unitech

2D Imager Scanner

- MS852P -

User's Manual

Version 1.0

Revision History

Date	Change Description	Version
20221011	First Version	1.0

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.

–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.

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

This device contains transmitters and receivers which emit Radio Frequency (RF) energy. The device is designed to comply with the limits for exposure to RF energy set by the Federal Communications Commission (FCC) of the United States.

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 declaration of conformity is available for download at :
https://portal.Unitech.eu/public/Safetyregulatorystatement

CE RF Exposure Compliance

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

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RoHS Statement

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

Waste electrical and electronic equipment (WEEE)

Unitech has set up a policy and process to meet the 2012/19/EU 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

Taiwan NCC Warning Statement

NCC 警語

取得審驗證明之低功率射頻器材，非經核准，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。低功率射頻器材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。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須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。

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 60825-1. 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.

Battery Notice

1. To guarantee optimal performance, it is recommended that rechargeable batteries be replaced every year, or after 500 charging cycles are completed. It is normal for the battery to balloon or expand after one year or 500 cycles. Although it does not cause damage, it cannot be used again and must be disposed of according to the location's safe battery disposal procedures.

2. If a battery performance decreases more than 20%, the battery is at the end of its life cycle. Stop use and ensure the battery is disposed of properly.

3. The length of time that a battery lasts depends on the battery type and how the device is used. Conserve the battery life by doing the following:
   - Avoid fully uncharging the battery because this places additional strain on it. Several partial uncharges with frequent charges are better than a fully uncharged battery. Charging a partially charged battery does not cause harm to the unit.
   - Keep the battery cool. Avoid hot vehicles. For prolonged storage, keep the battery at a 40% charge level.
   - Do not leave the battery uncharged and unused for an extended period of time, the battery will wear out and the longevity of the battery will be at least half of one with frequent charges.

4. Protect battery life by not over or under charging the battery.

5. Please do not leave battery unused for long time without charging it. Despite Unitech's safety precautions, the battery pack may begin to change shape. If so, stop using it immediately. Please check to see if you are using a proper power adapter to charge the battery or contact your service provider for service.

6. If you cannot charge the battery after it has been idle for an extended period of time and it begins to heat up, please do not try to charge it. It may not be functional anymore.

7. Please only use the original battery from Unitech. Using a third party battery can damage our products. Please note that when such damage occurs, it is not covered by Unitech's warranty policy.

CAUTION!

- RISK OF EXPLOSION IF BATTERY IS REPLACED INCORRECTLY. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- 電池若未正確更換，可能會爆炸。請原廠建議之同款電池或同等級的電池來更換。請依原廠指示處理廢電池。
- 如果更換不正確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 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.

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.

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.

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Hearing Damage Warning

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

Figure 1 – Warning label (IEC 60417-6044)

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:**	+81-3-62310896
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:**	Tosei Building 3F., 1-8-10 Nihonbashi-Hakozakicho, Cyuouku, Tokyo, 103-0015, 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	**E-mail:**	info@latin.ute.com
	info@india.ute.com	**Address:**	17171 Park Row, Suite 210 Houston, TX 77084USA (Rep.)
	info@mideast.ute.com		
Address:	4F., No. 236, ShinHu 2nd Rd., NeiHu Chiu, 114, Taipei,Taiwan	**Website:**	http://latin.ute.com
Website:	http://apac.ute.com / http://mideast.ute.com		
North America		**Please scan QR Code to visit us :**	
Tel:	+1-714-8916400		
E-mail:	info@us.ute.com / info@can.ute.com		
Address:	6182 Katella Ave, Cypress, CA 90630, USA		
Website:	http://us.ute.com		

Warranty Policy

The following 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.

Table of Contents

Chapter 1 - Overview

1.1 Package

Please make sure the following contents are in the MS852P gift box.
If something is missing or damaged, please contact your Unitech representative.

The Package Contents

- Dongle
- MS852P with battery
- USB Cable
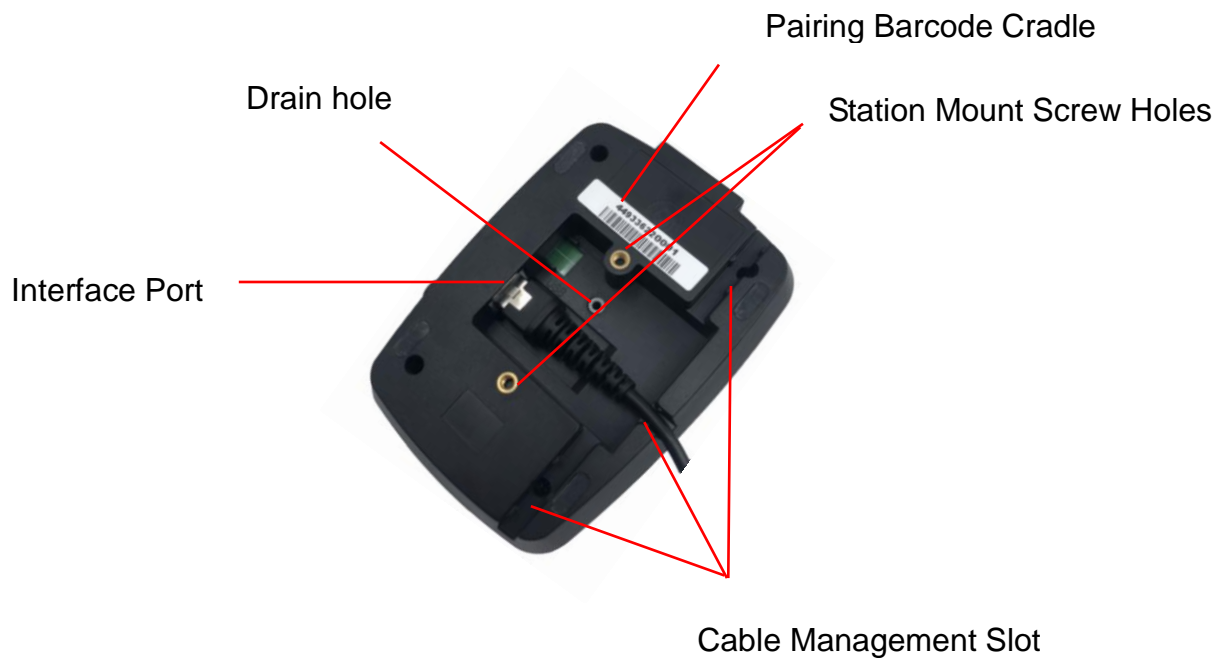- Quick Start Guide
- Cradle
- Power Adaptor

Optional Accessories

- Dongle
- Battery pack

1.2 Product Detail

1.2.1 MS852P Product View

1.2.2 Cradle details

Pairing Barcode Cradle

Station Mount Screw Holes

Drain hole

Interface Port

Cable Management Slot

1.3 Specifications

Optical & Performance	
Sensor	CMOS Sensor, 1280 x 800 pixels
Aiming Element	655 nm Laser
Illumination	One (1) Hyper Red 660 nm LED
Skew Angle	± 60°
Pitch Angle Sensor	± 60°
Roll Angle	360°
Optical Resolution	3 mil (code 39), 5 mil (code128), 5 mil (PDF417)
Depth of Field	Symbology/Resolution Near/Far Code 39: 3 mil 7.6 cm to / 14.7 cm Code 128: 5 mil / 5.8 cm to / 24.9 cm PDF417: 5 mil / 7.6 cm to / 20.1 cm PDF 417: 6.67 mil / 6.3 cm to/ 25.7 cm DataMatrix: 10 mil / 5.3 cm to / 27.8 cm UPCA (100%) / 4.1 cm to / 63.2 cm Code 128: 15 mil / 6.1 cm to/ 70.6 cm Code 39: 20 mil / 4.1 cm to / 91.7 cm QR Code: 20 mil / 2.8 cm to / 44.5 cm
Electrical	
Operation Voltage	DC 3V to 5V
Current Consumption	Operation mode:80.6mA , Standby mode:14.6mA
Indicator	LED & Beeper & Vibrator
Symbologies	
1D	Code 39, Code 128, Code 93, Codebar/NW7, Code 11, MSI, UPC/EAN, I 2 of 5, Korean 3 of 5, GSI DataBar, Base 32 Italian Pharma)
2D	PDF417, Micro PDF417, Composite Codes, TLC-39, Aztec, DataMatrix, MaxiCode, QR Code, Micro QR, Chinese Sensible (Han Xin), Postal Codes Supported OCR Symbologies: OCR-A, OCR-B

Data Formatting	Prefix, Suffix, Code ID, Reformatting Date
Regulatory Approvals	
CE, FCC, BSMI, VCCI	
Communication	
Radio	Unlicensed 2.4GHz
Wireless Coverage	10M(line of sight)
Interface/ Profile	Wireless,SPP & HID profiles
Host Interface Supported	USB (HID; CDC)
Mechanical	
Dimensions	87.8 L x 71.6 W x 177.7 H (mm)
Weight	213g
Trigger Switch Life	10 million times
Cradle Dimension	120.6 L x 88.7 W x 86.0 H (mm)
Environmental	
ESD Protection	Functional after 8K Contact and 15K Air
Mechanical Shock	2.1M onto concrete (scanner only)
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to +70°C (-40°F to +158°F)
Relative Humidity	95% non-condensing
IP Rating	IP42
Accessories	
• Dongle	• Battery pack

Note:

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

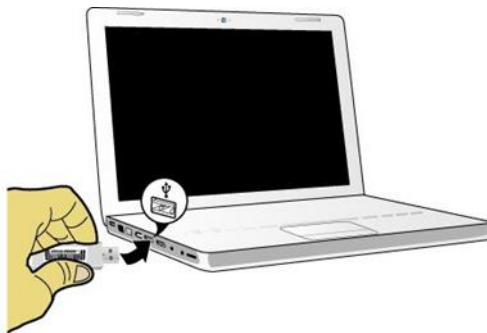| AT	BE	BG	HR	CY	CZ	DK
EE	FI	FR	DE	EL	HU	IE
IT	LV	LT	LU	MT	NL	PL
PT	RO	SK	SI	ES	SE	UK
IS	LI	NO	CH	TR		

1.4 Getting Started

Scanner Turn on : Long press the trigger key for 2 seconds until you hear a long beep sound.

Scanner Turn off : Long press the trigger key for about 7 seconds until you hear a short beep sound.

1.4.1 How to pair the scanner with the receiver

1. Long press the trigger key for 2 seconds until you hear a long beep sound to turn on the MS852P.

2. Scan the MAC address on the dongle with MS852P.

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

4. When being successfully connected to the dongle, the scanner will beep with low-medium-high sound.

1.4.3 Cradle Function & Operation

1. Charging
2. Update scanner firmware
- Cradle button is for updating MS852P firmware
- Connect cradle to PC or an adaptor and plug in the socket.
- Place the MS852P scanner into the cradle under power off condition. Press and hold the cradle button and MS852P trigger key for around 2 seconds, release after you hear beeper sound. It means MS852P scanner has enter firmware update process.
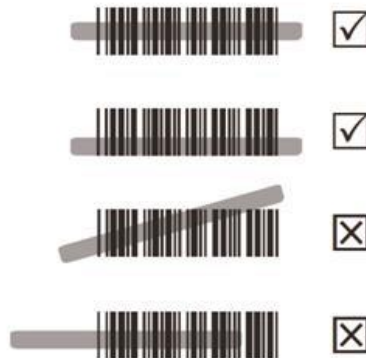
Cradle Button

1.4.4 Test

Open a word processing program such as Microsoft Word or Notepad, and scan the following barcode:

If the word "Unitech" appears on the screen, you have successfully installed your scanner.

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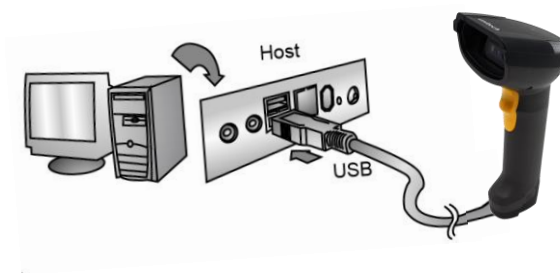
1.5 Battery Charging

Before you use the MS852B for the first time, we strongly recommend charging the battery. It takes approximately 5 hours to fully charge the battery. To charge the scanner with / without a cradle, please follow the instructions below. Please only use the USB type C cable which came with the package.
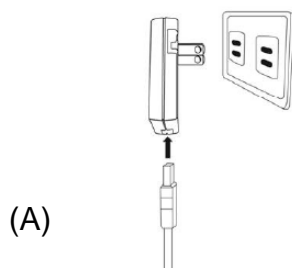
■ **Charging through USB type C cable**

　To charge MS852B, please connect scanner with host PC through USB type C cable.
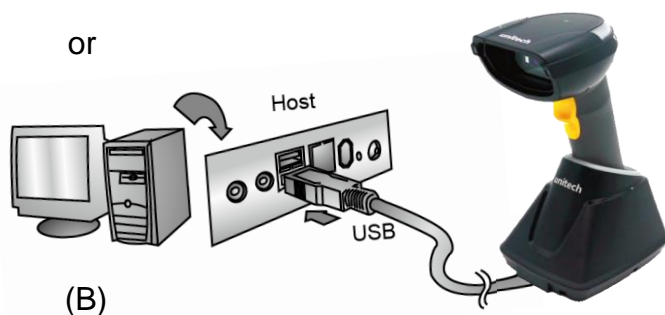

■ Charging with the cradle

Please charge your scanner with the cradle by connecting the cradle with host PC, or the USB cable connect to AC power adapter into the electrical outlet.

(A)

or

(B)

1.6 How to Replace Battery

Please follow the below instruction to replace the scanner battery.

1. Loosen the screw with a screwdriver, and take the screw out.

2. Remove the battery cap

3. Take out the battery

4.Place the new battery into the scanner.

5.   Lock the battery cap with a screw using screwdriver tightly.

1.7 LED / Beeper Indicator

1.7.1 Scanner LED indicator

Description	Indication
Battery charging	Solid Red Light **(LED is in the center of housing)**
Battery Low < 10%	Red LED blinking every 2 seconds **(LED is in the outer ring)**
Battery Low < 5%	Red LED blinking fast with all other LED indicators disabled **(LED is in the outer ring)**
System Warning /Error	Red LED toggling every second for 5 seconds or until trigger key pressed
BT is paired and disconnected to the host	Solid Green Light
Scanner in Auto Presentation Mode	Green LED blinking every 2 seconds
System busy with data scanning disabled	Green LED toggling every second
BT is connected to the host / cradle & ready to send data.	Solid Blue Light
Good read	Green LED flashing once
BT in pairing mode	Blue LED toggling every second
BT is connected to the host / cradle but its signal is too weak to send data Blue LED blinking fast	Blue LED blinking fast
In scanner Firmware Update Mode	White LED

1.7.2 Scanner Beeper indicator

Beeper Description	Indication
Scanner in Auto Operation Mode	Power On with 1 Beep
Scanner in Wedge Operation Mode	Power On with 2 Beeps
Scanner in Batch Operation Mode	Power On with 3 Beeps
Auto Power Off Alarm	3 short beeps at 15 seconds before power off
Power Off	Short beep
Good Read with BT Connected	Beep with medium sound
Good Read with BT Disconnected	Beep with short medium-high sound
BT Connection	Beep with low-medium-high sound

1.7.3 Cradle LED indicator

Description	Indication
Power is on but host is not connected	Solid Red Light
Host is connected, BT is paired and disconnected	Solid Green Light
System busy with data sending/receiving disabled	Green LED toggling every second
Host is connected, BT is connected and cradle is ready to send/receive data	Solid Blue Light
BT in pairing mode	Blue LED toggling every second
In cradle Firmware Update Mode	White Light on
In scanner Firmware Update Mode	White LED toggling every second