but not six zeros have the leading '0100' stripped and the barcode reported as UPC-A. The UPC-A Preamble parameter to transmit the system character and country code applies to converted barcodes. Note that neither the system character nor the check digit can be stripped.

Enable Convert GS1 DataBar to UPC/EAN



Disable GS1 DataBar Expanded *



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3.12 Transmit Code ID Character

A code ID character identifies the code type of a scanned barcode. This can be useful when decoding more than one code type. The code ID character is inserted between the prefix character (if selected) and the decoded symbol.

Select no code ID character, a Symbol Code ID character, or an AIM Code ID character. The Symbol Code ID characters are listed below; see *Appendix A*, *Miscellaneous Code Information* for *AIM Code Identifiers*.

- A = UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13
- B = Code 39, Code 32
- C = Codabar
- D = Code 128, ISBT 128
- E = Code 93
- F = Interleaved 2 of 5
- G = Discrete 2 of 5
- J = MSI
- K = GS1-DataBar
- L = Bookland EAN
- M = Trioptic Code 39
- N = Coupon Code
- R = GS1 DataBar-14, GS1 DataBar Limited, GS1 DataBar Expanded.

Symbol Code ID character



Aim Code ID character



None *



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3.13 Linear Code Type Security Level

The scanner offers four levels of decode security for linear code types (e.g. Code 39, Interleaved 2 of 5). Select higher security levels for decreasing levels of barcode quality. As security levels increase, the scan engine's aggressiveness decreases.

Select the security level appropriate for your barcode quality.

Linear Security Level 1

The following code types must be successfully read twice before being decoded:

Code Type	Length
Codabar	All
MSI	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

Linear Security Level 1 *



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Linear Security Level 2

All code types must be successfully read twice before being decoded.

Linear Security Level 2



Linear Security Level 3

Code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Length
MSI	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

Linear Security Level 3



Linear Security Level 4

All code types must be successfully read three times before being decoded.

Linear Security Level 4



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3.14 Bi-directional Redundancy

This parameter is only valid when a *Linear Code Type Security Level* is enabled. When this parameter is enabled, a barcode must be successfully scanned in both directions (forward and reverse) before being decoded.

Enable Bi-directional Redundancy

Disable Bi-directional Redundancy *

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Appendix A –Miscellaneous Code Information

AIM Code Identifiers

Each AIM Code Identifier contains the three-character string **]cm** where:

] = Flag Character (ASCII 93)

c = Code Character (see *Table A-2*)

m = Modifier Character (see *Table A-3*).

Table A-1 *Code Characters*

Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, ISBT 128, GS1-128, Coupon (Code 128 portion)
E	UPC/EAN, Coupon (UPC portion)
F	Codabar
G	Code 93
H	Code 11
I	Interleaved 2 of 5
M	MSI
S	Discrete 2 of 5, IATA 2 of 5
X	Code 39 Trioptic, Bookland EAN
e	GS1 DataBar

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The modifier character is the sum of the applicable option values based on the following table.

Table A-2 *Modifier Characters*

Code Type	Option Value	Option
Code 39		
	0	No Check character or Full ASCII processing.
	1	Reader has checked one check character.
	3	Reader has checked and stripped check character.
	4	Reader has performed Full ASCII character conversion.
	5	Reader has performed Full ASCII character conversion and checked one check character.
	7	Reader has performed Full ASCII character conversion and checked and stripped check character.
	Example: A Full ASCII barcode with check character W, **A+I+MI+DW**, is transmitted as **]A7**AimId where 7 = (3+4).	
Trioptic Code 39		
	0	No option specified at this time. Always transmit 0.
	Example: A trioptic barcode 412356 is transmitted as **]X0**412356	
Code 128		
	0	Standard data packet, No Function code 1 in first symbol position.
	1	Function code 1 in first symbol character position.
	2	Function code 1 in second symbol character position.
	Example: A Code (EAN) 128 barcode with Function 1 character in the first position, **FNC1** Aim Id is transmitted as **]C1**AimId	
I 2 of 5		
	0	No check digit processing.
	1	Reader has validated check digit.
	3	Reader has validated and stripped check digit.
	Example: An I 2 of 5 barcode without check digit, 4123, is transmitted as **]I0**4123	

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Code Type	Option Value	Option
Codabar		
	0	No check digit processing.
	1	Reader has checked check digit.
	Example: A Codabar barcode without check digit, 4123, is transmitted as **]F0**4123	
Code 93		
	0	No options specified at this time. Always transmit 0.
	Example: A Code 93 barcode 012345678905 is transmitted as **]G0**012345678905	
MSI		
	0	Mod 10 check digit checked and transmitted.
	1	Mod 10 check digit checked but not transmitted.
	Example: An MSI barcode 4123, with a single check digit checked, is transmitted as **]M0**4123	
D 2 of 5		
	0	No options specified at this time. Always transmit 0.
	Example: A D 2 of 5 barcode 4123, is transmitted as **]S0**4123	
UPC/EAN		
	0	Standard packet in full EAN country code format, which is 13 digits for UPC-A, UPC-E, and EAN-13 (not including supplemental data).
	1	Two digit supplement data only.
	2	Five digit supplement data only.
	3	Combined data packet comprising 13 digits from a UPC-A, UPC-E, or EAN-13 symbol and 2 or 5 digits from a supplemental symbol.
	4	EAN-8 data packet.
	Example: A UPC-A barcode 012345678905 is transmitted as **]E0**0012345678905	
Bookland EAN		
	0	No options specified at this time. Always transmit 0.
	Example: A Bookland EAN barcode 123456789X is transmitted as **]X0**123456789X	

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According to AIM standards, a UPC with supplemental barcode is transmitted in the following format:

]E0 (UPC chars) (terminator) **]E2** (supplemental) (terminator)

In the scanner, however, the format is changed to:

]E0 (UPC chars) **]E2** (supplemental)

Therefore, a UPC with two supplemental characters, 01234567890510, is transmitted to the host as a 21-character string, **]E0**0012345678905**]E1**10.

Setting Code Lengths Via Serial Commands

There are two lengths (L1 and L2) for each variable length code type. Depending on the selected option, the scan engine decodes:

- One discrete length barcode
- Two discrete length barcodes
- Barcodes within a range of lengths within the scan engine capability
- Any length of barcodes within the scan engine capability.

Table A-3 lists the requirements for each option.

Table A-3 *Setting Variable Code Lengths*

Code Length Option	L1 value	L2 value
One discrete length is decoded.	Discrete length to decode	0x00
Two discrete lengths is decoded.	Higher length value	Lower length value
Lengths within a range are decoded within the scan engine capability.	Lower length value	Higher length value
Any length barcode is decoded within the scan engine capability.	0x00	0x00

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Appendix B –Numeric Barcodes

For parameters requiring specific numeric values, scan the appropriately numbered barcode(s).

0



1



2



3



4



5



6



7



8



9



Cancel

To change the selection or cancel an incorrect entry, scan the barcode below.

Cancel



** Exit Setup



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