



DENSO BHT-M70 Series BHT-M70-QW Hand-Held terminal User Guide

[Home](#) » [DENSO](#) » DENSO BHT-M70 Series BHT-M70-QW Hand-Held terminal User Guide 

DENSO

**BHT-M70 Series
Operator's Guide
Handy Terminal
BHT-M70-QW (WLAN model)
BHT-M70-QWG (WLAN + WWAN model)**

Thank you for using the DENSO WAVE Handy Terminal. Please read this manual thoroughly prior to operation to ensure full use of the product's functionality, and store safely in a convenient location for quick reference even after reading. This manual contains only the basic details required for operation. Please refer to the User's Manual for further details on general operation. The User's Manual can be downloaded from the DENSO WAVE Web site.

<https://www.denso-wave.com>



496996-0930

Contents

- 1 Chapter 1 Please read me first
 - 1.1 About This Manual
 - 1.2 Liability Limitations
 - 1.3 Free/Open source software (FOSS)
 - 1.4 Product Contents Check
 - 1.5 Customer Registration
 - 1.6 Secured Three-year Warranty
 - 1.7 Usage Precautions
 - 1.8 Proper Care of the BHT
- 2 Chapter2 Component and Functions
 - 2.1 BHT-M70
- 3 Chapter3 Preparation before use
 - 3.1 Mounting the hand belt
 - 3.2 Inserting and removing the main battery
 - 3.3 Charging the BHT
- 4 Chapter4 How to Use
 - 4.1 Turning ON the Power
 - 4.2 Reading Codes
 - 4.3 Turning OFF the Power
 - 4.4 Battery Power Level Indicator
 - 4.5 Using the BHT after Long Non-Use
- 5 Chapter5 When Unable to Successfully Read Codes
- 6 Chapter6 Troubleshooting Guide
- 7 Documents / Resources
- 8 Related Posts

Chapter 1 Please read me first

Please contact your nearest distributor, if using in other countries. The latest precision manufacturing technology yields LCD panels with an effective resolution of 99.99% or higher. The downside, however, is that up to 0.01% of the pixels can remain permanently dark or light on today's state-of-the-art panels. Furthermore, please be aware that individual differences may occur in the screen color and brightness due to the characteristics of the white LEDs used in the LCD display backlight.

The Customer shall not modify, reverse compile, reverse engineer, reverse assemble, and or otherwise tamper with our BHT's firmware.

About This Manual

Due to changes and improvements, the content of this manual may be subject to change without prior notice. The reproduction or duplication of the whole or part of this manual is strictly prohibited without prior consent. Please contact DENSO WAVE if this manual is lost. Every attempt has been made to ensure that the content of this manual is thorough and up to date, however, we kindly ask you to report any questionable descriptions, mistakes, or omissions, if any, to DENSO WAVE.

Liability Limitations

DENSO WAVE INCORPORATED ("DENSO WAVE") does not assume any product liability (including damages for lost profits, interruption of operations, or the loss of business-related information) arising out of, or in connection with, the use of, or inability to use the BHT system software or related manuals. DENSO WAVE takes reasonable precautions to ensure its products do not infringe upon any patents or other intellectual property rights of other(s), however, DENSO WAVE cannot be responsible for any patent or other intellectual property right infringement(s) or violation(s) arising from any of the following.

1. The use of DENSO WAVE's products in connection or in combination with other components, products, devices, data processing systems or software not supplied by DENSO WAVE.
2. The use of DENSO WAVE's products in a manner for which they were not intended nor designed.
3. The modification of DENSO WAVE's products by parties other than DENSO WAVE.

If it is judged by DENSO WAVE that malfunction of the product is due to the product having been dropped or subjected to impact, repairs will be made at a reasonable charge even within the warranty period. DENSO WAVE will not bear any responsibility for data that customers have recorded and are received by DENSO WAVE for repair and analysis.

Free/Open source software (FOSS)

This product contains Free / Open Source Software (FOSS.) DENSO WAVE is ready to provide compliant source codes. For details, please contact our dealer or contact the site below. <https://www.denso-wave.com/>

Product Contents Check

Ensure you have all of the following items prior to use. In the event of a missing or damaged item, please contact your dealer.

- Handy terminal ×1
- Operator's guide (this manual) ×1
- SAFETY PRECAUTIONS ×1
- Hand belt ×1 Battery
- Included or not depends on the model.

Model	Product Number	Included battery
BHT-M70-QW	104969-465X	Not included
	104969-466X	BT3
	104969-468X	
	104969-470X	
BHT-M70-QWG	104969-477X	Not included
	104969-478X	BT3
	104969-480X	
	104969-482X	

X is a number between 0 and 9.

Customer Registration

To allow us to provide our customers with comprehensive service and support, we request that all customers complete a Member Registration Form. Registered members will be offered the following privileges.

- The latest upgrade information
- Free exhibition and event information for new products
- Free web-information service "QBdirect."

Information searching service (FAQ)	Offers detailed information on each product.
Download service	The latest OS systems for the BHT Series, repair software, and sample programs can be downloaded.
E-mail inquiries	Product-related queries can be sent in by e-mail.

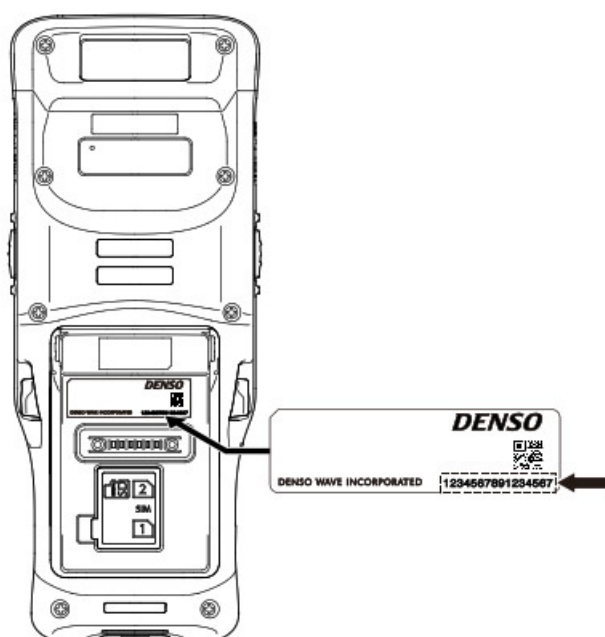
Please note that these privileges may be subject to change without prior notice.

How to Register

Access the URL below and follow the instruction provided. <https://www.denso-wave.com/>

Secured Three-year Warranty

If you register the serial number of the product within one month after your purchase, the warranty of the registered product will be prolonged to three years from the one-year warranty. Please access the URL below to register. <https://www.denso-wave.com/> The serial number for registration is found under the QR Code on the nameplate.



Usage Precautions

1.7.1 Usage environment restrictions

Do not use the BHT where it may be exposed to fire, high temperatures, or direct sunlight. (Failure to observe this may result in damage, overheating, explosion, or fire.) When the BHT is stored in a high-temperature, high-humidity environment of 50 – 60°C, leave to sit in a location at room temperature and normal humidity for at least 1 day prior to use. Failure to observe this may cause a reading failure or damage the BHT. Do not use the BHT in places with extreme temperature variations. (Failure to observe this may lead to BHT malfunction due to condensation.) Leave the BHT for a short while prior to use when moved from a cold to a warm environment. Do not use the BHT in places where it may be exposed to strong impact or significant static electricity.

1.7.2 Keep the BHT away from electromagnetic waves and metallic objects.

Wireless communication may not be possible in the following locations and using. In the vicinity of the following devices operating on a 2.4 GHz waveband (Communication may not be possible due to electromagnetic interference.)

- Industrial, scientific, or medical equipment such as microwave ovens.
- Wireless LAN devices
- Logistics systems in places such as plants or warehouses
- Wireless devices such as amateur radio stations

In the vicinity of household appliances emitting electromagnetic waves such as computers or televisions (Communication may not be possible due to electromagnetic noise.) In the vicinity of metallic objects, in places with high levels of metallic dust, or in places surrounded by metal walls (Communication may not be possible due to the presence of metallic objects.) Putting on any metallic objects around the antenna. Placing your hand over the antenna

Proper Care of the BHT

Make sure to turn OFF the BHT before cleaning.

Cleaning the BHT and charging contacts

To keep clean BHT and charging contacts, periodically wipe them clean with a cotton swab and the like. Be sure not to scratch or deform the contacts while cleaning. Never use organic solvents such as thinner or alcohol, as this may cause plating of the contacts to be peeled off.

Cleaning the Housing

To keep the appearance of the BHT at its best, wipe it clean with a dry, soft cloth.

To best clean the BHT, wipe it clean with a cloth slightly dampened with diluted neutral detergent and dry with a soft, dry cloth. Never use organic solvents such as thinner or alcohol, as this may cause the housing to be marred or paint to be peeled off.

Cleaning the LCD screen

Never rub or hit the LCD screen with anything hard, as this may result in scratches on the screen or breakage.

Cleaning the Reading window

Keep a clean reading window; otherwise, reading performance may be adversely affected.

When using in dusty areas, check the clear plate of the reading window for the accumulation of the dust, on a regular basis.

To keep the clean device at its best, blow dust away with an airbrush and wipe it clean with a cotton swab and the like.

Hard particles such as sand can cause abrasive wear on the plate. Blow them away with an airbrush or brush them away with a soft brush.

Important Notice of Disinfection and Maintenance for DENSO WAVE AUTO-ID Products.

As described in the care and maintenance of the Operator's Guide* contained in the package of regular AUTO-ID products, the usage of thinner and alcohol for cleaning is prohibited.

In consideration of the currently widespread novel coronavirus infection, DENSO WAVE performed the wiping test under its own test standards using 70% ethanol or 10 ppm to 80 ppm hypochlorous acid water in expectation of a certain disinfection effect. As a result, we visually confirmed that there is no remarkable discoloration and color fading on the surface of the housing. Before using the solutions described below, please read and understand the following descriptions.

Test description: Wiping the outer surface of a product excluding the reading window, the dust-proof plate and cables with the robot arm 1,500 times

Solutions: 70% ethanol/ 10 ppm to 80 ppm hypochlorous acid water/ 70% isopropyl alcohol/ 3% hydrogen peroxide

Applicable models: AUTO-ID product models selected by material and posted on the DENSO WAVE's website.

Note

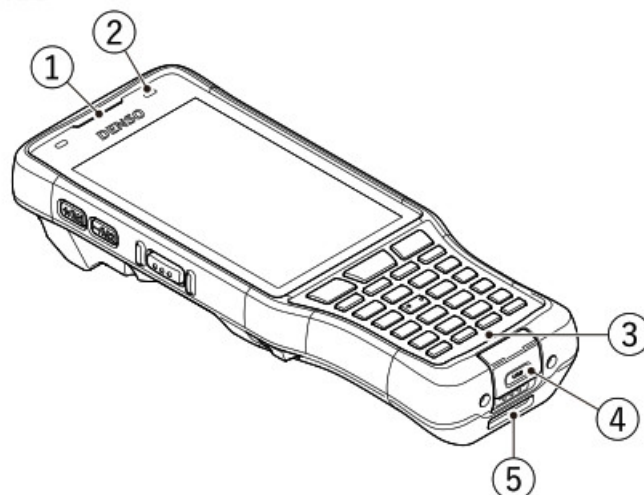
– Do not apply any liquid on the reading window or the dust-proof plate. Never get any liquid into narrow spaces such as holes and slits.

– When wiping, be sure to use a soft cloth. If any liquid remains after the operation, wipe it off with a dry and soft cloth.

– This description does not guarantee the product specifications. Product degradation such as housing degradation may become apparent depending on the operating environment.

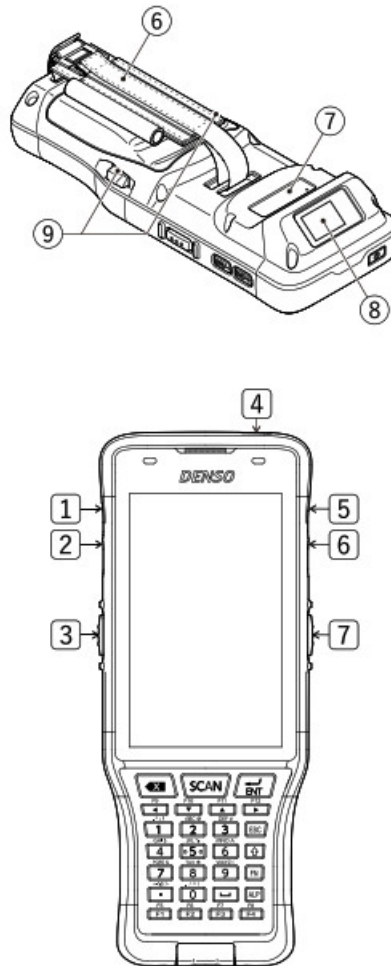
Chapter2 Component and Functions

Upper side



1. Receiver, Speaker
2. Status indicator
3. microphone
4. USB connector
5. Interface connector
6. Hand belt
7. Rear camera
8. Code reading window
9. Battery cover locks

Lower side

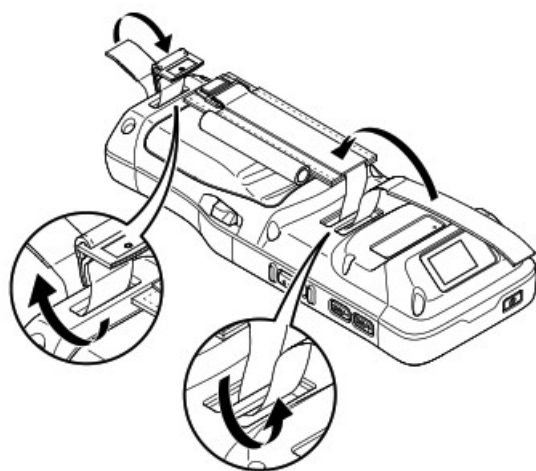


1. M1 key
2. M2 key
3. Left trigger key
4. Power key
5. M3 key
6. M4 key
7. Right trigger key

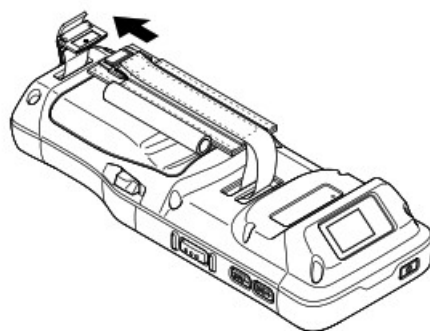
Chapter3 Preparation before use

Mounting the hand belt

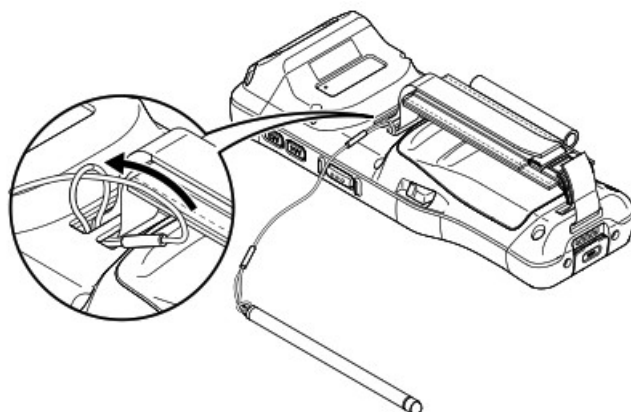
3.1.1 Attach the hand belt to each of the two places as shown in the figure.



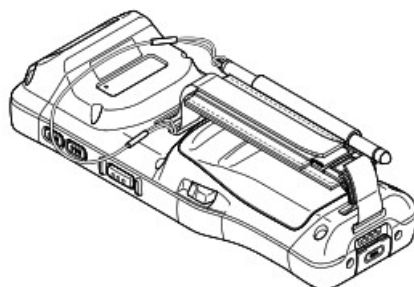
3.1.2 Connect the hand belt.



3.1.3 Install the stylus as shown. Select the right or left side of the hand belt.

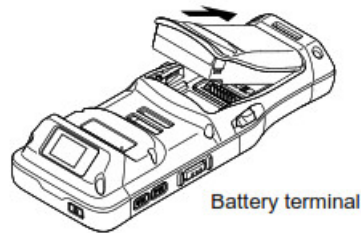


3.1.4 It is also possible to store the stylus in the hand belt.



Inserting and removing the main battery

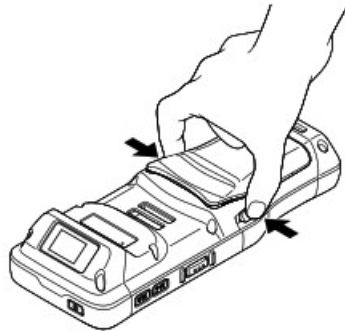
Inserting the battery
Insert the battery in the arrow direction.



Push the battery in the arrow direction.



Removing the battery
Push the battery cover locks in the arrow direction.



Pull out the battery with the battery tab held.



Charging the BHT

The main battery may not be fully charged for shipment. Please charge the main battery to full before using the handy terminal. You may use the Charging Cradle or USB cable to charge the handy terminal.

3.3.1 Charging Time Main battery

The main battery powers the handy terminal to work. It takes approximately 2.1 hours to charge an empty 3050 mAh battery to full. The status indicator above the screen will light up in red while charging and will turn blue when charging is complete.

Sub-battery The sub-battery is mounted on the circuit board and used for retaining data when the main battery is replaced or when it is removed. It may take approximately ten minutes to fully charge an empty sub-battery after installing the main one. Do not remove the battery until the charge is completed so as to retain data properly.

3.3.2 Charging Temperature

Charging the battery at room temperature (18 – 25°C) is recommended in order to deliver optimal performance. Please note that battery charging stops when the ambient temperature drops below 0°C or exceeds 40°C. The temperature to stop charging may vary according to the practical operating environment.

3.3.3 Operation on Battery Power When 802.11a/b/g/n/ac

GSM/GPRS/EDGE/WCDMA/UMTS/HSDPA/HSUPA/HSPA+/LTE, Bluetooth v5.1&v2.1+EDR and GPS are all enabled on battery power, the main battery level will drop down substantially. Prolonged use of the display and continued scanning of barcodes will also affect battery level. In order to avoid the unexpected system shutting down when the battery level is low, we suggest that you keep a fresh battery for replacement at all times, or connect the BHT to external power.

Remove the battery from the BHT or the Cradle then store in a cool and dry place if not using the BHT for an extended period of time. Storing a fully charged or depleted (unable to turn on the BHT) battery for long periods of time may deteriorate the performance and life of the battery. For long-term storage, storing the battery at 50% of the power level is recommended. During long-term storage, charge the battery cartridge fully once a year in order to maintain the battery performance. When fully charged, allow the battery to discharge down to the recommended level before restoring. The battery may swell over the years depending on the usage environment. This is a characteristic of a lithium-ion battery and is no a safety hazard.

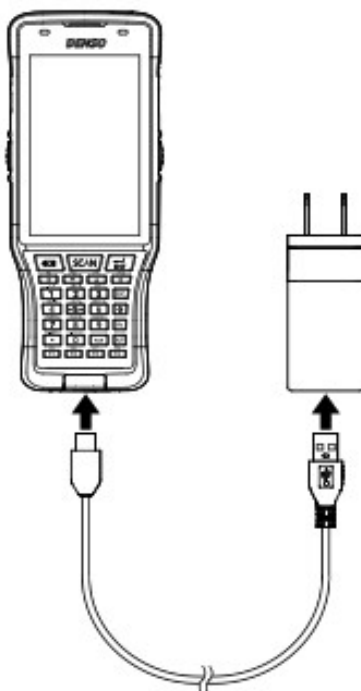
3.3.4 Charging Status of the BHT

The Charge status of the BHT is shown on the status indicator above the display screen.

Status indicator	Indication	Description
Charging	Red, solid	Charging the BHT
	Red, blink	Charging error
	Green, solid	Charging complete
	Not light	Charging error (Charging stops.)

3.3.5 Using the USB Cable

1. Connect the USB Type-C connector to the connector at the bottom of the BHT.



2. Connect the USB Type-A connector to the USB power adapter.

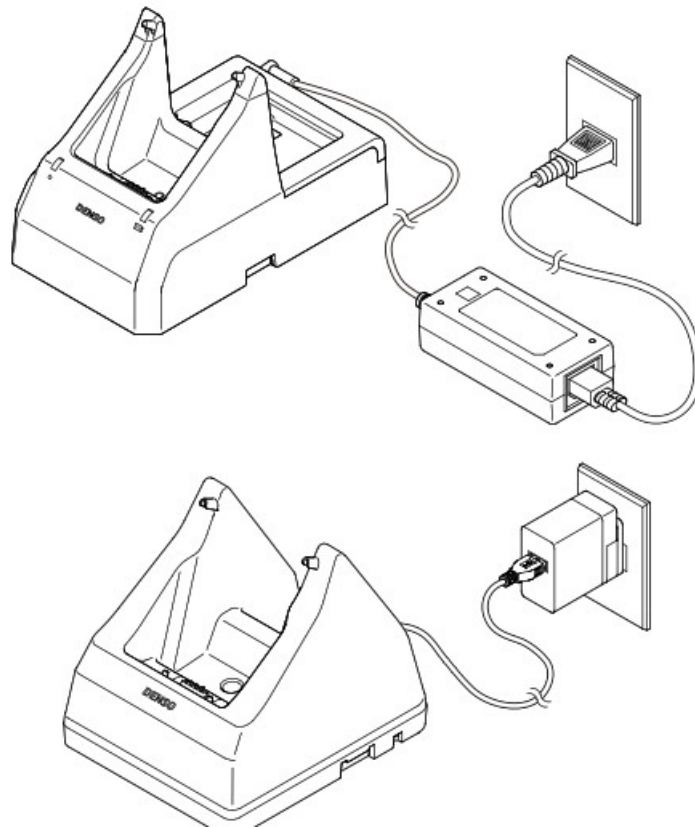
3.3.6 Using the Charging Cradle

Plugging in the cradle

Connect the dedicated power adapter, the USB cable, and/or USB power adapter to the cradle. Plug in the AC plug or the AC adapter.

The right figure is for when the CU-M70U is plugged in using the power adapter.

The right figure is for when the CU-M70UQ is connected using the USB cable and USB power adapter.



Power Supply for CU-M70U/L

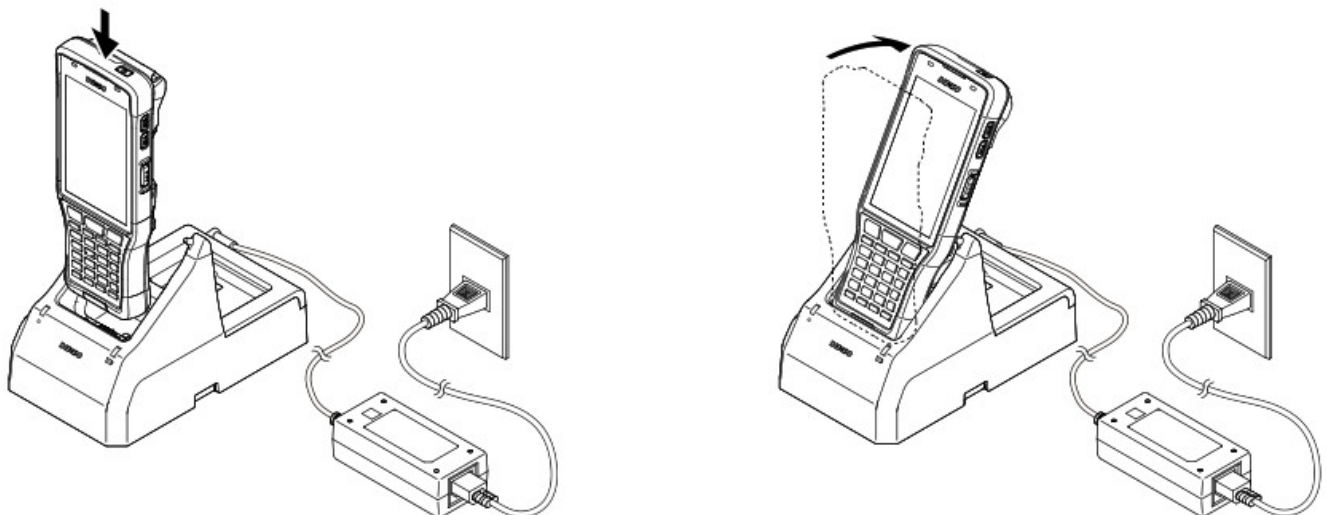
Use ONLY a DNWA approved Nationally Recognized Test Laboratory (NRTL) Certified ITE (LPS/SELV) power supply with electrical ratings: Output 12 VDC, min 4.16 A, with a maximum ambient temperature of at least + 40°C. The use of an alternative power supply will invalidate any approvals given to this unit and may be dangerous.

Power Supply for CU-M70UQ

Use ONLY a DNWA approved Nationally Recognized Test Laboratory (NRTL) Certified ITE (LPS/SELV) power supply with electrical ratings: Output 5 VDC, min 3 A, with a maximum ambient temperature of at least + 40°C. The use of an alternative power supply will invalidate any approvals given to this unit and may be dangerous.

Charging BHT

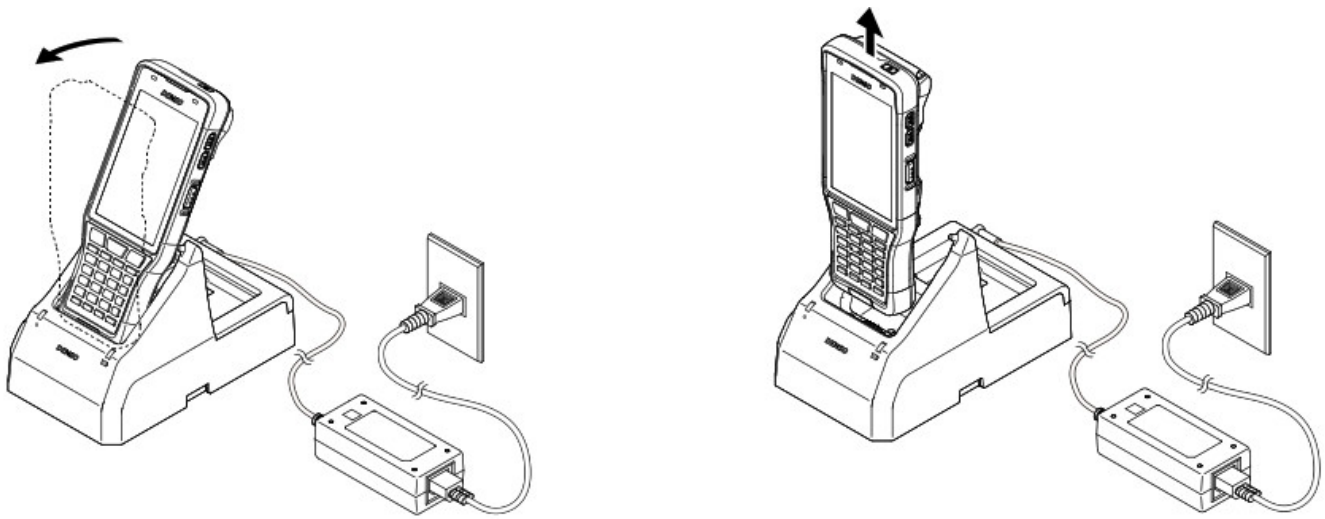
Set the BHT in the cradle upright and gently tilt it away from you.



Note: When placing the BHT on the cradle, ensure there is no tangled strap between the device and the cradle. A specific part of the device may get warm while charging depending on the operating environment and conditions. This is not a malfunction.

Removing the BHT from the Cradle

Tilt the BHT toward you and pull it out perpendicularly



Notice on the power connection of the charging cradle

As for CU-M70U with the USB interface, both a power adapter and USB cable can be used. When only the USB cable is used, the charging time could be longer under the condition where the BHT is operated even during charging. This may cause the charging status error, and thus, use of the power adapter is recommended. Using a deteriorated battery may also cause a charging error. In this case, replace that battery with a new one.

Chapter4 How to Use

Turning ON the Power

To turn on the BHT, press and hold the power button located on the upper side of the device. The OS starts up and the lock screen is displayed. Swipe up from the bottom of the lock screen to display the home screen.

Note: Ensure the battery is seated properly; otherwise, the BHT is not turned on. If the device is used in a low-temperature environment such as a freezing room, it shall be turned on in the environment of ambient temperature prior to use. Cold environment can prevent the device from powering on. Operating the device in a low-temperature environment may result in delayed BHT operations, or considerably reduced operating time, due to the battery characteristics. Perform operation verification of the BHT against conditions of use before use.

Reading Codes

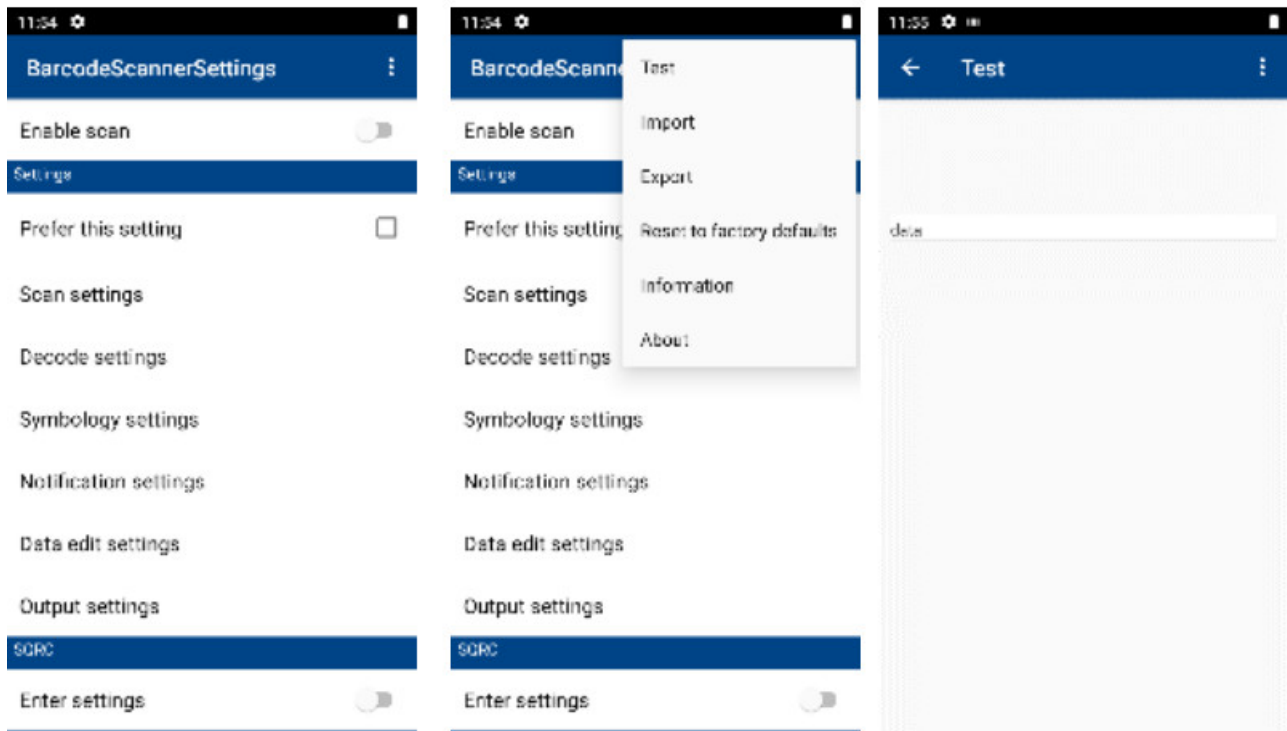
Follow the procedure below to read codes.

4.2.1 Press the power key to start up the BHT from the sleep mode.

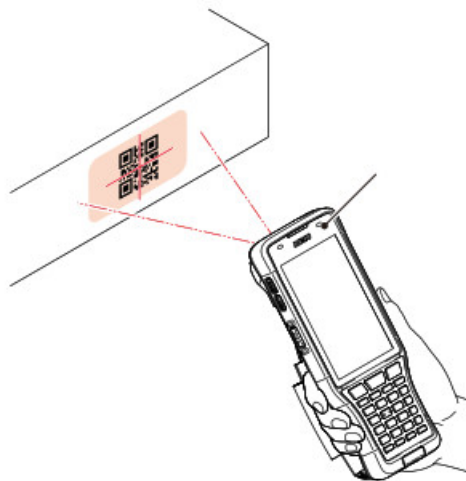
4.2.2 Tap the Scan Settings.

Set the Enabled scan to ON, and tap the *TEST* on the menu bar.

Then the test scan form opens to display the scanned data.



4.2.3 Point the code reading window towards the barcode to scan and press a trigger key on the side of the scanner. Light for scanning is irradiated and the printed barcode is scanned. When the data is successfully scanned and displayed, or the time has elapsed, the light for scanning disappears.







Turning OFF the Power

To power off the BHT, press and hold the power button,  and tap the pop-up *Power off *menu. Make sure that all user data and tasks are saved before tapping the *Power off *menu.

Battery Power Level Indicator

You can check the battery charge on the battery icon, on the top left corner of the screen. The battery indicator just shows the estimated battery remaining, so charge the device a little at a time, whenever you have a chance. Refer to the Safety Precautions for proper handling and usage of the battery.

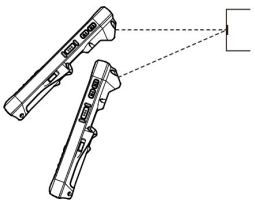
Battery icon	Status
 100%	100%
 76%	Slightly reduced
 15%	Dropping below 15%
	Charging

Using the BHT after Long Non-Use

Data stored in the BHT may be lost or damaged and the calendar clock may stop if the BHT is left unused for a long period.

- Keep a backup copy of important or critical information beforehand.
- Reset the calendar clock if it is stopped. The battery can also be served as a backup power source to fully charge the sub-battery.
- To successfully achieve this, keep the battery installed at least for 10 minutes. Please refer to the User's Manual for more information on troubleshooting.

Chapter5 When Unable to Successfully Read Codes

	Cause	Countermeasure
Specular reflection	Mounting the BHT perpendicular to a code may cause specular reflection. This may lead to no-read results.	Adjust the position of the BHT relative to the code and scan again. 
Distance from code	No-read results can occur if the BHT is positioned too close to or too far from a code within a possible read distance.	Gradually change the mounting position of the BHT relative to the code so as to find an appropriate focal distance.
Curved material's surface of barcodes	No-read results can occur if the material's surface of the barcode is excessively curved.	Ensure that the reading window is mounted at the center relative to the code while scanning.
Missing barcodes by debris	Debris can obstruct barcode elements from the view of the BHT.	Remove any obstruction of the barcode and scan again.
Soiled reading window	No-read results can occur if the reading window has obstructions such as dust or debris.	Blow out any contaminants with an airbrush; gently wipe the window with a soft, dry cloth.
Reading in sunlight or inappropriate brightness	No-read results can be caused by code reading in sunlight or an environment with inappropriate brightness.	In outdoor use, ensure to avoid an environment where the BHT is exposed to sunlight while scanning. In indoor use, ensure to scan barcodes in an environment with appropriate brightness for decoding.

Chapter6 Troubleshooting Guide

6.1 The BHT is not turned ON

- Make sure that the battery is properly inserted into the BHT.
- Check the battery power level and charge the battery if necessary.
- Wipe any dirt from the battery and BHT terminals.

6.2 The BHT cannot be charged

- Make sure that the dedicated battery charger is being used.
- Make sure that the battery is properly inserted into the BHT.
- Make sure that the BHT has been properly placed on the charger.

The BHT status indicator will turn red when properly placed on the charger.

- Wipe any dirt from the battery and BHT contacts. If the battery in use has been repeatedly charged three hundred times or more or it has been more than one year since the battery started to be used, replace it with a new one to avoid any trouble caused by the deteriorated battery.

6.3 The BHT accidentally turns OFF

- Make sure that the battery has been fully charged. If not, charge the battery.
- Check whether auto power off is set. If auto power off is set, the power will be turned off automatically when the BHT is not used for the set time.

The auto power-off setting can be changed only in the user program.

The BHT may be broken if the above measures are not adequate. Notify the system administrator. Refer to the User's Manual for appropriate measures if an error message is displayed on the BHT during the operation.

Data location	Data retention
Internal storage flash memory	Data retained
microSD card	Data retained
Data being edited	Data erased

- All rights reserved. No part of this publication may be reproduced in any form or by any means without permission in writing from the publisher. All products and company names mentioned are trademarks or registered trademarks of their respective holders.
- DENSO WAVE INCORPORATED does not assume any product liability arising out of, or in connection with, the application or use of any product, circuit, or application described herein.
- If it is judged by DENSO WAVE INCORPORATED that malfunction of the product is due to the product having been dropped or subjected to impact, repairs will be made at a reasonable charge even within the warranty period.
- Intellectual Property Precaution

DENSO WAVE INCORPORATED ("DENSO WAVE") takes reasonable precautions to ensure its products do not infringe upon any patent or other intellectual property rights of other(s), but DENSO WAVE cannot be responsible for any patent or other intellectual property right infringement(s) or violation(s) which arise from (i) the use of DENSO WAVES product(s) in connection or in combination with another component (s), product(s), data processing system(s) or equipment or software not supplied from DENSO WAVE; (ii) the use of DENSO WAVES products in a manner for which the same were not intended nor designed; or (iii) any modification of DENSO WAVES products by other(s) than DENSO WAVE.

Copyright © DENSO WAVE INCORPORATED, 2018

All rights reserved. No part of this publication may be reproduced in any form or by any means without permission in writing from the publisher.

All products and company names mentioned in this document are trademarks or registered trademarks of their respective holders. QBdirect is a trademark of DENSO WAVE INCORPORATED.

Android™ is a trademark of Google LLC. Other products and company names mentioned in this document are trademarks or registered trademarks of their respective holders. Specifications are subject to change without prior notice.




DENSO WAVE INCORPORATED

1 Yoshiike Kusagi Agui-cho, Chita-gun, Aichi 470-2297, Japan

<https://www.denso-wave.com/>

This manual uses recycled paper.

Documents / Resources

	<p>DENSO BHT-M70 Series BHT-M70-QW Hand-Held terminal [pdf] User Guide BHTM70QW, PZWBHTM70QW, BHT-M70 Series, BHT-M70-QW, BHT-M70-QWG, Hand-Held t erminal</p>
---	--

[Manuals+](#)