

DENSO

**Barcode/2D code
Handy Terminal**

BHT-1260BWB-CE
BHT-1261BWB-CE
BHT-1260QWB-CE
BHT-1261QWB-CE
BHT-1261QWBG-CE

User's Manual



Preface

Thank you for using the DENSO WAVE Barcode Handy Terminal BHT-1260BWB-CE/BHT-1261BWB-CE and 2D code Handy Terminal BHT-1260QWB-CE/BHT-1261QWB-CE/BHT-1261QWBG-CE.

Read this manual thoroughly before using the product to ensure the proper use of the product and its functions, and keep the manual in a convenient location as a quick reference.

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Some of the pixels on the LCD touch screen may not illuminate or stay permanently illuminated. There may also be inconsistencies in color and brightness. None of these factors imply an LCD functional defect.

A thin Newton's ring (rainbow-like patterns) may appear on the touch panel.

This does not necessarily indicate a problem with the touch panel.

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- DENSO WAVE INCORPORATED 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.
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Customer Registration and Inquiries

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 information for exhibitions, events and new products
- Free Web-information service "QBdirect".

QBdirect Service Contents

Information search service (FAQ)	Offers detailed information on each product.
Download service	Offers downloads of update modules with the latest BHT Series systems or software, and sample programs.
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 instructions provided.

<http://www.qbdirect.net/>

Inquiries

– Technical Inquiries (QBdirect)

- BHT product programming method
- Product setup method and usage
- Other technical questions

Inquires relating to the above can be made at our exclusive Web site for registered users (QBdirect).

Access the link below to log on or register.

<http://www.qbdirect.net/>

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- The reproduction or duplication of the whole or part of this manual is strictly prohibited without prior consent.
- Every reasonable effort has been taken to ensure that the information contained in this manual is complete and accurate; however, should you notice any questionable points, errors or omissions, please contact DENSO WAVE.
- The copyright for this User's Manual belongs to DENSO WAVE INCORPORATED.
- All screens in this User's Manual are simulated. Actual screens may differ. File names used are only for explanation purposes and will not be displayed if file names are not exactly the same.

Manual Contents

This manual consists of the following 9 chapters.

Chapter 1 Outline

Describes the BHT system and overall outline of the BHT.

Chapter 2 BHT Preparation

Describes information and preparations required prior to operation.

Chapter 3 Basic Operation

Describes how to read codes using the BHT, the backlight function, how to use the keypad, and BHT data transmission.

Chapter 4 System Operation

Describes how to operate the desktop, Start menu and System Menu, and how to create wireless network settings.

Chapter 5 Communication

Describes technical information on BHT Ethernet communication, Bluetooth[®] communication, and wireless communication, and provides details of Microsoft ActiveSync.

Chapter 6 Maintenance

Describes battery replacement, and daily procedures for taking care of the BHT and CU.

Chapter 7 Error Messages

Describes causes and countermeasures for error messages that display during the BHT use.

Chapter 8 Specifications

Describes specifications for hardware, readable codes, and interfaces.

Chapter 9 Appendices

Describes the CU-1200 Series.

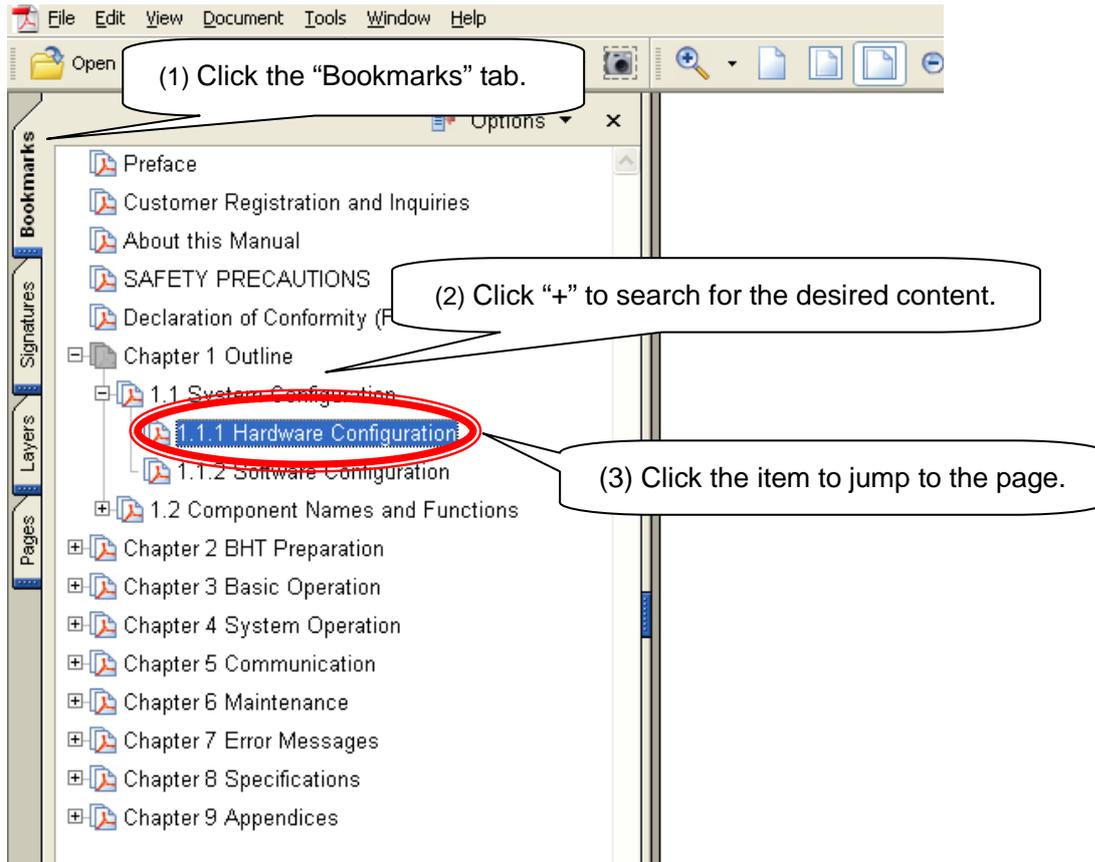
Viewing this Manual

- About the Bookmark

The PDF Bookmark function allows you to jump to the desired page.

<Procedure>

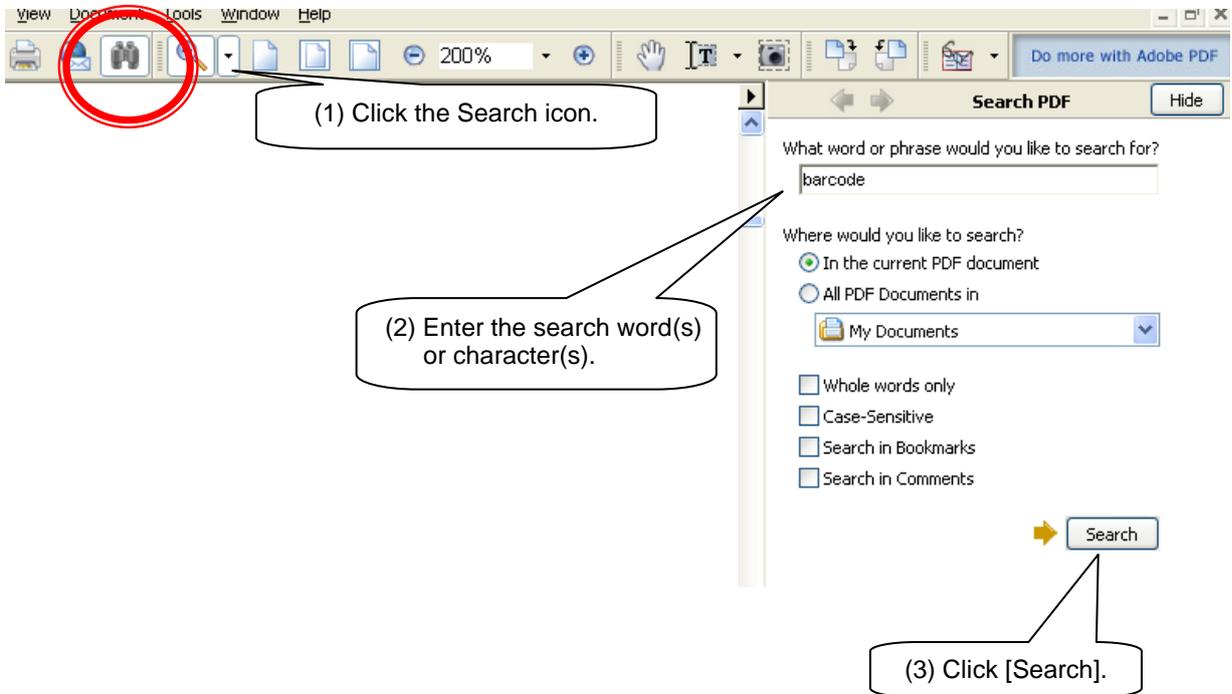
- (1) Click the "Bookmark" tab.
- (2) Click "+" to search for the desired content.
- (3) Click the item to jump to the page.



- Searching by Word

The PDF search function allows you to jump to the desired page by entering words or characters related to the item being searched.

- (1) Click the Search icon. (Or select "Edit" – "Search".)
- (2) Enter the search word(s) or character(s).
- (3) Click [Search].



<Search Results Example>

Thank you for using the BHT-700BB-CE/700BWB-CE/700BWBG-CE DENSO WAVE Barcode Handy Terminal.

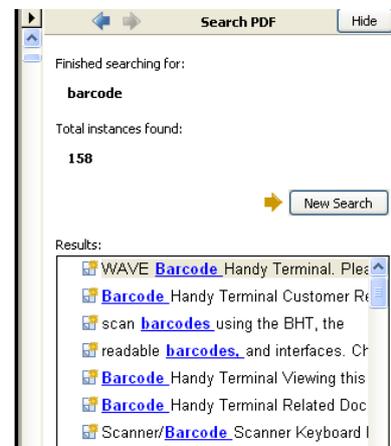
Please read this manual thoroughly prior to operation to ensure full use of the product's functionality, and store safely in a convenient location for quick reference even after reading.

If the BHT is left with the battery cartridge discharged or with no battery cartridge loaded, or if the battery cartridge is replaced incorrectly, data stored in the BHT may be lost. By performing a full reset (refer to "Chapter 2 BHT Preparation" – "2.6 Resetting and Full Resetting"), all data stored in the RAM will be lost. It is therefore recommended that important data be either saved to the "FLASH" folder or backed up at the computer.

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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 lit on today's state-of-the-art panels.

A thin Newton's ring (rainbow-like patterns) may appear on the touch panel.
This does not necessarily indicate a problem with the touch panel.



Supported OS versions for this manual

- The manual is intended for the following OS versions.

Edition	Revision record	OS Version		
		1200B	1200Q	1200QG
1st	-	1.00	—	—
2nd	Enhanced the BHTSettings features (KEY, Display, StartupConfig), and added the SIP feature.	1.02	—	—
(Integrated manual edition of the BHT-1200B and BHT-1200Q)				
1st	Added the BHTSettings features (VGA, WLAN Manager, SQRC, Scanner, Log Manager and so on)	1.06	1.03	—
2nd	— (skipped)	—	—	—
3rd	Added the reset menu Enhanced the BHT Settings features (StartupConfig, Remote Desktop, Log Manager) Enhanced the Device Lock features. Added the Application Launcher feature	1.07	1.04	—
4th	Added the BHT-1200QWBG features.	—	—	1.01
5th	Added "Multi-press input with timeout" for alphabet input method. Modified control panel features (Regional settings > Uniscribe default, Terminal Server Client Licenses) Enhanced the WLAN Manager profile feature Enhanced the Application launcher feature Uniscribe in Regiona and Language Settings is changed [Notes] As a result, the text layout of the complex text languages (CTL) such as Thai is changed after OS update. Refer to Chapter 4, 4.2 Regional and Language Settings for mode details.	1.10	1.07	1.02
6th	Added the description related to the CCX support.	1.11	1.08	1.03
7th	Added the description related to the alphabet entry mode 2.	1.13	1.10	1.04
8th	Trigger release mode is added	1.16	1.12	1.05
9th	Added the IE address bar hide function, the wireless communication logging and the USB setting menu.	1.16	1.12	1.05
10th	Added the SessionKeeper.	—	—	1.05
	Added the error reporting property. Added the feature that backs up OS settings automatically at power-off to StartupConfig.	1.18	1.14	1.06
	Added the battery charging mode.	1.19	1.19	(unsupported)
	Modified the BHT backup menu and the Startup Config menu.	1.20	1.20	1.10
	Added the following functions and explanations to WWAN Manager. (1) PPP authentication method selection function ([DataConnection] tab). (2) Explanation of automatic power restore.	—	—	1.10
11th	Modified the G sensor calibration menu.	1.22	1.22	1.11

Related Documentations

- BHT API Reference Manual
- BHT Class Library Reference Manual
- Bluetooth Reference Manual
- kbifCE Users guide
- SQRC Setting User's Manual
- Remote Desktop Plug-in Reference Manual
- Web Browser Plug-in Reference Manual
- WWAN/GPS API Reference Manual
- WWAN/GPS Class Library Reference Manual

SAFETY PRECAUTIONS

Be sure to observe all these safety precautions.

- Read through this manual carefully to use the BHT and CU safely and correctly.
Always keep this manual nearby for easy reference.
- The symbols used in this manual
The symbols used in this manual are used to explain safe and correct use of the product so as to prevent bodily injury and property damage to you and others.
Before reading this manual, make sure that you fully understand the meanings of the symbols below.



WARNING

Alerts you to those conditions that could cause serious bodily injury or death if the instructions are not followed correctly.



CAUTION

Alerts you to those conditions that could cause minor bodily injury or substantial property damage if the instructions are not followed correctly.

Meaning of Symbols



A triangle (Δ) with a picture inside alerts you to a warning of danger. Here you see the warning for electrical shock.



A diagonal line through a circle (⊘) warns you of something you should not do; it may or may not have a picture inside. Here you see a screwdriver inside the circle, meaning that you should not disassemble.



A black circle (\bullet) with a picture inside alerts you to something you MUST do. This example shows that you MUST unplug the power cord.

WARNING

Handling the battery

Failure to follow all instructions listed below may cause electrical shock, overheating, smoking, fire, or an explosion.

	<ul style="list-style-type: none"> Do not disassemble or modify the battery.
	<ul style="list-style-type: none"> Do not use batteries other than the specified ones. Do not connect the battery (+) and (-) terminals with a metal object such as a wire. Do not carry or store the battery together with metallic ball-point pens, necklaces, coins, hairpins, etc. Do not use or store the battery in places exceeding the service or storage temperature. Do not expose the battery to fire or heat. Do not use or leave the battery near high-temperature locations (60°C or higher) such as a fire or heater. Do not put or wet the battery with water or seawater. Do not charge the battery near a fire or in direct sunlight. Do not charge the rechargeable battery where any inflammable gases may be emitted Do not hammer nails into the battery, hit it with a hammer, or step on it. Do not subject the battery to strong impact or throw it. Do not use a damaged or deformed battery. Do not solder directly to the battery. Do not put the battery into a microwave oven or high-pressure container.
	<ul style="list-style-type: none"> During use, charging, or storage of the battery, if any odor comes from the battery, it is overheated, discolored, deformed, or anything unusual is noticed, remove the battery if in the BHT or charger. Do not use the battery. If any battery fluid leaks out from the battery and gets into your eyes or comes into contact with the skin, wash thoroughly with clean water such as tap water without rubbing, and seek medical attention immediately. Failure to follow instruction may result in eye or skin injuries. Stop charging if the charge is not completed after the specified time has elapsed.

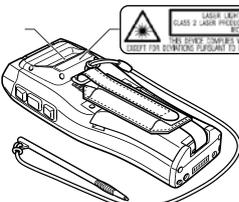
! WARNING

To System Designers

- In a life-critical system such as a medicines management system, even a simple data error may cause a potential life-threatening situation. Always design a redundant fail-safe system to protect human lives.

Handling the BHT

Failure to follow all instructions listed below may cause electrical shock, overheating and smoking.

	<ul style="list-style-type: none"> • Do not disassemble or modify the BHT.
	<ul style="list-style-type: none"> • Do not insert foreign objects in the BHT. • Do not wet the BHT with water or seawater. • Do not put the BHT into a microwave oven or high-pressure container. • Do not leave the BHT in places where there are excessively high temperatures, such as inside closed-up automobiles or in places exposed to direct sunlight. • Do not use or store the battery in places exceeding the service or storage temperature. • Do not use the BHT with the damaged case. • Do not use the power supply other than the battery specified by DENSO WAVE. • Do not poke anyone's eyes with the stylus that comes with the BHT. <p>The 2D Code Handy Terminal uses a laser light for indicating the scanning range. The intensity of the laser light is too low to inflict bodily injury. However, do not stare into beam. You must observe the following precautions when handling the BHT equipped with laser light.</p> <ol style="list-style-type: none"> 1) Never stare into the reading window. 2) Never point the reading window at someone's eye. <p>The 2D Code Handy Terminal complies with IEC 60825-1 Ed.2:2007. In accordance with Clause 5 and 6, IEC 60825-1, the following information is provided to the user:</p> <div style="display: flex; align-items: center; justify-content: space-between;"> <div style="text-align: left;"> <p>BHT-1261QWB BHT-1261QWBG</p> </div> <div style="text-align: center;"> <p>Reading Window (Laser Light emission window)</p> </div> <div style="text-align: center;">  </div> <div style="text-align: right;"> <p>LASER LIGHT DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT</p> </div> </div> <p>Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.</p>
	<ul style="list-style-type: none"> • If smoke, abnormal odor, noises, or anything unusual is noticed, immediately turn the BHT off and remove the battery from the BHT. • If the battery fluid leaks out from the battery and gets into your eyes, or comes into contact with the skin, wash thoroughly with clean water such as tap water without rubbing, and seek medical attention immediately. Failure to follow instruction may result in eye or skin injuries. • Stop charging if the charge does not complete after the specified time has elapsed.

CAUTION

Handling the BHT

Failure to follow all instructions listed below may cause not only incorrect operation, but also overheating, smoking and malfunction.

	<ul style="list-style-type: none">• When using the hand belt, avoid getting them caught in other objects or entangled them in rotating machinery.
	<ul style="list-style-type: none">• Do not use the BHT near wireless devices such as personal radios and ham radios.• Do not place magnetic cards such as cash cards, credit cards, etc., close to the BHT speaker. Failure to follow instruction may result in the loss of magnetic data.• Do not place your ear close to the speaker when sounds are emitted. Failure to follow instruction may result in hearing loss.• Do not use excessive force when inserting or removing the rechargeable battery.• Do not use the BHT in environments where static electricity can build into significant charges.• Do not drop the BHT on the floor or subject it to strong impact.• Do not touch the BHT with greasy hands or gloves.• Make sure that both the BHT and battery are dry before placing the BHT into the cradle. Failure to follow instruction may result in a fire or electrical shock• This product is equipped with the connector for a microSD card. Do not insert anything other than a microSD card. Do not use excessive strength when inserting the microSD card. Insert the microSD card straight into the slot with the metal contacts facing up and going in first. Failure to follow instruction may damage the microSD card and connector.• Plugging in the BHT into the CU: Slide the BHT gently into the CU. Make sure that it is placed along the guides and not tilted or twisted. If the BHT does not easily fit into the CU, please take it out, check the CU and the BHT for interfering obstacles and try again. Never use any force to attach the BHT into the CU.

BHT-1200 Series

Chapter 1

Outline

This chapter describes the system and overall outline of the BHT.

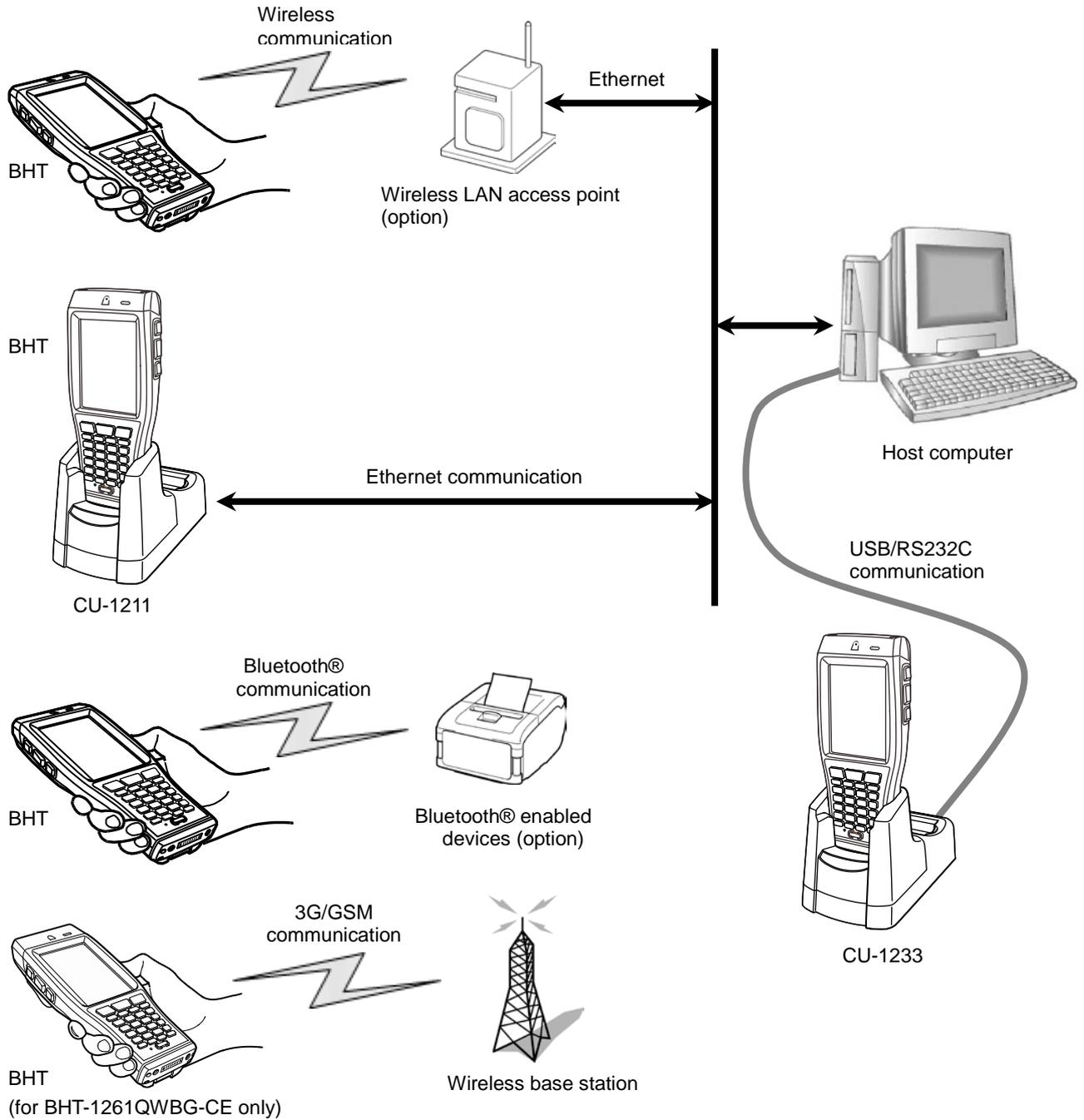
1.1	System Configuration	2
1.1.1	Hardware Configuration	2
1.1.2	Software Configuration	3
1.2	Component Names and Functions	4
1.2.1	BHT	4
1.2.2	CU	8
1.2.3	Keypad	9
1.2.4	BHT Screen	11

1.1 System Configuration

This section describes the hardware and software required for the BHT code data collection system.

1.1.1 Hardware Configuration

The following figure shows the required hardware for the BHT code data collection system. The required hardware varies depending on the communication used.



1.1.2 Software Configuration

[1] BHT Operating System (OS)

Microsoft Windows Embedded CE 6.0 R3

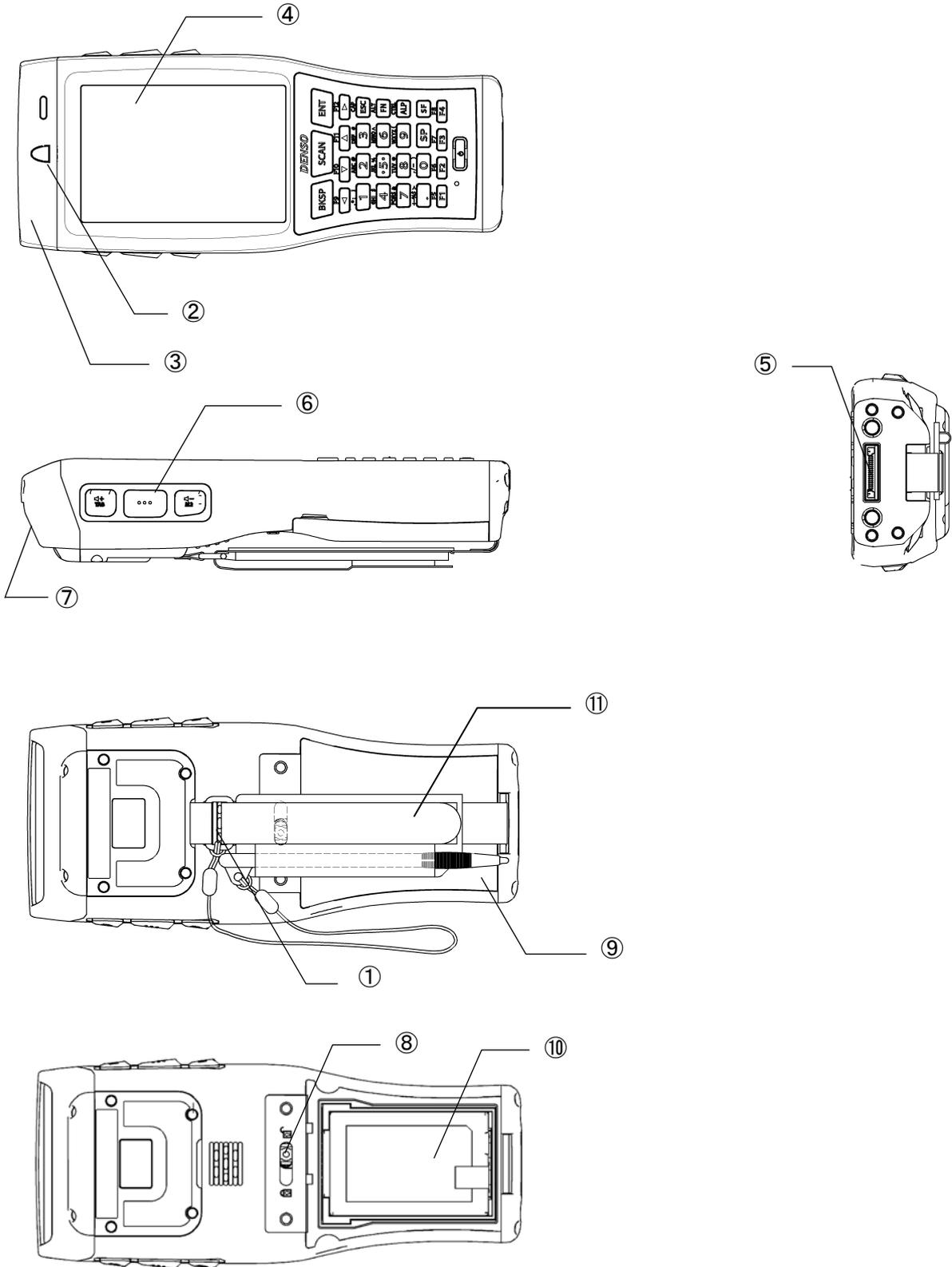
[2] Application Program Development Environment

Refer to the BHT API Reference Manual and BHT Class Library Reference Manual.

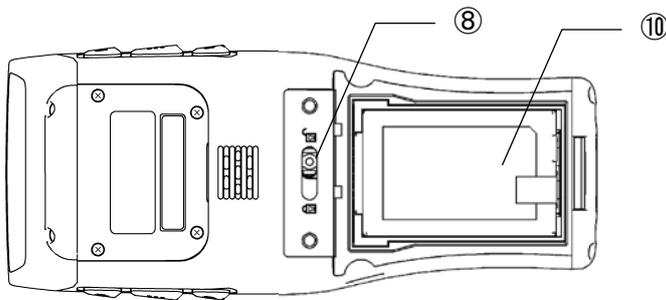
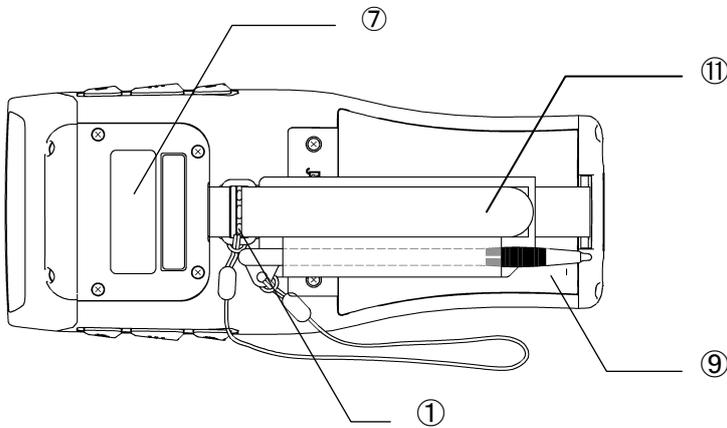
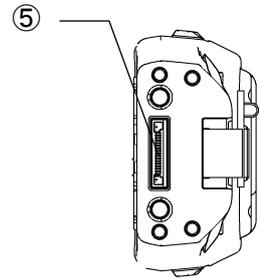
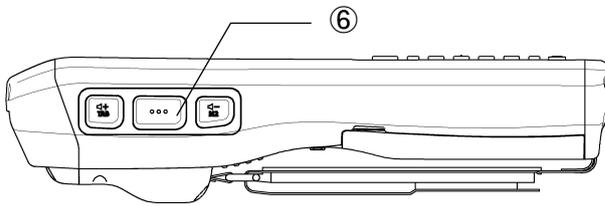
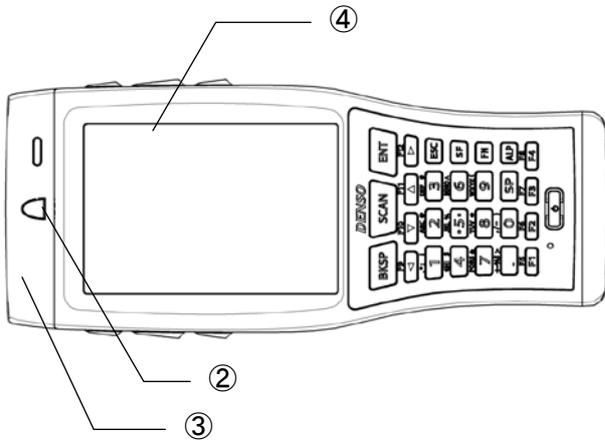
1.2 Component Names and Functions

1.2.1 BHT

BHT-1260BWB-CE/BHT-1261BWB-CE

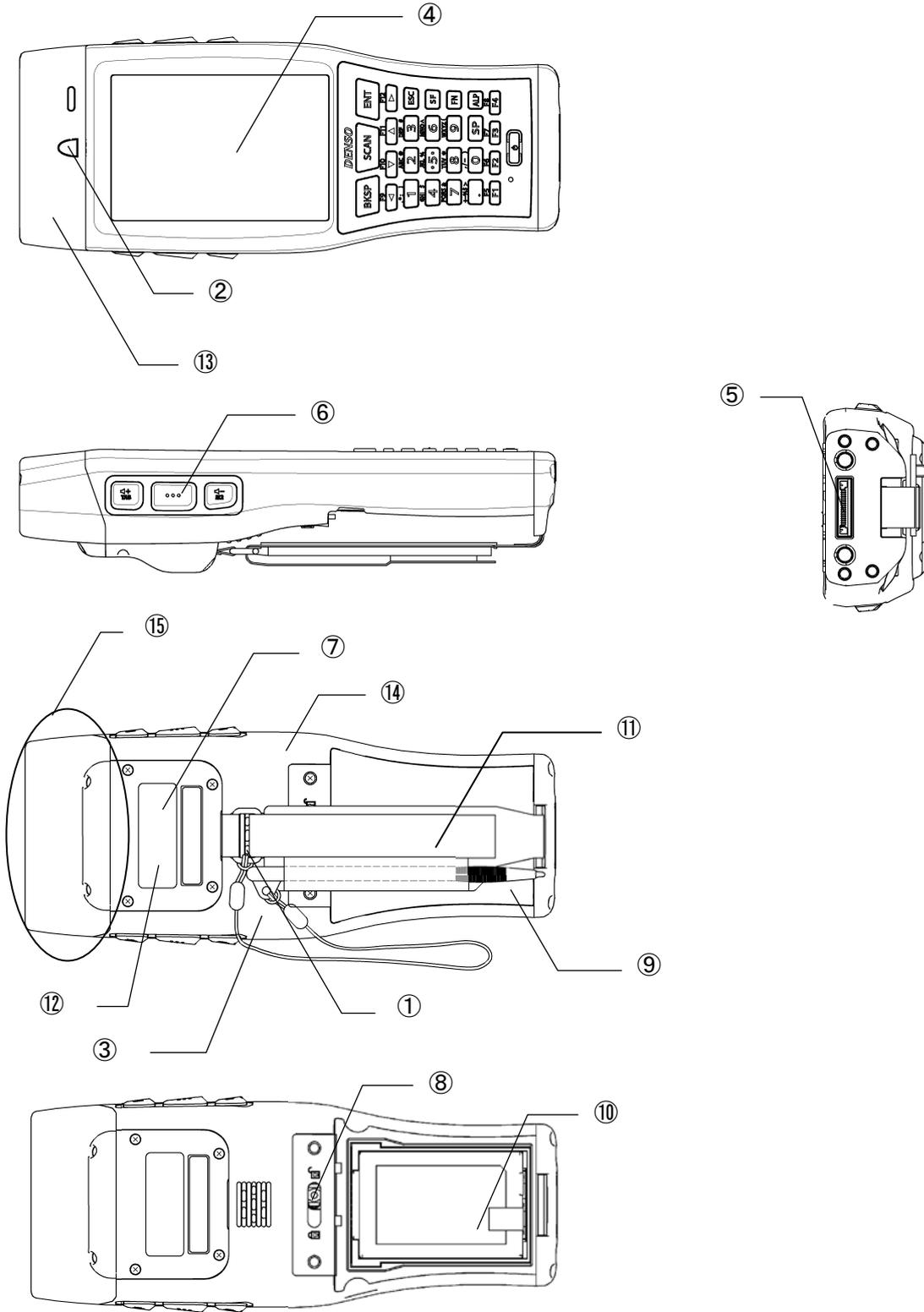


BHT-1260QWB-CE/BHT-1261QWB-CE



BHT-1200 Series

BHT-1261QWBG-CE

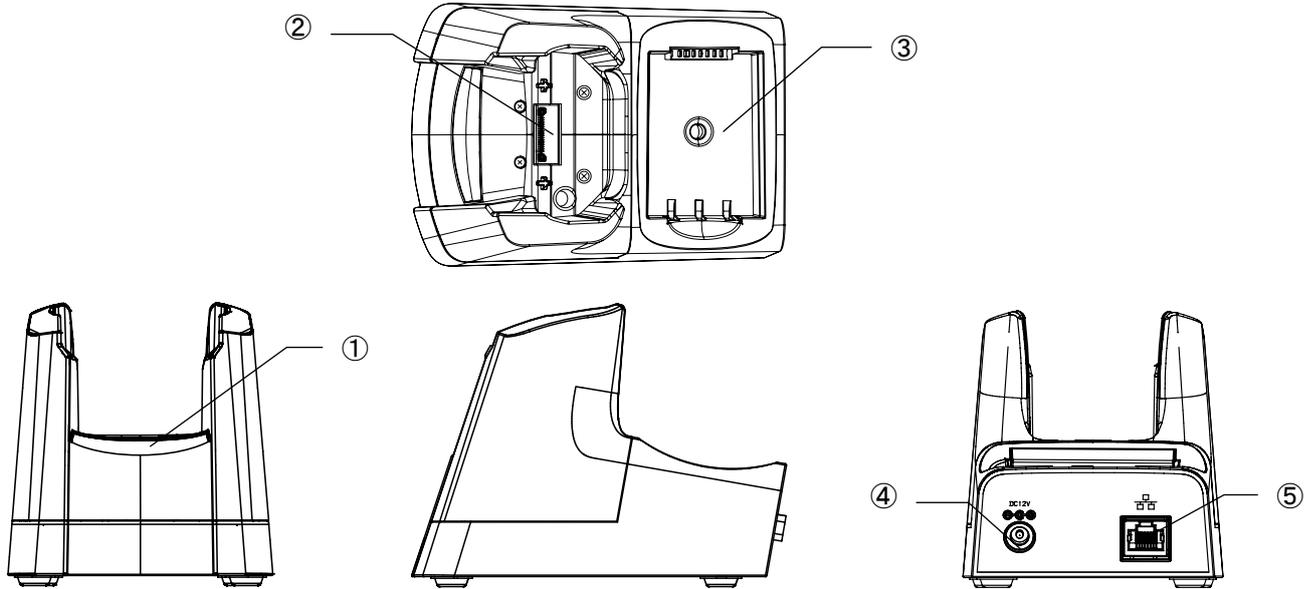


No.	Name	Function and Description
①	Speaker	Emits sounds
②	LED Indicator	Illuminates in red during charging and turns green upon completion of charging. Illuminates in blue when the BHT has successfully read a code.
③	IEEE802.11b/g/n built-in antenna	Communicates with the wireless LAN access point.
	Bluetooth® built-in antenna	Communicates with other Bluetooth® enabled devices.
④	LCD (with Touch panel)	Displays characters and graphic patterns. Enters data by tapping the screen with the stylus.
⑤	Interface port	Connects to the CU for charging and communication.
⑥	Trigger key	To read a code, press this key. (This key functions the same as the Scan key.)
⑦	Reading window	To read a code, point this reading window at a code.
⑧	Battery cover lock	Locks or unlocks the battery cover.
⑨	Battery cover	To replace the battery, remove this cover
⑩	Battery	Main BHT power source
⑪	Hand belt	Keeps the BHT secure in the palm of your hand.
⑫	Camera	Takes photos
⑬	Built-in GPS antenna	Receives GPS signals
⑭	Built-in 3G diversity antenna	Communicates via 3G networks
⑮	Interface connector	For the wireless WAN (3G/GSM) communication

1.2.2 CU

The CU is a battery charger with communication function.

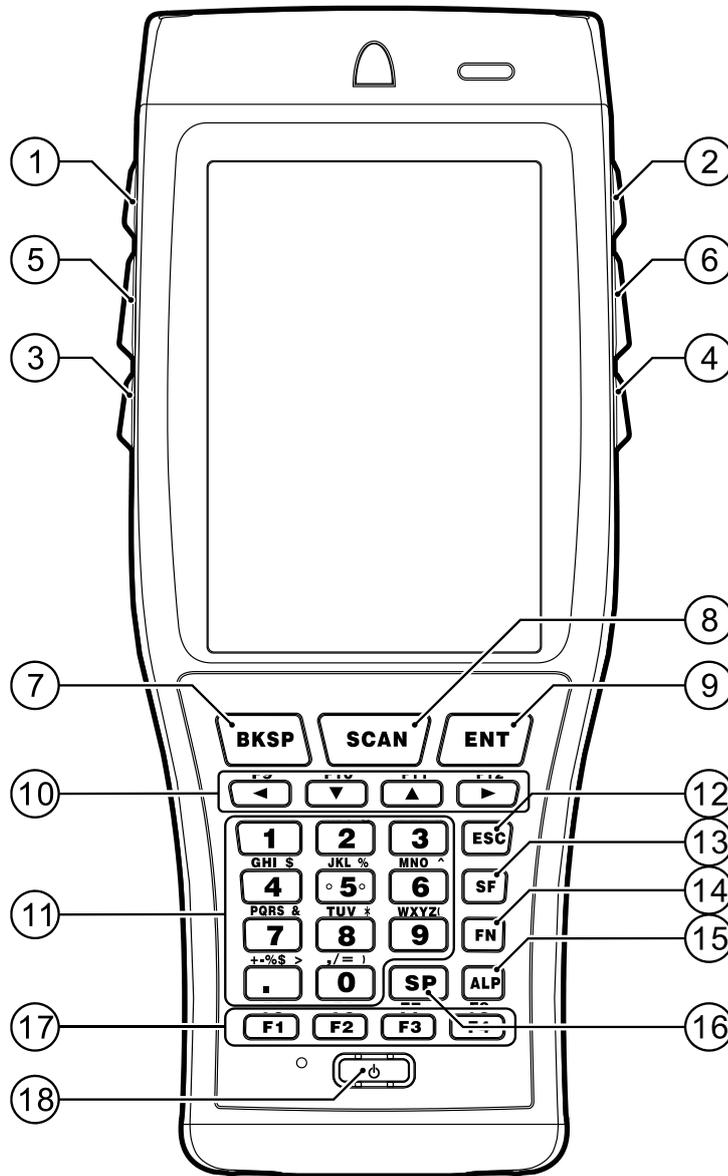
The CU-1211 and CU-1233 are for the BHT-1200 Series, and referred to as the CU in this manual unless otherwise indicated.



NO.	Name	Function and Description
①	LED Panel	<p>Power communication LED Illuminates in green while the power is ON. Blinks in green during communication.</p> <p>Spare battery charge LED Illuminates in red during charging and turns green upon completion of charging.</p> <p>Power communication LED Spare battery charge LED</p>
②	BHT charge terminals and interface terminals	<p>BHT charge terminals Charges a battery.</p> <p>Interface terminals Exchanges data with the BHT.</p>
③	Spare battery charging slot	Charges a spare battery.
④	Power inlet connector	Use only the dedicated AC adapter (DC12V).
⑤	Interface connector	<p>Exchanges data with the host computer or communication station.</p> <p>The CU-1211: Ethernet port (100Base-T). The CU-1233: RS-232C port and USB port</p>

1.2.3 Keypad

The BHT key functions can be changed with user programs.
The figure below shows an example of settings for each key function.



No.	Key	Name	Function and Description
①		Tab key	Moves a cursor to the next tab stop Can also be used as the M4 key.
②		M1, M2, M3 Magic Keys	<ul style="list-style-type: none"> The Shift Key and Enter key functions can be assigned to these magic keys in the System Menu. Characters can be assigned with user programs. Refer to 4.4 System Menu Details for how to use the System Menu.
③			
④			
⑤⑥		Trigger keys	Reads a code when pressed. (This key functions the same as a Trigger key.)
⑦		Backspace key	Moves a cursor one character to the left and deletes a character from the current cursor position.
⑧		Scan key	Reads a code when pressed. (This key functions the same as a Trigger key.)
⑨		Enter key	Enters data or executes operations.
⑩		Cursor keys/ Function keys	Moves a cursor, selects menus or functions.
⑪		Numeric keys	Enters data.
⑫		Escape key	Cancels the operation.
⑬		Shift key	Switches to the shift mode.
⑭		Function mode key	Switches to the function mode.
⑮		Alphabetical mode key	Switches to alphabet entry mode.
⑯		Space key	Enters space.
⑰		Function keys	Selects functions.
⑱		Power key	Turns the BHT power ON and OFF.

1.2.4 BHT Screen

All screens in this User’s Manual are simulated. Actual screens may differ depending on user settings and other factors.



Note: Taskbar may also differ from the actual screens.

	Shows a battery power level.
	Shows a local area network (wired LAN) connection status when using a CU. : The BHT is connected to a wired network. : The BHT is disconnected to a wired network.
	Shows the wireless device status and radio field strength. : Wireless LAN is disconnected or failed to authenticate : Vertical bars indicate radio field strength. Strong → Weak
	Shows the Bluetooth® status. : The Bluetooth® device is ON. (Blue) : The Bluetooth® device is OFF. (Grey) (This icon does not show in taskbar by default settings. To show this icon, change the settings in the System Menu or with user programs.)
	Displays the WWAN received signal strength. (Only for BHT-1200QG) Not Detect Signal strength level: The number of the blue bars means more stronger signal. No SIM card
	Shows that shift mode is ON.
	Shows that function mode is ON.
	Shows that the BHT is communicating with the computer via Microsoft ActiveSync / Windows Mobile Device Center (WMDc).
	Shows that alphabet entry mode is ON. (To change entry mode, press the Alpha key.) Refer to the BHT Class Library Reference Manual “Chapter 9 Keyboard” for the input character details while in the ALP mode.
	Tap this icon while an application is running to display the desktop. Tap again to return the original application screen.

	<p>Shows the software keyboard status.</p> <p>: Shows that the software keyboard is activated.</p> <p>: Shows that the software keyboard is deactivated.</p>
	<p>Shows that the CPU is in standby mode.</p> <p>(This icon does not show in taskbar by default settings. To show this icon, change the settings in the System Menu or with user programs.)</p>
	<p>Shows that the Caps Lock key on the software keyboard is ON.</p>
	<p>Tap this icon to display/hide the software keyboard menu.</p> <div data-bbox="427 629 683 768" style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> <p>Keyboard</p> <p>✓ LargeKB</p> <hr/> <p>Hide Input Panel</p> </div> <p>Keyboard: Tap the "Keyboard" item to display the small software keyboard.</p> <p>LargeKB: Tap the "LargeKB" item to display the large software keyboard.</p> <p>Hide Input Panel: Tap the "Hide Input Panel" item to hide the software keyboard. This item is enabled if software keyboard is displayed.</p>

– Note – To minimize power consumption, the BHT automatically switches to standby mode after it has not been operated for a specified period*.

In standby mode, the touch screen is not refreshed, and as a result, icons in the taskbar may not be displayed or refreshed, and the calendar clock may not display the correct date or time.

* Default is one second, and can be changed to desired time period in the System Menu (Refer to "Chapter 4 System Operation") or by creating user programs. Refer to the "BHT API Reference Manual" or "BHT Class Library Reference Manual" for details of the user program creation method.

BHT-1200 Series

Chapter 2

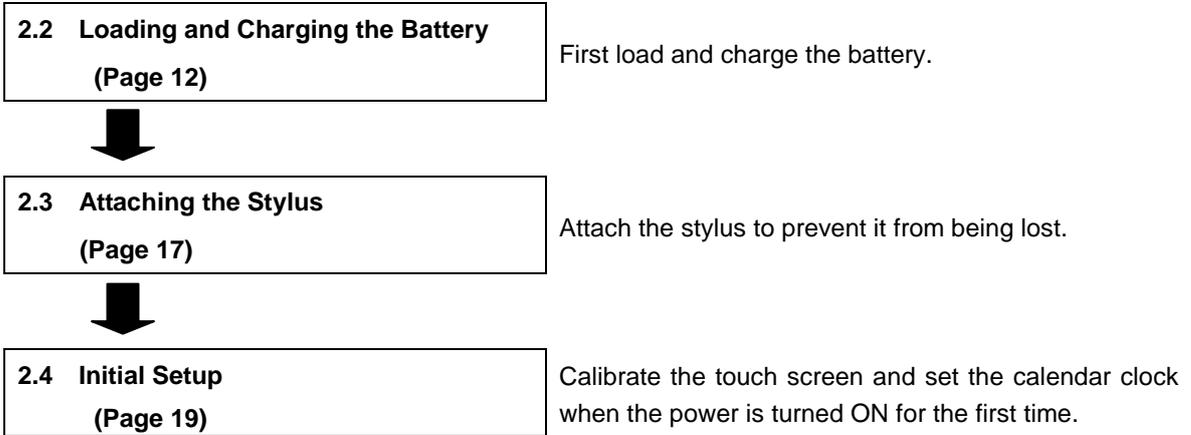
BHT Preparation

This chapter describes information and preparations required prior to operation.

2.1	“BHT Preparation” Procedure.....	14
2.2	Loading and Charging the Battery.....	14
2.2.1	Loading and Charging the Battery	15
2.2.2	Battery Power Level Indicator.....	18
2.2.3	Battery Voltage Drop.....	18
2.3	Attaching the Stylus	19
2.3.1	Attaching the Stylus	19
2.3.2	Holding the BHT	19
2.3.3	Using the Stylus.....	19
2.3.4	How to use the touch screen	20
2.4	Initial Setup.....	21
2.5	Turning OFF the Power	22
2.5.1	Normal Power OFF	22
2.5.2	Turning the Power OFF after Registry Back-up.....	22
2.5.3	Auto Power OFF	23
2.6	Resetting and Full Resetting.....	24
2.6.1	Reset.....	24
2.6.2	Reset Method.....	24
2.6.3	Full Reset	24
2.6.4	Full Reset Method	24
2.6.5	Memory Contents after Reset/Full Reset	25
2.6.6	Reinstall/Recovery methods of data after Reset/Full reset	25
2.7	Inserting and removing the microSD/microSIM	27
2.7.1	Inserting the microSD	27
2.7.2	Removing the microSD or microSIM	28

2.1 “BHT Preparation” Procedure

Follow the steps below to prepare the BHT.



2.2 Loading and Charging the Battery

The battery is not charged when purchased.

Charge the battery before using.

To charge the battery, use only the CU.

The charge time is approximately 3 hours for the standard rechargeable battery, 4.5 hours for the large-capacity rechargeable battery.

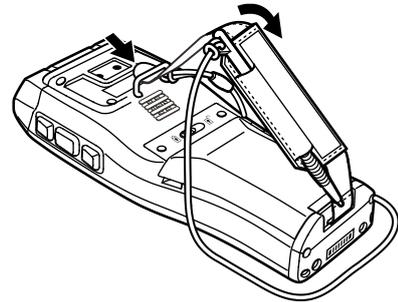
A slightly discharged battery takes less times to fully charge.

Charging Precautions

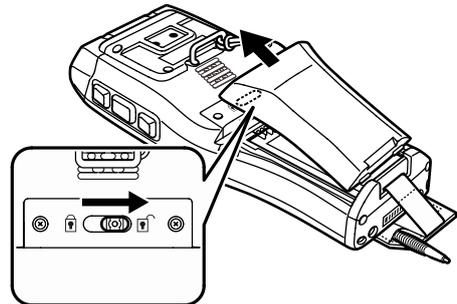
- Do not touch the BHT, battery, or charger terminals by hand or stain them.
Failure to follow instruction may result in a contact failure or a charging error.
- Never charge the battery near fire or in a high-temperature environment.
High-temperatures may activate the charger protection device to stop charging, or lead to protection device damage, overheating, explosion or fire.
- Stop charging if the charge does not complete after the specified time has elapsed.

2.2.1 Loading and Charging the Battery

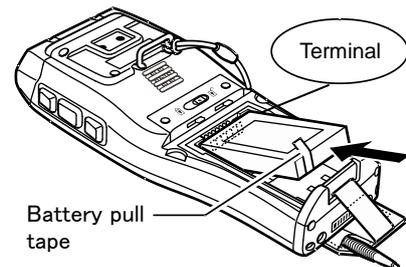
1. Loosen the hand belt.



2. Push down and slide the cover lock to open the cover.

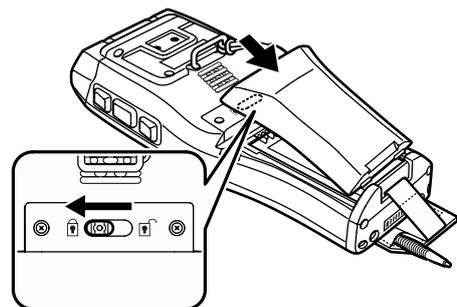


3. Load the battery in the direction shown by the arrow.

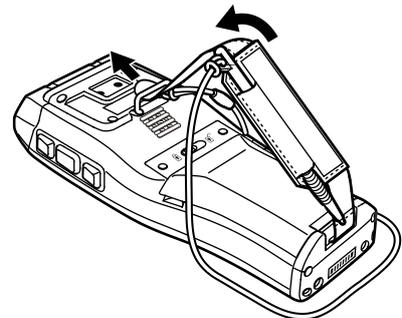


4. Replace the cover and slide shut the cover lock.

— Point — Do not pinch the battery pull tape between the battery cover when replacing the cover.

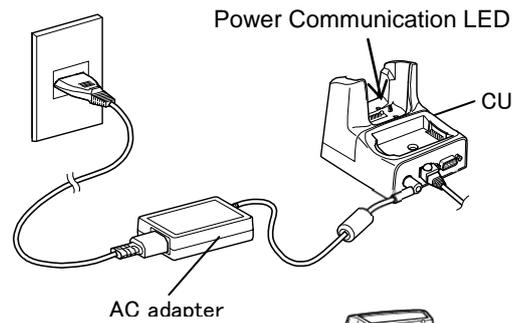


5. Fasten the hand belt to the same fit position.

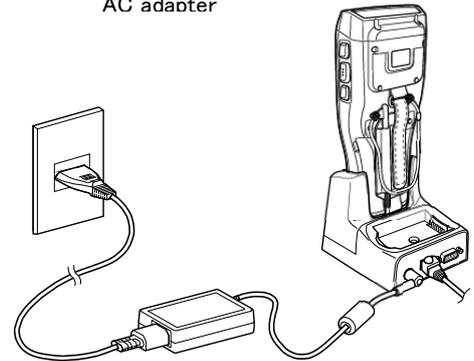


6. Connect the dedicated AC adapter to the CU (power inlet connector) and wall socket.

The Power Communication LED illuminates in green when connected.

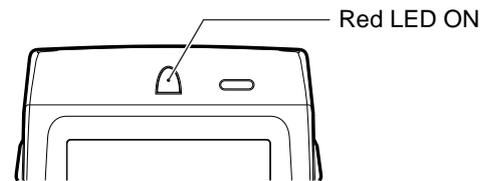


7. Set the BHT in the CU.

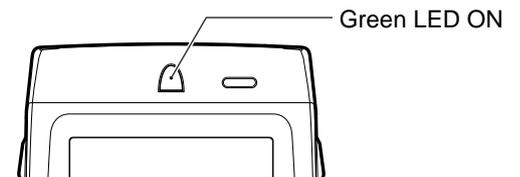


8. The BHT beeps sounds, when the LED Indicator turns red, and charging begins.

– Point – Do not remove the BHT from the CU at least 3 hours for the standard rechargeable battery, 4.5 hours for the large-capacity rechargeable battery, when using the BHT for the first time or after long unused periods of time,



9. The BHT indicator LED will change to green when charging is completed.



- Point –
- Charging takes approximately 3 hours for the standard rechargeable battery, 4.5 hours for the large-capacity rechargeable battery.
 - A slightly discharged battery takes less time to fully charge.
 - The indicator LED flashing in red indicates the following causes. The proper action stated below must be taken.
 - Abnormal temperature of the battery is detected.
 - Charge the battery under the proper temperature (0°C~40°C)
 - Avoid places where there are objects generating heat nearby or exposed to direct sunlight.
 - Stop charging and replace the battery if there are no objects generating heat nearby.
 - Charge terminal contact failure
 - Wipe any dirt or dust from the charge terminals as described in “Chapter 6 Maintenance” – “6.4 Daily Maintenance”.
 - Charging is not completed after the specified time has elapsed.
 - Always use a dedicated AC adapter to charge the battery.
 - The battery is broken or the battery life has ended.
 - Replace the battery.

-
- Note – The BHT has a backup battery to backup the internal memory and calendar clock. The internal backup battery first charges when a charged battery is loaded. Do not remove the battery from the BHT for at least 2 days when using the BHT for the first time or when left unused for long periods.
-

Failure to follow all instructions listed below may result in charger overheating, smoking, explosion or fire.

- Never disassemble or modify the battery.
- Never connect the battery terminals with a metal object such as wire.
- Never carry or store the battery together with metal object such as necklaces or hairpins.
- Never expose the battery to fire or heat.
- Never use or leave the battery in the vicinity of high-temperature locations (60° C or higher) such as a fire or heater.

- ⚠ WARNING**
- Never put or wet the battery with water or seawater.
 - Never charge the battery near a fire or in direct sunlight.
 - Never hammer nails into the battery, hit it with a hammer, or step on it.
 - Never subject the battery to strong impact or throw it.
 - Never use a damaged or deformed battery.
 - Never solder directly to the battery.
 - If battery fluid leaks out from the battery and gets into your eyes or comes into contact with the skin, wash thoroughly with clean water such as tap water without rubbing, and seek medical attention immediately. Failure to follow instruction may result in eye or skin injuries.
-

- ⚠ CAUTION**
- Failure to follow instruction below may result in charger overheating, smoking, blowup or combustion.
- Stop charging if the charge does not complete after the specified time has elapsed.
-

- Note –
- The BHT is equipped with a backup battery to backup the internal memory and calendar clock in case the battery is removed or the battery voltage falls below the stipulated level. It is therefore necessary to charge the internal backup battery when using the BHT for the first time or when left unused for long periods of time. The backup battery is charged automatically when a fully-charged battery is loaded. To ensure that the backup battery is fully charged, do not remove the battery for at least 2 days when using the BHT for the first time or when using it after long periods of time.
 - Refer to Chapter 6, 6.3 Using the BHT after Long Periods for the details of handling the BHT after long periods of time.
 - Avoid storing the battery in high-temperature locations. The battery capacity may decrease.
 - Do not touch the BHT, battery, or charger terminals by hand or stain them. Failure to follow instruction may result in a BHT malfunction or battery charging failure. It is recommended that any dirt on the battery terminals or BHT battery terminals be regularly wiped off with a soft, dry cloth.
-

2.2.2 Battery Power Level Indicator



The battery power level can be checked with the  icon (battery power level indicator) shown in the taskbar. The icon shows the battery power in four levels.

These levels are only a rough estimate of battery power, make sure to charge the battery before running out of power.

-  :The battery power is full.
-  : The battery power is partially used. Charging sooner is better.
-  : The battery power is low and should be charged immediately.
-  : The battery power is completely gone.
Charge immediately or replace with a fully charged battery.

Note: The taskbar in this manual varies from the actual BHT LCD screen.

About the Battery Level

- The battery power level indicator is used as a rough estimate of the remaining power. Use this indicator as a guideline.
- The battery power level will vary depending on BHT operation, therefore the actual battery voltage may differ from the battery power level indicator.
- Be sure to charge the battery promptly before the battery power runs out.

2.2.3 Battery Voltage Drop

The message on the right shows up for approximately 2 seconds and the beeper sounds three times when the battery voltage drops to a level that requires charging or battery replacement.

The message and beeper are briefly indicated to alert you only once when a key is pressed or the touch screen is tapped while using the BHT. Then the BHT returns to normal operation. Replace or charge the battery promptly.

If the BHT is left without charging the battery, the BHT may perform full-reset automatically and data including files and settings stored in the RAM may be lost.

Battery voltage has lowered.
Charge the Battery!

If the BHT is used without charging or replacing the battery after the above message is shown, the battery voltage drops to a level that stops the BHT operation. Then the screen on the right shows up, the beeper sounds five times, and the power automatically turns OFF. (Depending on the battery level, this message may not show up or the beeper may not sound five times.)

Replace or charge the battery immediately when this message shows up.

If the BHT is left without charging the battery, the BHT may perform full-reset automatically and data including files and settings stored in the RAM may be lost.

Charge the Battery!

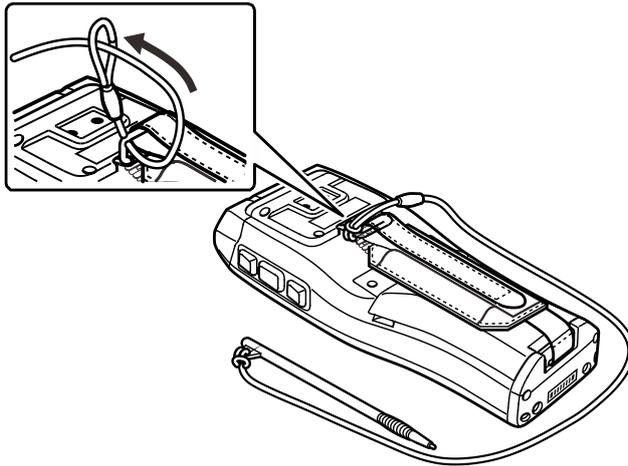
Refer to Chapter 2, 2.6.5 Memory Contents after Reset/Full Reset.

2.3 Attaching the Stylus

Attach the stylus to the hand belt to prevent it from being lost.

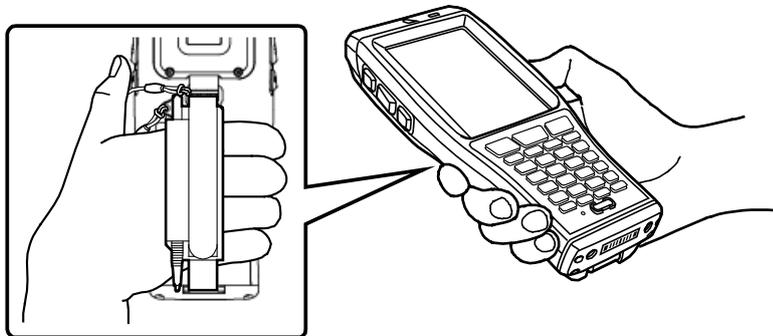
2.3.1 Attaching the Stylus

Attach the stylus as shown below.



2.3.2 Holding the BHT

Insert your hand into the hand belt and hold the BHT as shown below.



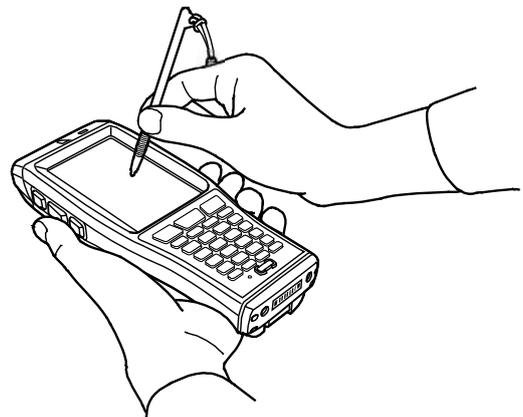
2.3.3 Using the Stylus

Always calibrate the touch screen before use.

The BHT liquid crystal display (LCD) is a touch screen.

Buttons, menus displayed on the screen can be selected with the stylus provided.

(Refer to Chapter 2, 2.4 Initial Setup.)



2.3.4 How to use the touch screen

Select the buttons and menus shown on the LCD touch screen with the stylus provided.

Action	Description
Tap	Means tapping the touch screen once. Similar to a "click" of a computer mouse.
Double-tap	Means tapping the touch screen quickly twice. Similar to a "double click" of a computer mouse.
Drag	Means moving the stylus to an object while pressing the touch screen. Similar to "dragging" a computer mouse.
Long-tap / Hold	Means touching the touch screen for several seconds. Similar to a "right-click" of a computer mouse.

- Always use the stylus provided to tap the touch screen. Never use fingernails or any pointed or hard objects, or subject to strong pressure or impact to the touch screen.
Failure to follow instructions may result in damage or a malfunction.
- If dirty, clean the touch screen and stylus tip prior to use.
Failure to follow instruction may result in scratches to the LCD screen or hinder smooth movement of the stylus.

2.4 Initial Setup

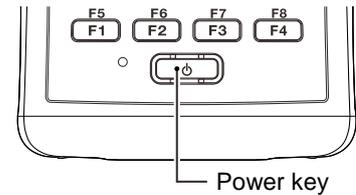
Press the **power** key to turn ON the BHT.

When turning ON the BHT for the first time or after a long period of time, if the dialog box is not displayed, first perform a “full reset” .

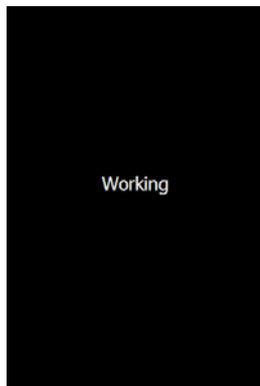
Refer to Chapter 2, 2.6 Resetting and Full Resetting for details of the full reset method.

Press the **power** key to turn ON the BHT.

-
- Point – Displaying the screen may take time after pressing the power key, but this is not a malfunction of the BHT.
Therefore, do not keep pressing the power key more than needed or press it too hard.
Failure to follow instruction may cause breakage or malfunction of the power key.
-



The following screen is displayed when turning ON the BHT.



After turning ON the HHT
(After Power ON / Reset / Full-Reset)



OS is running
(Desktop)

2.5 Turning OFF the Power

Use one of the following three methods to turn OFF the BHT.

- Normal power OFF → Press the **power** key.
- Turning the power OFF after registry backup → Hold down the **SF** key and press the **power** key for 3 seconds or more.
- Auto power OFF → The power turns OFF automatically when the BHT is not used for a specified length of time.

– Point – The power does not turn OFF for 10 seconds once the power turns ON.

2.5.1 Normal Power OFF

Press the **power** key.
 The BHT power turns OFF after the screen on the right is displayed.

– Point – Do not remove the battery while the message on the right is displayed.
 Failure to follow instruction may result in a loss of the data stored in the BHT.



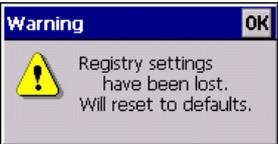
2.5.2 Turning the Power OFF after Registry Back-up

Hold down the **SF** key and press the **power** key for 3 seconds or more.
 The message on the right is displayed and registry backup begins.
 The power turns OFF automatically when the backup is completed.

– Point – Do not remove the battery while the message on the right is displayed. Failure to follow instruction may result in data stored in the BHT being lost.



The Registry is an area in which settings information required for BHT operation is recorded.
 The OS restores the registry automatically if it is lost.
 The error message on the right is displayed if the OS fails to restore the registry (because the registry has not been backed up).
 Refer to Chapter 4, 4.4.3 System Properties -[3] File System for details of how to restore the registry default.



2.5.3 Auto Power OFF

The power turns OFF automatically when the BHT is not used for the length of time set with the user program.

The factory default time is set at 3 minutes when the BHT is shipped.

* Refer to Chapter 4 System Operation for details of auto power OFF.

-
- **Point** – Do not remove the battery while Auto Power OFF is processing.
Failure to follow instruction may result in data stored in the BHT being lost.
-

2.6 Resetting and Full Resetting

2.6.1 Reset

Reset the BHT in the following cases.

- The BHT does not respond to an entry from the touch screen or keys.
- Programs in the BHT malfunction for some unknown reason.

2.6.2 Reset Method

With the BHT power ON, press the reset key combination (**BKSP + Right Trigger + Power**) at the same time. Then release all the keys.

– **Point** – Data stored in files will not be lost by resetting. However, unsaved data currently being edited will be lost.

2.6.3 Full Reset

Full reset is required if the problem persists even after resetting.

2.6.4 Full Reset Method

With the BHT power ON, press the full reset key combination (**BKSP + ENT + Left Trigger + Power**) for more than 1 sec. Then release all keys.

– **Point** – All data including files and settings stored in the RAM will be lost and the RAM will revert to the factory default when performing full reset. Back up any important data to the "Flash" folder or to the computer before full reset. The BHT starts from the "Initial Setup" when the BHT turns ON after the data in the RAM is deleted.

2.6.5 Memory Contents after Reset/Full Reset

	Reset	Full Reset
Data in the "FLASH" folder (on-board FLASH memory)	Data retained	Data retained
Data in the "Storage Card" folder (microSD card)	Data retained	Data retained
Data in other folders	Data retained	Data erased
Contents of the Registry	Data retained	Data erased ^(Note)
Data being edited	Data erased	Data erased

(Note) If the Registry has been backed up (Refer to Chapter 2, 2.5 Turning OFF the Power.), the backed up Registry will be used.

2.6.6 Reinstall/Recovery methods of data after Reset/Full reset

All data and information except for data in the on-board FLASH memory and microSD card folders will be lost after full reset. Reinstalling applications, registry reset, or recovery of application or registry, are necessary to keep using the BHT. Automatic recovery procedures are explained in the next page.

Follow the procedures [1] through [6] for full reset recovery, [5] and [6] for reset recovery after rebooting.

Follow the steps below to skip automatic recovery.

- First, perform a full reset by pressing the full reset key combination (**BKSP + ENT + Left Trigger + Power**) + **SCAN** key at the same time.
- Then press the **SCAN** key until the power is turned ON (until "Working" is displayed)

Memory contents are erased except for the FLASH memory and microSD card folder. The registry is also being lost. (Refer to Chapter 2, 2.6.5 Memory Contents after Reset / Full reset)

Refer to Chapter 4, 4.4.3 System Properties -[3] File System for details of how to restore the registry default.

Follow the steps below to run the application stored in the microSD card when performing full reset or initial setup.

- (1) Create a "Setup" folder in the microSD card default folder "Storage Card"
- (2) Store any applications in "Storage Card\Setup" folder
- (3) Perform full reset while pressing the **ENT** key.

Details of the procedures below can be changed in the BHT Backup menu and Startup Config menu.

Refer to Chapter 4, 4.4.3 System Properties -[11] Data Backup and [12] Startup Configuration.

Procedures	Outlines													
Follow the procedures [1] through [6] after full reset, [5] through [6] after reset.														
[1] Backup (BHTBackup.exe) Automatic restore (BHTRestore.exe)	Back up data (files) and registry using backup tool. Restore backup details automatically when rebooting after full reset. For further details, refer to Chapter 4, 4.4.3 System Properties - [11] Data Backup and [12] Startup Configuration.													
[2] Registry backup Registry automatic restore (Regload.exe)	“Registry backup” or “Registry automatic restore” can be performed independently. Refer to Chapter 2, 2.5.2 Turning the Power OFF after Registry Back-up. [Note] When [1] “automatic restore” function is activated, the contents backed up using this “registry backup” function is not automatically restored.													
[3] File automatic copy (Regload.exe)	Copy files (data) stored in specific folders of the on-board FLASH memory in the order listed below. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Folders to copy from</th> <th style="width: 33%;">Folders to copy to</th> <th style="width: 33%;">Notes</th> </tr> </thead> <tbody> <tr> <td>\Flash\Startup\Windows</td> <td>\Windows</td> <td>Does NOT copy files in sub folders.</td> </tr> <tr> <td>\Flash\Copyfile</td> <td>\(root folder)</td> <td>Copy files in sub folders</td> </tr> </tbody> </table> [Note] “\Flash\Copyfile” folder is strongly recommended, and “\Flash\Startup\Windows” should be only used with older series of BHT. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: left;"><Example> Folders to copy from</th> <th style="width: 50%; text-align: left;"><Example> Folders to copy to</th> </tr> </thead> <tbody> <tr> <td>\Flash\Copyfile\Windows \Flash\Copyfile\Program Files</td> <td>Windows Program Files</td> </tr> </tbody> </table>	Folders to copy from	Folders to copy to	Notes	\Flash\Startup\Windows	\Windows	Does NOT copy files in sub folders.	\Flash\Copyfile	\(root folder)	Copy files in sub folders	<Example> Folders to copy from	<Example> Folders to copy to	\Flash\Copyfile\Windows \Flash\Copyfile\Program Files	Windows Program Files
Folders to copy from	Folders to copy to	Notes												
\Flash\Startup\Windows	\Windows	Does NOT copy files in sub folders.												
\Flash\Copyfile	\(root folder)	Copy files in sub folders												
<Example> Folders to copy from	<Example> Folders to copy to													
\Flash\Copyfile\Windows \Flash\Copyfile\Program Files	Windows Program Files													
(Reset internally)														
[4] Execute program automatically And /or Reset(Warm boot)	Execute the programs automatically including applications stored in the “\Flash\Setup” folder. Execute setup application and install the CAB files, too. [Specific execution with bat file] Execution order can be defined with the “*.bat” file. [Example autorun.bat] <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>wceload /noui /delete 0 \Flash\SetUp\dnwa.cab</td> <td>' CAB Install</td> </tr> <tr> <td>call apl1setup.bat</td> <td>' Application1 setup</td> </tr> <tr> <td>call apl1setup.bat</td> <td>' Application2 setup</td> </tr> <tr> <td>regedit /H /I \Flash\Setup\Regfile\setup.reg</td> <td>' registry setup</td> </tr> </tbody> </table> [Note] For further details about registry setup, refer to Chapter 4, 4.4.3 System Properties -[13] Registry editor.	wceload /noui /delete 0 \Flash\SetUp\dnwa.cab	' CAB Install	call apl1setup.bat	' Application1 setup	call apl1setup.bat	' Application2 setup	regedit /H /I \Flash\Setup\Regfile\setup.reg	' registry setup					
wceload /noui /delete 0 \Flash\SetUp\dnwa.cab	' CAB Install													
call apl1setup.bat	' Application1 setup													
call apl1setup.bat	' Application2 setup													
regedit /H /I \Flash\Setup\Regfile\setup.reg	' registry setup													
[5] Execute program automatically (Windows Startup)	Execute programs automatically including applications stored in “\Windows\Startup”.													
[6] Execute program automatically [Compatibility with the past functions]	Execute programs automatically including applicators stored in “\FLASH\Startup” [Note] This function is used with older BHT series.													

– **Point** – The bat files (*.bat, *.cmd) stored in the following folder are executed as hidden files in procedure [4], [5] and [6] if the bat file name starts with ‘_’(underscore).

function [4] : “\Flash\Setup”

function [5] : “\Windows\Startup”

function [6] : “\Flash\Startup”

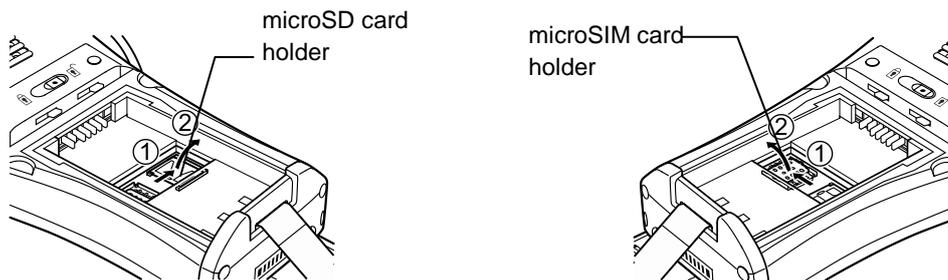
2.7 Inserting and removing the microSD/microSIM

The microSIM card is available only for the BHT-1261QWBG-CD.

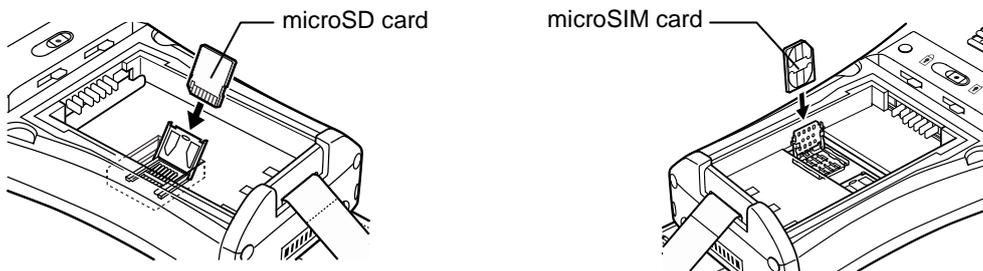
2.7.1 Inserting the microSD

Follow the procedure below to insert the microSD or microSIM card (option) into the BHT.

1. Remove the battery.
2. Slide the microSD or microSIM card holder to the unlock position and then open it.

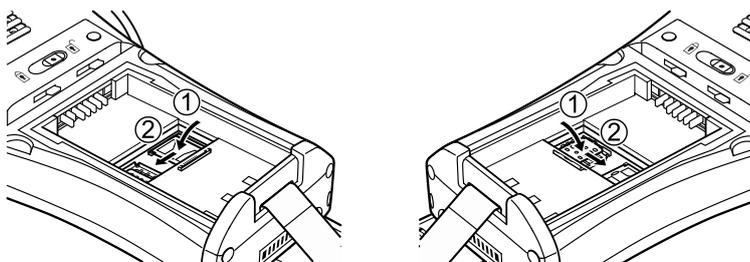


3. Insert the microSD or microSIM card into the card holder slot.



– Point – Insert the microSD or microSIM card straight into the slot.
Do not use excessive strength when inserting the microSD or microSIM card, so as not to damage the cards and holders.

4. Close the card holder and then slide the cover to the LOCK position.



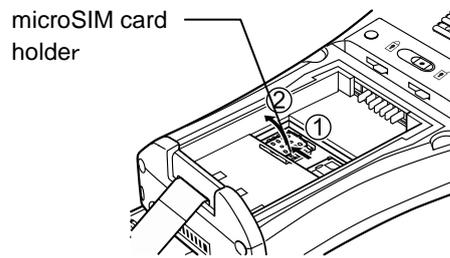
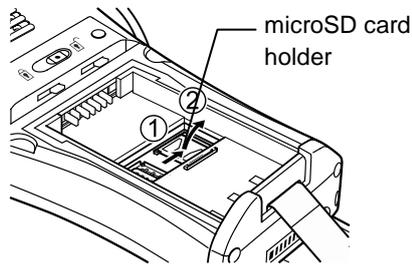
5. Load the battery.

2.7.2 Removing the microSD or microSIM

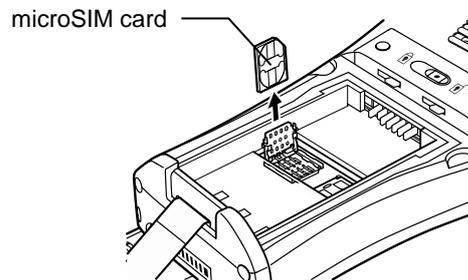
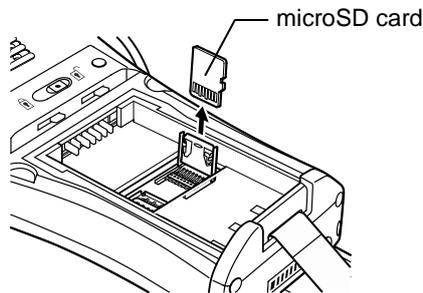
Remove the microSD or microSIM card (option) from the BHT using the following procedure.

– **Caution** – Always turn the BHT power OFF before removing the microSD or microSIM card.
Failure to follow instruction may result in the loss of data stored in the microSD or microSIM card.

1. Remove the battery.
2. Slide the microSD card holder to the unlock position and then open it.

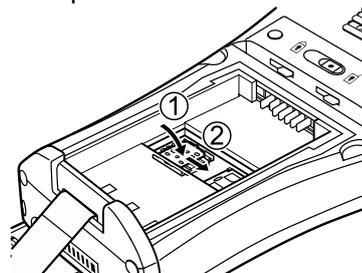
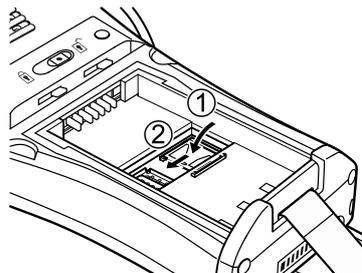


3. Remove the microSD card from the holder slot.



– **Point** – Insert the microSD or microSIM card straight into the slot.
Do not use excessive strength when inserting the microSD or microSIM card, so as not to damage the cards and holders.

4. Close the card holder and then slide the cover to the LOCK position



5. Load the battery.

BHT-1200 Series

Chapter 3

Basic Operation

This chapter describes how to read barcodes using the BHT, the backlight function, how to use the keypad, and BHT data transmission.

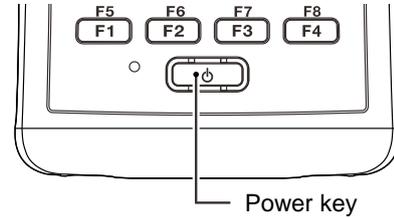
3.1	Reading Codes	30
3.2	Turning ON/OFF the Backlight	32
3.3	Using the Keypad	33
3.3.1	Entering Numerical Data	33
3.3.2	Entering Alphabet Data	33
3.3.3	Using the shift key	34
3.3.4	Using the FN key	34
3.3.5	Using the Software Keyboard	35
3.4	Transmitting Data	36
3.4.1	Ethernet Communication	37
3.4.2	USB / RS-232C Communication	37
3.4.3	Bluetooth® Communication	38
3.4.4	Wireless Communication	39
3.4.5	3G/GSM Communication (for BHT-1261QWBG-CE only)	39

3.1 Reading Codes

Follow the procedure below to read codes.

1. Turn the BHT ON.

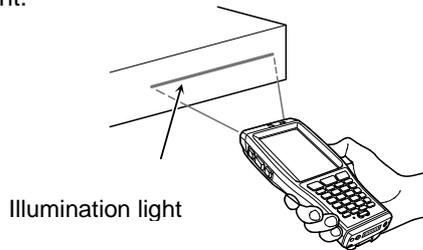
- Note -
- When turning the BHT on, reading may not be successful immediately.
 - While reading, the beeping sound may also be unsuccessful.



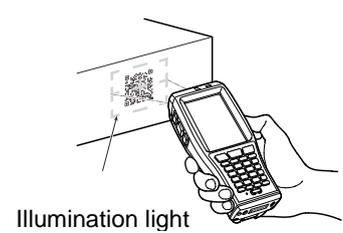
2. Tap "BhtShell" icon on the desktop.
Then tap "4:Test", and then tap "1:SCANNER".

3. Press the trigger key.
The BHT emits an illumination light.

BHT-1200BWB Series



BHT-1200QWB/QWBG Series



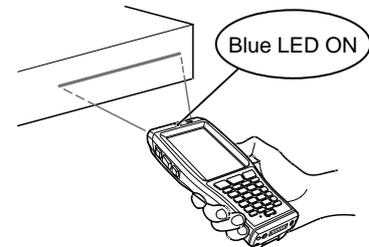
4. Point the illumination light toward the barcode

The LED indicator will illuminate in blue when the BHT has read the code successfully.

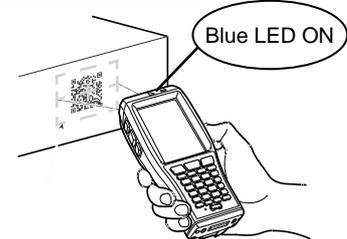
Barcodes can be read also by pressing the **Scan** key.

- Point -
- The barcode reading method may vary depending on the application.
 - Follow the instructions provided in the application manual.

BHT-1200BWB Series

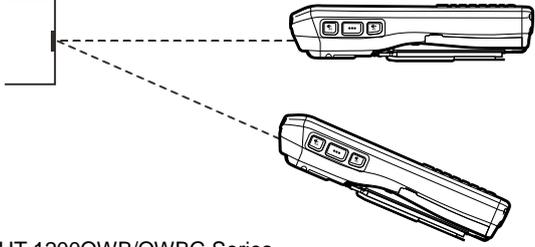
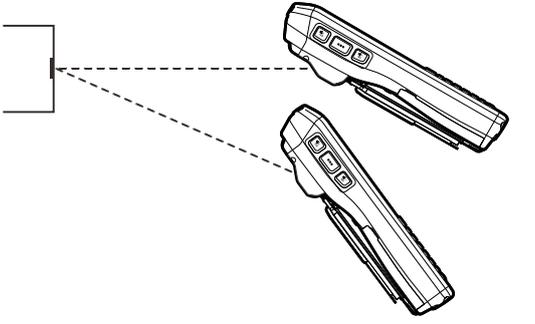


BHT-1200QWB/QWBG Series



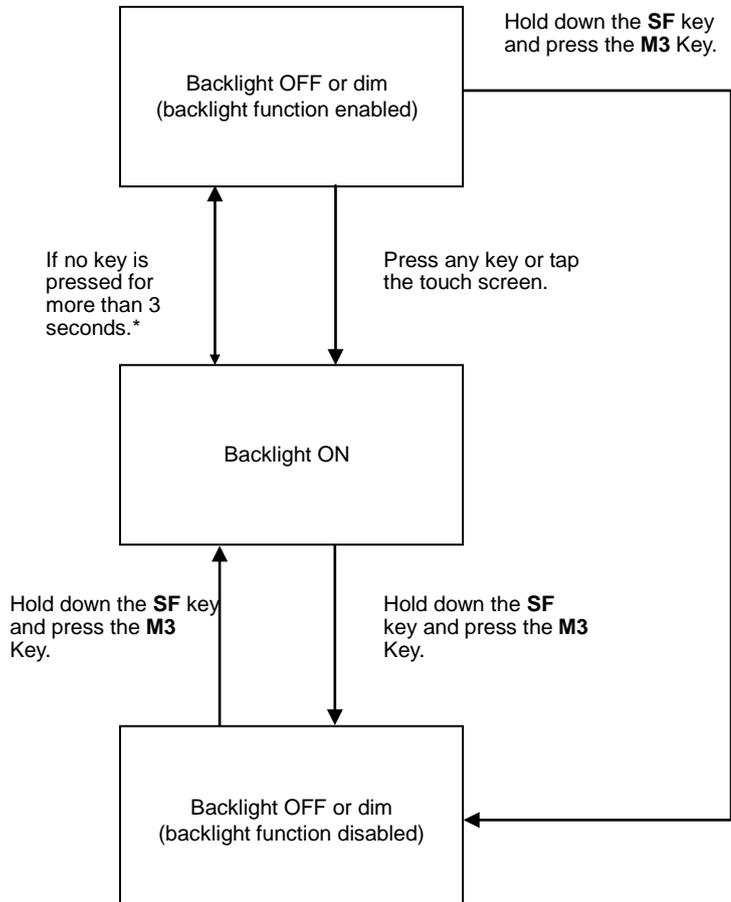
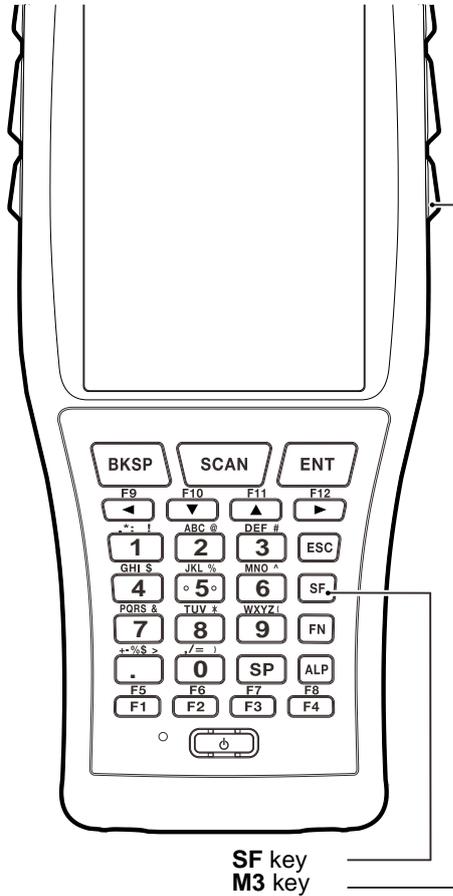
- Note -
- Clean dirty labels before reading.
 - The BHT may have difficulty reading codes in direct sunlight.
 - If the barcode is on a curved surface, read the barcode at the center of the illumination light.
 - If the barcode reading window is too far away from the barcode, the readable range will become narrower than the illumination light range.
 - Do not use the BHT near any radio equipment such as a personal radio or an amateur radio.
- Failure to follow instruction may cause the BHT to malfunction.

When having difficulty reading codes...

	Cause	Countermeasure
Specular reflection	The BHT may not read a barcode due to specular reflection when the illumination light is pointed vertically at a barcode on the printed surface.	<p>Change the BHT reading angle and try again.</p> <p><u>BHT-1200BWB Series</u></p>  <p><u>BHT-1200QWB/QWBG Series</u></p> 
Distance from barcode	The BHT may not read a barcode if the BHT reading window is too close to or too far from the barcode, even when the barcode is within the illumination light range.	Move the BHT slowly toward or away from the barcode and try again. The illumination light is only a guideline. Maximum reading distance is 100cm from the BHT reading window.
Curved surface	The BHT may not read a barcode if the code surface is curved.	Read the barcode at the center of the barcode reading window.
Barcode surface dirt	The BHT may not read a barcode if the code surface is dirty.	Wipe the dirt from the barcode and try again.
Barcode reading window dirt	The BHT may not read a barcode if the barcode reading window is dirty.	Blow any dust away with an airbrush, and then gently wipe the reading window with a cotton swab or similar soft object.
Direct sunlight, ambient light	The BHT may not read a barcode in direct sunlight or under high ambient light.	Read codes away from direct sunlight. Try adjusting the brightness of the ambient light when reading codes indoors.

3.2 Turning ON/OFF the Backlight

To turn the backlight ON or OFF, hold down the **SF** key and press the **M3** key.



* More than 1 minute if the BHT is placed in the CU.

- Point –
- Auto OFF time can be changed with user programs.
 - The backlight can also be turned ON or OFF in the Backlight settings menu instead of pressing the SF key and M3 key.

3.3 Using the Keypad

3.3.1 Entering Numerical Data

The default entry mode is numeric, enabling numbers written on the top of numeric keys to be entered.

To enter “120” for example, press the “1”, “2” and “0” keys sequentially.

To delete the wrong number entered, press the **BKSP** key and then re-enter the correct number.

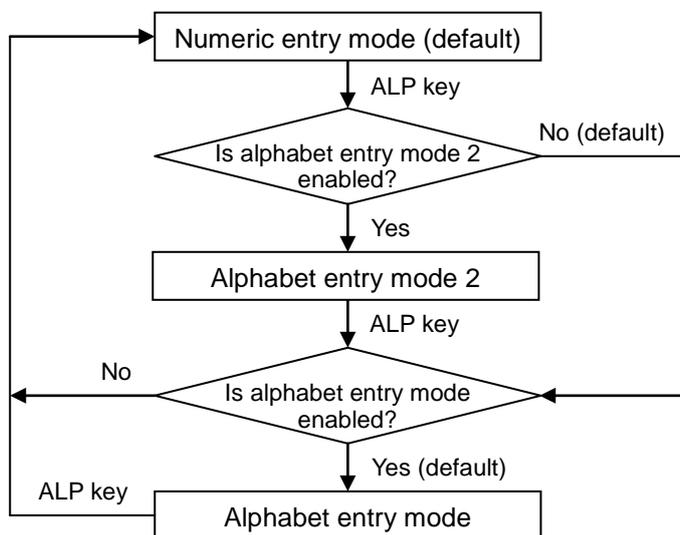
Numeric entry mode can be also switched with the program.

Refer to the BHT API Reference Manual or BHT Class Library Reference Manual for further details.

3.3.2 Entering Alphabet Data

The alphabet character assigned to the key will be entered while in the alphabet entry mode.

Alphabet entry mode changes every time the ALP key is pressed, in the order as shown in the chart below.



The alphabet entry modes changeable by the ALP key can be selected from the key menu in the System Properties or by using a user program.

Refer to Chapter 4 System Operation- 4.4.3 System Properties- [5] Key for the key menu details, the BHT API reference manual or the BHT Class Library reference manual for the programming details.

3.3.3 Using the shift key

The **SF** key is used in combination with other keys such as the numerical keys or power key for special input procedures. When the **SF** key is pressed, the keypad is switched to the **SF** key mode.
Refer to the BHT API Reference Manual or BHT Class Library Reference Manual for further details.

There are two **SF** key modes —“Nonlock mode” and “Onetime mode”.

“Nonlock mode”: The keypad stays in the SF mode while the **SF** key is held down.

“Onetime mode” : The keypad is in the SF mode only once each time the **SF** key is pressed

The default is “Nonlock mode”.

The **SF** key mode can be changed in “System Properties”.

Refer to Chapter 4, 4.4.3 System Properties – [5] key.

The SF key mode can also be changed with the user program.

Refer to the BHT API Reference Manual or BHT Class Library Reference Manual for further details.

3.3.4 Using the FN key

The **FN** key is used to activate the function keys such as the **F5** to **F12** keys which are printed in blue on the keypad.

When the **FN** key is pressed, the keypad is switched to the **FN** key mode.

There are two **FN** key modes —“Lock mode (default)” and “Onetime lock mode”.

For example;

To use the **F9** key, first press the **FN** key and then press the **F1** key.

In the lock mode, the **F5** to **F12** keys are activated until the FN key is pressed again.

In the onetime lock mode, the **F5** to **F12** keys are activated only once each time the FN key is pressed.

The **FN** key mode can be changed in the System Properties.

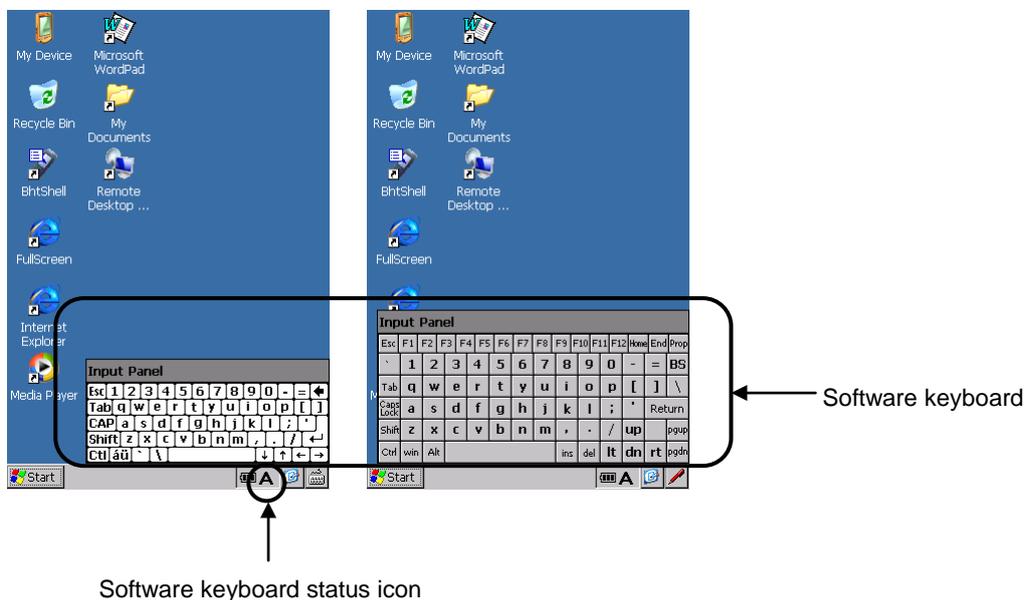
Refer to Chapter4, 4.4.3 System Properties – [5] key.

The **FN** key mode can also be changed with the user program.

Refer to the BHT API Reference Manual or BHT Class Library Reference Manual for further details.

3.3.5 Using the Software Keyboard

Tap the software keyboard status icon in the taskbar or hold down the **SF** key and press the **M2** key to display/hide the software keyboard.



Tap the keys on the software keyboard to enter data.

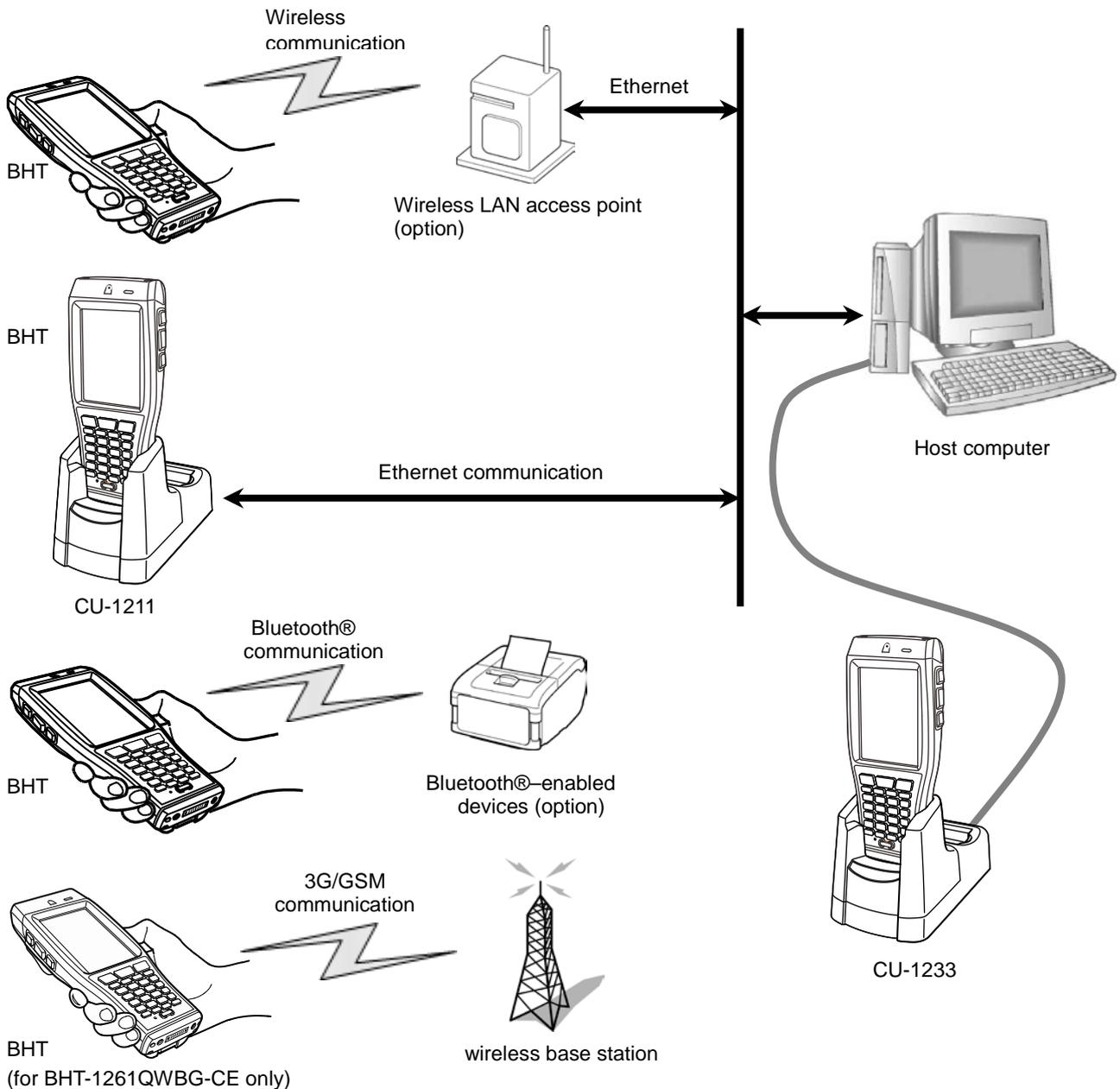
3.4 Transmitting Data

Ethernet, USB / RS-232C, Bluetooth® or wireless communication* can be used to transmit data collected by the BHT to the host computer.

The data transmission method and BHT setting method varies depending on the system used, contact the system administrator for operation details

Request

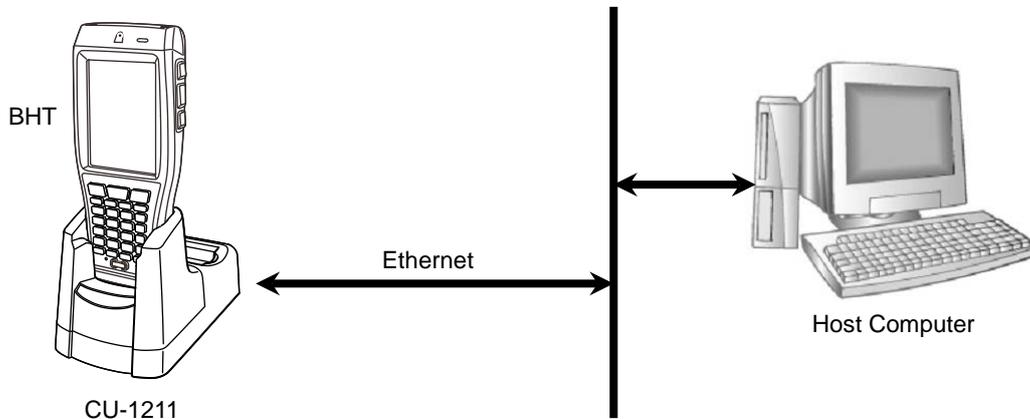
Upload the data collected by the BHT to the host computer as soon as possible.



A wireless local area network between the BHT and wireless LAN access point is required to communicate via the wireless LAN.

3.4.1 Ethernet Communication

The CU-1211 connects to the host computer via ethernet.
Place the BHT in the CU-1211 to transmit data.



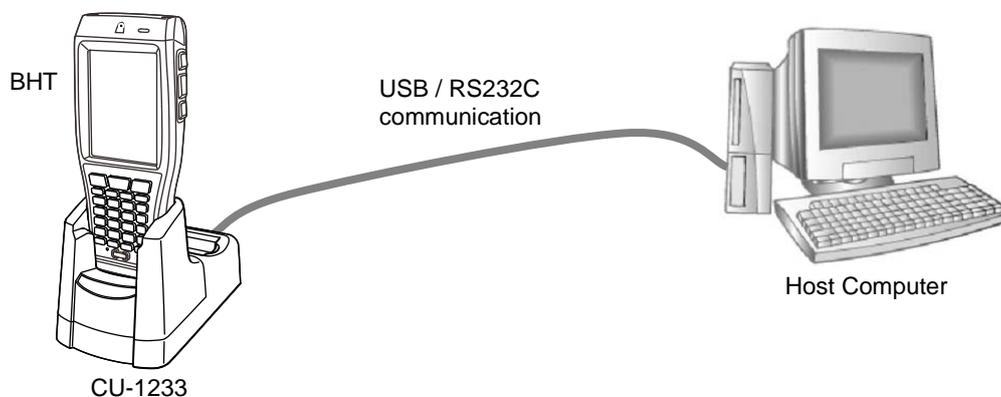
Requests

Handling the CU-1211

- Use a category 5 (Cat 5) Ethernet cable or higher when connecting the CU-1211 to 100BASE-TX networks. Using other cables may cause communication failure.
- Do not forcibly insert the Ethernet cable plug or pull the Ethernet cable strongly. Failure to follow the instruction may result in damage to the connector or cable.
- The MAC address is written on the backside of the CU-1211.
- Connect the Ethernet cable to the CU-1211 before using Ethernet communication via the CU-1211.

3.4.2 USB / RS-232C Communication

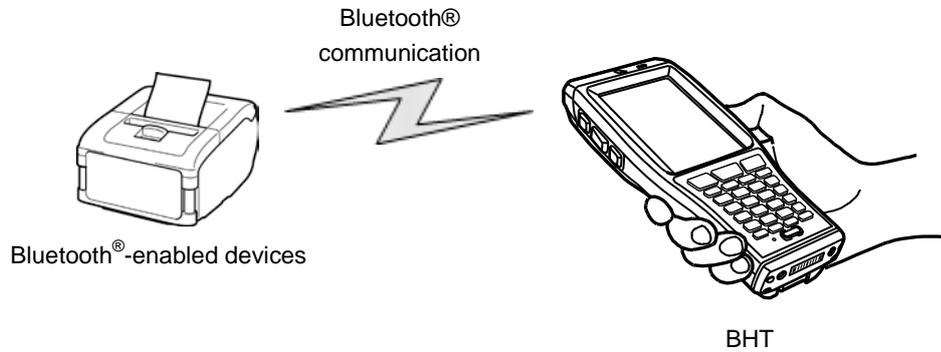
The CU-1233 connects to the host computer via USB / RS-232C connection.
Set the BHT in the CU-1233 to transmit data.



The BHT RS-232C interface has no signal lines for ActiveSync / WMDC, therefore the BHT cannot transmit data with ActiveSync / WMDC by directly connecting to the hostcomputer.

3.4.3 Bluetooth® Communication

The Bluetooth interface permits wireless communications with other Bluetooth®-enabled devices.



The BHT supports the following profiles:

- DUN-DT
- Generic Access
- Serial-DevA
- Serial-DevB
- Service Discovery
- FTP
- OPP
- A2DP

[Notes]

The other profiles like HSP, HID and PAN are not supported.

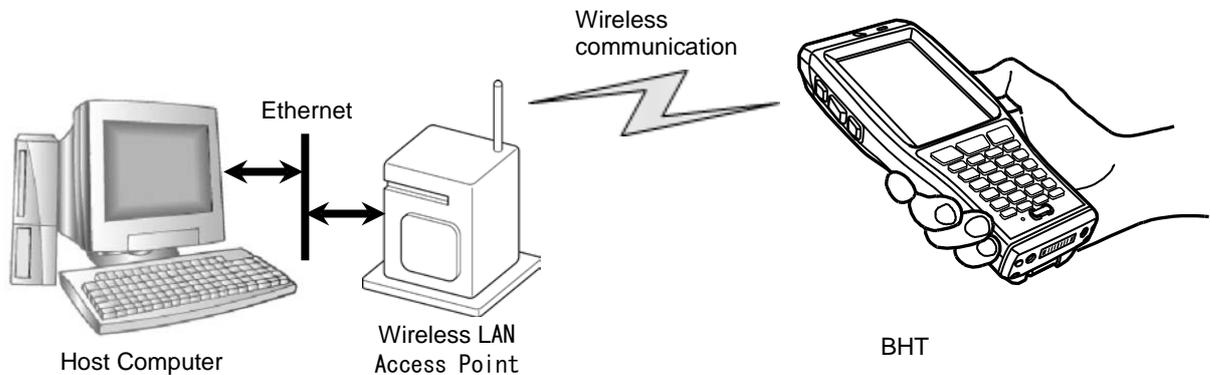
Request

- Pointing the BHT toward the other devices may improve communications over the link.
- Do not cover the antenna area with metal-evaporated tape or by hand.
This may result in communication failures.

3.4.4 Wireless Communication

Wireless communication to the host computer via the wireless LAN access point.

A wireless local area network between the BHT and wireless LAN access point is required to communicate with the wireless LAN access point.



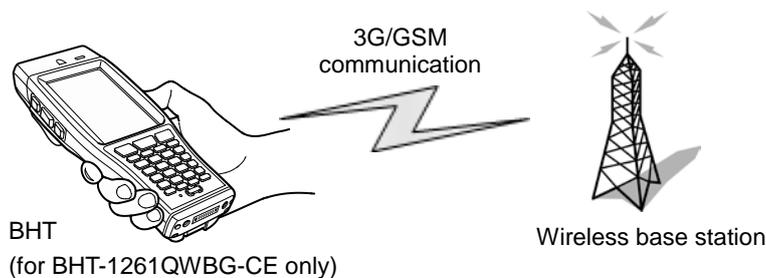
Requests

- Point the BHT toward the access point to improve wireless communication.
- Do not cover the antenna area with metal-evaporated tape or by hand, this may result in communication failures.
- Communication may not be possible at the following locations.
 1. Near devices operating on the same 2.4GHz waveband as the BHT, such as microwave ovens, industrial heating equipment, or high-frequency medical equipment.
 2. Near computers or household appliances such as refrigerators that emit electromagnetic noise.
 3. Near metallic objects, in places with high levels of metallic dust, in rooms surrounded by metal walls (metallic influence), or places where the BHT may be subject to strong impact.

3.4.5 3G/GSM Communication (for BHT-1261QWBG-CE only)

The BHT transmits data using the 3G/GSM cellular networks via a wireless base station.

A contract with a service provider and SIM card are required in order to use the 3G/GSM data communication service.



Chapter 4

System Operation

This chapter describes how to operate the desktop, Start menu and System Menu, and how to make wireless network settings.

4.1	Desktop	42
4.2	Start Menu	46
4.3	System Menu Outline	63
4.3.1	System Menu Structure	64
4.4	System Menu Details	68
4.4.1	Execute Program Menu	68
4.4.2	Communication Menu	69
4.4.3	System Properties	78
4.4.4	Test	119
4.4.5	Explorer	119
4.4.6	System Information	119
4.5	Wireless Network Settings	120
4.5.1	Wireless LAN Menu	120
4.5.2	Information menu	120
4.5.3	Network menu	121
4.5.4	Settings menu	122
4.5.5	Profiles menu	125
4.5.6	Link menu	136
4.5.7	Ping menu	137
4.6	Bluetooth Manager	140
4.6.1	Main window description	140
4.6.2	Device Inquiry	141
4.6.3	Device pairing	142
4.6.4	Properties and configuration	143
4.6.5	Remote devices services	146
4.6.6	Disconnection management	153
4.6.7	Service connection shortcuts	153
4.6.8	Version information	155
4.6.9	Exit the Bluetooth Manager	155
4.7	WWAN Manager	156
4.7.1	WWAN Manager menu	156
4.7.2	General	157
4.7.3	DataConnection	158
4.7.4	Security	159
4.7.5	Bands	161
4.7.6	Info	161
4.7.7	Ping	162
4.7.8	Exit the WWAN Manager	163
4.7.9	Automatic Power Restore	163
4.7.10	Error Message	163
4.8	Scanner Reading Parameters	164
4.8.1	Top Menu	164
4.8.2	Read Mode	164
4.8.3	Read Code	165
4.8.4	Data Edit	169
4.9	Hard Test Menu	171
4.9.1	HardTest Menu	171
4.10	BHT Photo	180
4.10.1	Taking Still Images	181
4.10.2	Changing the image save folder	181
4.11	Application Launcher	182
4.11.1	Main menu	182
4.11.2	Initial setup	182
4.11.3	User mode	183
4.11.4	Administrator mode	184
4.12	Session Keeper	192

4.1 Desktop

The windows desktop is displayed after the initial setup.
(Refer to Chapter 2, 2.4 Initial Setup.)

The following is an explanation of all the icons on the desktop.

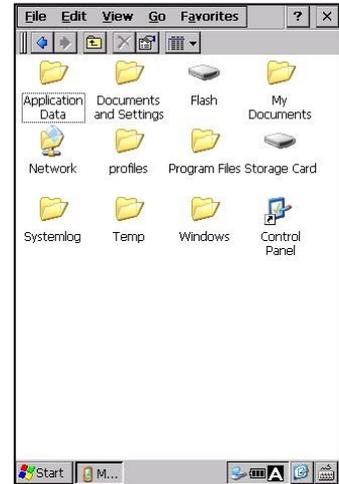
The icons on the desktop are application icons, and start up a program by double tapping each icon.



My Device / My Documents

“My Device” is used to see file information and programs inside the BHT.
To open, double tap the My Device icon.

“My Documents” is also used to see file information inside the BHT.
To open, double tap the My Documents icon.



Recycle Bin

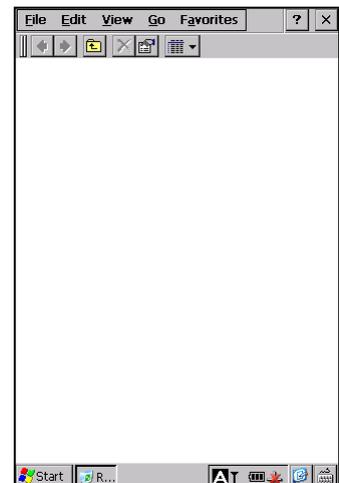
“Recycle Bin” stores deleted files from the BHT memory.
To see deleted files, double tap the Recycle Bin icon.

To recover deleted files from the Recycle Bin, select the file to recover and tap [File(F)] – [Restore(E)].

To delete specific files in the Recycle Bin from the BHT memory, select the file to delete and tap [File(D)] – [Delete(D)].

To delete all files in the Recycle Bin from the BHT memory, select all files and tap [File(D)] – [Empty Recycle Bin(B)].

– **Note** – Files in the FLASH or Storage Card folder are deleted directly from the BHT memory, not stored in the Recycle Bin.



BhtShell

“BhtShell” is a system menu launcher that provides easy access to the system menus.

To start up the system menu, double tap the BhtShell icon.

Refer to Chapter 4, 4.4 System Menu Details.



FullScreen

“FullScreen” is an Internet Explorer without a menu bar, address bar and status bar.

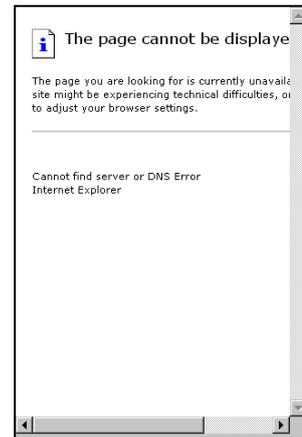
Full Screen Internet Explorer has the same functions as a standard Internet Explorer.

Full Screen Internet Explorer displays the screen shown on the right when the BHT is disconnected from the network (LAN / WLAN / ...).

To reconnect the BHT to the server, press the following function keys.

F4 :Reconnects to the current URL

F12 : Reconnects to the “Start Page” in Internet Options >General tab.



Refer to BHT Web Browser Plug-in Reference Manual, chapter 2. Web browser settings for more details.

- Close control of “FullScreen”
- Plug-in settings (enable/disable)
- Error control (enable/disable)
- Function key assignment (only for FullScreen)

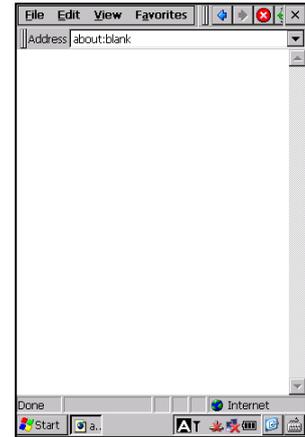
Internet Explorer

“Internet Explorer” is used to browse web pages.

To run Internet Explorer, double tap the Internet Explore icon.

– **Note** – Before using Internet Explorer, set up the wireless settings and open the wireless device.

Refer to Chapter 4, 4.4.3 System Properties – [17] Wireless LAN, or 4.5 Wireless Network Settings.

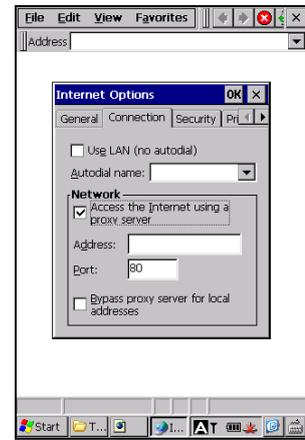


Internet Options

“Internet Options” is used to set up internet settings.

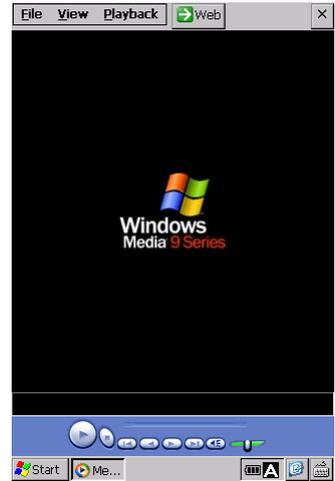
Select [View(V)] – [Internet Options(O)] from the Internet Explorer menu to open the Internet Options.

To set up the Internet connection settings, tap the Connection tab.



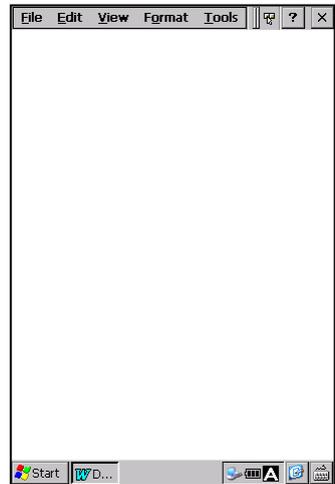
Media Player

“Media Player” is used to play windows media and MP3 files.
To play digital media files, double tap the Media Player icon.



Microsoft WordPad

“Microsoft WordPad” is the basic word processor in windows.
To use WordPad, double tap the Microsoft WordPad icon.



Remote Desktop Connection

“Remote Desktop Connection” is used to control other computers remotely.
To connect to a remote computer, double tap the Remote Desktop Connection icon.

Refer to the BHT RDP Plug-in Reference Manual to control local devices such as barcodes, beeper, LED and so on for the BHT operating in the Microsoft Windows terminal service / desktop environments.



4.2 Start Menu

Start menu is used to run programs installed in the BHT and set up system settings.

The following is an explanation of all the functions in the start menu.

Tap the  button in the bottom left corner of the desktop to open the start menu.



App Launcher

The Application Launcher is an application guard tool that is used to restrict the use of applications for the BHT end users in order to ensure smooth BHT operation.

In the **Start** menu, tap Programs > App Launcher > AppLauncher to start up the AppLauncher program.

Refer to Chapter 4, 4.11 Application Launcher.

BHT Photo

“BHT Photo” is used to take photos with the BHT.

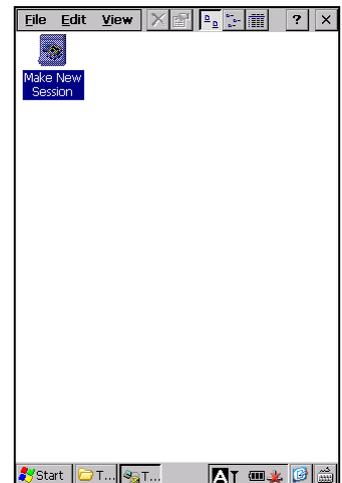
In the **Start** menu, tap Programs > BHTPhoto > BHTPhoto to start up the BHTPhoto program.

Refer to Chapter 4, 4.10 BHT Photo.

Terminal

In the **Start** menu, tap Programs > Communication > Terminal to open the Terminal window.

Double tap the Make New Session icon and follow the instructions given by the wizard.



kbifCE

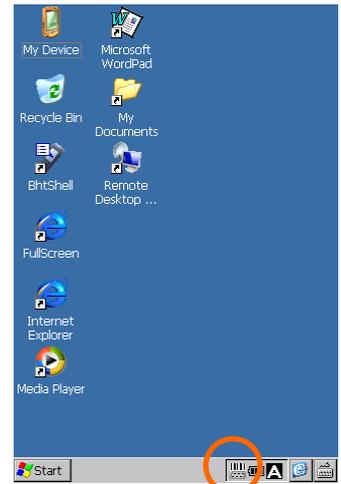
“kbifCE” is a keyboard interface software program to display a virtual keyboard (software keyboard) on the screen.

The virtual keyboard provides the use of the stylus for data entry.

To use the virtual keyboard, tap Programs > kbifCE > kbifCE in the **Start** menu.

The kbifCE icon is shown and stays active in the task bar.

Refer to the BHT-CE kbifCE User's Guide.



kbifCE icon ↗

Session Keeper (Available only for BHT-1261QWBG-CE)

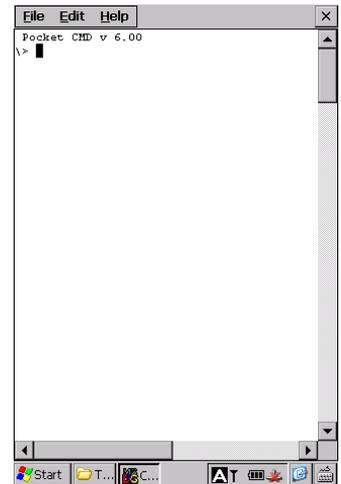
In the **Start** menu, tap Programs > SessionKeeper > SessionKeepr to open the application.

Refer to Section 4.12 Session Keeper in Chapter 4 System Operation.

Command Prompt

“Command Prompt” is a windows command processor, and is used to execute entered commands.

In the **Start** menu, tap Programs > Command Prompt to open the command prompt window.



The following programs can also be started in the start menu.

Internet Explorer

In the **Start** menu, tap Programs > Internet Explorer to run Internet Explorer.

Refer to Chapter 4, 4.1 Desktop –Internet Explorer.

Media Player

In the **Start** menu, tap Programs > Media Player to run Media Player.

Refer to Chapter 4, 4.1 Desktop – Media Player.

Microsoft WordPad

In the **Start** menu, tap Programs > Microsoft WordPad to run Microsoft WordPad.

Refer to Chapter 4, 4.1 Desktop – Microsoft WordPad.

Remote Desktop Connection

In the **Start** menu, tap Programs > Remote Desktop Connection to run Remote Desktop Connection.
Refer to Chapter 4, 4.1 Desktop – Remote Desktop Connection.

Windows Explorer

“Windows Explorer” is used to browse files and folders inside the BHT.
In the **Start** menu, tap Programs > Windows Explorer to run Windows Explorer.
The Windows Explorer first opens the My Device.
Refer to Chapter 4, 4.1 Desktop – My Device.

-
- **Note** – When connecting the BHT to the (remote) host computer via a windows network, set the time and date of the BHT properly.
- If both the BHT and the (remote) host computer do not have the same date and time, the BHT may not log into the (remote) host computer.
-

Favorites

“Favorites” is used to view a list of registered files in the favorites folder.
To add a file to the favorites folder, create a shortcut of the file in the “\Windows\favorites” folder.

Documents

“Documents” is used to view a list of recently used files.
To add a file to the Documents folder, use the SHAddToRecentDocs(D) standard API.
Refer to the help menu in application development tools for further details on SHAddToRecentDocs(D).

Control Panel

“Control Panel” is used to set up a windows operating environment.
 In the Start menu, tap [Settings(S)] – [Control Panel(C)] to open Control Panel.

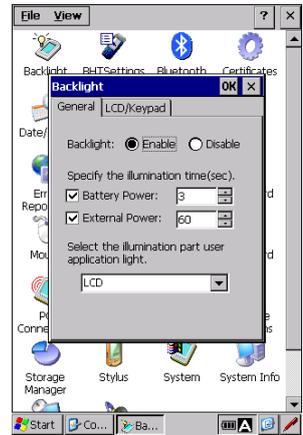


Backlight

“Backlight” is used to change the backlight settings.
 To open the Backlight menu, double tap the Backlight icon in the Control Panel .

General tab- Backlight (*1)

“General” tab is used to change the following general settings.
 Tap the General tab in the Backlight menu to change the General settings.



- Enable: Turns the backlight ON when any key is pressed or the screen is tapped.
- Disable: Turns the backlight OFF when any key is pressed or the screen is tapped.

(*1) The backlight ON/OFF keys (**SF** key + **M3** key) overrides the above backlight settings.
 Whenever the backlight ON/OFF keys (**SF** key + **M3** key) are pressed, the backlight switches between ON and OFF regardless of the backlight settings in this menu.
 Refer to Chapter 3, 3.2 Turning ON/OFF the Backlight for details of the backlight ON/OFF keys.

General tab - Specify the illumination time (sec)

Set the backlight ON time in seconds.
 The backlight is turned ON for a specified period of time when any key is pressed or the screen is tapped.

- Battery Power: Backlight ON time duration when the BHT is not placed in the CU.
- External Power: Backlight ON time duration when the BHT is placed in the CU.

Checkbox	Value	Description
Checked	0	Continuously ON
	1 to 600	1 to 600 seconds
Unchecked	-	Backlight OFF

General tab - Select the illumination part

- Select the part to be illuminated when turning ON the backlight with the user application.
- None
 - LCD
 - Keypad
 - LCD and Keypad

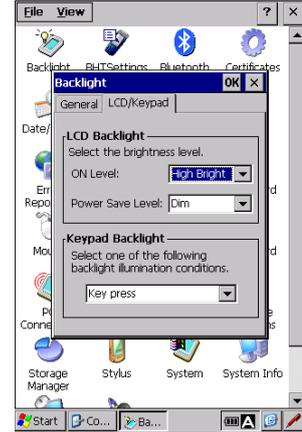
“LCD/Keypad” tab is used to change the LCD/Keypad brightness, power save level and keypad backlight ON timing.
To change the settings, tap the LCD/Keypad tab in the Backlight menu.

LCD/Keypad tab - LCD Backlight

ON Level

Select the LCD brightness from the following four levels.

- Off
- Low Bright (Dark)
- Mid Bright
- High Bright (Bright)



Power Save Level

“Power save Level” is used to save battery power when the BHT is not in use for a period of time specified in the General tab – “Specify the illumination time (sec)”.

Select “Dim” or “Off”.

- Dim: Dim (Backlight stays ON faintly.)
- Off: Backlight turns OFF.

LCD/Keypad tab - Keypad Backlight

Select when the keypad backlight is turned ON.

- Key press or Screen tap: The backlight is turned ON when any key is pressed or the screen is tapped.
- Key press: The backlight is turned ON when any key is pressed.
- Disable: The backlight is turned Always ON.

BHTSettings

“BHTSettings” is used to access to the system properties of the BHT.
Double tap the “BHTSettings” icon in the Control Panel to open the System Properties menu.
Refer to Chapter 4, 4.4.3 System Properties.



Error Reporting

"Error Reporting" is creates an error information when an error occurs in applications.

Enabling Error Reporting is recommended when developing applications.

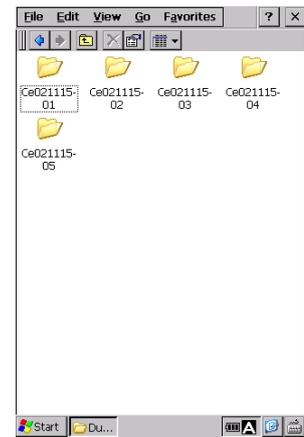
Using Windows CE Dump Viewer in a host computer together with this function helps early detection and solution of application problems.

Access to Microsoft HP or MSDN for further details.

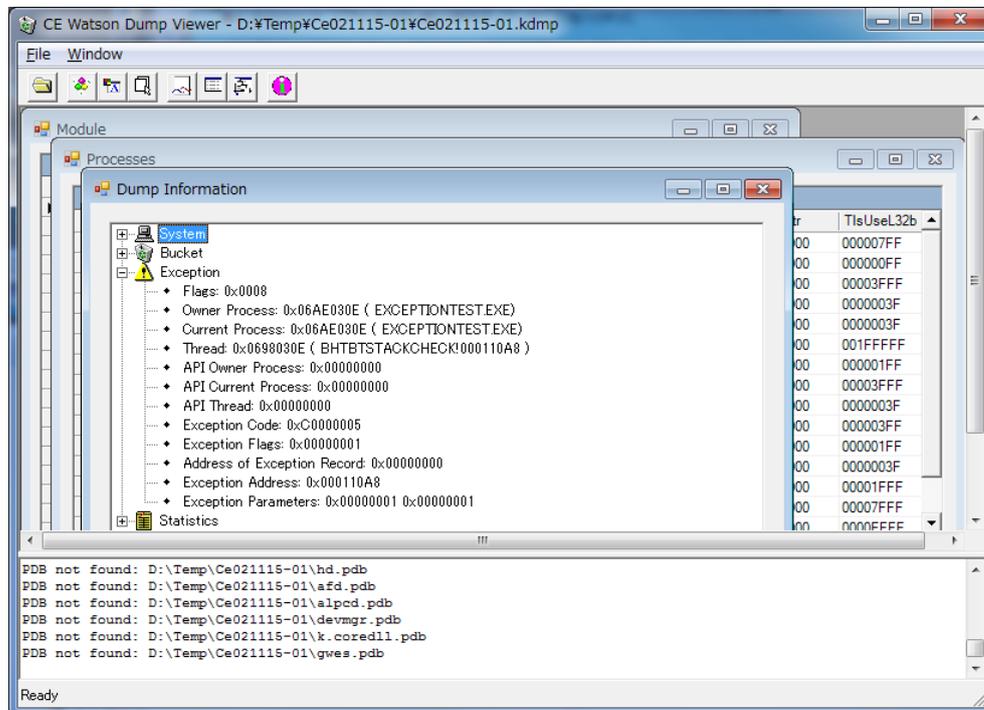
An error information is created in the Windows\DumpFiles folder when an application error is detected.

A folder is created as shown on the left each time when an error occurs,

To see error details, copy log files from these folders to a computer then view the error details by using Windows CE Dump Viewer.



The following example shows that errors occurred in EXCEPTIONTEST.EXE.



[Reference URL]

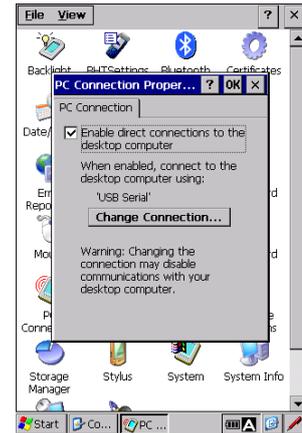
<http://www.microsoft.com/en-us/download/details.aspx?id=15935>

PC Connection

“PC Connection” is used to connect the BHT to a computer.

To change the BHT connection to the computer, double tap the PC Connection icon in the Control Panel to open the PC Connection Properties.

Then tap the “Change Connection...” button to change the connection method.



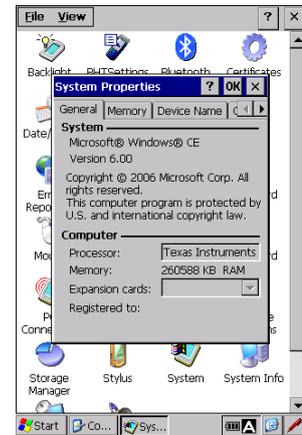
System

“System” is used to change the windows System Properties.

To open the windows System Properties, double tap the System icon in the Control Panel

Tap “General” tab to open the General menu.

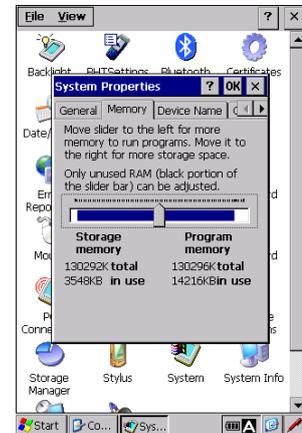
General menu shows the basic windows system information.



Tap “Memory” tab to open the Memory menu.

The Memory menu is used to check the memory allocation and free space of the RAM memory, and change the RAM memory allocation.

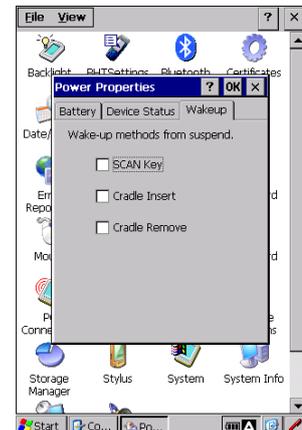
-
- Note – Allocate the memory between “Storage memory” and “Program memory” based on the operating requirements.
 - Depending on the memory allocation (e.g., insufficient program execution space), the BHT may not operate normally.
-



Power

Double tap the Power icon in the Control Panel to open the Power Properties menu.

“Wakeup” tab is used to set up when the BHT wakes up from a powered off state.



Stylus

“Stylus” is used to change the stylus settings.

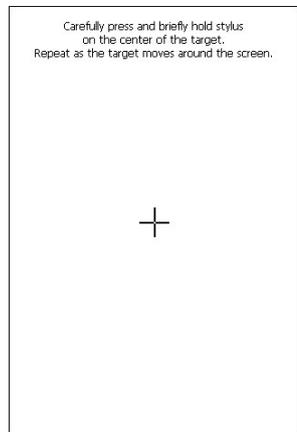
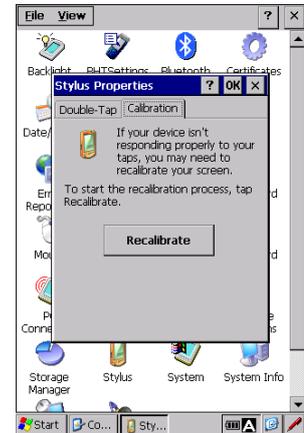
To open the Stylus Properties, double tap the Stylus icon in the Control Panel.

In “Double-Tap” tab menu, the double tapping speed of the stylus can be changed.



In “Calibration” tab menu, the screen can be recalibrated when the BHT is not responding properly to the stylus taps.

To recalibrate the touch screen, tap the “Recalibrate” button
Then follow the instructions displayed on the screen.



Dialing

“Dialing” is used to set up the telephone line settings.

To open the Dialing Properties, double tap the Dialing icon in the Control Panel.



Network and Dial-up Connection

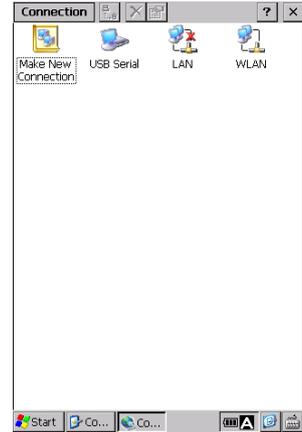
“Network and Dial-up Connection” is used to connect the BHT to a network for uploading and downloading files from a remote location.

Double tap the Network and Dial-up Connection icon in the Control Panel. Then, double tap the “Make New Connection” to create a new network connection.

Enter a new connection name and choose a connection type by following the instructions given by the wizard.

Connection type:

- USB Serial :Connects to a network via a cradle USB
- LAN / SMSC95001 :Connects to a network via a cradle LAN
- WLAN / PASS-TIWLNAPI1 :Connects to a network via a Wireless LAN



The LAN and WLAN icon in the Network and Dial-up Connection window are used to set the “IP address” and “name servers”.

When the BHT connects to a network via a cradle LAN or wireless LAN, set the “IP address” and “name servers” as necessary.

To open the “IP address” and “name servers” settings, double tap the LAN icon or WLAN icon whichever the BHT is connecting to.

To set the IP address, tap the “IP Address” tab.

Obtain an IP address via DHCP:

Select this option to automatically obtain an IP address (dynamic IP address) from the DHCP server.

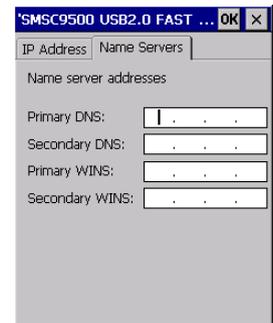
Specify an IP address:

Select this option to manually enter an IP address (static IP address).



To set the IP address for the name server, tap the “Name Servers” tab.

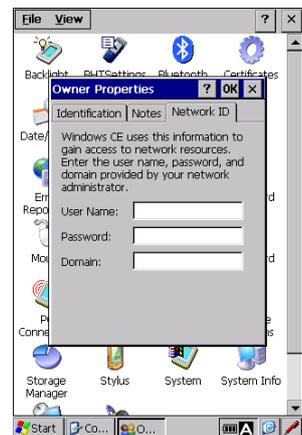
- Primary DNS : Enter the IP address for the Primary DNS server.
- Secondary DNS : Enter the IP address for the Secondary DNS server.
- Primary WINS : Enter the IP address for the Primary WINS server.
- Secondary WINS : Enter the IP address for the Secondary WINS server.



– Note – Contact your network administrator for the IP addresses.

Owner

“Owner” is used to set up the owner properties (such as the user name, password and domain name) that is required to access the network resource. To set up the Owner properties, double tap the “Owner” icon in the Control Panel, then tap the “Network ID” tab.



Volume and Sounds

“Volume & Sounds” is used to change sound settings and adjust the sound volume.

To change the volume and sounds, double tap the “Volume & Sounds” icon in the Control Panel.

In the “Volume” tab, the following settings can be changed.

To change the settings below, tap the “Volume” tab.

- Sounds volume adjustment (0 to 5)
- Event sound enable/disable
- Application sound enable/disable
- Notification sound enable/disable
- Key clicks
- Screen taps
- Trigger Key clicks

In the “Sounds” tab, sounds for various events can be changed.

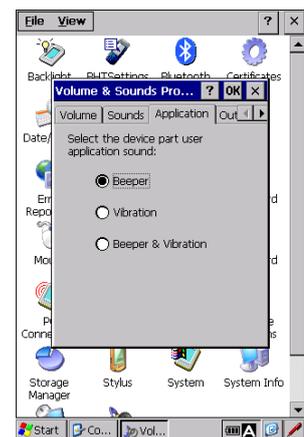
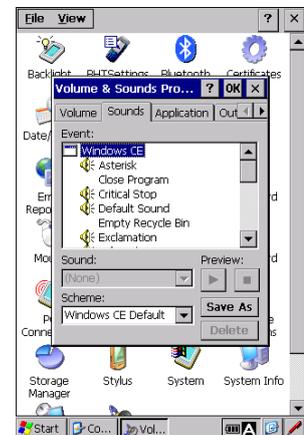
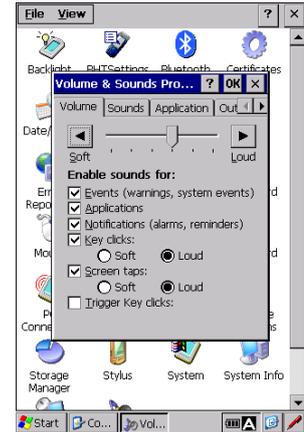
To change the settings, tap the “Sounds” tab.

In the “Application” tab, the following settings can be changed.

To change the settings, tap the “Application” tab.

Select one of the following three patterns to notify code scanning completion, application and system warning.

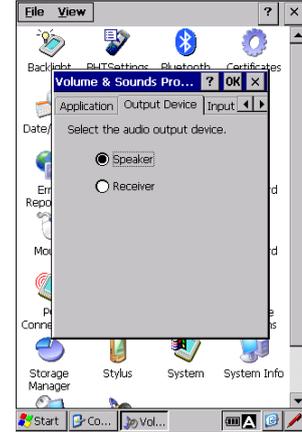
- Beeper : Beeper only (default)
- Vibration : Vibrator only
- Beeper/Vibration : Beeper and Vibrator



– **Note** – The vibrator can be controlled by adjusting the sound volume in the “Volume” tab.
 Level 0 (1st position from the left) : The vibrator is disabled
 Level 1 (2nd position from the left) : Low level vibration

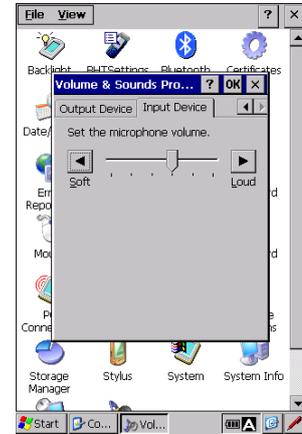
“Output Device” tab is used to select an audio output device that emits sounds for the BHT.

To select an audio output device, tap the “Output Device” tab. Then choose “Speaker” or “Receiver”.



“Input Device” tab is used to adjust the microphone volume when the microphone is used as an input device.

To adjust the microphone volume, tap the “Input Device” tab. Then use the slider to adjust the volume level.

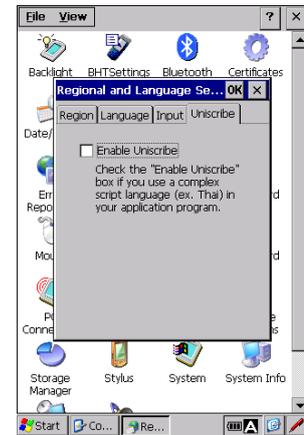
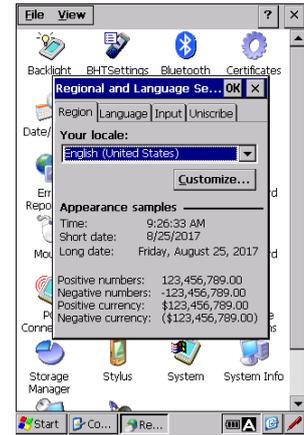


Regional and Language Settings

“Regional and Language Settings” is used to change the display language and the format that windows uses to display dates, times, currency, values and Uniscribe for complex text layout. (for example Thai language).

To change the settings, double tap the “Regional and Language Settings” icon in the Control Panel.

Uniscribe: Check this box when displaying complex text languages (CTL) such as Thai.



- **Notes** - Default of Uniscribe is changed from "checked" to "unchecked" in this OS version. As a result, the text layout of the complex text languages (CTL) such as Thai is changed after OS update. Check this box to enable Uniscribe after OS update if any one of the complex script languages listed at the following URLs (Microsoft MSDN) is used for an application.
 - [http://msdn.microsoft.com/en-us/library/ee491922\(v=winembedded.60\).aspx](http://msdn.microsoft.com/en-us/library/ee491922(v=winembedded.60).aspx)
 - <http://msdn.microsoft.com/en-us/library/aa912899.aspx>

Date/Time

“Date/Time” is used to set the date, time, time zone and automatic adjustment for daylight saving time.

To change the settings, double tap the “Date/Time” icon in the Control Panel.

– **Note** – The year can be set from 2000 to 2099.

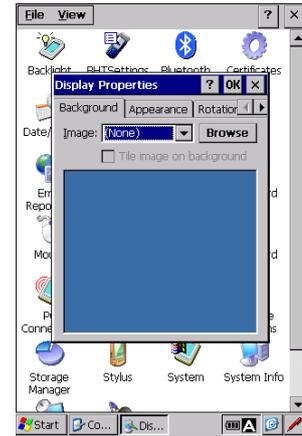


Display

“Display” is used to change the display settings to customize the desktop. To change the display settings, double tap the “Display” icon in the Control Panel.

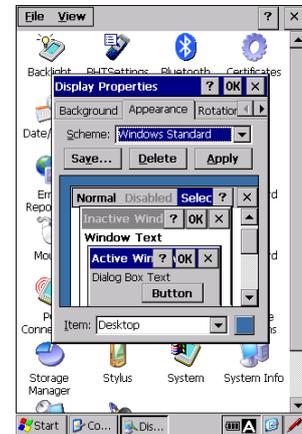
“Background” tab in the Display properties is used to change the desktop background (wallpaper).

To change the desktop background, tap the “Background” tab.



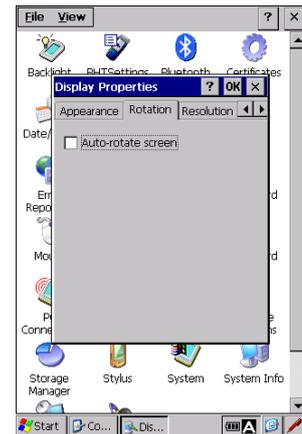
“Appearance” tab in the Display properties is used to customize the desktop appearance.

To change the desktop appearance the way you want, tap the “Appearance” tab.



The BHT has a G sensor that provides an automatic rotation screen to match the orientation of the BHT.

To set the screen to automatically rotate, check the “Auto-rotate screen” check box in the “Rotation” tab.



– **Note** – Recalibrate the G sensor if the auto-rotate screen does not work properly.
Refer to 4.4.3 System Properties – [8] G sensor.

“Resolution” tab in the Display properties is used to change the screen resolution.
 To change the resolution settings, tap the “Resolution” tab and select the resolution mode.

Resolution mode:

- HVGA (width 320 x height 480 pixels) (default)
- QVGA (width 240 x height 320 pixels)
- H1.5 (width 320 x height 320 pixels)
- VGA (width 480 x height 640 pixels)

The settings are affected after the reset.

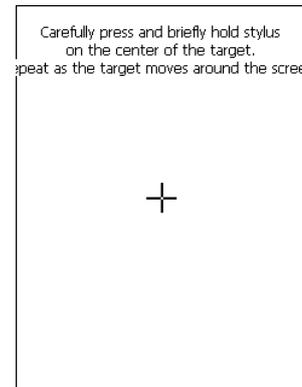
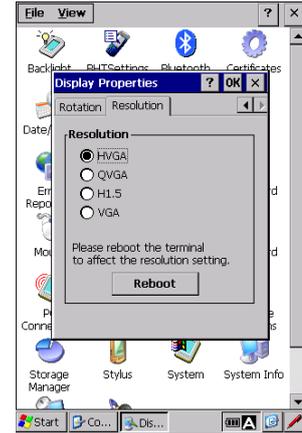
When QVGA mode is selected for the first time, the calibration screen shown on the right is displayed after the BHT is reset.

Follow the instructions displayed on the screen to calibrate the touch screen.

– Note – HVGA mode is recommended particularly when changing the BHT settings.

Some system setting tools such as the “Wireless LAN” (in the System Properties < BHTShell) are built for the HVGA screen.

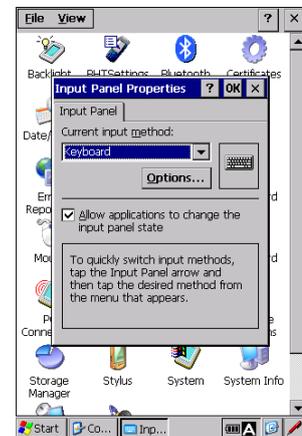
If the QVGA mode is selected when a system setting tool is used, the display images of these tools exceed the actual screen size.



Input Panel

“Input Panel” is used to change the software keyboard settings.

To change the settings, double tap the “Input Panel” icon in the Control Panel.

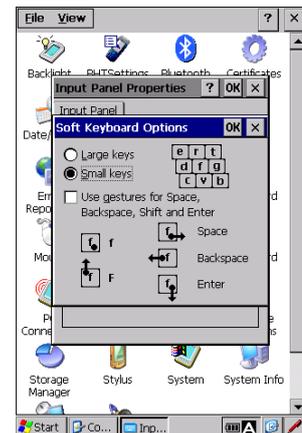


The “Options...” button in the Input Panel tab is used to switch the key size of the software keyboard between “Large” and “Small”.

To change the settings, tap the “Options...” button in the Input Panel tab.

– Note – Gestures* are always active regardless of the above settings, whether the "Use gestures for..." check box is checked.

* Gestures refer to special stylus movements that enable special input methods in the software keyboard as shown on the right.



Network and Dial-up Connection

“Network and Dial-up Connection” is used to connect the BHT to a network for uploading and downloading files from a remote location.

To set up the network settings, tap [Settings(S)] – [Network & Dial-up Connection(N)] in the **Start** menu,

The Network and Dial-up Connection can also be accessed from the Control Panel.
Refer to –Chapter 4, 4.2 Start Menu – Control Panel.

Task Bar and Start Menu

“Taskbar and Start Menu” is used to customize the taskbar and start menu appearance.

To change the settings, tap [Settings(S)] – [Taskbar and Start Menu(T)] in the **Start** menu,

In the “General” tab, the taskbar appearance can be changed.



Help

“Help” is used to browse the Windows CE Help.

To browse the Windows CE Help contents, tap [Help(H)] in the **Start** menu,



Run

“Run” is used to directly run an application or open a file.

To run an application or open a file, tap [Run(R)...] in the **Start** menu.



Reset

“Reset” is used to perform a reset or full reset.
Tap [Reset(E)] in the Start menu to open the Reset menu.

To perform a reset, uncheck the check box (Full reset) then tap “Yes” button.
To perform a full reset, check the check box (Full reset) then tap “Yes” button.



Screen capture tool (captbht.exe)

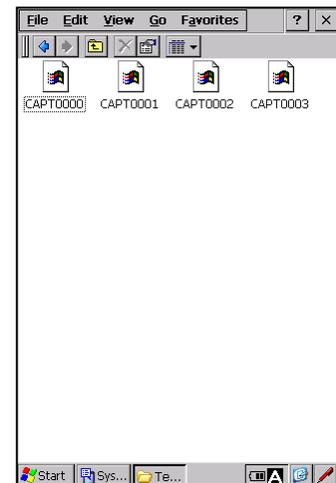
Captures screen images.
The screen images captured can be utilized for creating documents such as an application manual.

To open the screen capture tool,
1. Tap the “Desktop > Start > Run...”, [Run]” in the Start menu
2. Enter “captbht” in the Run dialog then tap the “OK” button.

To capture a screen image, press the [F3] key.
The BHT beeps twice when a screen image is captured.
The captured screen image is saved as a BMP file in the folder created under the temp folder. Copy this BMP file to the computer to utilize it.

To close the screen capture tool, press the [F4] key.
The BHT beeps once when the tool is closed.

- Note - The BMP files saved as output data consume large amount of memory. For this reason, using the screen capture tool during the BHT operation is not recommended.



Remote Display Application

The Remote Display Application is a tool that displays a BHT screen on a computer and manipulates the BHT via network. The following application files “CERDISP.exe” and “CERHOST.exe” must be run respectively on the BHT and the host computer in order to manipulate the BHT remotely.

BHT : Remote Display Application CERDISP.exe
 PC : Remote Display Utility CERHOST.exe

Remote Display Application CERDISP.exe

Follow the steps below to run the Remote Display Application on the BHT.

1. Tap the “Desktop > Start > Run... , [Run]” in the Start menu
2. Enter “cerdisp” in the Run dialog (fig.1) then tap the “OK” button.
3. Tap the “Start” button in the start confirmation dialog (fig.2).

The desktop shown in fig.3 is displayed after the application is launched.

To skip the start confirmation dialog (fig.2), enter “cerdisp -c” in the Run dialog (fig.1) instead of “cerdisp”.



Run dialog (fig.1)



Start confirmation dialog (fig.2)



Desktop after the cerdisp is launched (fig.3)

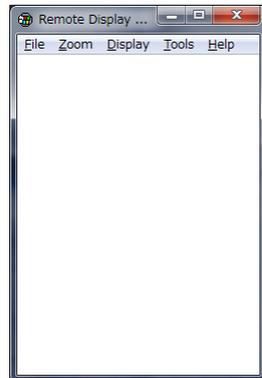
Remote Display Utility CERHOST.exe

Follow the steps below to run the Remote Display Utility on the computer.

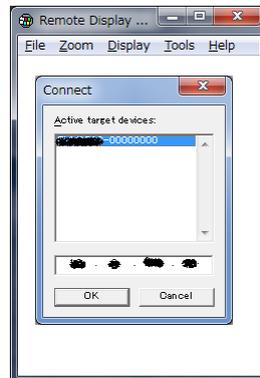
1. Copy the “cerhost.exe” which comes with the SDK(SDK\Tools\CERHOST folder) to the computer.
2. Run the “cerhost.exe”. The Cerhost screen (fig.4) is displayed.
3. Select the “Connect...” from the “file” menu. The connect dialog (fig.5) is displayed.
4. Select the BHT to connect from the active target device list shown on the connect dialog, then tap the “OK” button.

The BHT desktop shown in fig.6 is displayed on the computer after the application is launched.

The computer can manipulate the BHT with this BHT desktop.



Cerhost screen (fig.4)



Connect dialog (fig.5)



BHT desktop (fig.6)

4.3 System Menu Outline

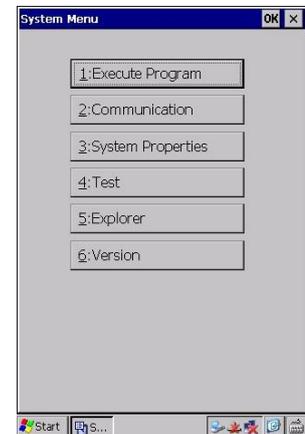
The System Menu provides easy access to perform common tasks such as running programs, communication setup and system setup.

The System Menu lists the menus with a corresponding number (menu number).

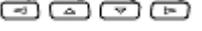
To open the System Menu, double tap the “BhtShell” icon on the desktop.

To open each menu in the System Menu, tap a menu button with the stylus or press a menu number with the keypad.

To exit the System Menu, tap the **OK** or **X** button on the top right corner of the System Menu window.



The keys below functions the same in all menus.

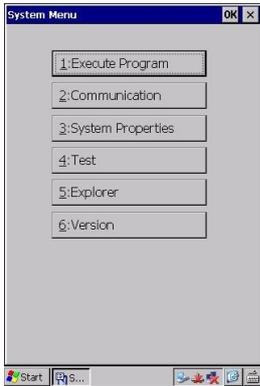
Numeric keys	Opens a menu when the menu number is pressed.
ENT key	Opens a focused menu (*).
Tab key	Moves a focus.
Cursor keys 	
ESC key	Returns to the previous screen. (**)

* The currently selected menu. In the screen above, the [1:Execute Program] is focused.

** The ESC key function is disabled in the System Properties menu and Explorer menu.

Refer to 4.4 System Menu Details, 4.4.3 System Properties, or 4.4.5 Explorer.

4.3.1 System Menu Structure



<System Menu>

Double tap the “BhtShell” shortcut icon on the desktop to start up the System Menu.

Menu [1]



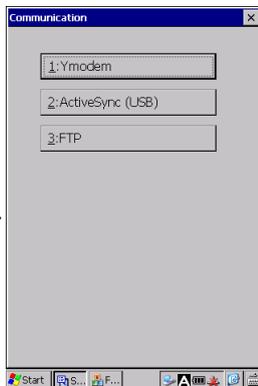
<Execute Program>

Runs selected applications and opens selected folders or files.

(Refer to Chapter 4, 4.4.1 Execute Program Menu)

ESC key

Menu [2]



<Communication Menu>

Communicates with the host computer.

(Refer to Chapter 4, 4.4.2 Communication Menu)

ESC key

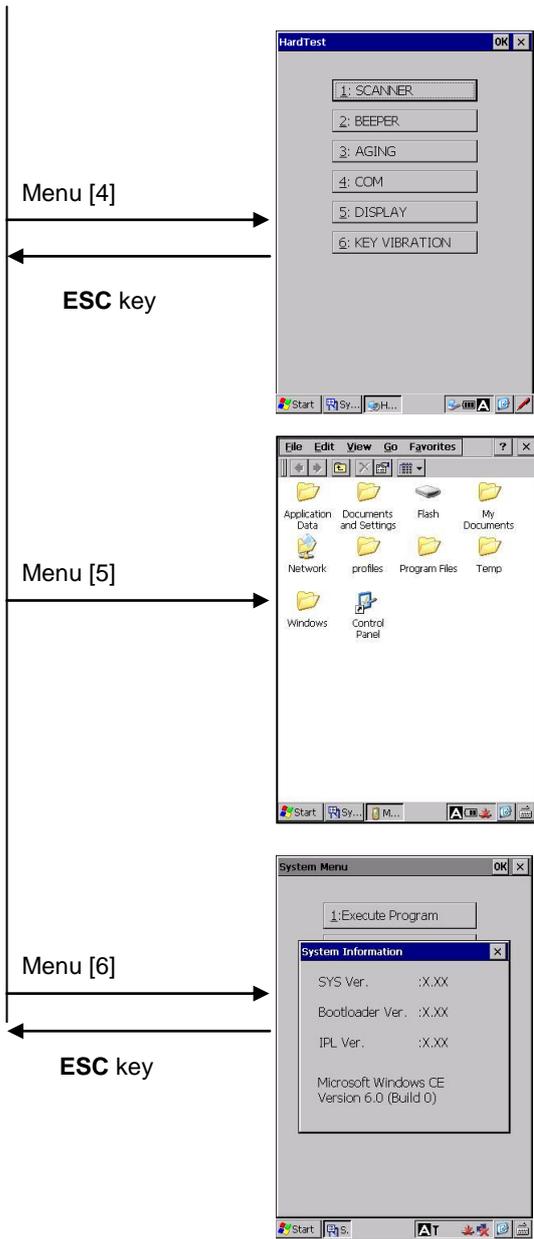
Menu [3]



<System Properties>

Sets up various settings that control how the BHT works.

(Refer to Chapter 4, 4.4.3 System Properties)



<Test Menu>
 Performs various hardware tests.
 (Refer to Chapter 4, 4.7 Hard Test Menu)

<Explorer>
 Runs Explorer.
 (Refer to Chapter 4, 4.4.5 Explorer)

<Version>
 Displays system information.
 (Refer to Chapter 4, 4.4.6 System Information)

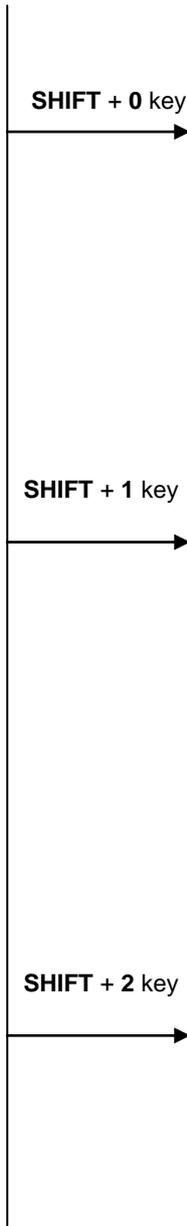
Advanced System Menus that are not in the System Menu

Open the System Properties menu.

Then hold down the **SHIFT** key and press the corresponding numerical key.



ESC key

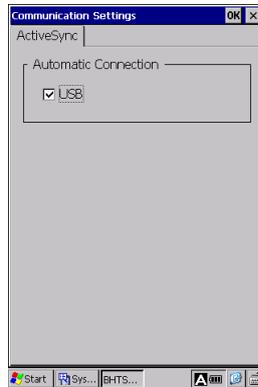


<System Properties>

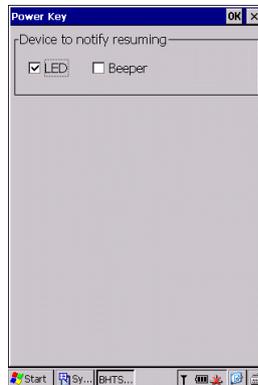
Sets up various settings that control how the BHT works.
(Refer to Chapter 4, 4.4.3 System Properties)



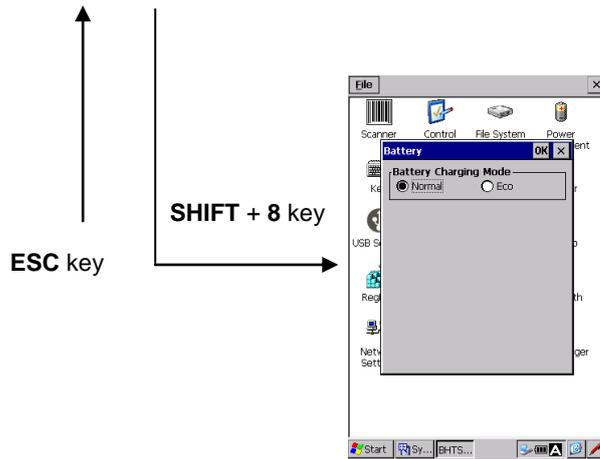
<Backup Battery Discharge Count Reset>
Resets the backup battery discharge count.



<ActiveSync/WMDC Auto Connection Setting>
Sets the ActiveSync/WMDC auto connection via a USB to either ON or OFF.



<Power key>
Selects the notification devices (LED, Beeper or both) to notify that the BHT is turned on by the power key.



<Battery Charging Mode>

Selects the charging mode when charging a battery while the BHT is turned off (in suspend mode).

4.4 System Menu Details

The following is an explanation of all the functions in the System Menu.

4.4.1 Execute Program Menu

“Execute Program” is used to run applications and open folders or files.

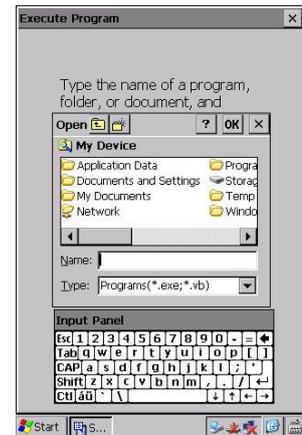
1. Tap “1: Execute Program” in the System Menu.



2. Tap the “Browse...” button.

Select a file from the My Device list, or enter a file name. Make sure that the file name displayed in the “Name:” field is correct.

Then tap the “OK” button.



3. Confirm that the file name displayed in the “Open:” field is correct.

Then tap the “OK” button.



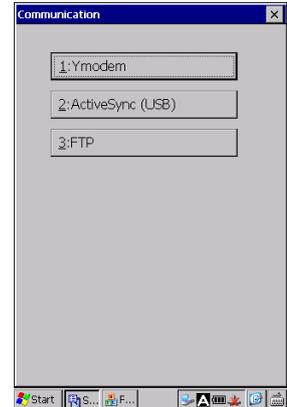
4.4.2 Communication Menu

“Communication” is used to connect the BHT to the host computer.

Tap “2: Communication” in the System Menu.

The BHT can connect to the host computer using the following three methods.

- | | |
|----------------------|--|
| [1] Ymodem: | Communicates with the host computer using the Ymodem. |
| [2] ActiveSync(USB): | Communicates with the host computer via a USB using the ActiveSync/WMDC. |
| [3] FTP: | Communicates with the host computer using the FTP. |



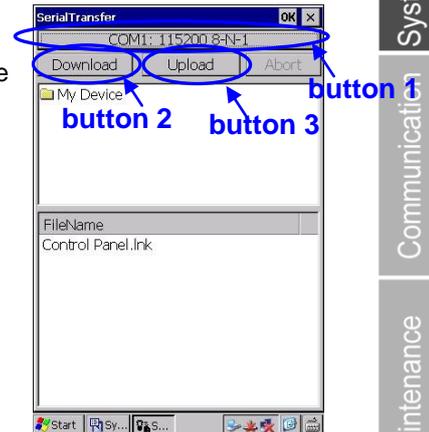
– Point – ActiveSync/WMDC cannot be used when the BHT is using the CU (LAN) or wireless communication.

[1] Ymodem Menu

“Ymodem” is used when the BHT is connecting to the host computer via the RS-232C interface port.

To use Ymodem, follow the steps below.

1. Tap “1:Ymodem” in the Communication menu.
2. Tap the button 1 to set the communication environment.
3. Tap the button 2 to download files to the BHT, or tap the button 3 to upload files stored in the BHT to the host computer.



Communication Settings

To set up the Ymodem communication settings, tap the button 1 in the Ymodem menu.

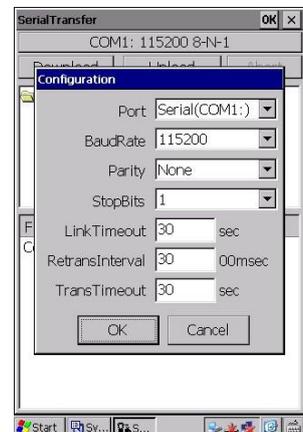
RS-232C Interface Settings

Select the “Serial(COM1:)” in the “Port” field, when the BHT is connecting to the host computer via a RS-232C connector interface port.

The following fields must be set to the same values as the host computer.

“BaudRate”, “Parity”, “StopBits”, “LinkTimeout”, “Retrans Interval” and “TransTimeout”.

The “data bits” is fixed at 8.



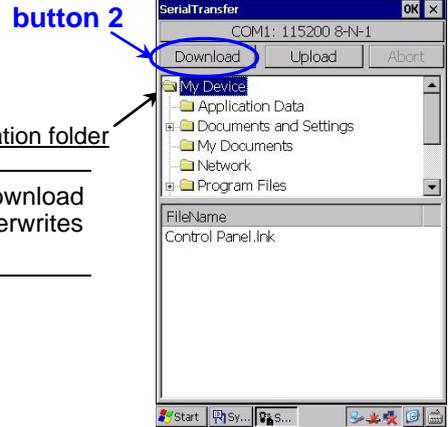
Download

1. Select the download destination folder.

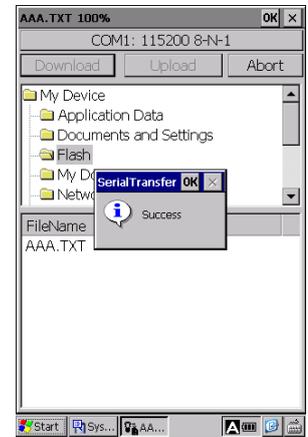
Then tap the button 2 to start the download.

Download destination folder

– **Note** – If a file with the same name already exists in a download destination folder, the new downloaded file overwrites the old one.

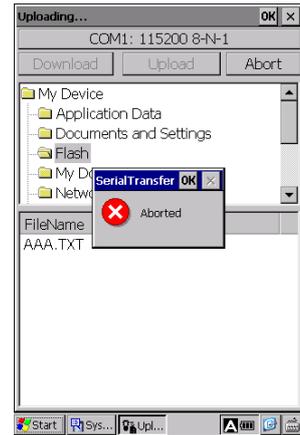


2. The popup message shown on the right is displayed when the download is successfully completed.



If an error occurs while downloading...

If an error occurs while downloading, the popup message shown on the right is displayed.



The error messages are listed below.

Message	Problem	Solution
Not enough storage	Not enough memory to store downloaded files.	Delete any unnecessary files or reduce the size of the download file.
Too long path	The file path is too long to download.	Change the download file name or the download destination folder.
File open error	The file to be overwritten is currently open.	Close the file and try again.
Communication error	Download has failed due to a communication error.	Check the communication settings, and then try again. If the error still occurs, check that the communication parameters in the host computer are the same as the BHT.
Aborted	Download has aborted.	Check the communication settings and communication log, then try again. If the error still occurs, check that the communication parameters in the host computer are the same as the BHT.
Cannot open port	The communication port has already been opened.	Close the communication port that is already opened for another process, and then try again.
Protocol timeout	A timeout has occurred.	Check the communication settings and communication log, then try again. If the error still occurs, check that the communication parameters in the host computer are the same as the BHT.

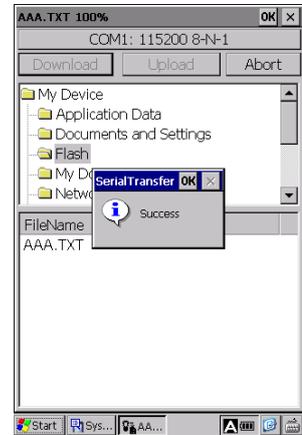
Upload

1. Select the file to upload to the host computer. Then tap button 3 to start the upload.

Upload file

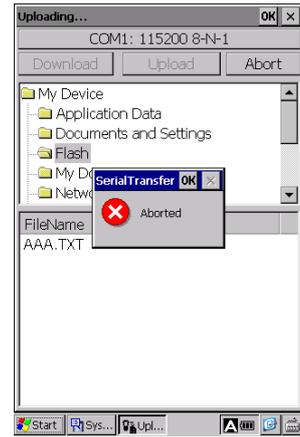


2. The popup message shown on the right is displayed when the upload is successfully completed.



If an error occurs while uploading...

If an error occurs while uploading, the popup message shown on the right is displayed.



The error messages are listed below.

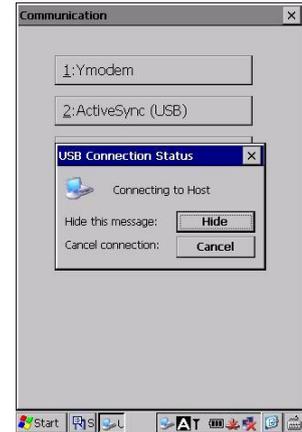
Message	Problem	Solution
File open error	The file to be uploaded is currently open.	Close the file and try again.
Aborted	Upload has been aborted.	Check the communication settings and communication log, then try again. If the error still occurs, check that the communication parameters in the host computer are the same as the BHT.
Cannot open port	The communication port has already been opened.	Close the communication port that is already opened for another process, and then try again.
Protocol timeout	A timeout has occurred.	Check the communication settings and communication log, then try again. If the error still occurs, check that the communication parameters in the host computer are the same as the BHT.
Select one or more files.	No files have been correctly selected for uploading.	Select the file(s) to upload and then try again.

[2] ActiveSync(USB)

“ActiveSync(USB)” is used when the BHT is connecting to the host computer via the USB.

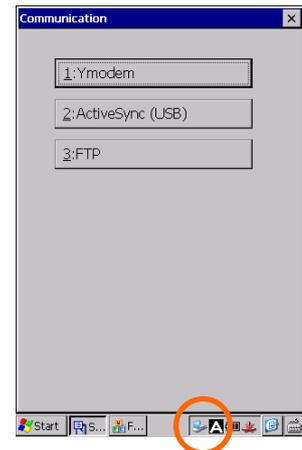
To connect to the host computer via the USB, tap “2:ActiveSync(USB)” in the Communication menu

The popup message shown on the right is displayed when a connection has been established.



When ActiveSync/WMDC connection is successful...

When ActiveSync/WMDC connection is successfully established, the BHT emits a network notification sound, and the ActiveSync/WMDC icon is displayed in the task bar (circled in red shown on the right).



If ActiveSync/WMDC connection fails to establish...

If ActiveSync/WMDC connection fails to establish, the ActiveSync/WMDC icon is not displayed.

[3] FTP Menu

“FTP” is a FTP Client software program (FTPClient), and is used when the BHT transfers files from or to the FTP server.

When the “FTP” menu is tapped for the first time, the “FTP Client Configuration” is displayed.

After the FTP Client Configuration setup, the FTPClient is displayed.

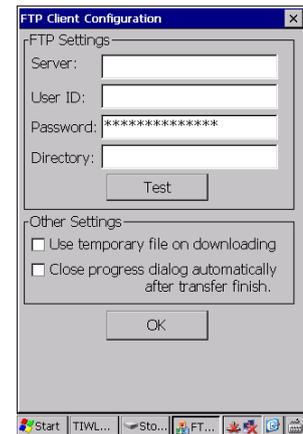
Follow the steps to use the FTPClient.

◆ Step 1: FTP Client Configuration

Tap “3: FTP” in the Communication Menu to set up the “FTP Client Configuration”.

FTP Settings;

Server: IP address or host name of the FTP server
 User ID: User name registered in the FTP server
 Password: Password of the above user name
 Directory: Folder to be used (Use the root folder if left blank)



Other Settings;

“Use temporary file on downloading” check box:

Check the box to save an existing file as a temporary file when downloading, just in case the download fails.

Make sure that the device memory has enough space to save a temporary file before downloading.

“Close progress dialog automatically after transfer finish” check box:

Check the box to automatically close the popup dialog for the file transfer progress when the file transfer is completed,

To confirm that the BHT can log into the FTP server, tap the “Test” button.

When the BHT is successfully logged into the FTP server, the popup message shown on the right is displayed.

Close the popup message, then tap the “OK” button to proceed to file transfer.



– **Note** – Connect the BHT to a wireless network with WLAN Manager, before starting the file transfer via a wireless LAN communication.
 Refer to Chapter4, 4.5 Wireless Network Settings.

– **Note** – Once the FTP Client Configuration is set up, the next time the FTP Client is activated, the file transfer screen (FTPClient) is displayed.

◆ Step 2: Transfer Files (Upload/Download)

(1) File downloading

To download files from the FTP server, follow the steps below.

1. Tap the “Ref...” button in the Download section.
The “Select file” dialog box is displayed.
2. In the “Select file” dialog box, select the folder and file to download.
3. Tap the “Download” button to start download.



(2) File uploading

To upload files to the FTP server, follow the steps below.

1. Tap the “Ref...” button in the Upload section.
The “Select file” dialog is displayed.
2. In the “Select file” dialog, select the folder and file to upload.
3. Tap the “Upload” button to start upload.



(3) During file transfer

During file transfer, the popup dialog that shows file transfer progress is displayed.

To stop file transfer, tap the “Abort” button.



(4) When file transfer is completed

When the file is successfully transferred, the Status of the popup dialog shows the “Downloading...done” message.

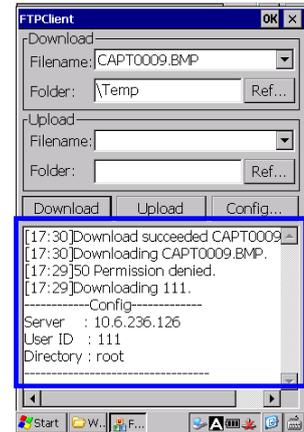
To close the popup dialog, tap the “Close” button.

To close the popup dialog automatically after file transfer is completed, check the box.



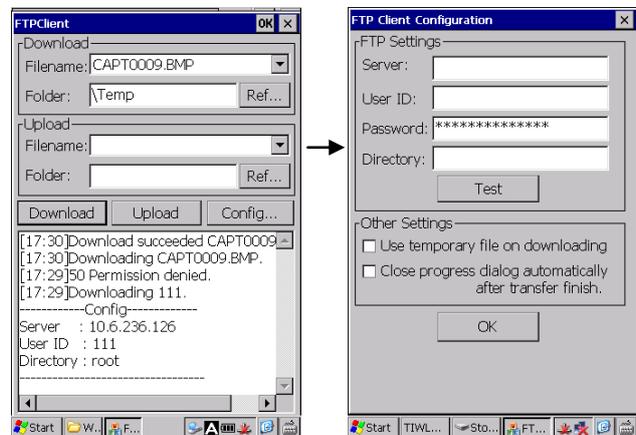
(5) File transfer history

The login and file transfer history is displayed in the lower half of the screen shown on the right (the area surrounded by blue lines).



If the Ftp Client Configuration needs to be changed...

To change the FTP Client Configuration, tap the “Config...” button.



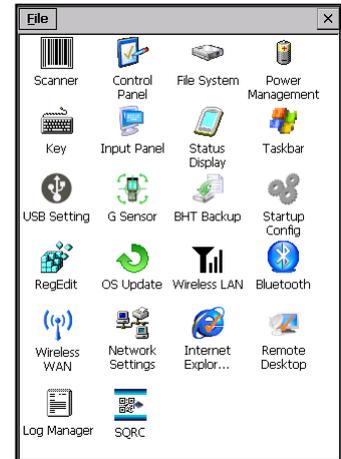
The error messages are listed below.

Message	Problem	Solution
Connection error XXXX	Failed to connect to the server.	Check the network environments, server active status and FTP settings.
Server IP or Name required	Either the server IP or host name is not specified.	Specify the server IP or host name.
User ID required	Either the user ID or password is not specified.	Specify the user ID or password.
Cannot contain any of the following characters.	The folder or file name is not correct (e.g., unsupported or very long characters are used)	Specify the correct folder or file name.
The path is invalid.		
The path is too long.		
Filename required	The file name is not entered.	Enter the file name.
The file is read only.	No data can be written to the file that is selected as the download destination.	Change the read-only file to the read-write file, or select another file.
The file could not be found.	The selected file cannot be found.	Select an existing file name.
This file already exists. Replace existing file?	The same file already exists.	Select “Yes” to overwrite the file. Select “No” not to overwrite the file, then select another file and retry.

4.4.3 System Properties

“System Properties” is used to set up various settings that control how the BHT works. The following icons are in the System Properties.

- [1] Control Panel: Sets up the windows operating environment.
 - [2] Scanner: Sets up how the BHT reads barcodes and QRcodes.
 - [3] File System: Initializes the Flash memory, RAM memory and registry.
 - [4] Power Management: Sets up the power saving mode.
 - [5] Key: Sets up how the keypad keys work.
 - [6] Input Panel: Sets up how the input panel work.
 - [7] Status Display: Sets the status icons of the common tasks to show or hide in the task bar.
 - [8] Taskbar: Sets the taskbar to show or hide on the desktop.
 - [9] USB Setting: Sets up the USB communication mode .
 - [10] G sensor: Calibrates the G sensor.
 - [11] BHT Backup: Backs up data and restores the registry.
 - [12] Startup Config: Sets up how the BHT starts up after a reset or full reset.
 - [13] RegEdit: Edits, imports and exports the registry.
 - [14] OS Update: Updates the OS.
 - [15] Wireless LAN: Sets up a wireless LAN network.
 - [16] Bluetooth: Connects to a Bluetooth® device.
 - [17] Wireless WAN: Sets up a wireless WAN network. (Only for BHT-1200QG)
 - [18] Network Settings: Changes the network settings.
 - [19] Internet Explorer Options: Changes the IE additional options.
 - [20] Remote Desktop: Changes the Remote Desktop settings.
 - [21] Log Manager: Retrieves logs.
 - [22] SQRC: Opens the SQRC setting menu. (Only for BHT-1200Q)
- To open the System Properties, tap “3:System Properties” in the System Menu.



[1] Control Panel

“Control Panel” is used to set up the windows operating environment.

To open, double tap the “Control Panel” icon in the System Properties.

Refer to Chapter 4, 4.2 Start Menu – Control Panel for details.

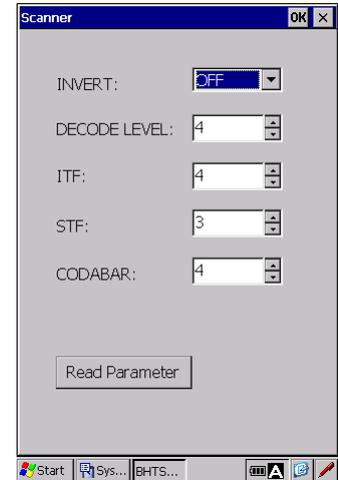


[2] Scanner**BHT-1200B Series**

“Scanner” is used to set up how the BHT reads barcodes.

To open the barcode menu, double tap the “Scanner” icon in the System Properties.

- INVERT:** Enables or disables inverted barcodes to be read.
- DECODE LEVEL:** Selects the decode level.
- ITF:** Selects the minimum number of digits for ITF.
- STF:** Selects the minimum number of digits for STF.
- CODABAR:** Selects the minimum number of digits for CODABAR.
- Read Parameter:** Launch the menu for barcode reading parameter (refer to 4.8 Scanner Reading Parameter).

**INVERT (Black-and-white inverted code reading function)**

Inverted barcodes are white bars on black backgrounds, standard barcodes are black bars on white backgrounds.

Set either “ON” for enabling inverted barcodes to be read or “OFF” for disabling inverted barcodes to be read. Default is set to “OFF”.

-
- **Note** – Setting the INVERT to ON may increase the frequency of barcode read errors. Setting the INVERT to OFF is recommended if not necessary. (inverted barcode reading is disabled).
-

DECODE LEVEL

The decode level can be set from 1 to 9.

The default level is set to 4.

Lowering the level increases the barcode reading efficiency, however, misreading probability of poor-quality barcodes (broken or dirty bars) also increases.

Raising the level decreases the barcode reading efficiency, and also decreases misreading probability of poor-quality barcodes.

Select only the required level to reduce the misreading probability.

ITF, STF and CODABAR

The minimum number of digits to be read for ITF, STF and CODABAR can be changed.

Setting smaller numbers for each code increases probability of missing digits or misreading, depending on various factors such as barcode reading conditions and barcode quality.

Setting larger numbers for each code decreases probability of missing digits or misreading.

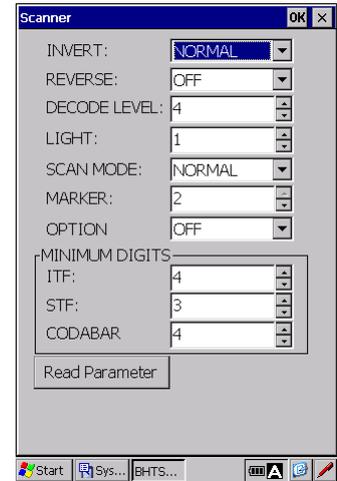
Select only the required number to reduce the probability of missing digits or misreading.

Read code	Range	Default
ITF	2 to 20	4
STF	1 to 20	3
CODABAR	3 to 20	4

BHT-1200Q Series

“Scanner” is used to set up how the BHT reads barcodes or 2D codes. To open the Scanner menu, double tap the “Scanner” icon in the System Properties.

- INVERT:** Enables or disables inverted codes to be read.
- REVERSE:** Enables or disables mirror image codes to be read.
- DECODE LEVEL:** Selects the decode level.
- LIGHT:** Selects the LIGHT mode.
- SCAN MODE:** Selects the SCAN mode.
- MARKER:** Selects the marker indicator.
- OPTION:** Selects whether or not to add optional data to the end of 2D code data read.
- MINIMUM DIGITS:** Selects the minimum number of digits for each code.
- Read Parameter:** Launch the menu for barcode reading parameter (refer to 4.8 Scanner Reading Parameter).



INVERT (Black-and-white inverted code reading function)

Inverted 2D codes or barcodes are white cells/bars on black backgrounds, standard 2D codes or barcodes are black cells/bars on white backgrounds.

Select one from the following three choices.

- NORMAL:** Reads only normal code (black cells/bars on a white background). (default)
- INVERT:** Reads only inverted code (white cells/bars on a black background).
- AUTO:** Reads both types of codes. (automatic detection)

– **Note** – Setting to the AUTO may take more time to read codes than setting to NORMAL or INVERT.

REVERSE (Mirror image 2D code reading function)

Mirror image 2D code is a code viewed from a reversed side of a 2D code.

Mirror image 2D code can be read by setting the “REVERSE” to “ON”.

The default is set to “OFF”.

– **Note** – Enabling the mirror image 2D code reading may increase reading time for 2D codes.

DECODE LEVEL

The decode level can be set from 1 to 9.

The default level is set to 4.

Lowering the level increases the code reading efficiency, however, misreading probability of poor-quality codes (broken or dirty bars) also increases.

Raising the level decreases the code reading efficiency, and also decreases misreading probability of poor-quality codes.

Select only the required level to reduce the misreading probability.

LIGHT (LIGHT mode)

The light mode can be set.

- 0: AUTO (default)
- 1: Always ON
- 2: Always OFF

SCAN MODE

Select the scan mode either “NORMAL” or “POINT”.

- NORMAL: Normal read mode (default)
- POINT: Point Scan mode

The point scan mode is used to read a code by aiming at the center cross section of the laser light marker. The laser light marker is used to indicate the barcode reading position.

A code cannot be read in the point scan mode, if there is no code within the cross section, or if unable to detect the marker due to external light, and so on.

The point scan mode can be used only when the laser light marker is enabled and the normal read mode is selected.

MARKER

The “MARKER” is used to set whether the laser light marker illuminates or not, when a trigger key is pressed.

- 0: Normal
The laser light marker illuminates during barcode reading. (default)
- 1: Always ON
The laser light marker illuminates during barcode reading, and stays illuminated for the first 30 seconds until the barcode is read.
- 2: Always OFF
The laser light marker never illuminates.

– Note – Setting to “Always ON” increases the power consumption, and may shorten the operation time as compared to the other two settings.
Changing the settings is not recommended unless necessary.

OPTION

Setting to "ON" enables optional data (Option Data) to be added to the end of data read.

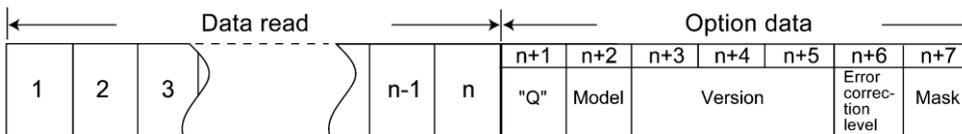
The default is set to OFF.

The Option data format is explained below.

– Note – The "OPTION" setting is not just for the system mode scan test. The setting is always effective when the BHT is used. Changing the settings is not recommended unless necessary.

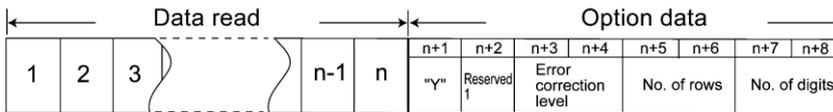
Option data format

• QR code



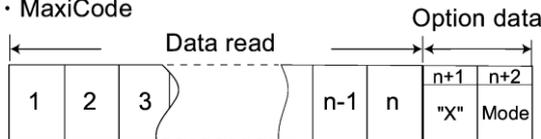
Example code: QR code, Model 2, Version 5, Error correction level M, and mask number 6
(Data read)... Q2V05M6

• PDF417



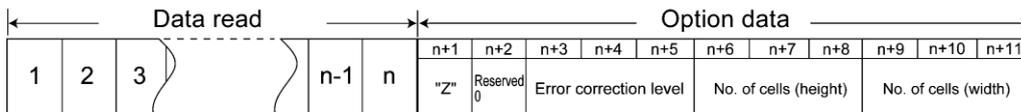
Example code: PDF417, Error correction level 4, 12 rows and 2 digits
(Data read)... Y1041202

• MaxiCode



Example code: MaxiCode and Mode 4
(Data read)... X4

• Data Matrix



Example code: Data Matrix, Error correction level ECC200, 10 cells wide by 10 cells high
(Data read)... Z0200010010

MINIMUM DIGITS

The minimum number of digits to be read for ITF, STF and CODABAR can be changed.

Setting smaller numbers for each code increases probability of missing digits or misreading, depending on various factors such as barcode reading conditions and barcode quality.

Setting larger numbers for each code decreases probability of missing digits or misreading.

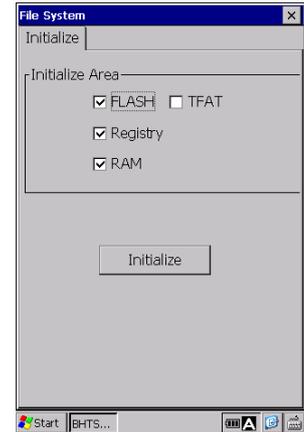
Select only the required number to reduce the probability of missing digits or misreading.

Read code	Range	Default
ITF	2 to 20	4
STF	1 to 20	3
CODABAR	3 to 20	4

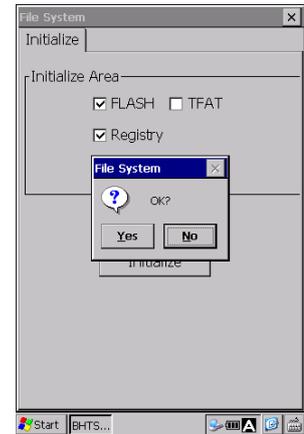
[3] File System

“File System” is used to initialize the Flash memory, registry and RAM memory.

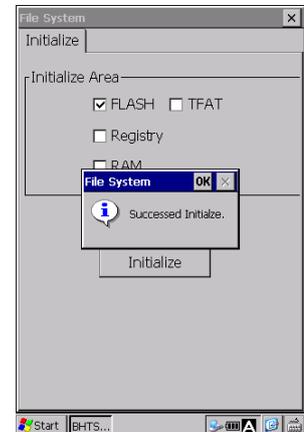
To initialize, double tap the “File System” icon in the System Properties. Select the memories to initialize, then tap the “Initialize” button.



The popup message shown on the right is displayed. Tap “Yes” to start initialization. Tap “No” to return to the previous menu.

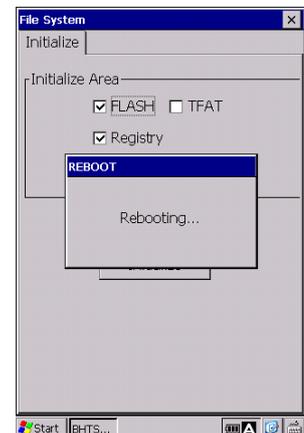


The FLASH memory initialization does not require the BHT to reboot. When the FLASH memory is only initialized, the popup message shown on the right is displayed after the initialization is successfully completed. Tap “OK” to close the popup message.



The registry and the RAM memory initializations require the BHT to reboot.

When the registry or RAM is selected for initialization, the popup message shown on the right is displayed for several seconds after the initialization is successfully completed. Then the BHT reboots automatically.



[4] Power Management

“Power Management” is used to set the automatic power-off timer and standby timer.

To set up, double tap the “Power Management” icon in the System Properties.

Automatic Power off Time:

Battery Power (sec): (Default: 180)

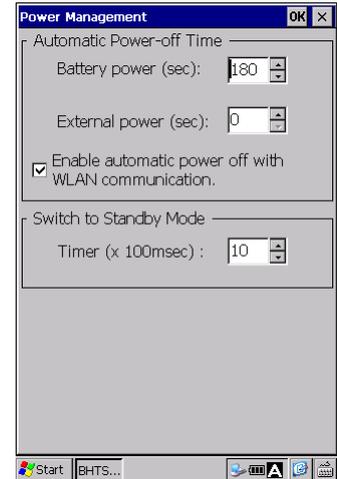
Selects the automatic power-off time from 0 to 600 seconds, when the BHT is not set in the CU.

The power does not automatically turn OFF when “0” is set.

External Power (sec): (Default: 0)

Selects the automatic power-off time from 0 to 1800 seconds, when the BHT is set in the CU.

The power does not automatically turn OFF when “0” is set, or when the BHT is communicating via a LAN.



There will be a time delay of a few seconds when automatically turning off the power after the specified time has elapsed.

When the “**Enable automatic power off with wireless communication**” check box is selected, the power turns OFF automatically even during wireless communication.

- when automatic power-off time is set to 0 : The power does not automatically turn OFF.
- when automatic power-off time is set to a non-zero value : refer to the following chart.

	During wireless communication	When wireless communication is disconnected	When the BHT communicates via the CU
Checked	The power automatically turns OFF		
Unchecked	The power does NOT turn OFF automatically	The power turns OFF automatically.	The power does NOT Turn OFF automatically.

– Point – The power does not turn OFF for 10 seconds once the power turns ON.

Switch to Standby Mode:

Timer (x 100 ms):

Sets the waiting time to be switched to the standby mode in 100ms units.

(10: 100ms x 10 = 1 second)

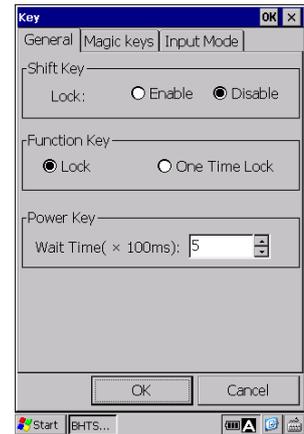
Value	Description
0	Disable the standby mode
1 to 9	1 second
10 to 600	1 to 60 seconds

[5] Key

“Key” is used to set up how the keypad keys work.

To set the keypad key functions, double tap the “Key” icon in the System Properties.

In the “General” tab, the Shift key, Function key and Power key functions can be changed.



Shift key

Nonlock: The keypad stays in the SF mode while the **SHIFT** key is held down. (Default)

Onetime: The keypad is in the SF mode only once each time the **SHIFT** key is pressed.

Function key

Lock: The function keys are activated until the **FN** key is pressed again. (Default)

One Time Lock: The function keys are activated only once each time the **FN** key is pressed.

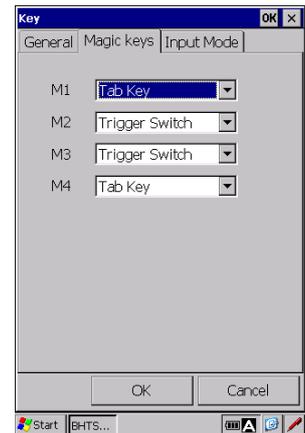
Power key

Sets how long the power key needs to be held down until the BHT goes into the suspend mode (wait time). The wait time can be set from 1 to 600 (The unit is 100ms). The default is set to 5.

In the “Magic Keys” tab, the M1 to M4 key functions can be changed.

Magic keys

The magic keys **M1** to **M4** can be assigned to some functions from the drop-down list.



Assignable functions for the Magic keys

The following key functions can be assigned to the magic keys **M1** to **M4** (**TAB**).

(The example on the right shows that the Tab key function is assigned to the **M1**.)

None: No function is assigned. (The key entry will be ignored, but the key code will be sent to the application.)

Trigger Switch: Sets a magic key as the trigger key.

Shift Key: Sets a magic key as the **SHIFT** key.

Enter Key: Sets a magic key as the **ENT** key.

Backlight Key: Sets a magic key as the backlight ON/OFF function key.

Tab Key: Sets a magic key as the **TAB** key.

Control: Sets a magic key as the **CTRL** key.

Alternate: Sets a magic key as the **ALT** key.

Clear: Sets a magic key as the Clear function key.

Disable: Disables the key entry. (No key code will be sent to the application).

Launch APP key: Sets a magic key as the application launcher key.



User-defined virtual key

The user-defined virtual key can be assigned to the magic keys.

To use the user-defined virtual key, follow the steps below.

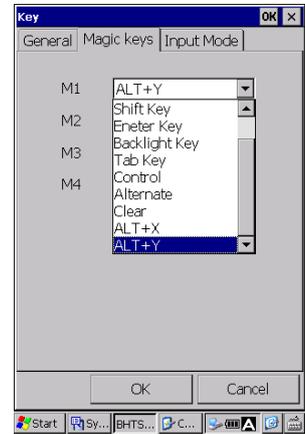
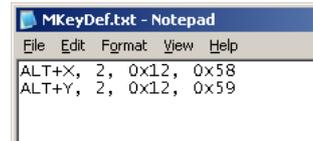
1. Write the codes for the virtual key to a text file.
2. Save the file in the BHT FLASH folder with the filename "MKeyDef.txt".

This file is used as the user-defined code file.

In the example shown on the right, "ALT+X" and "ALT+Y" are added.

3. Double tap the "Key" icon in the System Properties.

The user-defined code file is read when the Key menu starts up.



Parameter

Name	Meaning	Value
Function name (to be displayed in the list)	Characters shown as "Function name" in the code example below.	Maximum 64 characters
The number of the key codes	The number of the key codes to be sent when the Mx key is pressed	1 to 4
Key code (Max. 4)	Key code(s) to be sent (Specify the same number of the key codes as specified in "Number of the key codes".)	ASCII characters in hexadecimal format 0xYY

Code example

Function name	The number of key codes	Key code 1	Key code 2
ALT+X	2	0x12 (ALT)	0x58 (X)
ALT+Y	2	0x12 (ALT)	0x59 (Y)

The user-defined keys are displayed under the "Launch APP Key" in the order in which they are written in the user-defined code file.

The example shown on the left, "ALT+X" and "ALT+Y" are added.

Refer to the BHT API Reference Manual or BHT Class Library Reference Manual for further details.

Launch APP key

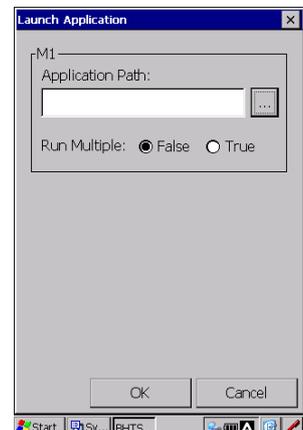
The application launcher function can be assigned to the magic keys.

When the Launch APP key function is set to the magic key, the right screen is displayed.

Set the application path and filename to run when the magic key is pressed.

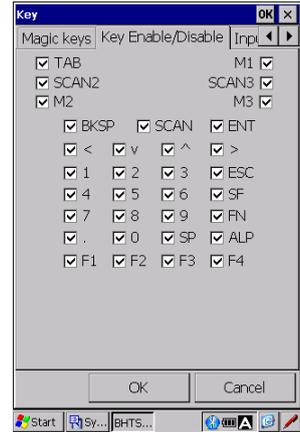
Then select one of the following radio buttons.

- False: Disable the multiple startups for the application, if checked. (the application starts up only once.)
- True: Enables the multiple startups for the application, if checked. (The application can start up multiple times.)



Key Enable/Disable menu

The keys checked are enabled .
 To disable a key, uncheck the box.



Switching Alphabet input mode

Enables or disables the multipress input method for the alphabet input mode.

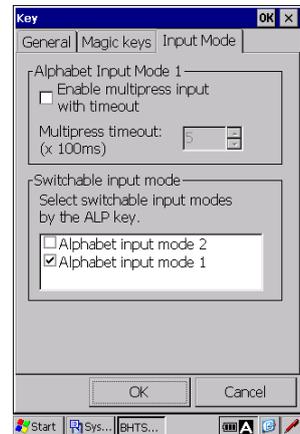
Enable multipress input with timeout:

Unchecked: A text shown on the screen changes in the order shown on a key every time the key is pressed. Press any other key to enter the text. (default input mode)

Checked: A text selected is entered after the specified time has elapsed. For example, to enter the second text shown on a key, press the key twice quickly then pause until the text is shown on the screen.

Multipress timeout:

Sets the length of time between key presses when entering text in multipress input mode.



Selecting the entry mode(s) changeable by the ALP key.

Enable one or both modes to be changeable by the ALP key.

Alphabet input mode 2:

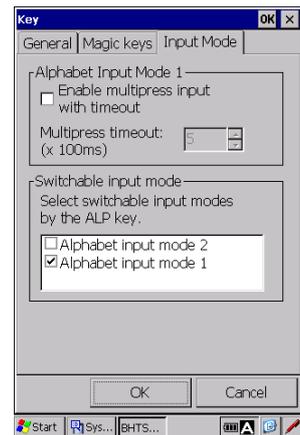
Unchecked: Disable alphabet entry mode 2. (default)

Checked: Enable alphabet entry mode 2.

Alphabet input mode 1:

Unchecked: Disable alphabet entry mode 1.

Checked: Enable alphabet entry mode 1. (default)



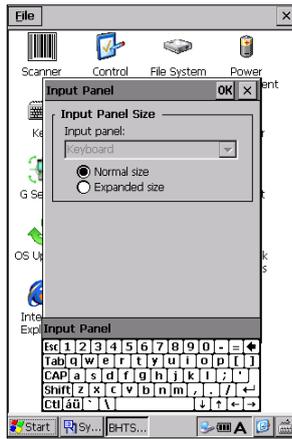
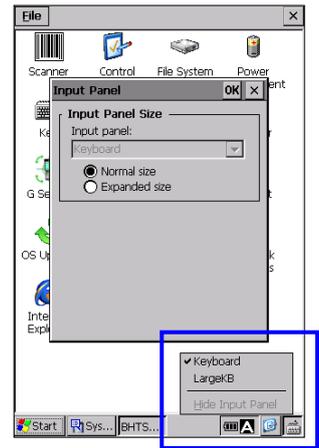
[6] Input Panel

“Input Panel” is a software keyboard that is used to enter characters with a stylus.

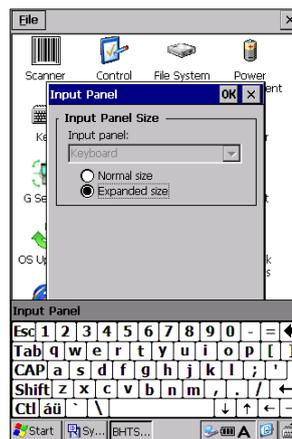
To change the input panel size, double tap the “Input Panel” icon in the System Properties. The changes take effect after the “keyboard” is reselected from the Input Panel menu in the task bar as indicated by the blue lines.

Normal size: Displays the normal-sized Input Panel.

Expanded size: Displays the large-sized Input Panel.



Normal-sized Input Panel



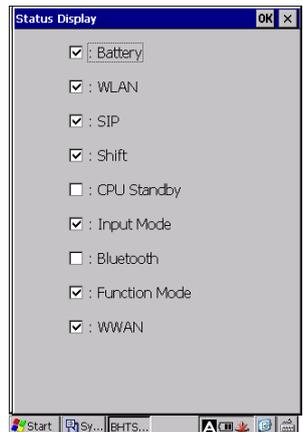
Large-sized Input Panel

[7] Status Display

“Status Display” is used to display or hide the following status indicators in the taskbar.

To set up, double tap the “Status Display” icon in the System Properties.

- Battery: Battery voltage level (Default: Displayed)
- WLAN: Wireless communication status (Default: Displayed)
- SIP: Software input panel status (Default: Displayed)
- Shift: Keypad shift status (Default: Displayed)
- CPU Standby: CPU standby status (Default: Hidden)
- Input Mode: Alphabet input mode status (Default: Displayed)
- Bluetooth: Bluetooth device power status (Default: Hidden)
- Function Mode: Function mode status (Default: Displayed)
- WWAN: WWAN device signal strength and SIM card status (Default: Displayed)



Refer to Chapter 1, 1.2.4 BHT Screen for further details.

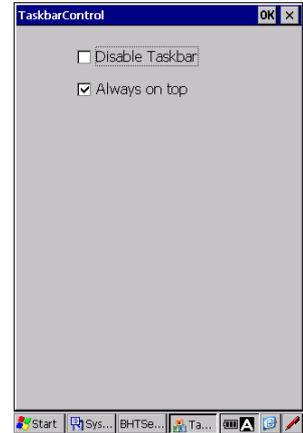
[8] Taskbar

“Taskbar” is used to control the taskbar.

To change, double tap the “Taskbar” icon in the System Properties.

Disable Taskbar: Enables or disables the taskbar. (Default: Enable)

Always on top: Shows or hides the taskbar. (Default: Show)
This option is the same as “Always on top” option in the “Taskbar and Start Menu...” .
Refer to 4.2 Start Menu - Taskbar and Start Menu.



- Note - When the taskbar is disabled, the following windows shortcut keys are also disabled.

- ALT + ESC : Switch window
 - ALT + TAB : Switch task (Launch task manager)
 - CTRL + ESC : Display Windows Start menu
-

[9] USB Setting

The USB Setting is used to set how the BHT communicates with a host computer via a USB port. Double tap the USB Setting icon in the System Properties to open the menu.

ActiveSync / WMDC	Select when connecting to a host computer using ActiveSync or WMDC.
COM	<p>The USB port acts as a serial port (COM1), if selected. The RS-232C port cannot be used while "COM" is selected.</p> <p>The number of bytes available to send at once using WriteFile function is 8 KB while using the COM1.</p> <p>This setting is used for Ymodem communication in the BHTShell menu (BHTShell > 2 :Communication > 1 :Ymodem).</p>



Tap the OK button to finish .

The reboot (reset) prompt message shown on the left is displayed.

Tap Yes.



- Note - Install the Active USB-COM port driver in the host computer.
The Active USB-COM port driver can be downloaded from the QBdirect service (<http://www.qbdirect.net/>).

- Point -**
- Check the COM number using the device manager, etc. Even though our products have been used and the BHT is connected to the same port, the COM port number may be different.
 - It may happen that communication is impossible, depending on the destination or cable.
 - Connect the BHT to the USB port on the main body of the host computer.
 - If a connection is made via the hub, proper communication may not occur.
 - Do not unplug and plug in the USB cable repeatedly in a short period of time. Doing so may result in the host computer being locked.

Refer to Active USB-COM driver manual for more details and limitations.

[10] G sensor

The G sensor is factory calibrated, so recalibration is not necessary unless the screen auto-rotation does not work properly.

The G sensor calibration menu differs depending on the G sensor type mounted on the BHT. For the G sensor type 2, the maximum number of calibration is set to five times.

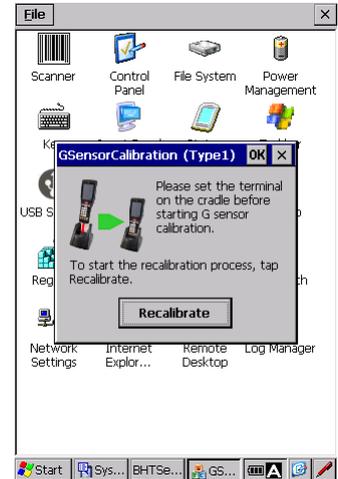
For G sensor Type 1

To recalibrate the G sensor, follow the steps below.

1. Place the CU on a flat surface.
2. Set the BHT in the CU.
3. Double tap the "G Sensor" icon in the System Properties.
4. Tap the "Recalibrate" button to start recalibration.

Recalibration takes about 10 seconds to finish.

Do not remove the BHT from the CU while calibrating.



The popup message is displayed when the recalibration is successfully completed.

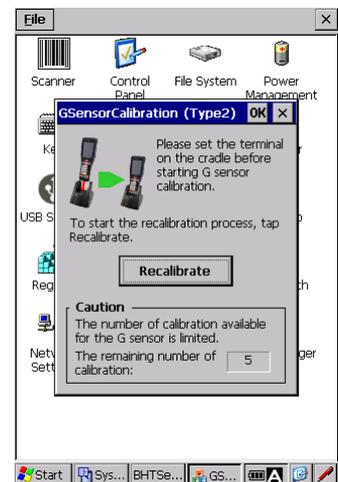


The popup error message is displayed if the recalibration failed, in this case, retry.

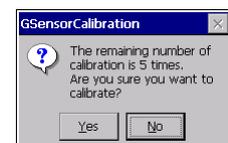
**For G sensor Type 2**

To recalibrate the G sensor, follow the steps below.

1. Place the CU on a flat surface.
2. Set the BHT in the CU.
3. Double tap the "G sensor" icon in the System Properties.
4. Tap the "Recalibrate" button.

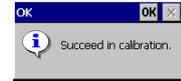


5. The confirmation popup message is displayed when the "Recalibrate" button is tapped. Tap the "Yes" button to start recalibration.

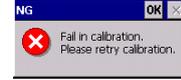


Do not remove the BHT from the CU while calibrating.

The popup message is displayed when the recalibration is successfully completed.



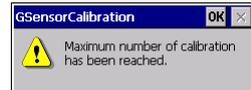
The popup error message is displayed if the recalibration failed, in this case, retry.



When the number of calibration reaches the limit, zero is displayed as the remaining calibration times.

Calibration is not possible once the calibration counter reaches down to zero.

The popup error message is displayed if the "Recalibrate" button is tapped in this state.



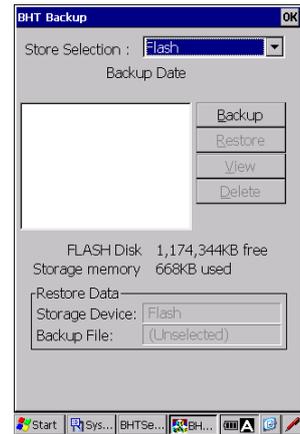
[11] BHT Backup (Data Backup)

“BHT Backup” is used to back up and restore the data (files) in the RAM memory and the registry.

Data or files in the flash memory or microSD cards are not supported by the BHT Backup.

The backup data can be set to be automatically restored after a full reset (cold boot). Refer to [12] Startup Configuration for automatic restore.

To back up or restore, double tap the “BHT Backup” icon in the System Properties.



- Store Selection: The location to store the backup file
- Backup Date: Created date and time of the backup file
- Backup: Proceeds with the backup process
- Restore: Proceeds with the restore process
- View: Displays the backup file information
- Delete: Proceeds with the backup file delete process
- FLASH Disk: FLASH memory free space (built-in)
- Storage memory: RAM memory size to be backed up
- Storage Device: Storage location of the backup file.
The device set in "[12] Startup Configuration" is displayed.
- Backup File: File name to be restored automatically.
The backup file name set in "[12] Startup Configuration" is displayed.
"Unselected" is displayed under the following conditions.
 - 1) The backup file is not set.
 - 2) The specified backup file does not exist.

The backup files are stored under the folder in the FLASH memory or microSD cards as shown below.

- FLASH folder: \FLASH\System\Backup\
- microSD card: \Storage Card\System\Backup\

- Note - After saving or deleting the backup file, change the auto restore settings explained in "[12] Startup Configuration" as necessary.

Backup

To back up the RAM memory data or the registry, follow the steps below.

1. Select the location to store the backup file from the “Store selection” drop-down list in the BHT Backup initial screen.
2. Tap the “Backup” button.
The popup screen shown on the right is displayed.
3. Enter the file name to back up.
4. Tap the “Backup” button.



The popup message shown on the right is displayed when the backup is successfully completed.



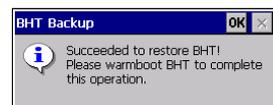
Restore

To restore the RAM memory data or the registry to the backup file, follow the steps below.

1. Select the backup file from the backup list to restore.
2. Tap the “Restore” button.
The popup screen is displayed.
3. Tap the “Restore” button.
The popup message is displayed when the restore is successfully completed.
4. Tap the “Reboot” button to reset the BHT.
The restore will be effective after the reset.



- If the popup message shown on the right is displayed;
1. Tap the “OK” button to close the popup message.
 2. Reset the BHT by pressing the reset key combination (**BKSP** key + **Right Trigger** key + **Power** key).
The restore will be effective after the reset.



View

To view the backup file information details, follow the steps below.

1. Select the file from the backup list in the BHT Backup initial screen.
2. Tap “VIEW” button to display the information details.

Name	Backup file name
Date	Created date and time of the backup file
Storage	RAM memory capacity required for the restore
FLASH	FLASH memory capacity required for the restore
OS	OS information
Language	Language information
SysVer	System version
ID	Serial number of the device that created the backup file



Delete

To delete the backup file, follow the steps below.

1. Select the file from the backup list in the BHT Backup initial screen.
2. Tap the “Delete” button.
The popup message shown on the right is displayed.
3. Tap the “Delete” button.
4. The “Succeeded !” popup message is displayed when the file delete is completed.
Tap the “OK” to close the popup message.



[NOTES] Command Prompt (CMD) specification

> **BHTBackup** [/b] [/r] [/f] [/bf] [/a] [/p] [/m] [/e]

/b	Backup Backup with the specified "folder" and "backup filename". Backup file is created in "\<folder>\System\Backup\<filename>.dbk".
/r	Restore Restore with the specified "folder" and "backup filename".
/f "xxx"	Folder like "Flash", "Storage Card" and so on. Default is "Flash" If a network folder is used, specify the full path starting with "\\". If a blank character is included in the path, use "". For example: /f "Storage Card" For example: (Remote PC name is ServerPC) /f "\\ServerPC\CommonFolder"
/bf "xxx"	Backup filename. Default is "Bkup". If a blank character is included in the filename, use "".
/a	Display "Backup start" message dialog. Default : Suppress the dialog.
/p	Display "Backup progress" message dialog. Default : Suppress the dialog.
/m	Display "Backup end" message dialog. Default : Suppress the dialog.
/e	Display "Error" message dialog. Default : Suppress the dialog.
/h	Help

-
- Note -**
- Both '/' and '-' can be used for the option delimiter.
 - Both lower case and upper case characters can be used.
-

Return value

- 0 : Success.
- 1 : Canceled by user
- 2 : Error (other error)
- 3 : Error (invalid parameter)
- 4 : Error (file / path not found)
- 5 : Error (memory full)
- 6 : Error (restore is terminated due to unmatched OS version.)

Examples;

(Ex1) Displays both the "Backup start" and "Backup progress" messages,
and backs up to the "\Flash\System\Backup\Backup1.dbk" backup file.

```
> BHTBackup.exe /b /bf "Backup1" /a /p
```

(Ex2) Displays the "Error" message if an error occurs, restore data from the "\Storage
Card\System\Backup\Bkup.dbk" backup file.

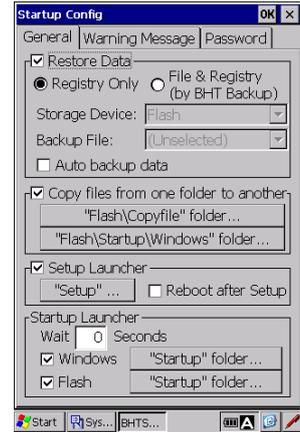
```
> BHTBackup.exe /r /f "Storage Card" /e
```

[12] Startup Configuration

"Startup Config" is used to define how the BHT starts up after rest and full-reset.

Refer to Chapter 2, 2.6.6 Reinstall/Recovery methods of data after Reset/Full reset, and Chapter 7, 7.1 System Errors.

To set up, double tap the "Startup Config" icon in the System Properties.



General

- | | |
|--|---|
| (1) Automatic Restore | Restore Data - File & Registry (BHT Backup) |
| (2) Automatic Registry Restore | Restore Data - Registry Only |
| (3) Automatic File Copy | Copy files from one folder to another |
| (4) Automatic Application Setup and Reboot | Setup Launcher |
| (5) Automatic Application Launch | Startup Launcher - Flash "Startup" folder...: |
| (6) Automatic Application Launch | Startup Launcher - Windows "Startup" folder...: |

- Restore Data: Selects whether to perform "Automatic Restore"
- Registry Only: Restores only the registry saved in the registry (default)
- File & Registry: Restores the files and registry from the BHT backup data

The following functions are supported by File & Registry (BHT Backup).

- Storage device: Storage location of backup file
- Backup file: Backup file name to be restored automatically
 "Unselected" is displayed under the following conditions.
 1) The backup file is not set.
 2) The specified backup file does not exist.

Auto backup data: Automatically backs up the specified data (registry or file/registry) at power-off. The storage location cannot be specified.
 Restore will be performed using the data backed up automatically.

- Copy files from one folder to another: Selects whether to perform "Automatic File Copy"
- "Flash\Copyfile" folder...: Open the "Flash\Copyfile" folder with file explorer
- "Flash\Startup\Windows" folder...: Open the "Flash\Startup\Windows" folder with file explorer

– **Note** – "Automatic File Copy" is not performed if no files exist in the above folder, even if "Copy files..." is selected.

- Setup Launcher: Selects whether to perform "Automatic Application Launch".
- "Setup" folder...: Open the "\Flash\Setup" folder with file explorer
- Reboot after Setup: Selects whether to reset the system after the execution of program.

– **Note** – "Automatic Application Setup and Reboot" is not performed if no files exist in the above folder, even if "Setup Launcher" is selected.

Startup Launcher: Automatically launches any application

Wait N Seconds : Wait specified second(s) and execute a startup application. (default:0)
(Range : 0 to 10)

For example “wait a few seconds till network is connected and execute a startup application”

Windows "Startup" folder...: Open the "\Windows\Startup" folder with file explorer

Flash "Startup" folder...: Open the "\FLASH\Startup" folder with file explorer

– **Note** – “Automatic Application Launch” is not performed if no files exist in the above folder, even if each of the corresponding functions is selected.

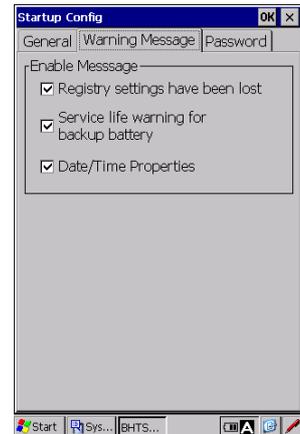
Warning Message

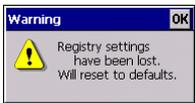
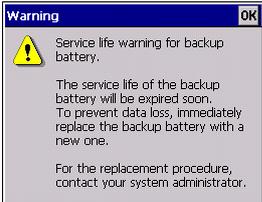
“Warning Message” tab in the “Startup Config” menu is used to enable or disable error messages listed below.

- (1) “Registry settings have been lost” error message
- (2) “Service life warning for backup battery” error message
- (3) “Date/Time Properties” error message

To enable the messages, check each box.

To disable the messages, uncheck each box.



No.	Message	Error message is displayed when;	Default
(1)		The power is turned ON. (Only after full reset)	Enable
(2)		The power is turned ON.	Enable
(3)		The power is turned ON. (Only in case the time and date settings are lost after full-reset)	Enable

Refer to Chapter 7, 7.1 System Errors for more details of error messages.

Password

“Password” tab in the “Startup Config” menu is used to restrict use of the BHT at reset, full-reset or power-on, and has two functions; Device lock (password protection) and Application Launcher.

Device lock:

The password is prompted to restrict use of the BHT at reset, full-reset or power-on.

Application Launcher:

The application launcher is activated after the BHT is unlocked.

Only specified applications can be used while the application launcher is active. Refer to “4.11 Application Launcher” for further details.



(1) Device lock options

Enable password protection at reset / Password

Check the box to lock the BHT after reset /full-reset, then enter a password.

The password entered is required to unlock the BHT. (Default : no password. Max 32 characters.)

Uncheck the box so as not to lock the BHT. Default is unchecked.

Enable password protection at power on

Check the box to lock the BHT when turning on (resume) the BHT.

The password entered is required to unlock the BHT.

Uncheck the box so as not to lock the BHT. Default is unchecked.

Disable Enter key Setup feature at full-reset

Check the box to disable "Enter key Setup feature*" so as not to start up the application programs in the microSD card "Storage Card/Setup" folder. Uncheck the box to enable. Default is checked.

* The “Enter key Setup feature” is a full-reset option using the ENT key and is used as setup options. When performing full-reset (cold boot) while holding down the ENT key, the application programs in the microSD card “Storage Card/Setup” folder start up at restart. This option is used to disable the “Enter key Setup feature”. Refer to 2.6.6 Reinstall/Recovery methods of data after Reset/Full reset for further details.

Disable ActiveSync autoconnect

Uncheck the box to enable the ActiveSync/WMDC autoconnect while the device lock is activated. (Default)

Check the box to disable.

– **Note** – The ActiveSync/WMDC autoconnect enabled will not activate if the ActiveSync / WMDC automatic connection is set to disable in the advanced system menu [24].

Hide Windows desktop at Setup/Startup

Windows desktop is displayed at setup/startup on the screen if applications are set to execute automatically at setup/startup. This option is used to hide Windows desktop at setup/startup.

Check the box to hide Windows desktop. Default is checked.

Uncheck the box to display Windows desktop.

Refer to Chapter 2, “2.6.6 Reinstall/Recovery methods of data after Reset/Full reset” for details of the automatic program execution.

(2)Application Launcher options

Enable Application Launcher

Check the box to start up the application launcher at reset /full-reset.
Uncheck the box so as not to start up. Default is unchecked.

Disable ActiveSync autoconnect

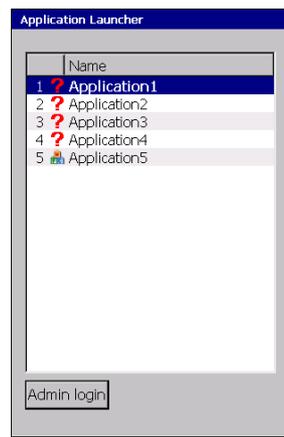
Uncheck the box to enable the ActiveSync/WMDC autoconnect while the application launcher is activated. (Default)
Check the box to disable.

– **Note** – The ActiveSync / WMDC autoconnect enabled will not activate if the ActiveSync / WMDC automatic connection is set to disable in the advanced system menu [19].

After the reset, full-rest or power-on (resume), the password entry screen is displayed if the device lock is enabled, the application launcher is displayed if the application launcher is enabled.
Enter the correct password to login to the BHT when the password entry screen is displayed.



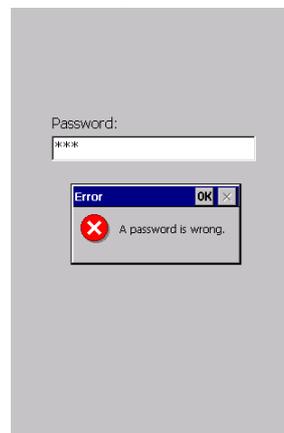
(Ex.) The device lock is enabled.



(Ex.) The application launcher is enabled.

When the “FUNC”, “ALP”, “SHIFT” or “CAPS” key is pressed while the password entry screen is displayed, the key names pressed are displayed on the screen as shown on the left below.

The message dialog on the right below is displayed when an incorrect password is entered.



Configuration File (Startup.ini)

The configuration file does not exist at default.

The following file is created as the configuration file when the OK button is pressed in the General, Warning Message or Password tab. (The file is not a registry file.)

\\Flash\system\Startup.ini

The sample configuration file:

1:checked, 0:unchecked

DEVICELOCK_ENABLE=1	' Enable password protection at reset
DEVICELOCK_PASSWORD=1234567890	' Password
DEVICELOCK_RESUME_ENABLE=0	' Enable password protection at power on
DEVICELOCK_ENTERKEY_DISABLE=1	' Disable Enter key Setup feature at full-reset
DEVICELOCK_ACTIVASYNC_DISABLE=1	' Disable ActiveSync autoconnect
DEVICELOCK_HIDE_WINDOWS_DESKTOP=0	' Hide Windows desktop at Setup/Startup
DEVICELOCK_APP_PATH=Windows\HtLogin.exe	' Htlogin.exe file path
APPLAUNCH_ENABLE=0	' Enable Application Launcher
APPLAUNCH_ACTIVASYNC_DISABLE=0	' Disable ActiveSync autoconnect

-
- **Note** – This configuration ini-file can be copied to other BHTs, and work the same.
 Copying the application launcher ini-file (CeAdmin.ini) together with the configuration ini-file is recommended when using the application launcher.
 Distributing the BHT backup file (*.dbk) together with the configuration ini-file is recommended when kitting.
 Refer to “4.11 Application Launcher” for details of the application launcher functions.
-

The password lock application default file name is “HTLogin.exe”.

The default application can be changed to a user customized application such as a multiple users and passwords manageable application.

There are two ways to change the default application.

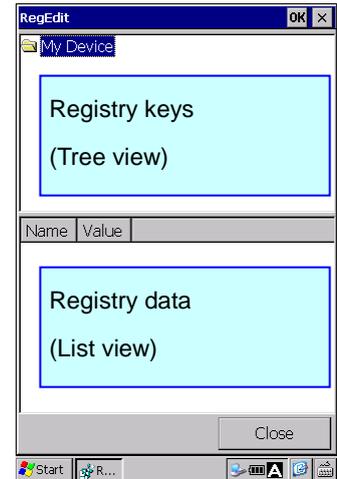
- (i) Overwrite the “HTLogin.exe” file.
 - (a) Copy the user customized application to the “Flash\COPYFILE\Windows” folder.
 - (b) Perform full reset (cold boot).
 The default application is replaced with the user customized application when the BHT restarts.
- (ii) Change the application path and file name in the “\\Flash\system\Startup.ini” file.
 - (a) Rewrite the application path and file name in the last statement of the Startup.ini file.
 In the above example, the application path and file name is “Windows\HtLogin.exe”.
 - (b) Perform full reset (cold boot).
 The user customized application is started up when the BHT restarts.

-
- **Note** – Controlling the ActiveSync autoconnect function when the device lock function is activated. This function is executed within “HTLogin.exe”. When replacing the application with another application, set up the ActiveSync autoconnect by using the following function.
 VC/++
 BHT_SetSysSettingDW(BHT_ACTSYNC_AUTOCONCT,ACTSYNC_AUTOCONCT_DISABLE);
 .NET (VB, C#)
 COM.Settings.EnabledAutoActiveSyncIF
 Refer to “BHT-1100 / 1200 API Reference Manual” and “BHT-1100 / 1200 Class Library Reference Manual”.
-

[13] Registry Editor

"RegEdit" is used to add, modify, delete, import or export the registry by using the GUI (graphical user interface) features.

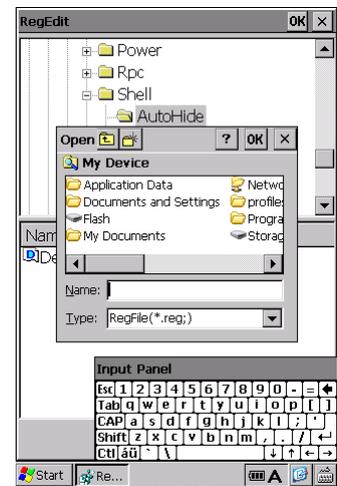
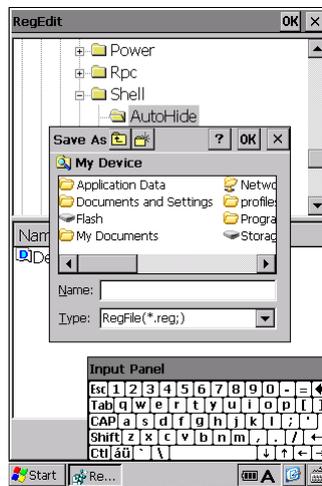
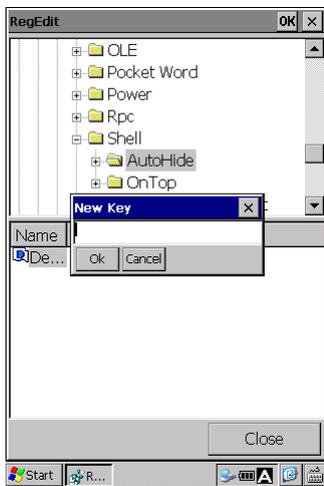
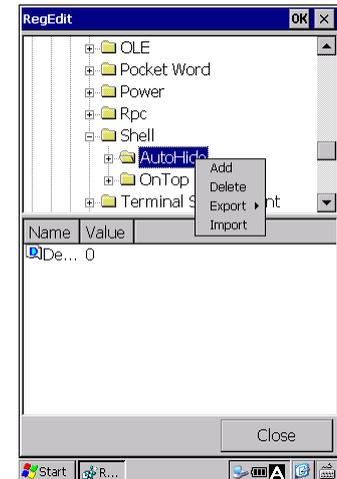
The RegEdit upper screen displays registry keys and the lower screen displays registry data.



To use RegEdit, follow the steps below.

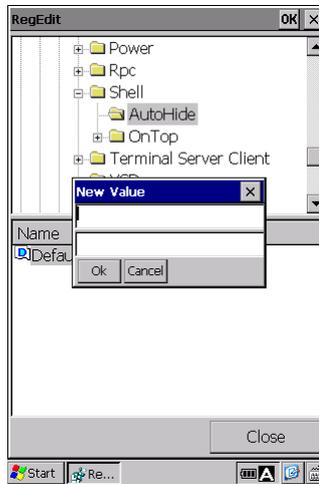
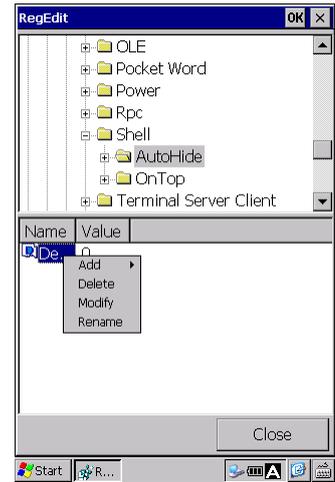
1. Double tap the "RegEdit" icon in the System Properties.
In the upper half of the RegEdit screen, the registry keys (similar to folders) are displayed.
2. Tap and hold a registry key to edit.
The edit menu pops up.
3. Select one from the following edit menu.

Add	Adds a registry key
Delete	Deletes a registry key
Export (All)	Exports (back up) the all registries
Export (Subset)	Exports (back up) the selected registry sub key
Import	Imports (set up or restore) a registry from the registry file.

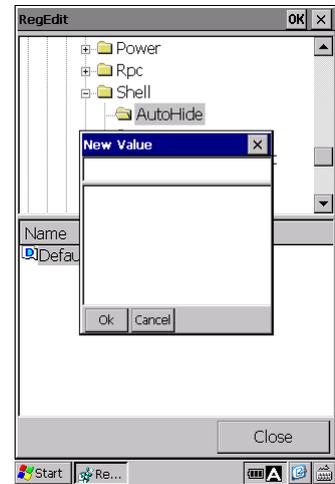


4. Tap and hold the registry data in the lower half of the RegEdit screen.
The edit menu pops up.
5. Select one from the following edit menu.

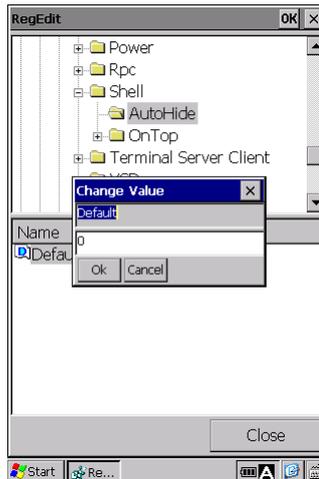
Add	Adds registry data Selects the registry type DWORD STRING - Single (without linefeed code) STRING - Multi (with linefeed code)
Delete	Deletes registry data
Modify	Modifies registry data
Rename	Renames registry data name



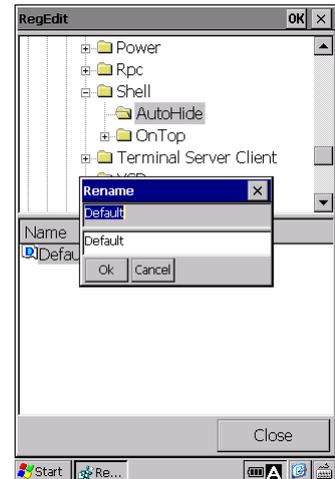
Add screen
DWORD, STRING(Single)



Add screen
STRING(Multi)



Modify screen



Rename

– Note – Reset (warm boot) is recommended after changing the registry.
Some programs (exe, dll) read registry data during the startup only.
In this case, the registry changes will not take effect until the BHT is reset (warm boot).

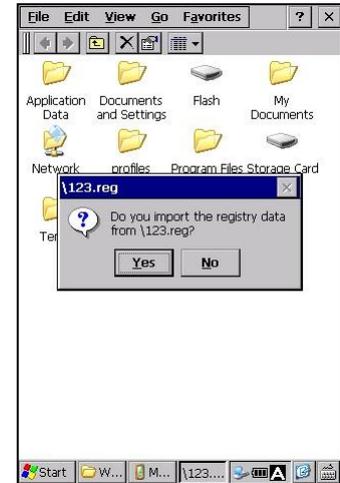
The following methods can also be used to import or export the registry.

Registry file (*.reg)

The registry file (*.reg) can also be used to import the registry.
To use the registry file (*.reg), follow the steps below.

1. Double tap the registry file.
The popup confirmation message is displayed.
2. Tap the "Yes" button to start installing the registry.
The popup message "Import succeed" is displayed after the registry installation is completed.

- Note - The above popup messages are not displayed if the registry file name starts with '_' (underline).
(Similar to the command line "/H" option)



Command prompt (CMD)

The command prompt can be used to import or export the registry from or to the registry file.
(This method is used to import the registry defined in Chapter 2, 2.6.6 Reinstalling data after reset/full reset - [4] Execute program automatically and/or reset.)

To use the command prompt, follow the steps below.

The following file and folder names are used in the steps below.

- Registry file : setup.reg
- Registry file deployment folder : \Flash\Setup\Regfile
- Registry import batch file : regset.bat
Description content : RegEdit /H /I \Flash\Setup\Regfile\setup.reg

1. Deploy the registry file "setup.reg" in the registry file deployment folder "\Flash\Setup\Regfile".
(see Fig.1 Registry file)
2. Create the registry import batch file "regset.bat" and deploy in the "\Flash\Setup" folder.
(see Fig.2 registry import batch)
3. Open the "Startup Config" by tapping,
"BHTSHELL" icon on the desk top > "3: SystemProperties" button > "Startup Config" icon.
4. In the "General" tab, check both boxes "Setup Launcher" and "Reboot after Setup".
(see Fig.3 Startup Config settings)
5. Reset the BHT.
The "regset.bat" in the "\Flash\Setup\Regfile" folder starts up to import the registry,
then the BHT is reset (cold boot).

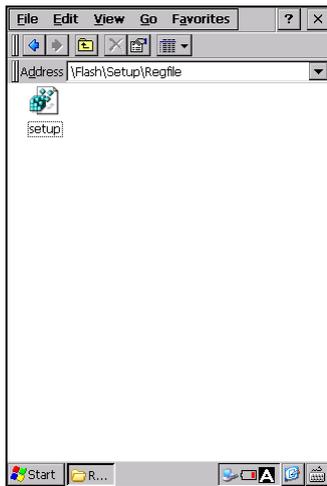


Fig.1 Registry file

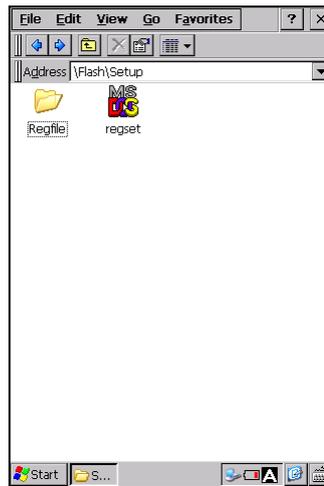


Fig.2 registry import batch

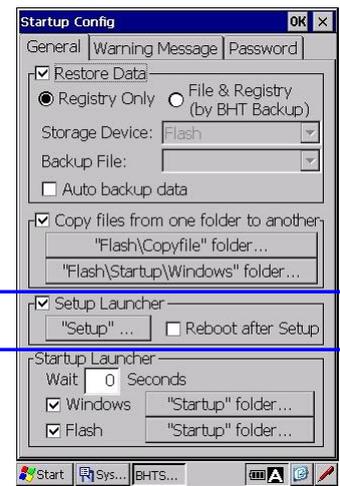


Fig.3 Startup Config settings

- Note - When the registry file name starts with ‘_’ (ex. _setup.reg), the above steps can be simplified as below.

Step 1: Can be skipped

Step 2: Deploy the registry file (_setup.reg) in the "\Flash\Setup" folder.

*Creating the registry import batch file “regset.bat” is not necessary.

NOTES: Command Prompt (CMD) specification

- Export function (/E option)

> **RegEdit [/H] /E filepath [sub-key]**

/H No message is displayed while exporting the registry (default: display)
 filepath The registry path and file name to export.
 sub-key The registry sub-key to export.
 If the sub-key is not specified, the entire registry will be exported.

- Import function (/I option)

> **RegEdit [/H] /I filepath**

/H No message is displayed while importing the registry (default: display)
 filepath The registry path and file name to import.

Registry file format

Format the registry file as shown on the right.

- **Blank line**

The blank line is a separator that identifies a beginning of a new registry path. Insert a blank line before each registry path.

- **RegistryPath**

The RegistryPath is the sub-key path.

Enclose the sub-key path in square brackets ([]).

For example:

```
[HKEY_LOCAL_MACHINE/SOFTWARE/BHT/BackLight]
```

When the sub-key in the registry path does not exist in the registry, a new sub-key is created. When the sub-key name starts with "-" (hyphen), the sub-key is deleted.

For example:

```
[-HKEY_LOCAL_MACHINE/SOFTWARE/BHT/BackLight]
```

- **DataItemName**

The DataItemName is the data item name to import.

Enclose the data item name in double quotation marks (""). An equal mark "=" follows the data item name.

When the specified data item name does not exist in the registry, a new data item name with a value is created.

When the specified data item name exists, the value in the new registry file overwrites the existing value.

- **DataType**

Enclose the data type in double quotation marks (""). The data type follows an equal mark, and is followed by a colon. If the data type is REG_SZ, do not include the data type value and colon. Refer to "Data type and format list" on the next page. When "-" (hyphen) is in front of "=" (equal mark), the value is deleted.

For example:

```
[HKEY_LOCAL_MACHINE/SOFTWARE/BHT/BackLight]
"Brightness"=-
```

- **DataValue**

Format the DataValue the way shown in "Data type and format list" on the next page.

Add a linefeed "\n" at the end of the line, when starting a new line.

For example:

```
[HKEY_LOCAL_MACHINE/Time Zones/Pacific Standard Time]
"TZI"=hex:/
a4, 01, 00, 00, 00, 00, 00, 00, c4, ff, ff, ff, 00, 00, 0b, 00, /
00, 00, 01, 00, 02, 00, 00, 00, 00, 00, 00, 00, 00, 03, 00, /
00, 00, 02, 00, 02, 00, 00, 00, 00, 00, 00, 00
```

```
Blank line
[RegistryPath1]
"DataItemName1"=DataType1:DataValue1
"DataItemName2"=DataType2:DataValue2
Blank line
[RegistryPath2]
"DataItemName3"=DataType3:DataValue3
"DataItemName4"=DataType4:\
DataValue4
"DataItemName5"=-
Blank line
[-RegistryPath3]
```

Data type and format list

Data type	Format	Description
REG_SZ	"DataItemName"="my string"	String data
REG_MULTI_SZ	"DataItemName"=multi_sz:"my string","my string"	String data (multi-line) Separate with "," (commas)
REG_DWORD	"DataItemName"=dword:00000000	Numeric value (32bits) Hexadecimal format
REG_BINARY	"DataItemName"=hex:01,23,cd,ef	Binary format

Error Message List

Message	Error No.	Problem	Solution
Import failed. Err Code = X	2	The specified registry file does not exist.	Check if the specified registry file exists.
		The specified sub-key or value to delete does not exist.	Check if the specified sub-key or value exists.
	5	The specified sub-key or value can not be edited.	Do not edit the specified sub-key or value.
	11	The registry file format is incorrect.	<p>Correct the registry file format. Common causes of the errors are listed below.</p> <ul style="list-style-type: none"> •The sub-key path is not enclosed in square brackets "[]". [NG] <i>Blank line</i> HKEY_LOCAL_MACHINE\SOFTWARE\BHT\Icon "Battery"=dword:00000001 •The specified data type is incorrect. [NG] <i>Blank line</i> [HKEY_LOCAL_MACHINE\SOFTWARE\BHT\Icon] "Battery"= 00000001 •The data item name is not enclosed in double quotation marks (""). [NG] <i>Blank line</i> [HKEY_LOCAL_MACHINE\SOFTWARE\BHT\Icon] Battery=dword:00000001 <p>[OK] <i>Blank line</i> [HKEY_LOCAL_MACHINE\SOFTWARE\BHT\Icon] "Battery"=dword:00000001</p>

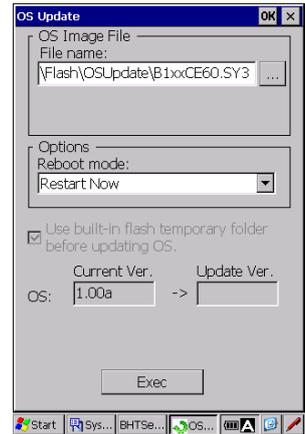
Message	ErrorNo.	Problem	Solution
Import failed. Err Code = X	87	The sub-key path is not specified.	<p>Specify the sub-key path or correct the registry file format. The following errors are examples.</p> <ul style="list-style-type: none"> •The sub-key path is not specified. [NG] <i>Blank line</i> "Battery"=dword:00000001 •The sub-key path can not be recognized due to missing a blank line. [NG] [HKEY_LOCAL_MACHINE\SOFTWARE\BHT\Icon] "Battery"=dword:00000001 [OK] <i>Blank line</i> [HKEY_LOCAL_MACHINE\SOFTWARE\BHT\Icon] "Battery"=dword:00000001

Message	ErrorNo.	Problem	Solution
All / Part of the registry Export failed. Err Code = X	2	The specified sub-key in the command line does not exist.	<p>Specify the existing sub-key path or correct the command line format. The following errors are examples.</p> <ul style="list-style-type: none"> •The sub-key path is enclosed in square brackets "[]". Do not enclose the key path in square brackets in the command line. [NG] > <i>RegEdit /e "sample.reg" [HKEY_LOCAL_MACHINE]</i> [OK] > <i>RegEdit /e "sample.reg" HKEY_LOCAL_MACHINE</i> •The file path that includes space is not enclosed in double quotation marks (""). [NG] > <i>RegEdit /e \Storage Card\sample.reg</i> [OK] > <i>RegEdit /e "\Storage Card\sample.reg"</i>
	8	There is not enough free memory.	Close other programs.
	87	Either the specified file path or sub-key path in the command line is incorrect.	<p>Correct either the file path or sub-key path. The following errors are examples.</p> <ul style="list-style-type: none"> •The file path is set to null. [NG] > <i>RegEdit /e ""</i> [OK] > <i>RegEdit /e "sample.reg"</i> •The key is set to null. [NG] > <i>RegEdit /e "sample.reg" ""</i> [OK] > <i>RegEdit /e "sample.reg" HKEY_LOCAL_MACHINE</i>

[14] OS Update

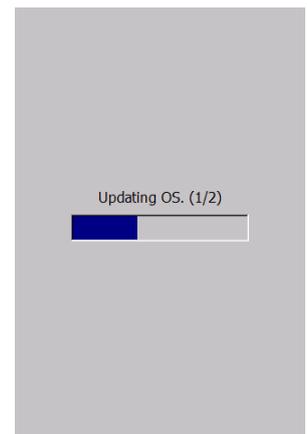
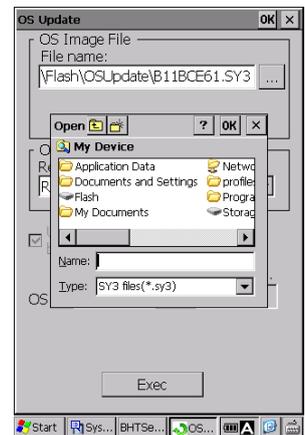
To update the Operating System, double tap the "OS Update" icon in the System Properties.

- File Name: OS update file name
The default OS update folder is "\Flash\OSUpdate".
Before updating the OS, copy the OS update file to the folder.
- ... (Browse): Opens "My Device" screen to select the OS Update file.
- Reboot mode: Selects one from the choices below to specify how the BHT performs after the OS Update.
 - Restart Now (Default): Performs an immediate full-reset (cold boot)
 - Restart Later: Returns to this menu
 - Power off: Turns off the BHT power
- Current Version: Current OS version
- Update Version: OS version to update
- Exec: Starts the OS Update
- "Use built-in flash temporary folder before updating OS." (Always checked)



Follow the steps below to update the OS.

1. Copy the OS Update file to the BHT, or store the OS Update file in the microSD card.
2. Tap the "..." browse button.
The My Device screen pops up.
3. Select the OS update file from the list.
4. Tap the "Exec" button to start the OS update.
The progress screen is displayed during the update.
The BHT reboots automatically after the update is completed.
Then the BHT performs the process selected in the above reboot mode.



- Note - The BHT always performs the full-reset (cold boot) after the update.

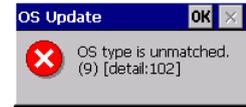
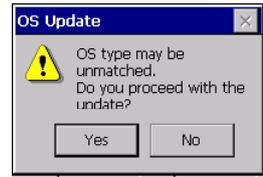
The RAM file system, the registry and the registry data stored in the FLASH memory are all deleted whenever a full-reset is performed. Therefore, resetting the registry is required after the update. The following steps are strongly recommended for the registry reset.

1. Create the registry file (*.reg).
Refer to "[13] Registry Editor" for how to create the registry file (*.reg).
2. Enable the "Startup Launcher" in the "Startup Config" to automatically deploy the registry file (*.reg) in the "Setup" folder when a cold boot is performed.
Refer to "[12] StartupConfig" for how to set up.

- Note - When the OS update fails, full-reset must be performed manually to restart the BHT or complete the OS update.

If the OS update file for other BHT models is selected, the popup error message shown on the right is displayed when the “Exec” button is pressed in step 4.

Stop the OS update then select the correct OS file and retry, if the message is displayed.



Error Message List

Message	Error number	Problem	Solution
The specified path or file is not found.	6	The selected file does not exist.	Select an existing file.
OS type is unmatched.	9	The selected OS update file does not support the hardware.	Select the supported OS update file.
OS update aborted.	101	The OS update is aborted by the user due to unmatched OS type.	Select the correct OS update file matching to the BHT model.
This OS is not supported in this hardware.	901	The selected OS update file does not support the hardware.	Select the supported OS update file.

NOTES: Command Prompt (CMD) specification

> **OSUpdate /e [/r] [/f]**

/e	Execute command line mode
(none)	Execute GUI mode (default)
/e	Command line mode without the battery power check.
/eb	Command line mode with the battery power check. If the battery level is level-1 or less, the OS update is not performed.

The following parameters are valid when "/e" is specified.

/r	Reboot mode
(none)	The BHT immediately restarts after the OS update. (Restart now) (default)
/r	The same as the above. (Restart now) (default)
/rp	The BHT turns off after the OS update. (Power off)
/rl	The BHT does not restart after the OS update. (Restart later). After full-reset is performed, the updated OS takes effect.
/f folder/file	Specify the OS image files or folder full path.
(none)	The OS is updated with the OS image files which are in the folder that the OSupdate.exe deploys
/f	Specify the full path that the OS image files deploy. The full path must start with "\" for the local folder. The full path must start with "\\\" for the network folder. Enclose the path in double quotation marks (") when a blank character is included in the path.
/h, /?	help

-
- Note -**
- Both '/' and '-' can be used as an option delimiter.
 - Both lower case and upper case characters are treated as the same character. (Both lower case and upper case characters can be used.)
 - OSUpdate.exe is provided with the OS image files, or can be copied from the windows folder.
-

Return values

0	Success
1	OS updating is skipped due to the existence of the same OS version
2	Failed
3	OS updating is canceled due to low battery power
4	Incorrect parameters
5	Error occurred before the OS update
6	Error occurred after the OS update
7	Error (Full-reset is required before the next OS update.)
9	Unable to update the OS.

Examples:

(Ex1) [Recommendation]

Update the OS with the OS image files that are in the folder that the OSupdate.exe deploys.

```
> \\Flash\OSUpdate.exe /e
```

(Ex2) Update the OS with the OS image files in the server folder.

The battery power check is enabled (/eb). (File name is an example.)

```
> OSUpdate.exe /eb /f: "\\ServerName\OSupdate\BxxBCExx.SY3"
```

(Ex3) Update the OS with the OS image files and OSupdate.exe in the "OSUpdate" folder in micro SD card.

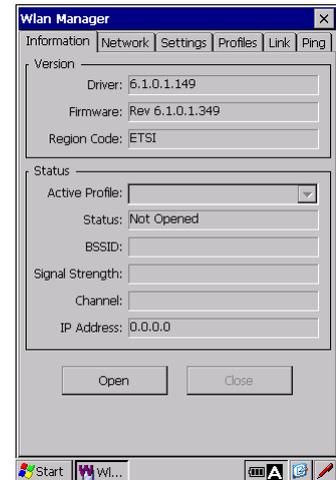
```
> "\\Storage Card\OSupdate\OSUpdate.exe" /e
```

[15] Wireless LAN Menu

"Wireless LAN" is a wireless LAN setup tool called "Wlan Manager", and is used to connect the BHT via a wireless network.

To open the Wlan Manager, double tap the Wireless LAN icon in the System Properties.

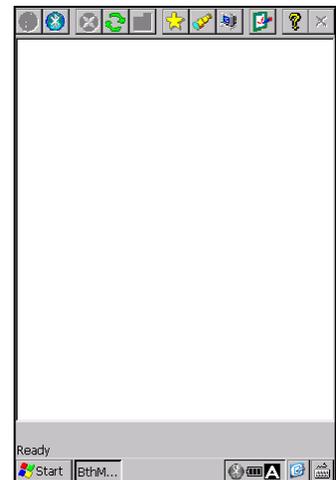
Refer to Chapter 4, 4.5 Wireless Network Settings for more details.

**[16] Bluetooth Manager**

"Bluetooth Manager" is a Bluetooth connection setup tool that connects the BHT via Bluetooth.

To open the Bluetooth Manager, double tap the Bluetooth Manager icon in the System Properties.

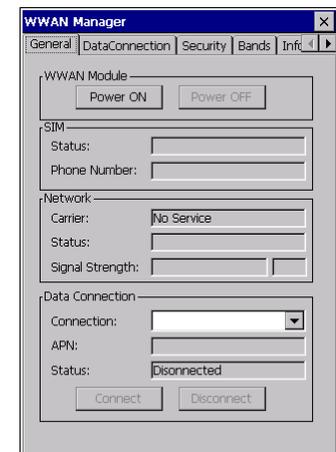
Refer to Chapter 4, 4.6 Bluetooth Manager for more details.

**[17] WWAN Manager**

"WWAN Manager" is a wireless WAN connection setup tool that is used to connect the BHT via a wireless wide area network.

To open the WWAN Manager, double tap the WWAN Manager icon in the System Properties.

Refer to Chapter 4, 4.7 WWAN Manager for more details.



[18] Network Settings

"Network Settings" is used to enable or disable IPv6 (Internet Protocol version 6).

IPv6 is set to "Enable" as default.

To change, follow the steps below.

1. Double-tap the Network Settings in the System Properties.

The "Network Settings" screen is displayed.

Enable: IPv6 is activated.

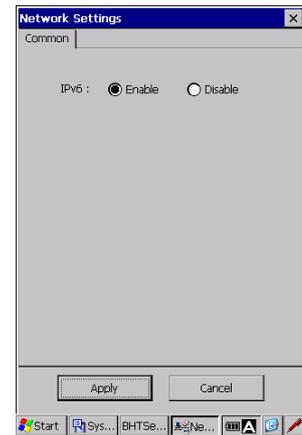
Disable: IPv6 is deactivated.

2. Select either "Enable" or "Disable", then tap the "Apply" button.

The popup message shown on the right is displayed.

3. Tap the "OK" button on the right corner of the message.

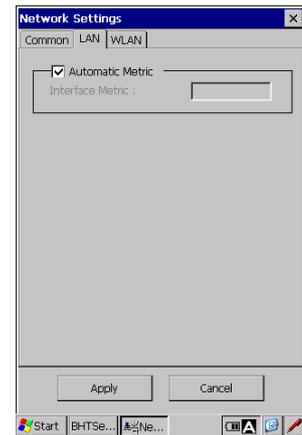
The BHT performs the reboot for the change to take effect.



LAN / WLAN interface Metric

Automatic metric specifies whether TCP/IP automatically calculates a value for an interface metric that is based on the speed of the interface. The highest-speed interface has the lowest interface metric value.

Interface metric provides a location for you to type a value for the interface metric for this network connection. A lower value for the interface metric indicates a higher priority for use of this interface.



[19] Internet Explorer Options

“Internet Explorer Options” is used to set up the FullScreen web browser. Tap the “Internet Explorer Options” icon in the System Properties to open.

Full Screen IE menu:

Enables the Full Screen mode and the function keys to control the Full Screen mode.

Internet Explorer opens in the Full Screen mode if "Full Screen IE mode" box is checked.

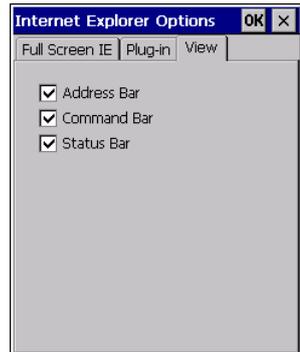
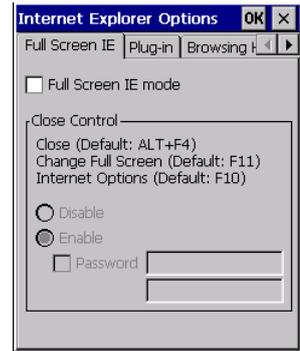
Plug-in menu:

Sets up the Plug-in settings and the error control

Refer to the BHT Web Browser Plug-in Reference Manual, chapter 2. Web browser settings for more details .

View:

Switches the Address Bar, Command Bar and Status bar between “show” or “hide”

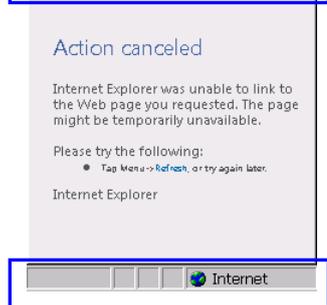


Command Bar →

Address Bar →



Status Bar →



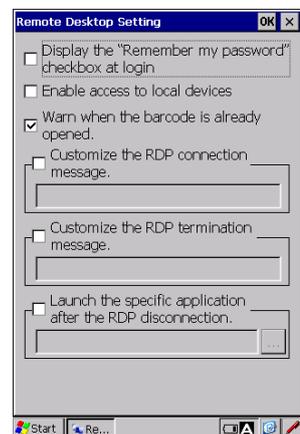
- **Notes** - The location of the “Internet Explorer Options” varies depending on OS version as follows.
 Latest version: BHTSHELL > System Properties > Internet Explorer Options
 All previous versions: Control panel > Internet Options > Full Screen IE

[20] Remote Desktop

“Remote Desktop” is a Remote Desktop setup too.

To open the Remote Desktop setup menu, double tap the Remote Desktop icon in the System Properties.

Refer to BHT RDP Plug-in Reference Manual 2.3 Preparing the BHT (5) BHT extended functions.

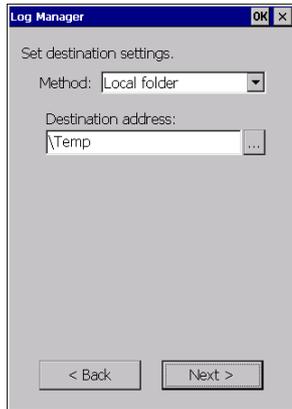
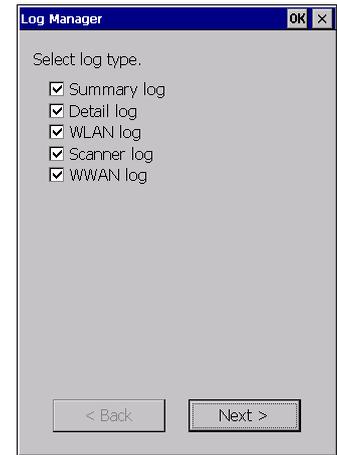


[21] Log Manager

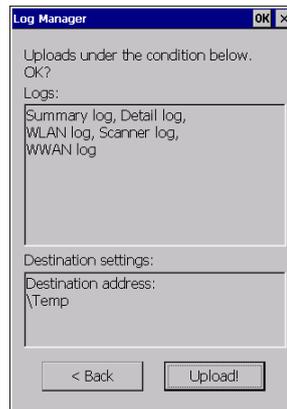
Log Manager is a tool for retrieving logs of BHT internal behavior.

- Summary log: History log (power on, off, reboot,...)
- Detail log: Details of the above log
- WLAN log: WLAN packets and events log
- Scanner log: Barcode reading log
- WWAN log: WLAN events log (Only for BHT-1200QG)

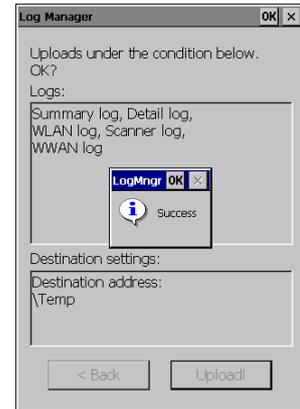
1. Double-tap the [Next] [Upload] button to retrieve log files.
 - Location to be saved.
 - Confirmation
 - Result



Location

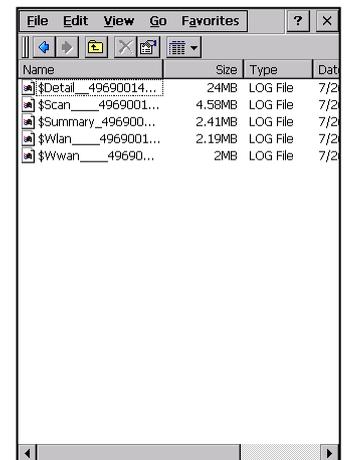


Confirmation



Result

The log files are created in "Temp" folder. (default)
 The file name has the serial number, created date and time.
 The files are copied and retrieved by ActiveSync/WMDC or/and microSD card.

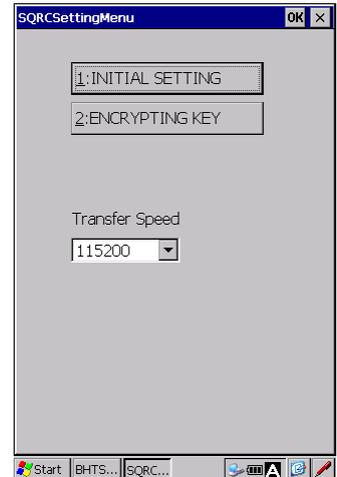


[22] SQRC (Only for BHT-1200Q)

"SQRC" is a setting tool called the "SQRC setting menu" which is used to perform SQRC scanning.

To open the SQRC setting menu, double tap the SQRC icon in the System Properties.

Refer to SQRC Setting User's Manual for details.



The following is an explanation of all the advanced system menus that are not in the system menu.

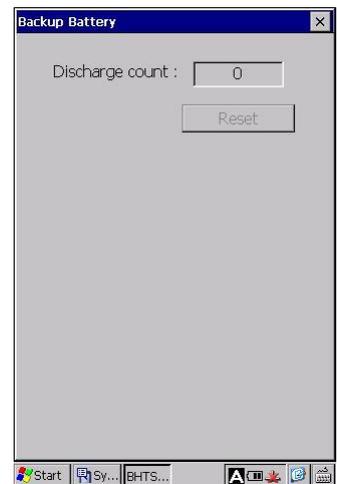
[23] Resetting the Backup Battery Discharge Counter

The backup battery discharge counter can be reset in the advanced system menu.

Reset the backup battery discharge counter after replacing the backup battery.

To reset the backup battery discharge counter, follow the steps below.

1. Open the System Properties menu.
2. Hold down the **SHIFT** key and press the "0" key.
The "Backup Battery" screen shown on the right is displayed.
3. Tap the "Reset" button.
The battery backup discharge count is reset to zero (0).



- **Note** - The counter can only be reset after the discharge count reaches 200.

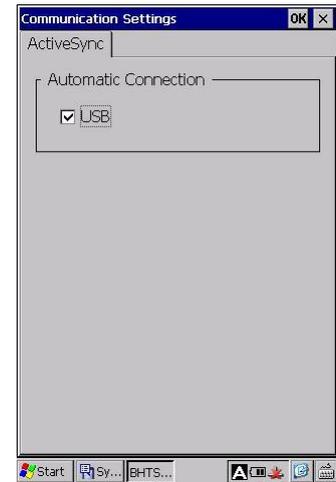
[24] ActiveSync/WMDC Automatic Connection

The ActiveSync/WMDC is set to automatically connect via the USB as default.

The ActiveSync/WMDC Automatic Connection can be changed in the advanced system menu.

To enable or disable, follow the steps below.

1. Open the System Properties menu.
2. Hold down the **SHIFT** key and press the “1” key.
The “Communication Settings” screen shown on the right is displayed.
3. Check or Uncheck the box to enable or disable, then tap the “OK” button.



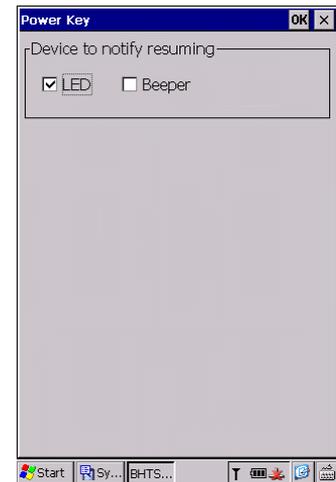
– Note – Automatic connection is enabled as default.

[25] Power key

The LED and Beeper can be used as notification devices to notify that the BHT is turned on by the power key.

To change the notification device, follow the steps below.

1. Open the System Properties menu.
2. Hold down the **SHIFT** key and press the “2” key.
The “Power Key” screen shown on the right is displayed.
LED: Blue LED (Default)
Beeper: Beeper



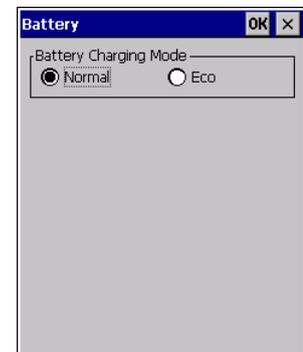
3. Select the notification device.
Both the LED and Beeper can be selected at the same time.

[26] Battery charging mode

Hold down the SHIFT key and press the 8 key while the System menu is open. The Battery menu shown on the right is displayed.

The Eco mode reduces power consumption compared to the Normal mode when charging a battery while the BHT is turned off (in suspend mode).

Normal	Normal mode
Eco	Eco mode : Complies with California appliance efficiency regulations for battery chargers.



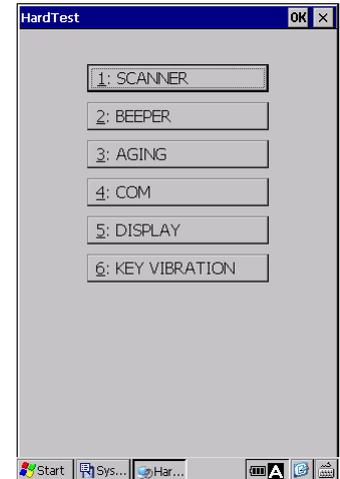
Select the Eco mode when the BHT using in the state of California.

4.4.4 Test

“Test” is used to perform various hardware tests for the BHT.
To open the test menu, tap the “4:Test” button in the System Menu.

Refer to 4.9 Hard Test Menu for details.

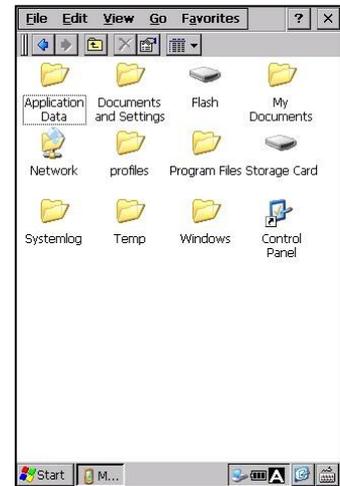
– Note – Contact your sales dealer if an error occurs during the tests.



4.4.5 Explorer

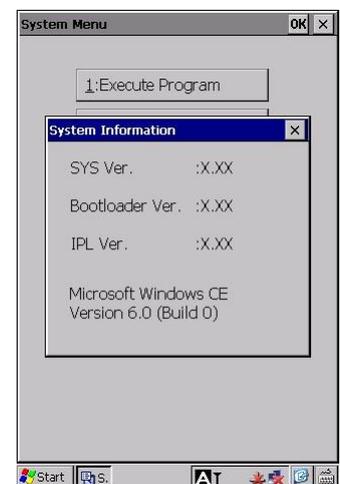
“Explorer” provides easy access to files, programs and network devices.
To open the explorer, tap the “5:Explorer” button in the System Menu.

– Note – When connecting the BHT to the (remote) host computer via a windows network, always set the proper time and date.
If both the BHT and the (remote) host computer do not have the same date and time, the BHT may not log into the (remote) host computer.



4.4.6 System Information

“Version” is used to check the BHT system information.
To view the system information, tap the “6:Version” button in the System Menu.



4.5 Wireless Network Settings

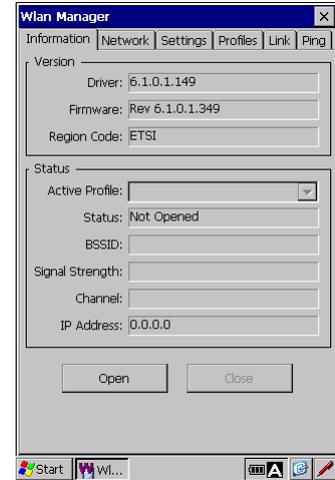
4.5.1 Wireless LAN Menu

“Wireless LAN” is a wireless LAN setup tool called the “Wlan Manager”, and is used to connect the BHT via a wireless network and check the network information.

To open the Wlan Manager, double tap the “Wireless LAN” icon in the System Properties.

The Wlan Manager provides the following menus.

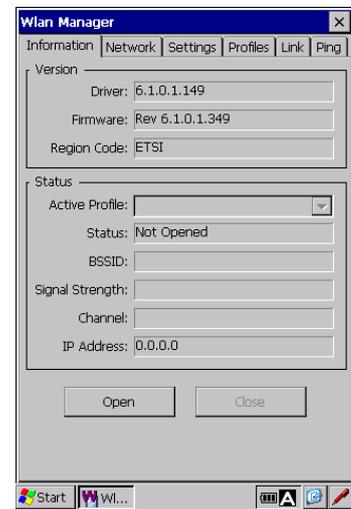
- Information:** Displays the wireless device information, and connection status.
- Network:** Displays network information, and sets up the IP address and the name servers.
- Settings:** Sets up the power save mode, radio mode and advanced settings.
- Profiles:** Edits the network profiles
- Link:** Displays the current communication status
- Ping:** Performs a Ping test



4.5.2 Information menu

Tap the “Information” tab in the Wlan manager. The following information is displayed.

- Version:**
 - Driver: Wireless driver version
 - Firmware: Wireless module firmware version
 - Region code: Country code (country name, standards organization)
- Status:**
 - Active Profile: Current active profile
 - Status: Current connection status
 - BSSID: Current BSSID
 - Signal Strength: Current signal strength
 - Channel: Current communication channel
 - IP Address: BHT IP Address
- “Open” button:** Opens the wireless device by tapping
- “Close” button:** Closes the wireless device by tapping



– Note – The wireless device opened by the “Open” button remains open even after the Wlan manager is closed. To close the wireless device, open this menu again and tap the “Close” button.

4.5.3 Network menu

Tap the “Network” tab in the Wlan manager.
The following information is displayed.

IP Type: IP address type, DHCP or Static
 IP Address: BHT IP address
 Subnet mask: Subnet mask
 Gateway: Default gateway
 DNS Server: DNS IP address
 WINS Server: WINS IP address
 MAC Address: BHT MAC address

“Property” button: Opens the IP address setup menu



To open the IP address setup menu, tap the “Property” button.

In the “IP Address” tab, set up how the BHT obtains an IP address from the DHCP server.

Obtain an IP address via DHCP:

Select the radio button to automatically obtain a dynamic IP address from the DHCP server.

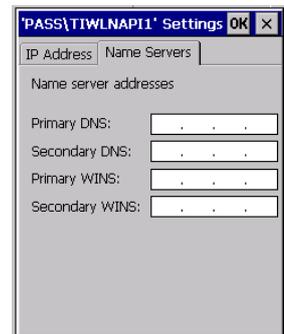
Specify an IP address:

Select the radio button to manually enter a static IP address, then enter the IP address, subnet mask, default gateway.



In the “Name Servers” tab, set up the name server addresses.
Enter the following IP addresses.

Primary DNS: Primary DNS server address
 Secondary DNS: Secondary DNS server address
 Primary WINS: Primary WINS server address
 Secondary WINS: Secondary WINS server address



– Note – Contact your network administrator for the IP address settings.

4.5.4 Settings menu

Tap the "Settings" tab in the Wlan manager.

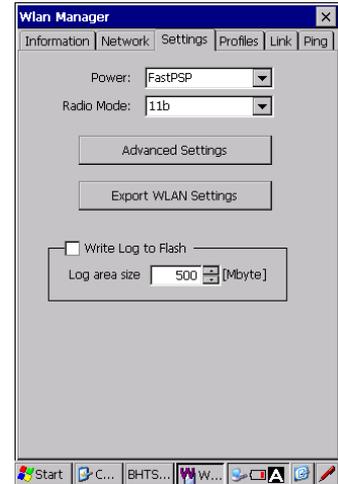
Power: Select the wireless module power save mode from the pull-down list.

CAM: Constantly awake mode
The wireless module is constantly powered ON.

FastPSP: Power save mode (Default)
The wireless mode switches between the power save mode and CAM mode depending on network traffic volume.

MaxPSP: Maximum power save mode
The wireless module wakes up periodically regardless of network traffic volume.

– Note – Set an access point with low DTIM periods (2 or 3) when the power save mode is set to FastPSP or MaxPSP.
The BHT may not reconnect to the access point if a larger number is set.



Radio mode: Select the radio mode from the pull-down list.

- 11b: 802.11b (Default)
- 11b/g: 802.11b or 802.11g
- 11b/g/n: 802.11b, 802.11g or 802.11n (2.4 GHz band)
- 11a (*): IEEE802.11a
- 11a/n (*): IEEE802.11a or IEEE802.11n (5GHz band)

(*) These choices can be selected only for the 5GHz band WLAN supported BHT models. Check the product label on the back of the product to see if the 5GHz band WLAN is supported. Refer to Chapter 8, 8-1-4 Interface specifications - Wireless Interface - Labels - 5GHz wireless connection for details.

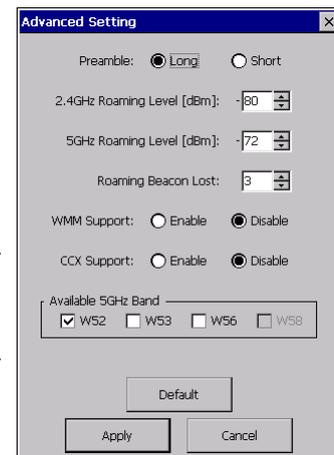
“Advanced Settings” button:

Tap the "Advanced Settings" button in the "Settings" tab menu to open the radio advanced settings.

Preamble: Select the "Short" or "Long" radio button for the preamble length.

- Long: Long preamble (Default)
- Short: Short preamble

– Note – Select the same preamble length as the access point. If both the BHT and access point are not set to the same preamble length, the BHT may not connect to the access point.



2.4GHz Roaming Level (dBm):

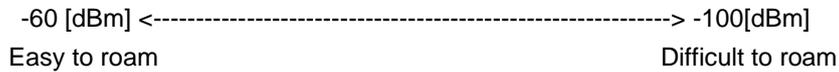
Set the roaming threshold for the 2.4GHz band from -60 to 100 dBm. (Default: -80 dBm)
The wireless module starts roaming when the received signal strength drops below the threshold.

5GHz Roaming Level (dBm):

The menu is displayed only for the 5GHz band WLAN supported BHTs.
Set the roaming threshold for the 5GHz band from -60 to 100 dBm (Default: -72 dBm)
The wireless module starts roaming when the received signal strength drops below the threshold.

- Note - Roaming will be easier and occur more frequently as the absolute value of the roaming threshold decreases, however, communication may easily be lost as the result of frequent roaming. Conversely, roaming will be more difficult as the absolute value of the roaming threshold increases, therefore communication will not be lost easily

When changing the roaming threshold, consider the environment in which the BHT operates, such as the access point arrangement or electromagnetic noise.



Roaming Beacon Lost :

Set the beacon lost number to start roaming from 1 to 10. (Default: 3)

WMM Support :

Select the “Enable” or “Disable” radio button for the WMM (Wi-Fi Multimedia) function

Enable : Enable WMM

Disable : Disable WMM (Default)

CCX Support :

Select the “Enable” or “Disable” radio button for the CCX function.

Enable :Enable CCX

Disable : Disable CCX(Default)

Available 5GHz Band:

The menu is displayed only for the 5GHz band WLAN supported BHTs.

Select the same 5GHz bands as the access point.

-
- Note -**
- The network connection time and roaming time can be reduced by using only the necessary bands (uncheck unnecessary bands), particularly when using the DFS bands (W53 and W56) which require passive scans.
 - The DFS bands (W53 and W56) access points automatically alter channels when a weather radar is detected. This may cause an unintentional disconnection of the wireless LAN communication or electrical interference.
 - Enable the access point function “Broadcast ESSID” and “802.11d”(Country notification) when using the DFS bands (W53 and W56).
-

“Default” button:

The “Default” button is used to restore the default settings.

“Apply” button:

The “Apply” button is used to apply the changes.

“Cancel” button:

The “Cancel” button is used to cancel all changes.

Export WLAN Settings:

“Export WLAN Settings” button is used to create a registry file which contains only the WLAN settings (WLAN registry file).

Tap the “Export WLAN settings” button to create the WLAN registry file.

The WLAN registry file can be copied to other BHT with the registry file (*.reg).

Refer to 4.4.3 System Properties – [13] Registry Editor – Registry file (*.reg), for how to import the registry file with the Registry file(*.reg).

-
- **Note** – The registry file (*.reg) can be used only when both BHTs support the WLAN export function. To import the WLAN settings from a non-supported BHT, copy all registry keys with the RegEdit or Command prompt (CMD).
The registry file copied from a non-supported BHT cannot be exported properly to a supported BHT.
-

Write log to flash:

Save the wireless logs (i.e. connected, disconnected, roamed) to the Flash folder.

Logs are saved in the "Flash\WLANlog" folder up to the maximum log storage size specified by the "Log area size".

If the saved log size exceeds the maximum size specified, old logs are deleted to reduce the storage space then latest logs are saved.

100MB of “Log area size” is roughly equivalent to 36 hours of log data. (Available storage capacity varies depending on communication conditions.)

4.5.5 Profiles menu

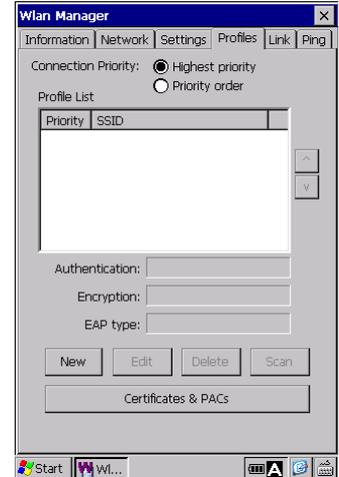
“Profiles” is used to set up the wireless network security.

To open, tap the “Profiles” tab in the Wlan manager.

Connection Priority: Sets the network connection priority when multiple profiles are available.

Highest priority: Connects to the network with the highest priority profile.

Priority order: Connects to an available network profile in the priority order. The profile connected is shown as an active profile on the Status section in the information tab page. Attempts to reconnect to the highest priority profile available until connected if the wireless network is disconnected.



-
- Notes -**
- The “Highest priority” is recommended if only one combination for the access point SSID and security type is used.
 - If the “Priority order” is selected, the BHT attempts to connect to a profile one by one in the priority order until a connection is established. As a result, a connection may take time to establish. The BHT may connect to an access point with a low priority profile unexpectedly in places where the multiple access points with the available SSIDs and security types exist.
-

“New...” button: Creates a new profile.

“Edit...” button: Edits the selected profile.

“Delete” button: Deletes the selected profile.

“Scan” button: Scans for access points and shows the access point information.

“Certificates & PACs” button: Edits the certificates and PACs.

[1] New

To create a new network profile, tap the “New” button in the Profiles tab screen.

The following menus are displayed in the Profiles screen. The menus shown in the screen will vary depending on the settings selected for the Authentication, Encryption and EAP type.

SSID: Enter an SSID (service set identifier) that identifies the wireless network. (1 to 32 ASCII characters)

Authentication:

Select the authentication method from the pull-down list.

Encryption:

Select the encryption method from the pull-down list.

WEP / Pre Shared key:

The WEP key is displayed only when the WEP is selected and the EAP type is disabled. The WEP Key can be entered as 26 hexadecimal characters (128 bits), 10 hexadecimal characters (40 bits), 13 ASCII characters (128 bits) or 5 ASCII characters (40 bits).

The Pre Shared key is displayed when the WPA-PSK is selected. The Pre Shared Key can be entered as 8 to 63 ASCII characters or 64 hexadecimal characters.

Key Index:

Select the Key index from 1 to 4 then enter the WEP Key.

EAP type:

Select the EAP type for the 802.1x wireless network security.

User ID:

Enter the user ID as 0 to 64 ASCII characters.

Password:

Enter the password as 0 to 64 ASCII characters.

Anonymous ID:

Enter the anonymous ID as 0 to 64 ASCII characters.

Issued to:

The destination of the specified client certificate is displayed.

Issued by:

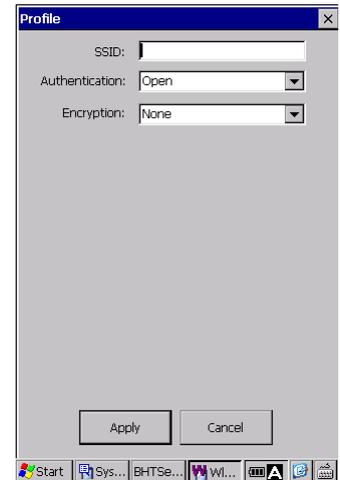
The source of the specified client certificate is displayed.

Validate Server:

Check the box to verify the server certificate with the existing root certificate which is previously imported.

PAC Provisioning:

Select the PAC provisioning mode.



Security Configuration

The network security is set with the combination of Encryption and Authentication as listed below.
The security combination is changeable.

Parameter	Security					
	None	PEAP (802.1x)	EAP-TLS (802.1x)	LEAP (802.1x)	EAP-FAST (802.1x)	
ESSID	√					
Authentication	Open					
Encryption	None	WEP				
802.1x (EAP type)	Disable	Disable	PEAP	EAP-TLS	LEAP	EAP-FAST
Pre Shared Key	–	–	–	–	–	–
WEP Key	–	√	–	–	–	–
User ID	–	–	√	√	√	√
Password	–	–	√	–	√	√
Anonymous ID	–	–	–	–	–	√
Validate Server	–	–	√	√	–	–
Client certificate	–	–	–	√	–	–
PAC Provisioning	–	–	–	–	–	√
Profile Priority	√					
screen image	A	B	C	D	E	F

Parameter	Security (WPA)				
	PEAP	EAP-TLS	LEAP	EAP-FAST	PSK
ESSID	√				
Authentication	WPA-1X				WPA-PSK
Encryption	TKIP / AES				
802.1x	PEAP	EAP-TLS	LEAP	EAP-FAST	Disable
Pre Shared Key	–	–	–	–	√
WEP Key	–	–	–	–	–
User ID	√	√	√	√	–
Password	√	–	√	√	–
Anonymous ID	–	–	–	√	–
Validate Server	√	√	–	–	–
Client certificate	–	√	–	–	–
PAC Provisioning	–	–	–	√	–
Profile Priority	√				
Screen image	G	H	I	J	K

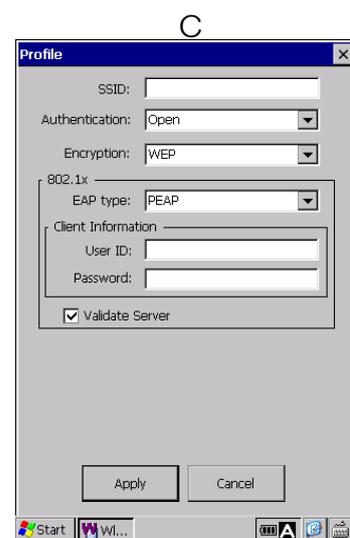
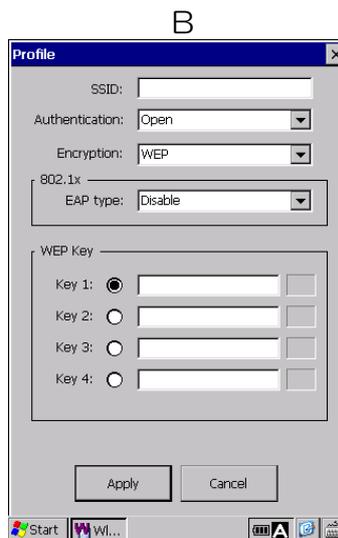
Parameter	Security (WPA2)				
	PEAP	EAP-TLS	LEAP	EAP-FAST	PSK
ESSID	√				
Authentication	WPA2-1X				WPA2-PSK
Encryption	TKIP / AES				
802.1x	PEAP	EAP-TLS	LEAP	EAP-FAST	Disable
Pre Shared Key	—	—	—	—	√
WEP Key	—	—	—	—	—
User ID	√	√	√	√	—
Password	√	—	√	√	—
Anonymous ID	—	—	—	√	—
Validate Server	√	√	—	—	—
Client certificate	—	√	—	—	—
PAC Provisioning	—	—	—	√	—
Profile Priority	√				
Screen image	G	H	I	J	K

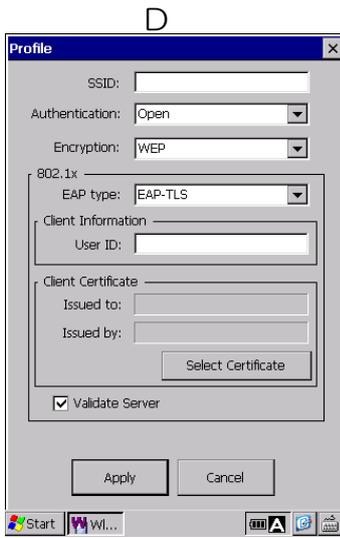
—: disabled

√: enabled

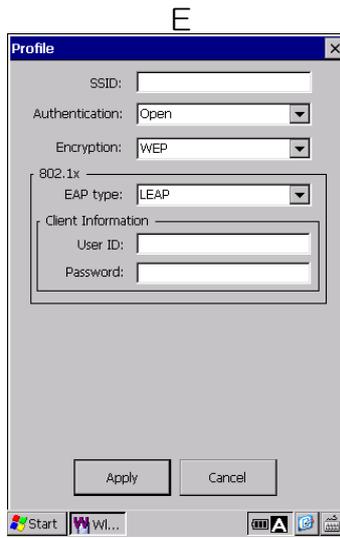
– Note – If the mixed mode that includes the WEP (such as WEP128+TKIP+AES) is set for the access point encryption, the WEP is the only encryption to connect to the access point.

Screen Images

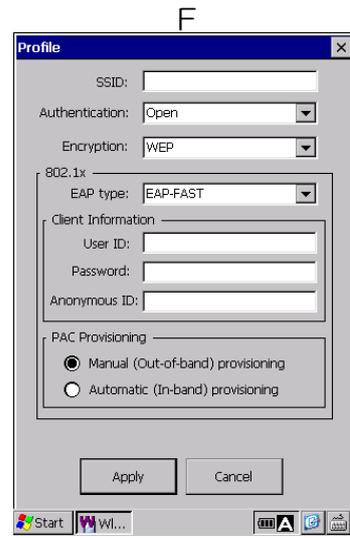




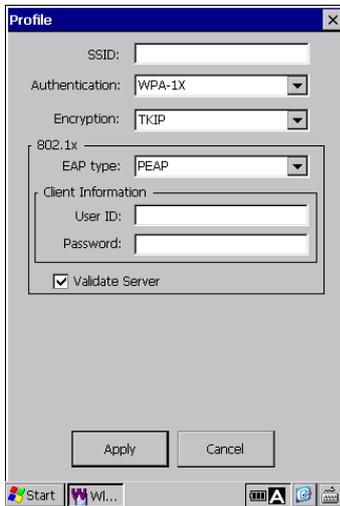
D



E



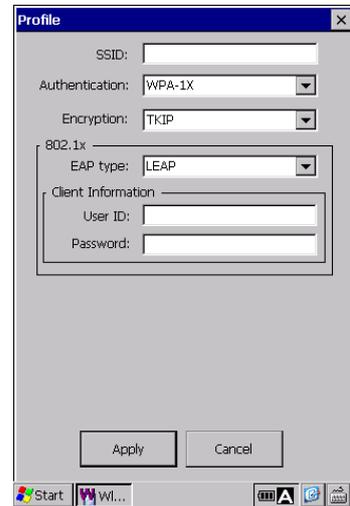
F



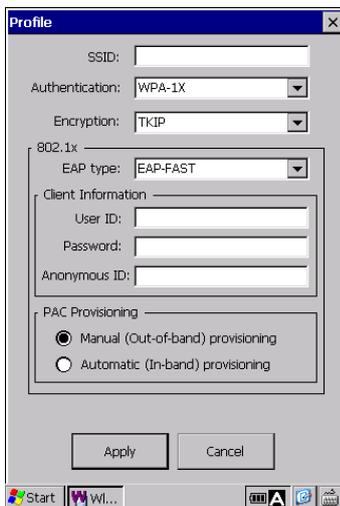
G



H



I



J



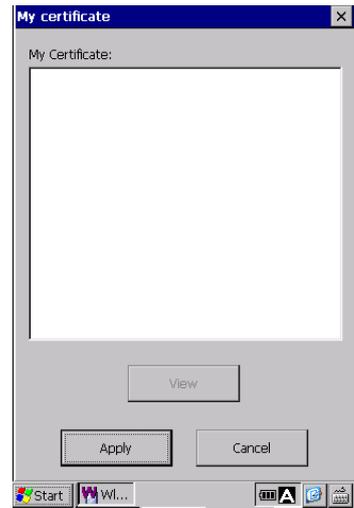
K

“Select Certificate” button in the profiles menu

The “Select Certificate” menu is used to import the certificate.

To import the certificate, follow the steps below

1. Tap the “Select Certificate” button in the profiles menu screen.
The “My certificate” screen is displayed.
2. Select the client certificate from the list and tap the “Apply” button.
The client certificates imported are displayed.

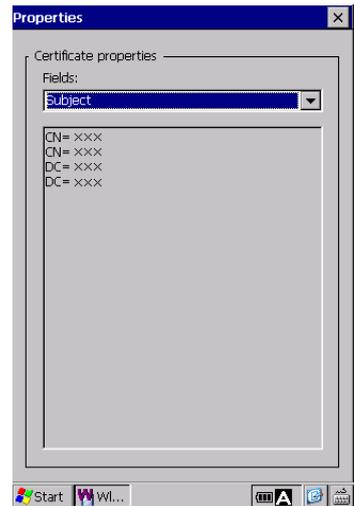


Select a client certificate from the list then tap the “View” button to open the certificate properties.

Certificate properties:

Select the certificate from the pull-down list.

The lower area of the screen displays the properties of the certificate selected.

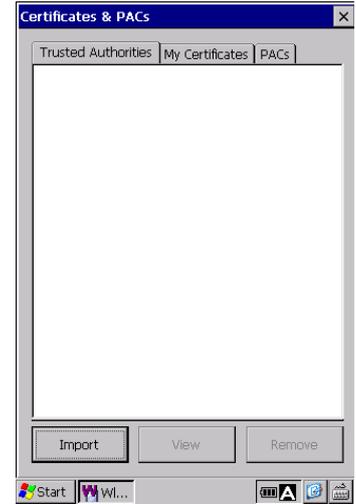


[2] “Cert & PAC (Certificates & PACs)” button in the Wlan manager

The “Cert & PAC (Certificates & PACs)” is used to import, view or remove the certificates and secret keys (PACs).

To open, tap the “Cert & PAC (Certificates & PACs)” button in the Wlan manager.

- “Trusted Authorities” tab: Edits the root certificates
- “My Certificates” tab: Edits the client certificates
- “PACs” tab: Edits the secret keys (PACs)



The required certificates and secret keys vary depending on the EAP types. To edit, tap each tab.

- “Import” button: Imports the certificate or PAC.
- “View” button: Views the details of the certificate.
- “Remove” button: Removes the selected certificate or PAC.

The following table shows the required certificates and secret keys for each EAP type.

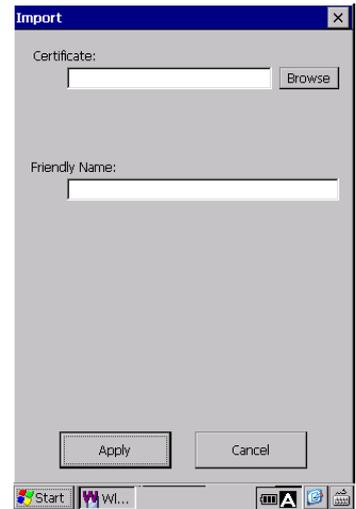
EAP type	Root certificate	Client certificate (incl. secret key)	PAC
PEAP	√ (omissible)	–	–
EAP-TLS	√ (omissible)	√	–
LEAP	–	–	–
EAP-FAST	–	–	√ (omissible)

The following table shows the supported formats for the certificates and secret keys .

File	Format
Root certificate / Client certificate	X.509 DER format
Secret key	PKCS#1 DER format

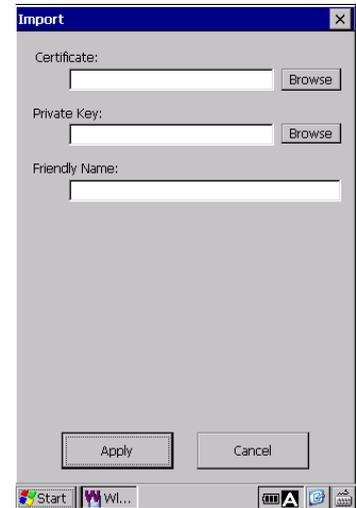
To import a root certificate, follow the steps below.

1. Select “Trusted Authorities” tab in the Certificates & PACs screen.
2. Tap the “Import” button.
The Import screen shown on the right is displayed.
3. Tap the “Browse” button to select a root certificate file, or enter the full path of the root certificate file.
4. Enter a friendly name.
5. Tap the “Apply” button.



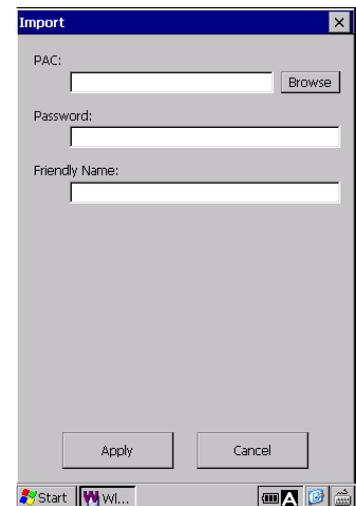
To import a client certificate, follow the steps below.

1. Select the “My Certificates” tab in the Certificates & PACs screen.
2. Tap the “Import” button.
The Import screen shown on the right is displayed.
3. Tap the “Browse” button to select a client certificate file, or enter the full path of the client certificate file.
4. Tap the “Browse” button to select a secret key file, or enter the full path of the secret key file.
5. Enter a friendly name.
6. Tap the “Apply” button.



To import a PAC, follow the steps below.

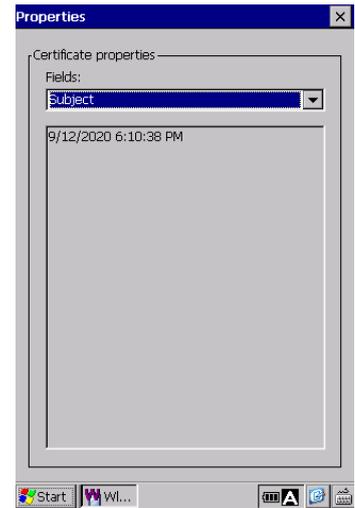
1. Select the “PACs” tab in the Certificates & PACs screen.
2. Tap the “Import” button.
The Import screen shown on the right is displayed.
3. Tap the “Browse” button to select a PAC file, or enter the full path of the PAC file.
4. Enter a PAC file password.
5. Enter a friendly name.
6. Tap the “Apply” button.



To view details of the certificate, tap the “View” button in the Certificates & PACs screen.

Then select the certificate from the pull-down list.

The screen displays the properties of the selected certificate.



[3] Scan Access points

To scan access points, tap the “Scan” button in the Profiles tab screen.

The following menus are displayed in the scan screen.

- **Rescan** Rescan access points.
- **Save...** Save the result of a scan.
- **Create Profile...** Create a new profile from the access point SSID.

Rescan

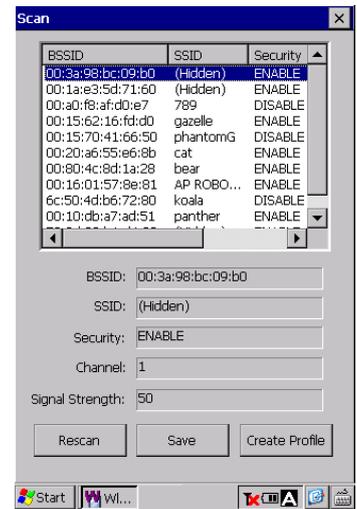
Tap the “Rescan” button to scan for surrounding access points.

The access points found are listed as shown on the right.

The maximum number of the scanned access points are 64.

The information for each access point is displayed on the lower half of the screen by selecting each line in the list.

- (1) BSSID
The access point MAC address
- (2) SSID *
The access point SSID
* “(Hidden)” is displayed when the access point SSID is hidden.
- (3) Security
ENABLE: Authentication or Encryption is required.
DISABLE: Both Authentication and Encryption are not required.
- (4) Channel
Channel that the access point uses.
- (5) Signal Strength
Radio field strength of the access point.



– Note – Some access points may not be found If profiles are already set. If any access points are not found, rescan access points multiple times or retry a scan after deleting profiles.

Save

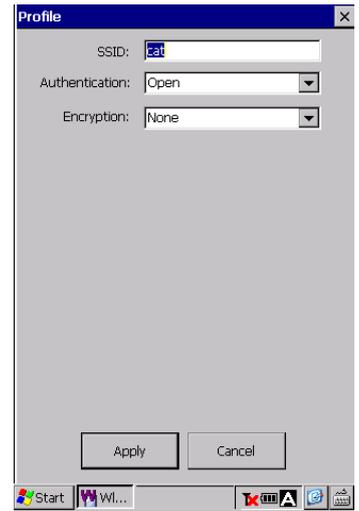
The scanned results are saved as files. The format to save files can be selected from three choices (the text format, CSV format and binary format).

Create Profile

Select the access point from the list in the “Scan” screen.
Then tap the “Create Profile” button.
The screen shown on the right is displayed.

Tap the “Apply” button to create a new profile with the SSID for the access point selected.

A new profile is created with only the SSID for the access point selected.
All other information such as the authentication and encryption are not used to create a new profile.



4.5.6 Link menu

“Link” tab in the Wlan Manager is used to view real-time communication current status.

Tap the “Link” tab to view the following information.

BHT

MAC Address: MAC Address

IP Address: IP Address

Associated access point

BSSID:

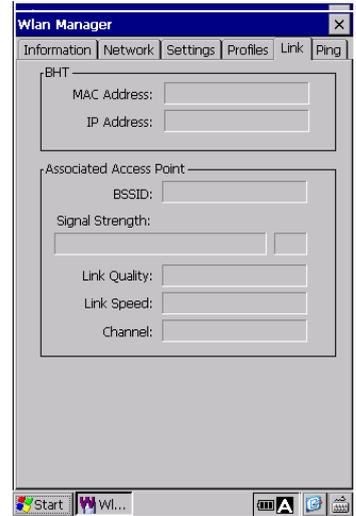
The MAC address assigned to the associated access point.

Signal Strength:

Signal strength of the received packets.

Link Quality:

Quality of the communication link between the access point and BHT.



Display	Communication Status
Excellent	Excellent communication link ↕
Good	
Fair	
Poor	Poor communication link
Not Associated	Not associated with an access point. (The wireless LAN device is opened.)
Not Opened	The wireless LAN device is not opened.

Link Speed:

The current transmission speed.

Channel:

The current communication channel.

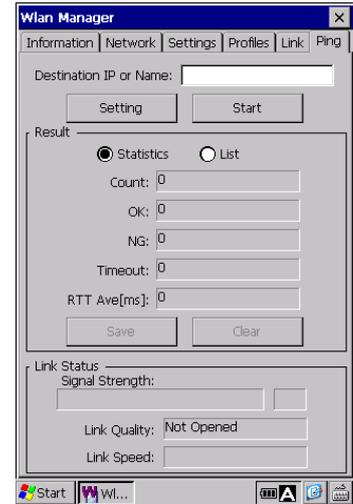
4.5.7 Ping menu

The “Ping” tab in the Wireless LAN menu is used to perform a ping test.

Destination IP or Name: Enter the IP address or name of the host computer in order to ping.

Tap the “Setting” button to set the ping parameters.

Tap the “Start” button to start the ping test.



– Note – The default host name of the BHT is “BHT” shown as a “Device name”. To find the “Device name”, tap the System icon in the control panel, then tap the Device Name tab.

Change the default device name “BHT” to a different name in order to ping the BHT from a remote device (such as a computer).

If the default device name “BHT” is used, the BHT will not respond to the ping command sent from a remote device.

Ping result

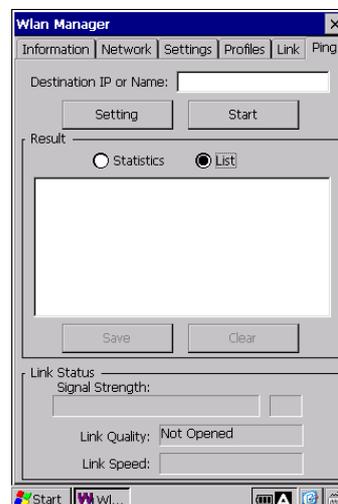
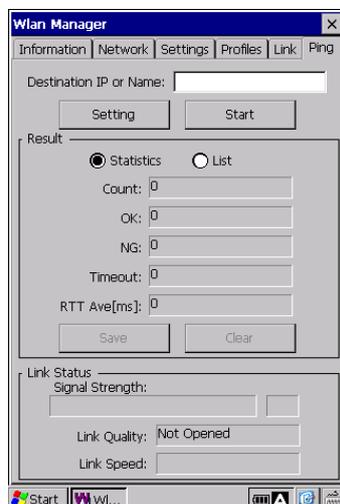
The ping results will be displayed in the “Result” section on the screen.

Count: Number of echo requests sent
 OK: Number of echo replies
 NG: Number of errors occurred during the ping test
 Timeout: Number of echo request timeouts occurred during the ping test
 RTT Ave.(ms): Echo reply time

Select the “List” radio button to view the list of results.

Tap the “Save” button to save the results as files.

Tap the “Clear” button to clear the results.



Ping settings

The Ping settings menu is used to set up the ping command parameters.

Tap the "Settings" button in the ping menu to display the "Ping settings" menu.

Data size: Specify the data size of the echo request.

Interval: Specify the length of echo request intervals (in 100 ms units).

Timeout: Specify the timeout period (in 100ms units) for the echo request.

Type1 or Type2: Choose "Type 1" or "Type 2" for timing when to send an echo request (refer to the next page for details).

Count: Specify the number of echo requests to send.

Tap the "Default" button to restore the default settings.

Setting ranges

Item	Value Range	Default Value
Data size	1 to 2048	32
Interval	0 to 65535	10
Timeout	0 to 65535	10
Type	Type1/Type2	Type2
Count	0* to 65535	4

* When zero (0) is set, the "Count" is set to infinity.

The echo requests are sent until the ping test is aborted.

If the specified value exceeds the value range, the closest value to the range will be automatically set as the value.

If the "timeout" is set to the value exceeding the range when Type 1 is chosen, the value will be automatically replaced by the value set as the "interval".

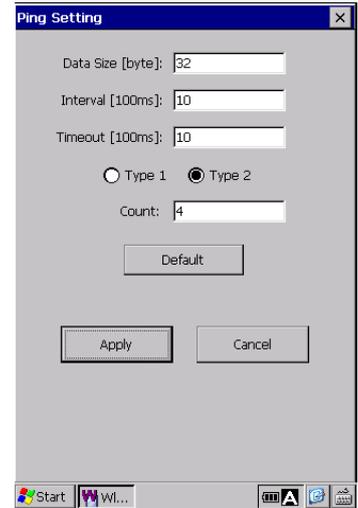
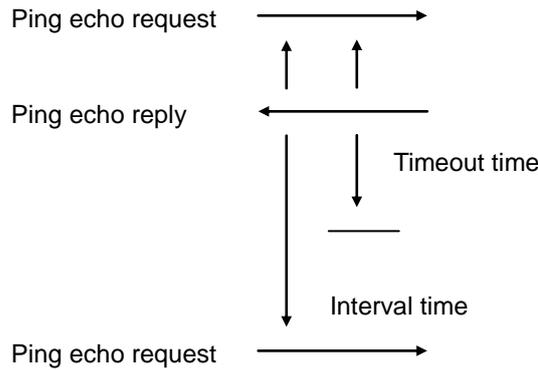
Ping echo request transmission timing

Two types of echo request transmission timing are available: Type 1 and Type 2. (Default: Type 2)

Type1

Type 1 sets the interval for a definite period of time between ping echo requests regardless of the timeout occurrence.

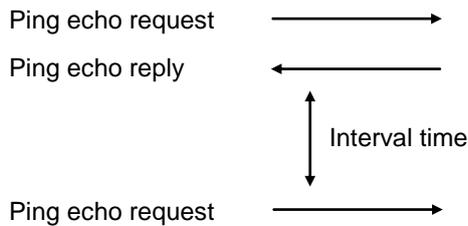
Set the interval time greater than or equal to the timeout time (Interval \geq Timeout), when Type 1 is chosen.



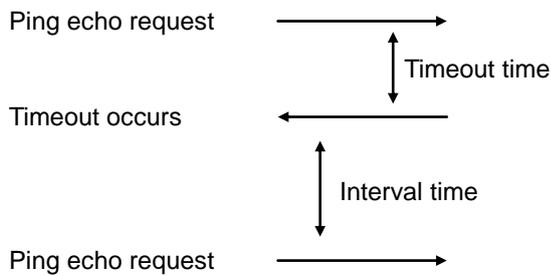
Type2

Type 2 sets the interval after receiving the ping echo reply and after timeout occurs. The interval time and timeout time do not affect each other in Type 2.

<When the ping echo reply is received>



<When the timeout occurs>

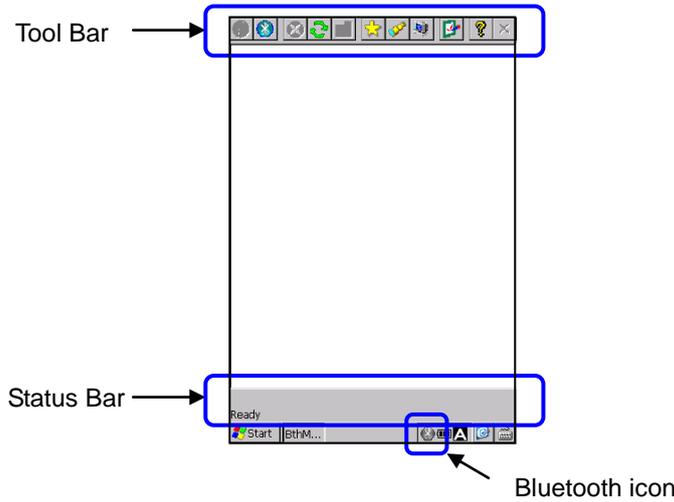


4.6 Bluetooth Manager

"Bluetooth Manager" is a Bluetooth communication setup tool to connect the BHT to other Bluetooth devices.

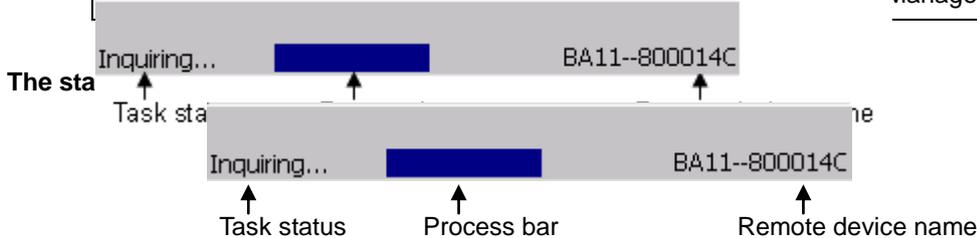
4.6.1 Main window description

To open the Bluetooth Manager, double tap the "Bluetooth" icon in the System Properties. The Bluetooth Manager is displayed with a toolbar and status bar.



The toolbar

	Battery power level	The current battery power level.
	Stop	Stop the current action
	Refresh	Refresh to update the displayed information.
	Folder	(not available)
	Shortcut	View the shortcut list.
	Device inquiry	View the remote device list
	Service	View local services.
	Setup	Set up the Bluetooth Manager.
	About	View the Bluetooth Manager version.
	Close	Close the Bluetooth Manager main window.



- Task status: The current task status of the Bluetooth Manager
- Progress bar: Indicates the progress of the task. (such as an Inquiry)
- Remote device name: Remote device name that the Bluetooth Manager is currently connected to

4.6.2 Device Inquiry

Tap the “Device inquiry” icon  in the tool bar to search for remote Bluetooth devices. The devices found are listed as device icons (such as a computer, laptop, PDA, audio device) in the main window.

The same remote device list is displayed next time the Bluetooth Manager is opened (to save time searching for the same devices).

To refresh the remote device list, tap the “Refresh” icon .

(Note : The devices already paired with the BHT are displayed without inquiry.)

If some device classes or names cannot be found, hold down the device icon with the stylus to open the contextual menu. Then select “Update” in the contextual menu to update the list.



To stop searching for remote devices, tap the “Stop” icon .

4.6.3 Device pairing

The following are three ways of pairing the BHT with a remote device.

(1) Pairing with a remote device from the BHT(local device).

- a) Select the remote device from the remote device list.
- b) Then hold down the device icon with the stylus to open the contextual menu.
- c) Select “Pair” in the contextual menu to open the “Pair request W...” dialog.
- d) Enter the PIN code and tap the “OK” button to start pairing.



To cancel pairing, tap the “X” button.

(2) Pairing with the BHT(local device) from a remote device without using the “Default Pin”.

A remote device is prompted to enter the PIN code when trying to pair with the BHT(local device).



Enter the PIN code set for the remote device.

(refer to “4.6.4 Properties and configuration [5] Local device properties and configuration - Security properties” for the Default Pin)

(3) Pairing with the BHT(local device) from a remote device with the “Default Pin”.

The PIN code prompt dialog will not be displayed.
The BHT is paired with a remote device automatically.

The following icons may appear during pairing.



Pairing failed.



Pairing succeeded
(Service is connected)



Pairing succeeded
(Service is not connected)

– **Note** – The BHT(local device) may be displayed as an “Unknown” remote device type in the remote device screen during pairing.
The Bluetooth communication will not be affected by the type “Unknown”.
To display the BHT device type correctly, perform a device inquiry from the remote device to search for the BHT before pairing.



4.6.4 Properties and configuration

[1] General

The Bluetooth Manager provides the SPP(Serial Port), OPP(Object Push) and FTP(File Transfer) functions as local services.

SPP (Serial Port): Establish a virtual serial connection with a remote device. (SPP server function)

OPP (Object Push): Receive files and contact information cards from a remote device.

FTP (File Transfer): Transfer files between the devices and create directories in a remote device.

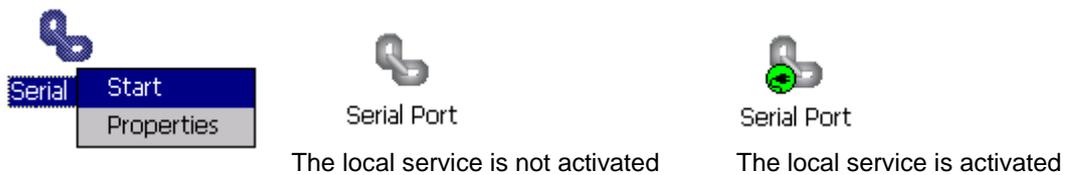
Note: Both the OPP and FTP must be activated at the same time.
Both functions do not work if the other one is deactivated.

Tap the “Service” icon  in the tool bar to view the local services .

The local services are shown in the main window as specific icons with specific names.

To activate a local service, double tap the icon or select “Start” in the contextual menu shown by holding down the each icon with the stylus.

To deactivate a local service, double tap the icon or select “Stop” in the contextual menu shown by holding down each icon with the stylus.

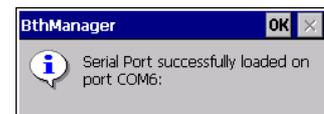
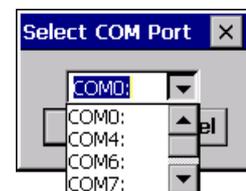


[2] SPP Profile

Configure the SPP profile to activate the SPP server function.

When the Auto Server COM Port in the “Local device properties” is not checked,

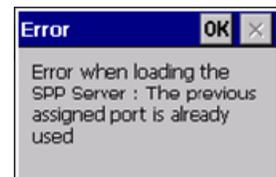
- The pop-up dialog is displayed with all the available COM ports
- Select the COM Port to assign to the SPP server function.
- The message shown on the right is displayed when the Serial Port server function is activated



(refer to [5] Local device properties and configuration-Application properties)

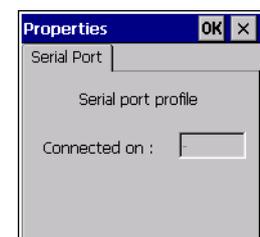
When the Auto Server COM Port in the “Local device properties” is checked, the last used COM port is assigned to activate the SPP server function.

If the COM port is not available, the error message shown on the right is displayed.



To check the COM port assigned to the SPP server function, select “Properties” in the contextual menu shown by holding down the “Serial Port” icon with the stylus.

The pop-up dialog shown on the right is displayed.



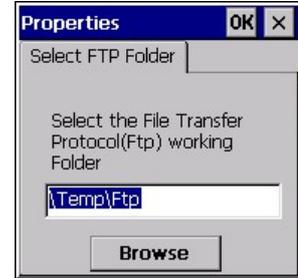
[3] FTP Profile

To activate the FTP Profile, double tap the “File Transfer” icon in the main window, or select “Start” in the contextual menu shown by holding down the “File Transfer” icon with the stylus.

To change the FTP server directory where the remote devices access to, select the “Properties” in the pop-up menu shown by holding down the “File Transfer” icon with the stylus.

The pop-up window shown on the right is displayed.

Enter the new directory path, or tap the “Browse” button to select the new directory.



[4] OPP Profile

To activate the OPP Profile, double tap the “Object Push” icon in the main window, or select “Start” in the contextual menu shown by holding down the “Object Push” icon with the stylus.

To change the directory where the files sent by a remote device are saved, select the “Properties” in the contextual menu shown by holding down the “Object Push” icon with the stylus.

The pop-up dialog shown on the right is displayed.

Enter the new directory path, or tap the “Browse” button to select the new directory.



[5] Local device properties and configuration

Tap the “Setup” icon , to open the local device (BHT) properties.

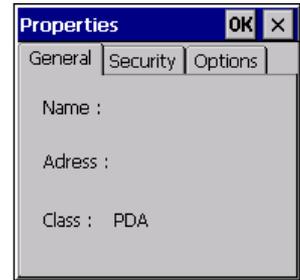
◆ General tab

The following local device properties are displayed in the “General” tab.

Name : The local device name that is discoverable by remote devices.

Address: MAC Address of the local device

Class: The device class that specifies the device type of the local device.

**◆ Security tab**

The “Security” is used to set up the local device security requirements.

Authentication :

Check the box if authorization (paring) is required for remote devices to access the local device.

Uncheck the box if authorization is not required.

Let other devices discover :

Check the box to make the local device discoverable from remote devices.

Uncheck the box so as not to be discoverable.

Default PIN :

Check the box to display the PIN code prompt dialog when remote devices try to pair with the local device. Enter the PIN code when checked.

Uncheck the box not to display the PIN code prompt dialog.

**◆ Options tab**

The “Options” is used to set up how the Bluetooth Manager works.

Start minimized:

Check the box to start the Bluetooth Manager with the minimized window size.

Uncheck the box to start the Bluetooth Manager with the normal window size.

Auto Client COM Port:

Check the box to automatically connect to the first available COM port when connecting to the SPP client.

Uncheck the box so as not to automatically connect to the SPP client.

Auto Server COM Port:

Check the box to display the COM port selection prompt dialog when starting up the SPP server function.

Uncheck the box so as not to display the COM port selection prompt dialog.

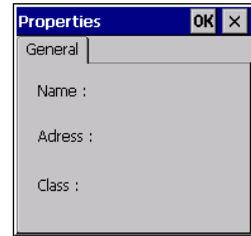


4.6.5 Remote devices services

[1] Remote device properties

To open the remote device properties, select “Properties” in the contextual menu shown by holding down the remote device icon in the main window.

The contents shown are the same as the property contents shown in the remote device.



[2] Service Inquiry

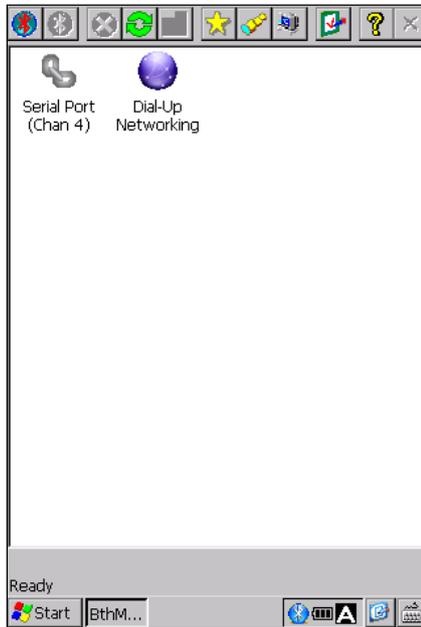
To find available services in a remote device, double tap the remote device icon in the main window.

The Bluetooth Manager starts to search for services in a remote device. (Inquiry progress is displayed in the status bar.)

All services found are displayed as icons (such as a “Serial Port”) in the main window.

To stop inquiring to search the services, tap the “Stop” icon .

To refresh the services displayed in the main window, tap the “Refresh” icon .

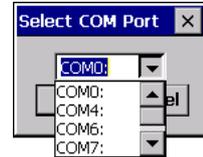


[3] Serial Port service

To use the serial port service, double tap the "Serial Port" icon or select "Connect" in the contextual menu shown by holding down the icon.

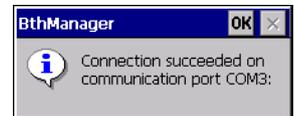
The COM port selection prompt dialog is displayed when the "Auto Client COM Port" is not checked in the local device properties option tab page.

Refer to 4.6.4 Properties and configuration [3] Local device properties and configuration - Option tab.

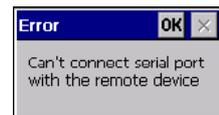


The first available COM port is automatically connected to the "Serial Port" service, when the Auto Client COM Port is checked.

The message shown on the right is displayed when the connection is successfully established.



The error message shown on the right is displayed when an error occurs.



The connection status of the service is shown as below.



When the "Serial Port" service is on, all applications can use the Bluetooth virtual COM port.

To check the COM port settings, select the "Properties" in the contextual menu shown by holding down the "Serial Port" icon.

[4] Dial-Up Networking service

To use the Dial-up Networking service, double tap the “Dial-Up Networking” icon or select the “Connect” in the contextual menu shown by holding down the icon.

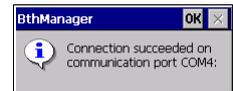
The first available COM port is connected to the DUN (Dial-up Networking) service.

The connection status of the service is shown as below.



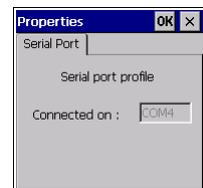
The message shown on the right is displayed when the connection succeeded.

The Bluetooth Manager can still be used normally while connecting to the Dial-up Networking service.



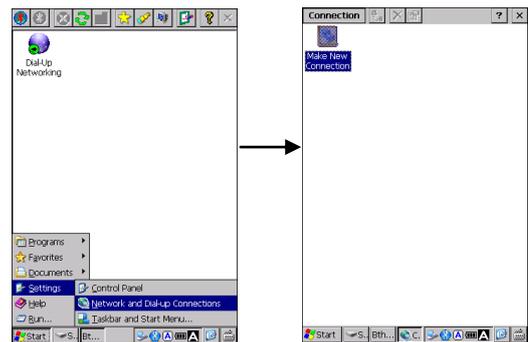
To check the Dial-up properties, select the “Properties” in the contextual menu shown by holding down the “Dial-Up Networking” icon.

The pop-up dialog shown on the right is displayed.

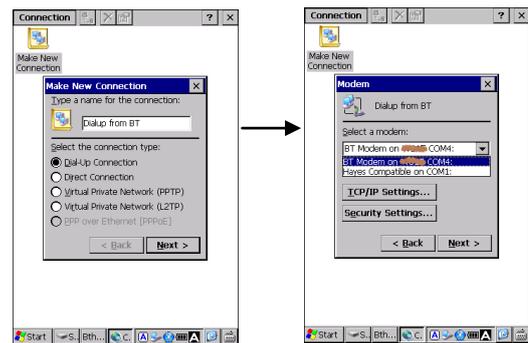


To make a new dial-up connection, follow the steps below.

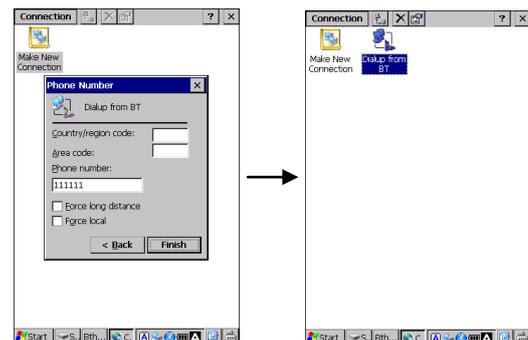
1. Tap the “Start” button in the windows task bar.
2. Tap the “Settings”.
3. Tap the “Network and Dial-up Connections”.
- The "Network and Dial-Up Connection" window is displayed.
4. Tap the "Make New Connection" icon in the "Network and Dial-Up Connection" window.
- The “Make New Connection” dialog is displayed.



5. Select the “Dial-Up Connection” radio button, then tap the “Next” button.
6. Select the “BT Modem on (Bluetooth device name) COMx:”, then tap the “Next” button.
- The “Phone Number” dialog is displayed.

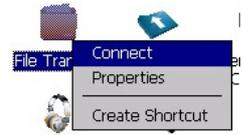


7. Enter the phone number, then tap the “Finish” button.
- The new connection icon is displayed in the window.



[5] File Transfer

To use the file transfer service, double tap the “File Transfer” icon or select the “Connect” in the contextual menu shown by holding down the icon.



The root directory which contains the shared folder of the remote device is displayed in the list view when the connection is successfully established with the remote device.

Double tap the folder icon to see inside of the folder.

To browse folders one level up from the current folder, tap the “Folder” icon 

To receive files from the remote device, double tap the folder icon or choose “Get file” in the contextual menu shown by holding down the folder icon.

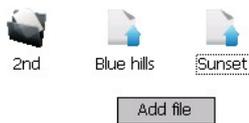


The pop-up dialog shown on the right is displayed to show the transfer progress.

The file is downloaded to the “/Temp” directory in the local device by default. To change the download destination folder, select the “Properties” in the contextual menu shown by holding down the “File Transfer” icon.



To send files to the remote device, hold down blank space in the list window. The “Add file” menu pops up, then tap.



To delete files, select “Delete” in the contextual menu shown by holding down the “File Transfer” icon.



[6] Object Push

To use the object push service, double-tap the “Object Push” icon or select “Push file” in the contextual menu shown by holding down the icon.



The file selection dialog shown on the right is displayed, then select the file to transfer.



To change the transfer speed, select “Properties” in the contextual menu shown by holding down the “Object Push” icon.



The pop-up dialog shown on the right is displayed.

Check the box to set high speed file transfer for object push.
 Uncheck the box to set low speed file transfer for object push.



	Transfer speed	Buffer size (KB)
Checked	High Speed	5000
Unchecked	Low Speed	64

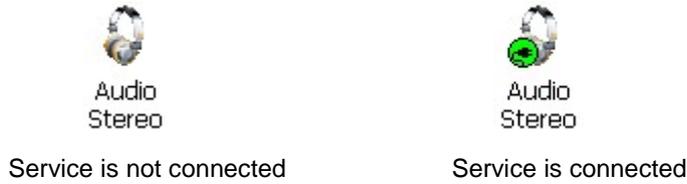
[7] A2DP

The A2DP(Advanced Audio Distribution Profile) is used to transfer a stereo audio signal.

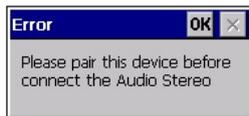
Make sure that the remote device is paired with the local device before using the A2DP service.

To use, double tap the “Audio Stereo” icon or select "Connect" in the contextual menu shown by holding down the “Audio Stereo” icon.

The connection status of the service is shown as below.



If the connection fails, the error message shown below is displayed.



To change the audio profile, select “Properties” in the contextual menu shown by holding down the “Audio Stereo” icon.



[8] HSP

The HSP(Headset Profile) is used to connect to the Bluetooth Headsets.

Make sure that the remote device is paired with the remote device before using the HSP service.

To use, double tap the “HSP” icon or select "Connect" in the contextual menu shown by holding down the “HSP” icon.

The pairing and connection status with the remote device is shown as below.



HSP is not paired



HSP is paired



HSP is paired and connected

The connection status of the service is shown as below



HeadSet Profile

Service is not connected



HeadSet Profile

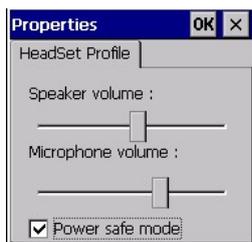
Service is connected

To change the headset profile, select “Properties” in the contextual menu shown by holding down the “HSP” icon

The “Properties” pop-up dialog is displayed.

Use the slider to adjust the speaker and microphone volume levels.

Check the box to enable the power safe mode, uncheck the box to disable.



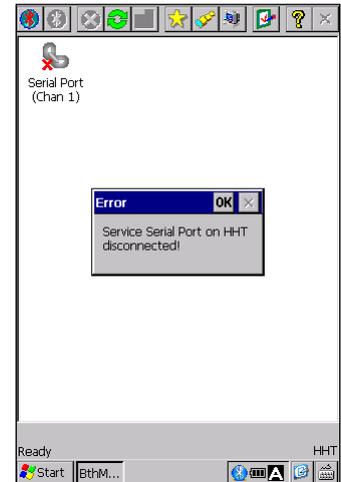
4.6.6 Disconnection management

The error message shown on the right pops up when an unexpected disconnection from the remote device occurs.

The disconnected service icon is displayed as red X.

The unexpected disconnection may be caused by manual disconnection from the remote device, connection drop or weak signals.

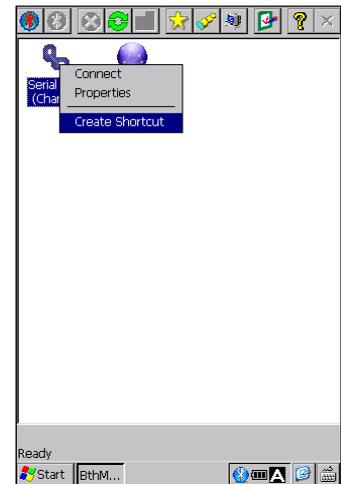
The Bluetooth Manager tries to reconnect to the remote device for 90 seconds after the disconnection occurs.



4.6.7 Service connection shortcuts

The service connection shortcut provides an easy connection to the remote device.

To create a shortcut, select the "Create Shortcut" in the contextual menu shown by holding down the service icon.



The message shown on the right is displayed when the shortcut is successfully created.



The message shown on the right is displayed if the same service connection shortcut already exists.



To display the service connection shortcuts list, tap the "Shortcut" icon  in the tool bar. The service name, device name and COM port number are used in the shortcut names.



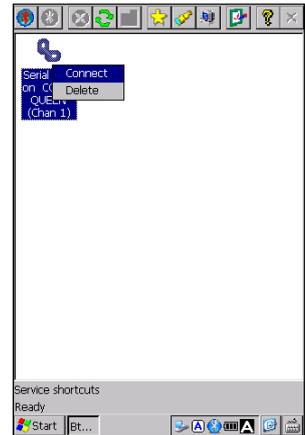
To connect to the remote device by using the shortcut, double tap the icon or select "Connect" in the contextual menu shown by holding down the shortcut icon.

The screen changes from the shortcut screen to the service screen whether or not the connection is established.

The service connection status is displayed in both the service and shortcut icons.

To disconnect the service, use the service icon contextual menu.

The shortcut icon does not provide the function to disconnect the service.



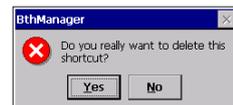
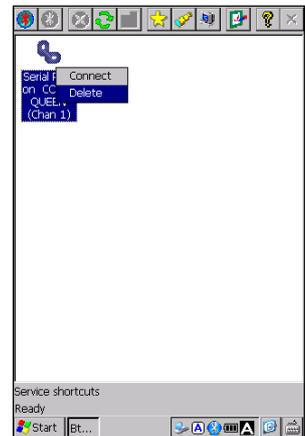
To delete the shortcuts, select "Delete" in the contextual menu shown by holding down the shortcut icon.

The message dialog is displayed.

Tap "Yes" to proceed with deletion.

The message "Shortcut deleted" is displayed when the deletion is completed.

The contents of the shortcut list are saved while the Bluetooth Manager is running.



4.6.8 Version information

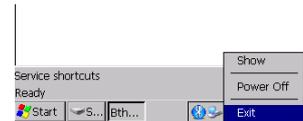
To find the Bluetooth Manager version and license information, tap “About” icon  in the tool bar.



4.6.9 Exit the Bluetooth Manager

The Bluetooth Manager is still running in the background after the main window is closed.

To display the Bluetooth Manager again or exit the Bluetooth Manager, select: “Show” or “Exit” in the contextual menu shown by holding down the Bluetooth icon in the Windows task bar.



Double tapping the “Bluetooth” icon in the System Properties is another way to redisplay the Bluetooth Manager.

4.7 WWAN Manager

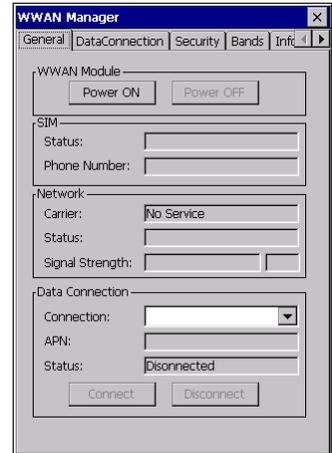
"WWAN Manager" is a wireless WAN setup tool to connect the BHT via a wireless wide area network.

4.7.1 WWAN Manager menu

To open the WWAN Manager, double tap the "Wireless WAN" icon in the System Properties.

The WWAN Manager provides the following menus.

- General:** Turns ON or OFF the WWAN module, connect or disconnect data connection, displays connection status
- Data Connection :** Sets up data connection
- Security :** Authenticates the PIN, enables or disables the SIM PIN, changes the PIN
- Bands :** Displays available frequency bands
- Info :** Displays the IMSI and IMEI information
- Ping:** Checks the WWAN communication status



- Note - Data connection started by the WWAN manager will be disconnected when the WWAN manager is closed.

Do not close the WWAN manager if data connection is needed to be ON.

The power status of the WWAN module will not be changed by closing the WWAN manager.

- Note - When replacing the battery, remove the battery cover after turning off either the WWAN module or the BHT.

- Note - The WWAN module may take some time to turn back ON if turned ON immediately after turning OFF.

- Note - When turning on and off the BHT while the WWAN module is ON, wait at least 30 seconds after turning off the BHT before turning it back on again.

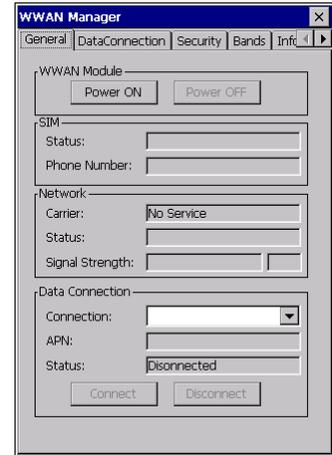
- Point - If the WWAN module is ON at reset (warm boot), the WWAN module will be turned ON after reset (warm boot)

4.7.2 General

Tap the “General” tab in the WWAN manager.
The screen on the right is displayed.

Tap the “Power ON” button to turn ON the WWAN module.
Tap the “Power OFF” button to turn OFF the WWAN module.

The following information is displayed when the WWAN module is ON.



Section	Item	Value	Meaning
SIM	Status	Removed	The SIM card is not inserted or the WWA module is not turned ON.
		Ready	The SIM card is ready to use.
		Waiting for PIN1	Waiting for PIN1 to be entered.
		Waiting for PUK1	Waiting for PUK1 to be entered.
	Phone Number	-	Phone Number
Network	Carrier	No Service	Out of service area, or the WWAN module is not turned ON.
		(Carrier name)	
	Status	GPRS available	GPRS is available
		GPRS in use	GPRS is in use
		EGPRS available	EGPRS is available
		EGPRS in use	EGPRS is in use
		3G available	3G is available
		3G in use	3G is in use
		HSDPA available	HSDPA is available
		HSDPA in use	HSDPA is in use
		HSDPA/HSUPA available	HSDPA/HSUPA is available
HSDPA/HSUPA in use		HSDPA/HSUPA is in use	
Signal Strength	0 - 100	Signal Strength	
Data Connection	Connection	(Connection name)	The connection name set in the data connection tab menu.
	APN	(Access point name)	The access point name set in the data connection tab menu.
	Status	Disconnected	Data connection is disconnected.
Connected		Data connection is connected.	

- Note - If the above information is not shown, tap the “Power OFF” button then tap the “Power ON” button to restart the WWAN module.
If the internet connection is disconnected, tap the “Disconnect” button then tap the “Connect” button to reconnect to the internet.

The “Connect” and “Disconnect” button will be enabled when data connection settings are configured. Tap the “Connect” button to start data connection, and tap the “Disconnect” button to stop data connection. Refer to 4.7.3 DataConnection – [1] Data connection setup for details.

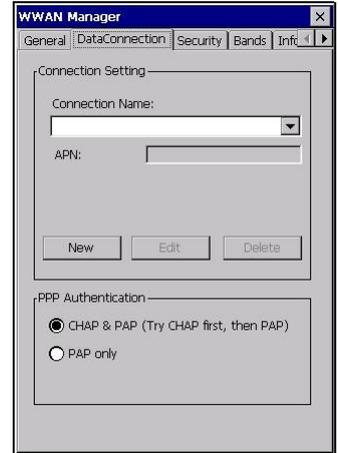
4.7.3 DataConnection

Tap the “DataConnection” tab in the WWAN manager.
The screen on the right is displayed.

- “New” button : Creates a new connection
- “Edit” button : Edits the connection selected in the Connection Name field.
- “Delete” button : Deletes the connection selected in the Connection Name field.

PPP authentication method is selectable by clicking the radio button.

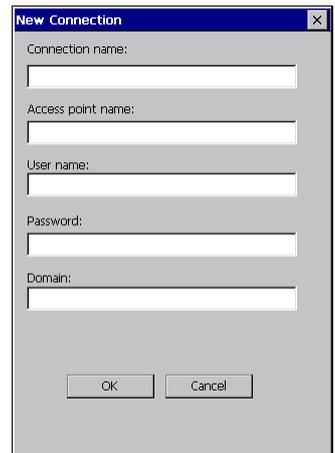
- Note - Select "PAP only" if your internet service provider supports only for PAP.



[1] Data connection setup

In order to connect to the internet, tap the “New” button then follow the steps below.

1. Enter a connection name in the “Connection name” field.
2. Enter the following information provided by the internet service provider.
 - Access point name (APN)
 - User name (if required by the internet provider)
 - Password (if required by the internet provider)
 - Domain (if required by the internet provider)
3. Tap the “OK” button after all the necessary information is entered.
4. Tap the “General” tab.
 - Select the connection created from the pull-down list in the “Connection” field.
 - Then tap the “Connect” button.
 - “Connected” is displayed in the “Status” field when connected to the internet.
5. Tap the “Edit” button if the connection settings need to be changed.



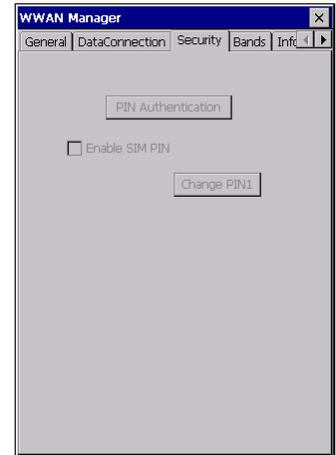
4.7.4 Security

Tap the "Security" tab in the WWAN manager.
The screen on the right is displayed.

"PIN Authentication" button : Enters the PIN/PUK.
(This button is displayed until the SIM card PIN1/PUK1 is entered.)

Enable SIM PIN : Enables or disables the SIM PIN.

Change PIN1 : Changes the PIN
(This button is displayed while the SIM PIN is enabled.)



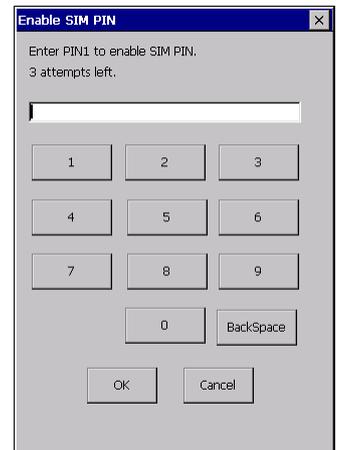
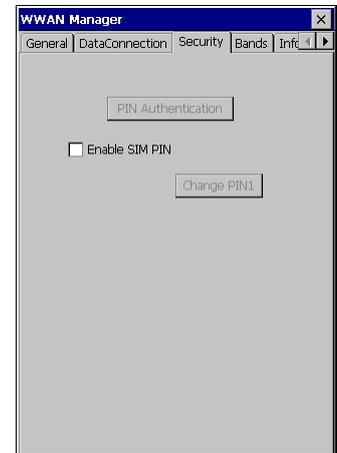
-
- Note -**
- If a wrong PIN1 is entered 3 times, the WWAN manager will prompt for the PUK1. Enter the PUK1 and a new PIN1.
 - If a wrong PUK1 is entered 10 times, the SIM card will be locked permanently. In this case, contact your internet service provider.
 - The number of remaining attempts to enter the correct PIN1 or PUK1 will be displayed on each PIN1/PUK1 entry screen.
-

[1] Enable SIM PIN

Enabling the SIM PIN prevents unauthorized use of the SIM card.
The WWAN manager prompts for the PIN1 when the WWAN module is turned ON, when SIM PIN is enabled.
Network connection cannot be established until the PIN1 is entered.

Follow the steps below to enable or disable the SIM PIN.

1. To enable the SIM PIN, check the "Enable SIM PIN" check box.
To disable the SIM PIN, uncheck the "Enable SIM PIN" check box.
2. Enter the PIN then tap the "OK" button.



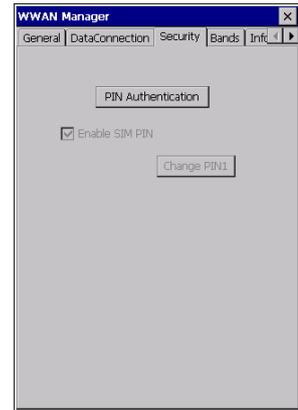
[2] PIN Authentication

The PIN1/PUK1 authentication is necessary in order to connect to a network while the SIM PIN is enabled.

The “PIN Authentication” button is displayed when the PIN1/PUK1 is required to be entered.

Follow the steps below for the PIN1/PUK1 authentication.

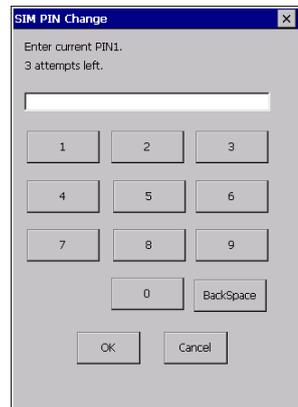
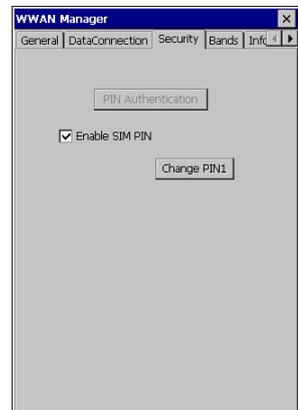
1. Tap the “PIN Authentication” button.
2. Enter the PIN1 then tap the “OK” button.
Enter the PUK1 and a new PIN1 then tap the “OK” button.



[3] Change SIM PIN

Follow the steps below if the PIN1 is necessary to change.

1. Tap the “Change PIN1” button.
2. Enter the current PIN1 then tap the “OK” button.
3. Enter a new PIN1 then tap the “OK” button.

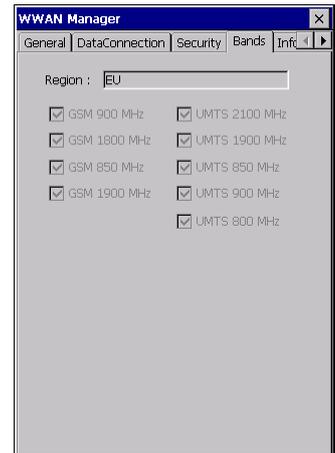


4.7.5 Bands

Tap the “Band” tab in the WWAN manager.

The screen on the right is displayed.

The check boxes for the frequency bands available in the region are checked when the WWAN module is ON.

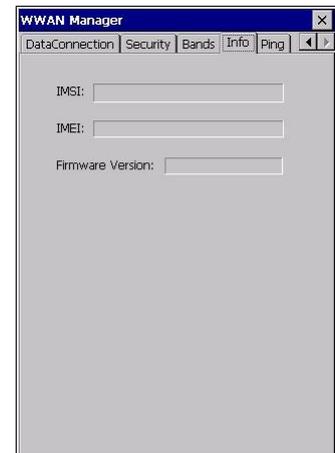


4.7.6 Info

Tap the “Info” tab in the WWAN manager.

The following information is displayed when the WWAN module is ON.

IMSI : International Mobile Subscriber Identity
 IMEI : International Mobile Equipment Identifier
 Firmware Version



4.7.7 Ping

Tap the “Ping” tab in the WWAN manager to check the WWAN communication status.

The screen on the right is displayed.

- Destination IP : Sets the destination device IP address
- Interval : Sets the ping time interval
- OK / Total : Displays the ping results.
Ping success count / Ping total count

- Note - Refer to “4.7.2 General” for the details of the “Network” and “Data Connection” section.

- “Start” / “End” button : Starts or ends ping.
- “Option” button : Sets the ping options.

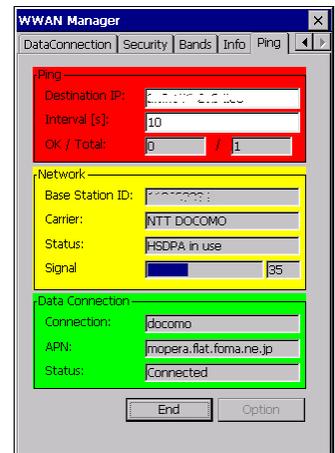
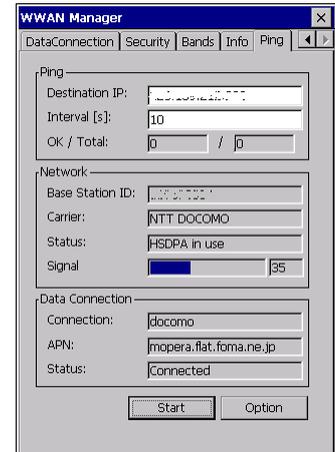
- OK Sound : Plays an OK sound when a ping succeeded.
- NG Sound : Plays an NG sound when a ping timeout occurs.
- Dialog Color : Uses the background color for each dialog group to classify the status by color.

Group	Color	Status
Ping	Green	Ping succeeded.
	Red	Ping timeout occurred.
Network	Green	4 or more antennas exist.
	Yellow	3 or less antennas exist.
	Red	1 or none antenna exists.
Data Connection	Green	Data connection is connected
	Red	Data connection is disconnected

File save : Saves the ping logs in the following file.

- File path : \Flash\3Glog
- File name : \$3Glog_ "serial number of the device".log
- Log contents : time(hh:mm:ss), ping status(OK/NG), BHT IP address, carrier name, network status, signal strength, base station ID, GPS latitude and longitude.

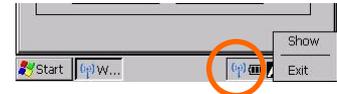
- Note - GPS data will be obtained in a few minutes after the ping is started.
The BHT will not be turned OFF while ping.



4.7.8 Exit the WWAN Manager

The WWAN Manager is still running in the background after the main window is closed.

To display the WWAN Manager again or exit the WWAN Manager, select: "Show" or "Exit" in the contextual menu shown by holding down the WWAN Manager icon in the Windows task bar.



Double tapping the "Wireless WAN" icon in the System Properties is another way to redisplay the WWAN Manager.

4.7.9 Automatic Power Restore

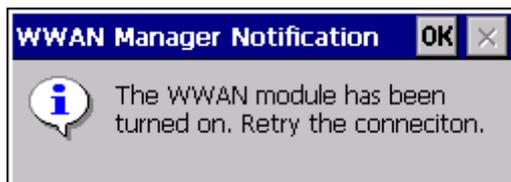
The 3G module stays in power saving mode even after the BHT goes into suspend mode by turning the power off.

However, the 3G module will be forcibly powered off when either one of the following events occurs.

- The battery cover is opened.
- The battery voltage is dropped below the level of proper startup.

After the forcible shutdown, the 3G module power automatically restores when the BHT is turned on.

The following message will appear if the WWAN manager is activated after the automatic power restore of the 3G module.



Data connection will not resume on automatic power restore.

Reconnect to the network manually after confirming that the BHT is in the 3G service area either by tapping the "Connect" button in the "General" tab or by using the application.

4.7.10 Error Message

Error Message	Solution
Data connection is not configured.	Configure the settings in the "DataConnection" tab menu.
The connection name is invalid. Correct it.	The connection name must be alphanumeric with at least one character. The following symbols cannot be used for the connection name. | > < ? * \ / :
The connection name already exists. Change it.	The connection name entered already exists. Change the connection name.
Data Connection has been terminated. Retry the connection.	Data Connection has been terminated. Restart the data communication
RasDial Error XXX	Refer to the link below for the error code details. http://support.microsoft.com/kb/163111/en-us
Insert SIM card.	Insert SIM card.
PIN1 is a 4 to 8 digits code.	Enter a 4 to 8 digits code for PIN1.
PUK1 is an 8 digits code.	Enter an 8 digits code for PUK1.
PIN1 is incorrect.	Enter the correct PIN1.
PUK1 is incorrect.	Enter the correct PUK1.

4.8 Scanner Reading Parameters

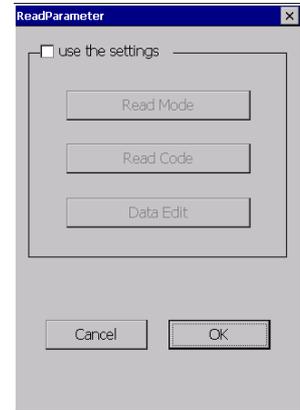
The setup menu for the scanner reading parameters can be launched from the System Properties menu or Hard Test menu.

4.8.1 Top Menu

- use the settings: Enables or disables the menu.
Default is unchecked (disabled).
- Read Mode: Sets the scanner reading mode.
- Read Code: Sets up the readable codes.
- Data Edit: Edits data read by the scanner.

Tap the "OK" button to make the new settings take effect and exit the menu.
The new settings are stored in the registry.

Tap the "Cancel" button to abort the changes and exit the menu.



4.8.2 Read Mode

The Read Mode menu is used to set the scanner reading mode.
Select one from the following 5 modes.

- Auto Off: Auto-Off mode
- Momentary: Momentary switching mode
- Alternate: Alternate switching mode
- Continuous: Continuous reading mode
- Trigger release: Trigger release mode

- Beeper: Activates the beeper and or vibrator when the scanning is completed.



Auto-off mode :

The illumination LED turns on when the trigger key is pressed, and turns off when the trigger key is released or a code is read.

The illumination LED turns on continuously for a maximum of 5 seconds while the trigger key is pressed. When the illumination LED turns off after 5 seconds has elapsed, press the trigger key again.

The BHT reads a code while the illumination LED is turned on.

When a first code is read successfully or the code device file is closed, the BHT no longer reads a code.

In order to read the next code, read out the scanned data from the code buffer, then press the trigger key again.

Momentary switching mode :

Only while the trigger key is held down, the illumination LED turns on and the BHT can read a code. The illumination LED does not turn back on by pressing the trigger key thus the BHT does not read the next code, unless the scanned data is read out from the barcode buffer.

Alternate switching mode :

The illumination LED turns on when the trigger key is pressed, and does not turn off until the code device file is closed or the trigger key is pressed again.

The illumination LED turns ON and OFF alternately by pressing the trigger key.

The BHT reads a code while the illumination LED is turned on, but does not read a next code until the scanned data is read out from the code buffer.

Continuous reading mode :

The illumination LED turns on regardless of the trigger key, and turns off when the code device file is closed.

The BHT reads a code while the illumination LED is turned on, but does not read a next code until the scanned data is read out from the code buffer.

Trigger release mode:

The aimer* illuminates when the trigger key is pressed. When the trigger key is released, the illumination LED turns on and the BHT starts reading a code. The BHT goes into standby state when a code is read or after the reading time has elapsed. Aiming restarts when the trigger key is pressed again.

This mode is used to read a specific code in an area where codes are closely spaced.

* The marker functions as an aimer for the BHT equipped with the marker.

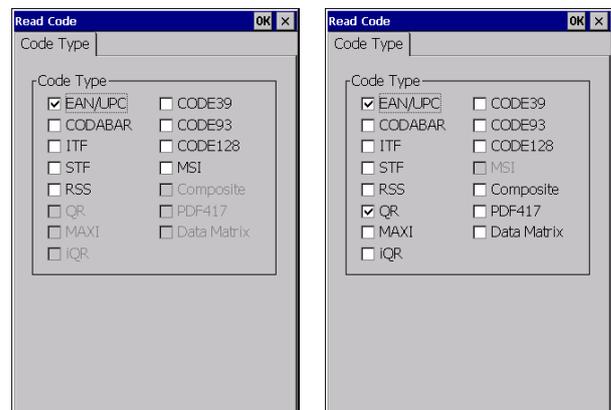
The illumination LED functions as an aimer for the BHT not equipped with the marker

4.8.3 Read Code

The Read Code menu is used to set up the readable codes and parameters.

The codes grayed out are not available.

The parameter for each code is displayed when a check box is checked.



BHT-1200B

BHT-1200Q

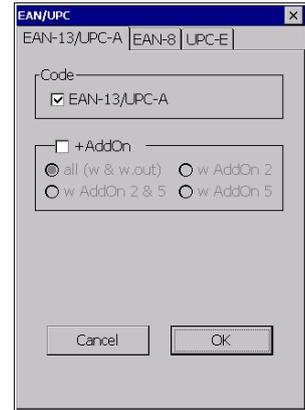
[1] EAN/UPC (EAN-13/UPC-A, EAN-8, UPC-E)

The parameter screen shown on the right is displayed when “EAN/UPC” is checked in the Read Code menu.

Tap each tab, to set up the parameters for EAN-13/UPC-A, EAN-8 or UPC-E.

Code: Enables the code reading.

+AddOn: Enables the add-on code reading.
For the BHT-1200B, the readable add-on codes can be selected by checking a radio button listed below.



	Readable codes		
	No add-on	With 2 digit add-on	With 5 digit add-on
all (w&w.out)	√	√	√
W AddOn 2 & 5	-	√	√
W AddOn 2	-	√	-
W AddOn 5	-	-	√

[2] CODE39, CODABAR, ITF, STF

The parameter screen shown on the right is displayed when “CODE39”, “CODABAR”, “ITF” or “STF” is checked in the Read Code menu.

Code: Enables the code reading.
Specify the minimum and maximum numbers of digits to be read, if the code is enabled.
The codes within the specified range are read.

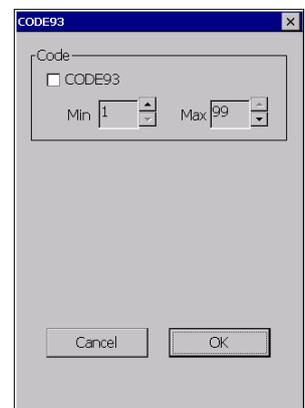
Check Digit: Enables reading of only codes with check digit.



[3] CODE93, CODE128

The parameter screen shown on the right is displayed when “CODE93” or “CODE128” is checked in the Read Code menu.

Code: Enables the code reading.
Specify the minimum and maximum numbers of digits to be read, if the code is enabled.
The codes within the specified range are read.



[4] MSI

The parameter screen shown on the right is displayed when “MSI” is checked in the Read Code menu.

Code: Enables the code reading.
Specify the minimum and maximum numbers of digits to be read, if the code is enabled.
The codes within the specified range are read.

Check Digit: Select the radio button “Single” or “Double”.
“Single” uses a one-digit character for the check digit.
“Double” uses two-digit characters for the check digit.

[5] RSS (RSS-14, RSS Limited, RSS Expanded)

The parameter screen shown on the right is displayed when “RSS” is checked in the Read Code menu.

Tap each tab, to set up the parameters for RSS-14, RSS Limited or RSS Expanded.

Code: Enables the code reading.
Stacked: Enables the stacked code reading.
(Only for RSS-14 and RSS Expanded)

[6] EAN UCC Composite, PDF (PDF417, Micro PDF417), MAXI

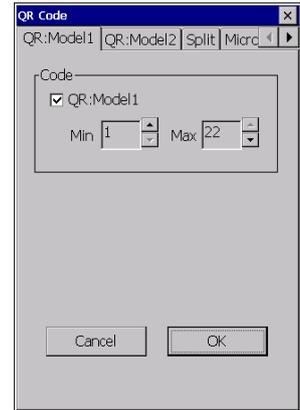
The parameter screen shown on the right is displayed when “Composite” or “MAXI” is checked in the Read Code menu.

Code: Enables the code reading.

[7] QR (Model1, Model2, MicroQR, SQRC), iQR

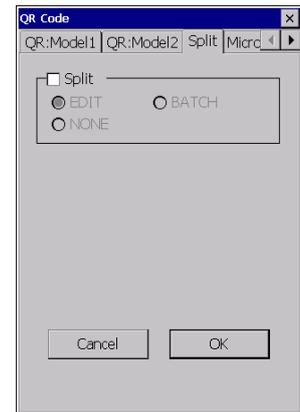
The parameter screen shown on the right is displayed when “QR” or “iQR” is checked in the Read Code menu.

Code: Enables the code reading.
Specify the minimum and maximum versions to be read, if the code is enabled.
The codes within the specified range are read.



The screen shown on the right is displayed when the “Split” tab is tapped.

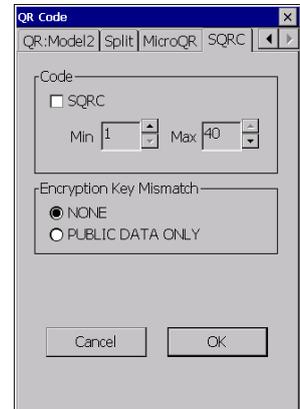
Split : Enables the split QR codes reading.
Select a radio button from the following three choices to set up how the split QR codes are handled.
“EDIT”: The scanned data is accumulated and edited before sending out. (The split SQRC codes cannot be read.)
“BATCH”: The scanned data is reconstructed as a single QR code and sent out when all split codes divided from a single QR code are read at once. (Only for QR codes).
“NONE”: The scanned data is sent out each time when a single split QR code is read.



The screen shown on the right is displayed when the “SQRC” tab is tapped.

Code: Enables the SQRC code reading.
Specify the minimum and maximum versions to be read, if the code is enabled.
The codes within the specified range are read.

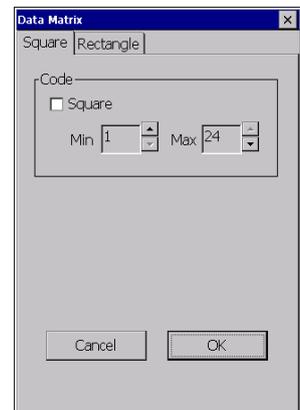
Encryption Key Mismatch:
Select the radio button to determine how the BHT reads the SQRC codes when the encryption key does not match.
“NONE”: SQRC code is not read.
“PUBLIC DATA ONLY”:
Reads only the SQRC code public data.



[8] Data Matrix (Square, Rectangle)

The parameter screen shown on the right is displayed when “Data Matrix” is checked in the Read Code menu.

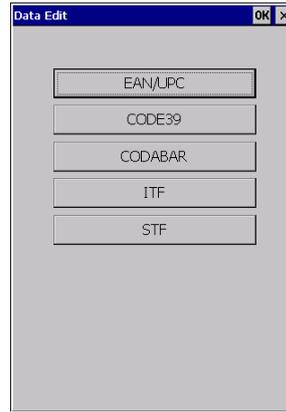
Code: Enables the code reading.
Specify the minimum and maximum versions to be read, if the code is enabled.
The codes within the specified range are read.



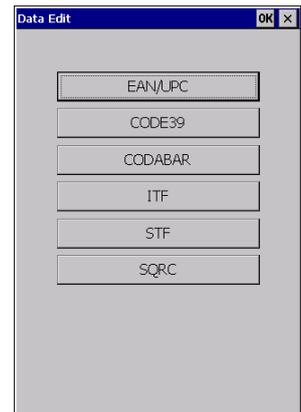
4.8.4 Data Edit

The Data Edit menu is used to set up the parameters for each code to edit the scanned data.

Tap each button to open the parameters.



BHT-1200B



BHT-1200Q

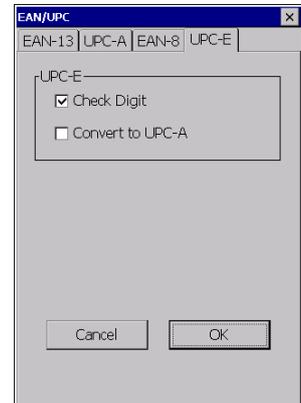
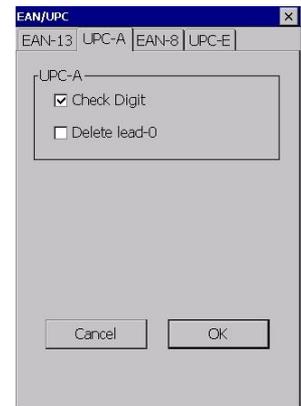
[1] EAN/UPC

The screens shown on the right are displayed when the “EAN/UPC” button is double tapped in the Data Edit menu.

Check Digit: Check the box to add the check digit to the code data.

Delete Lead-0: Check the box to delete a leading '0' from the UPC-A data.

Convert to UPC-A: Check the box to convert a UPC-E code to the UPC-A code.



[2] CODE 39

The screen shown on the right is displayed when the “CODE 39” button is double tapped in the Data Edit menu.

Check Digit: Check the box to add the check digit to the CODE39 data.

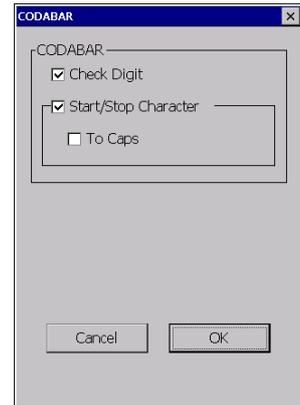
Start/Stop Character: Check the box to add start/stop characters to the CODE39 data.



[3] CODABAR

The screen shown on the right is displayed when the “CODABAR” button is double tapped in the Data Edit menu.

- Check Digit: Check the box to add the check digit to the CODABAR data.
- Start/Stop Character: Check the box to add start/stop characters to the CODABAR data.
- To Caps: Check the box to convert start/stop characters to uppercase characters.



[4] ITF

The screen shown on the right is displayed when the “ITF” button is double tapped in the Data Edit menu.

- Check Digit: Check the box to add the check digit to the ITF data.



[5] STF

The screen shown on the right is displayed when the “STF” button is double tapped in the Data Edit menu.

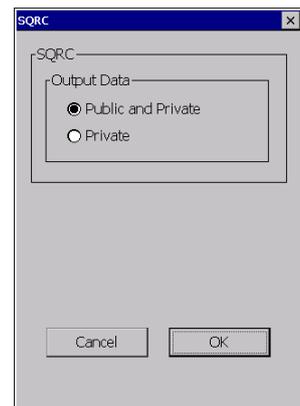
- Check Digit: Check the box to add the check digit to the STF data.



[6] SQRC

The screen shown on the right is displayed when the “SQRC” button is double tapped in the Data Edit menu.

- Output Data: Select the radio button to determine the output data type.
 - Public and Private: Outputs both the public data and private data.
 - Private: Outputs only the private data.



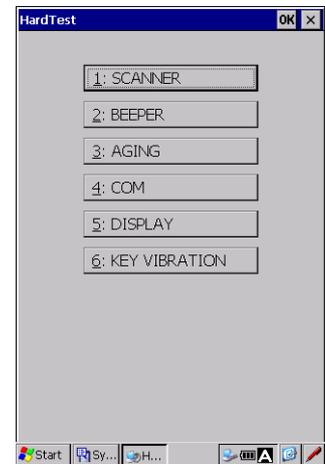
4.9 Hard Test Menu

4.9.1 HardTest Menu

The “HardTest” menu is used to perform the following hardware tests for the BHT. To open the HardTest menu, tap “4:Test” in the System Menu.

[1] SCANNER:	Performs a barcode scanning test.
[2] BEEPER :	Performs a beeper scale test.
[3] AGING:	Performs an aging test.
[4] COM:	Performs a communication test.
[5] DISPLAY:	Performs an LCD and indicator LED test.
[6] KEY VIBRATION:	Performs a key entry and vibrator test.

– Note – Contact your sales dealer if an error occurs during the above tests.

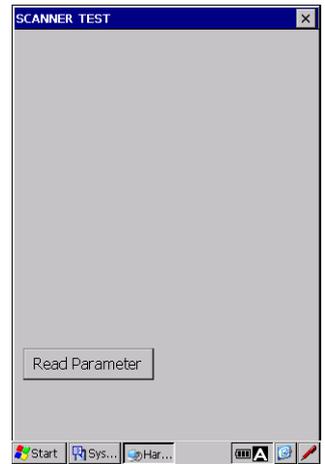


[1] Code Scanning Test

BHT-1200B Series

Tap the “1: SCANNER” button in the HardTest menu to perform a code scanning test. The screen shown on the right is displayed.

Scan an actual code with the BHT, and confirm that the scanned data matches with the data shown on the screen.



When a code is scanned, the LED indicator illuminates in blue, and the beeper sounds once.

The scanned code type, number of digits and scanned data are displayed in the screen.

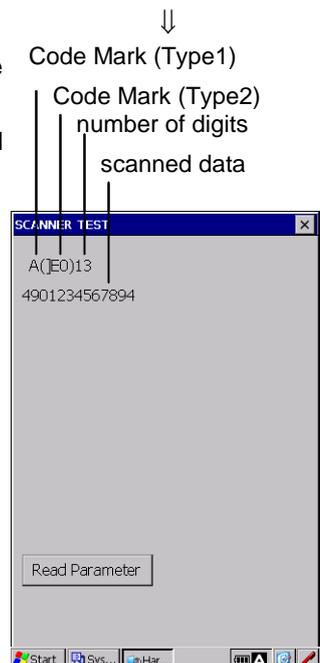
The code type and number of digits are displayed in the order shown below.

Code Mark TYPE1 (Code Mark TYPE2) number of digits

The scanned codes are displayed as characters.

The characters displayed on the screen vary depending on the code types as shown in the table on the next page.

Read Parameter: Opens the scanner reading parameter menu. (refer to "4.8 Scanner Reading Parameter")



Code mark

Code type		1200B	1200Q	Characters	
				Code mark Type1	Code mark Type2 ^{*1}
EAN-13 (JAN-13)	Without add-on	√	√	A	]E0
	With 2-digit add-on	√	√	A	]E3
	With 5-digit add-on	√	√	A	]E3
UPC-A	Without add-on	√	√	A	]X0
	With 2-digit add-on	√	√	A	]X3
	With 5-digit add-on	√	√	A	]X3
EAN-8 (JAN-8)	Without add-on	√	√	B	]E4
	With 2-digit add-on	√	√	B	]E5
	With 5-digit add-on	√	√	B	]E6
UPC-E	Without add-on	√	√	C	]X0
	With 2-digit add-on	√	√	C	]X3
	With 5-digit add-on	√	√	C	]X3
Interleaved 2of5 (ITF)		√	√	I	]Im
Standard 2of5 (STF)	Short	√	√	H	]R0
	Normal	√	√	H	]S0
Codabar (NW7)		√	√	N	]Fm
Code 39		√	√	M	]Am
Code 93		√	√	L	]G0
Code 128		√	√	K	]Cm
GS1-128 (EAN-128)		√	√	W	]C1
GS1 DataBar (RSS)		√	√	R	]e0
MSI		√	–	M	]M1
QR		–	√	Q	]Qm
QR (Split in non-edit mode)		–	√	S	S
Micro QR		–	√	Q	Q(*2)
SQRC		–	√	Q	Q(*2)
iQR		–	√	G	]Qm
iQR (Split in non-edit mode)		–	√	S	S
PDF417		–	√	Y	]L0
MaxiCode		–	√	X	]Um
Data Matrix		–	√	Z	]dm

– : not supported √ : Supported

^{*1} Codemark Type2 is a code mark system which complies with “Guidelines on Symbology Identifiers” of AIM USA. The last character “m” varies depending on the data format of the barcode system, as shown in the table on the next page.

Example)]11]: Flag Character (ASCII 93)

I: Code Character (ITF)

1: Modifier Character (see the table below)

The code mark is “]11” if the ITF code is set to add the C/D (Check digits) when scanned.

^{*2} For code types not compliant with the AIM USA "Guidelines on Symbology Identifiers," the characters are the same as the code mark Type 1.

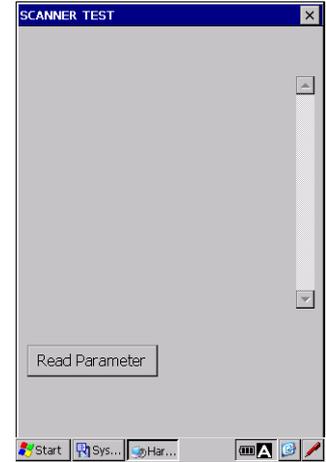
Code type	Modifer Character	Description
Interleaved 2of5 (ITF)	0	Read without C/D
	1	Read with C/D
Code 39	0	Read without C/D
	1	Read with C/D
Codabar (NW-7)	0	Read without C/D
	1	Read with C/D
Code 128	0	No FNC1 is in the 1 st and 2 nd character positions after the start code.
	2	FNC1 is in the 2 nd character position after the start code.
QR code	0	Model 1
	1	Model 2
	3	Model 2 FNC1 is in the 1 st character position after the start code.
iQRcode	A	No FNC1 is in the 1 st character position after the start code.
	C	FNC1 is in the 1 st character position after the start code.
MaxiCode	0	mode4, mode5
	1	mode2, mode3
Data Matrix	1	ECC-200
	2	ECC-200 FNC1 is in the 1 st or 5 th character position after the start code
	3	ECC-200 FNC1 is in the 2 nd or 6 th character position after the start code

C/D: Check digits

BHT-1200Q Series

Tap the "1: SCANNER" button in the HardTest menu to perform the code scanning test. The screen shown on the right is displayed.

Scan an actual code with the BHT, and confirm that the scanned data matches with the data shown on the screen.



Code Mark (Type1)

Code Mark (Type2)

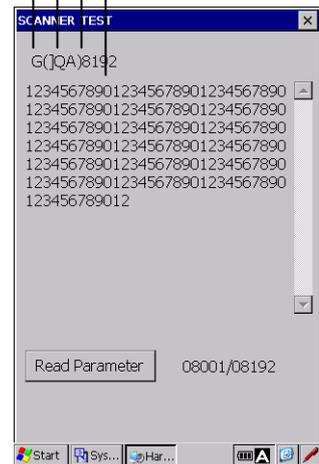
number of digits

scanned data

When a code is scanned, the LED indicator illuminates in blue, and the beeper sounds once.

The scanned code type, number of digits and scanned data are displayed in the screen.

The code type and number of digits are displayed with bold italic fonts in the order as shown below.



Code Mark TYPE1 (Code Mark TYPE2) number of digits

When the scanned data exceeds 500 bytes, tap the down arrow on the right side of the screen to view the next data, and tap the up arrow to view the previous data.

Read Parameter: Opens the scanner reading parameter menu. (refer to "4.8 Scanner Reading Parameter")

- **Point** - QR code and iQR code can be divided up to 16 codes from a single code. The multiple codes divided are called split codes. The split codes are reconstructed as a single code when all split codes are read.

The beeper sounds differently when the split codes are read. The beeper sounds twice when the first split code is read, then the BHT goes into the split code reading mode. For the second and subsequent readings, the beeper sounds once every time the split code is read. The read data is displayed all at once as a complete code when all split codes are read.

During the split code reading, if a non-split QR or iQR code is read, the trigger key is released, or a next split code is not read within 5 seconds;

- a non-split code just read is displayed on the screen, then
- the split code reading mode is cancelled, and
- the split codes already read are discarded.

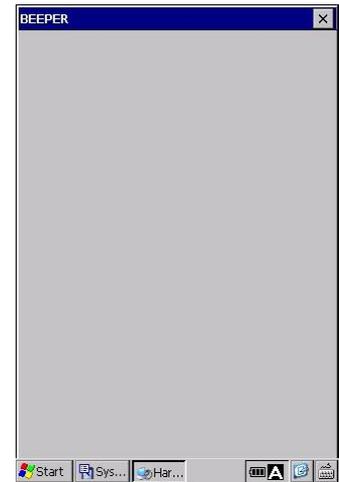
The split codes can be read in random order. The same split code will not be read twice.

[2] Beeper Scale Test

Tap the “2:BEEPER” button in the HardTest menu to perform the beeper scale test. The screen shown on the right is displayed, and the beeper sounds two octave major scales shown as below.

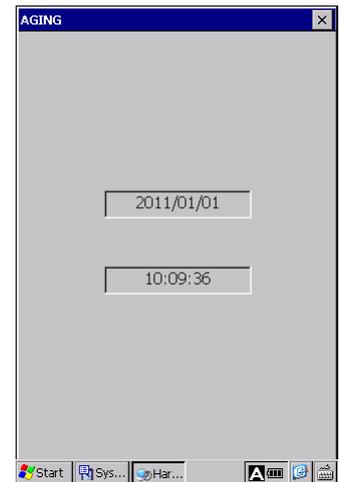
The BHT automatically returns to the HardTest menu after two octave major scales are played.

Scale	Frequency (Hz)		
do	1046	2093	4186
re	1174	2349	–
mi	1318	2637	–
fa	1396	2793	–
sol	1567	3135	–
la	1760	3520	–
ti	1975	3951	–

**[3] Aging Test**

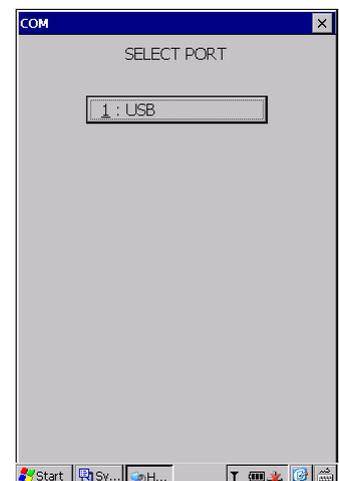
Tap the “3:AGING” button in the HardTest menu to perform the aging test. The current date and time are displayed during the aging test. (This test is intended for pre-shipment inspection at the factory)

– Note – The automatic power-off function is disabled during the aging test.

**[4] Communication Test**

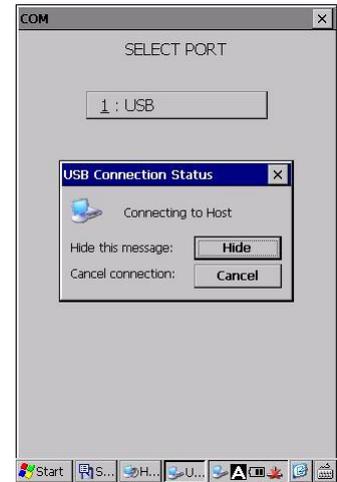
Tap the “4:COM” button in the HardTest menu to perform the communication test for the USB interface port.

1:USB: Performs the USB interface test.



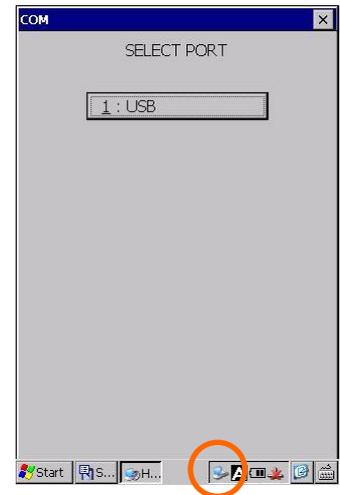
USB Interface Test

Tap the "1:USB" button in the COM menu to start the USB interface test. The BHT starts connecting to the host computer using ActiveSync/WMDC. The pop-up dialog is displayed during connection. Tap the "Hide" button to close the dialog or the "Cancel" button to cancel the test.



If the ActiveSync/WMDC connection is established...

If the ActiveSync/WMDC connection is established, the "Network Begin" message sounds and the ActiveSync/WMDC icon is displayed in the task bar (red circle shown on the right).



If the ActiveSync/WMDC connection fails...

If the ActiveSync/WMDC connection fails, the ActiveSync icon is not displayed in the task bar.

[5] LCD and LED Indicator Test

Tap the “5:DISPLAY” button in the HardTest menu to perform the LCD and LED indicator test.

The black test pattern on the right is displayed, and the LED indicator illuminates in blue.

Press the **ENT** key to proceed to the next test pattern.

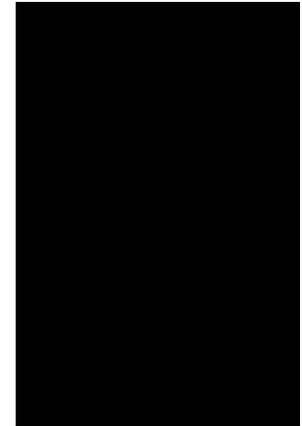
Press the **BS** key to return to the previous test pattern.



BS key ↑ ↓ ENT key

The second screen is black as shown on the right.

The LED indicator changes to red when the black screen is displayed.



BS key ↑ ↓ ENT key

The third screen is gray as shown on the right.

The LED indicator turns off when the gray screen is displayed.

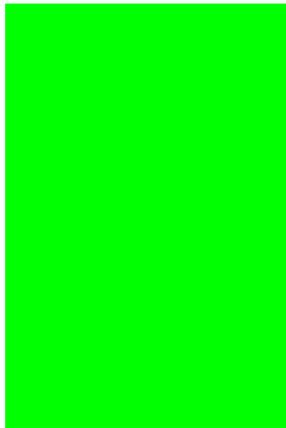
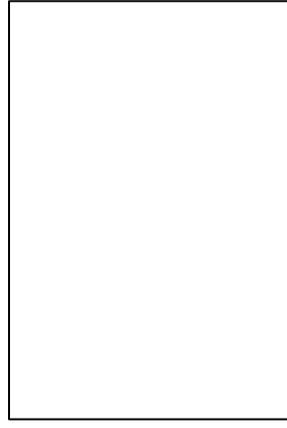
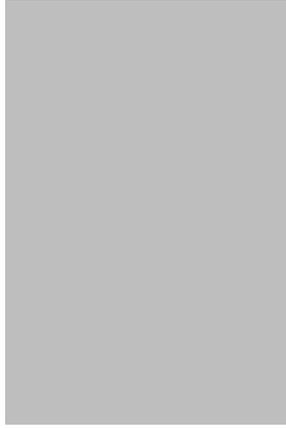


BS key ↑ ↓ ENT key

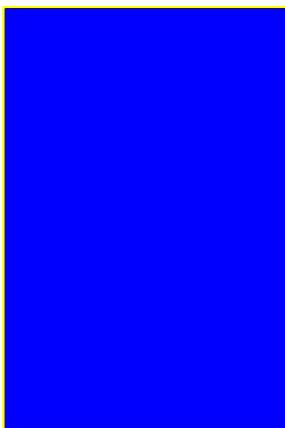
BHT-1200 Series

For the forth and subsequent screens, the color changes in the order as shown below. (gray, light gray, white)

While the red, green or blue screen is displayed, the LED indicator illuminates in the same color (red, green or blue) displayed on the screen.



The LED indicator illuminates in red and blue, when the blue screen with the one-dot width of yellow outlines is displayed



Press the **ENT** key to return to the HardTest menu.

[6] Key Entry and Vibrator Test

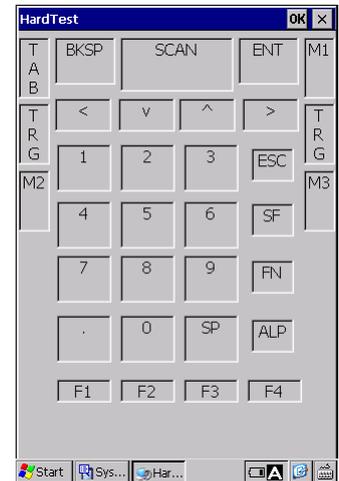
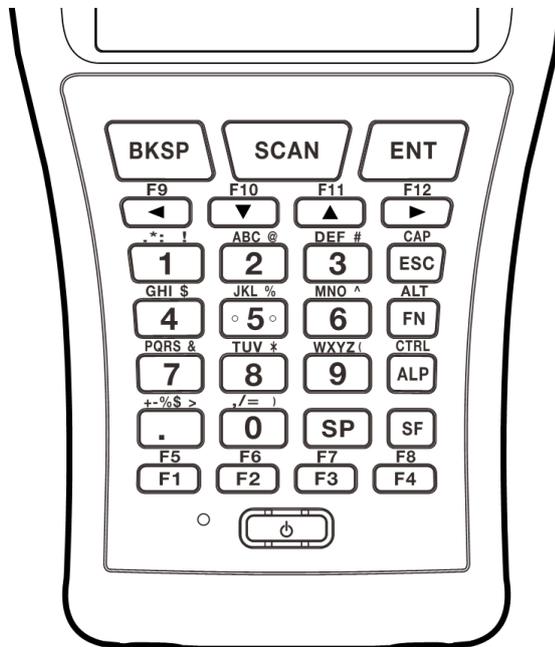
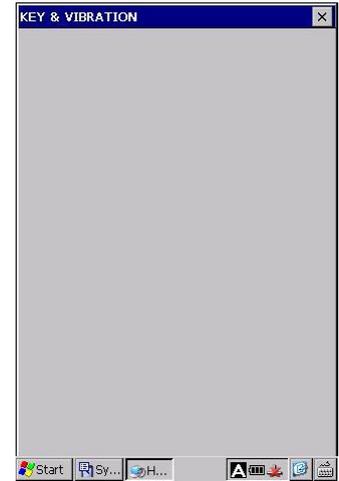
Tap the “6:KEY VIBRATION” button in the HardTest menu to perform a key entry and vibrator test.

The screen shown on the right is displayed and the BHT waits for a key entry.

Any key pressed is displayed on the screen and stays displayed until all keys are pressed.

The vibrator works when the “SCAN” key or right trigger key or left trigger key is pressed.

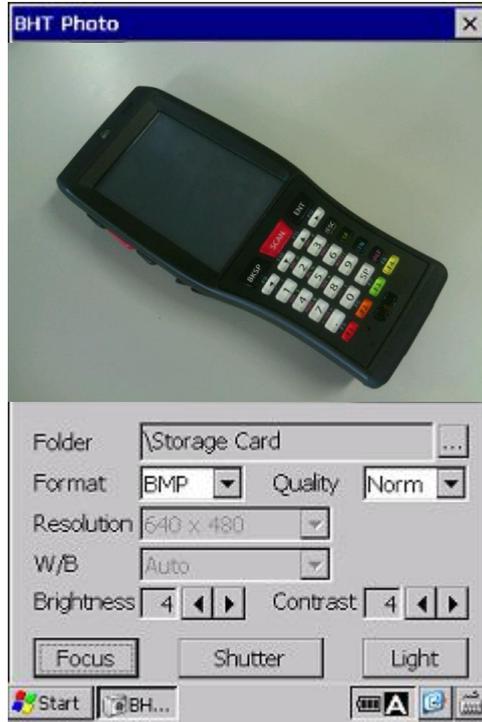
When the screen displays all keys as shown on the right blow, the BHT automatically finishes the test and returns to the HardTest menu.



4.10 BHT Photo

“BHT Photo” is used to take photos with the BHT.

In the **Start** menu, tap Programs > BHTPhoto > BHTPhoto to start up the BHTPhoto.



- Folder** : Folder path to the captured images
- Format** : Choose a still image format.
- Quality** : Choose a still image quality.
- Resolution** : Choose a still image resolution.
- W/B** : Choose a white balance mode for the camera image.
- Brightness** : Adjust brightness for the camera image.
- Contrast** : Adjust contrast for the camera image.

– Note – The camera cannot be used while the barcode device is in use.

– Note – The auto-rotate screen is disabled while the BHT Photo is running.
If the BHT Photo is started while the screen is rotated, the screen rotation angle changes to 0 degree then changes back to the previous angle after the BHT Photo is closed.

– Note – The CPU does not go into the standby mode while the camera is in use, thus the battery is consumed faster. Close the BHT Photo to save the battery power when finished taking images.

4.10.1 Taking Still Images

To take still images, tap the **“Shutter”** button or press the **Scan** key.

Still image files are saved in the folder selected in the **“Folder”** field.

The file name starts with **“IMG”** followed by a five-digit sequence number and file extension.

The **“Focus”** button is used to adjust focus before taking a still image.

The auto focus starts and the white focus frame appears when the **“Focus”** button is tapped.

The focus frame changes to green when the auto focus succeeded, and changes to orange when the auto focus failed.

The **“Light”** button is used to turn on or off the camera flash.

-
- **Note** – For the JPG format image file, the compression level of the captured still images vary depending on the quality level selected.

Example:

Sample image

Resolution:640x480



Format	JPG			BMP
Quality	Fine	Norm	Eco	-
Compression level	Low	Middle	High	-
Size of file	56KB	29KB	20KB	600KB

4.10.2 Changing the image save folder

To change the image save folder, tap the **“...”** button on the right of the **“Folder”** field.

The folder selection dialog box is displayed.

Select the folder from the dialog box and tap the **“OK”** button.

4.11 Application Launcher

The Application Launcher is an application guard tool that is used to restrict the use of applications for the BHT end users in order to ensure smooth BHT operation.

The end users are allowed to use only listed applications determined by the administrator.

The Application Launcher also restricts Windows desktop operation to prevent the end users from using non-listed applications or changing any configuration.

4.11.1 Main menu

The Application Launcher provides the following functions.

- (1) User mode
- (2) Admin mode
- (3) Adding applications to both modes
- (4) Settings



User mode



Administrator mode

The Application Launcher runs in two modes; user and administrator mode. The user mode is the default. In user mode, users have limited access to applications, and the Application Launcher window cannot be minimized or closed, change menus or configurations.

The Application Launcher monitors all application activities in the user mode, and stops any non-listed application from starting up.

The administrator mode allows full control of the Application Launcher.

When switching to administrator mode, the Application Launcher prompts for the administrator password.

4.11.2 Initial setup

- (1) Enabling the Application Launcher

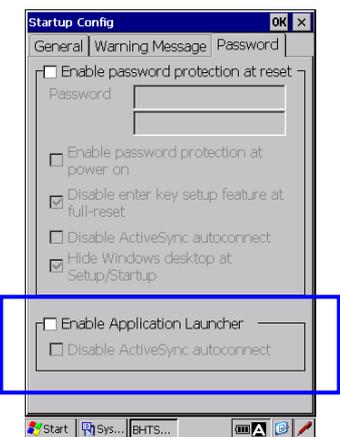
The Application Launcher must be enabled in the System Settings Menu.

To enable the Application Launcher, follow the steps below.

Enabling takes effect at reset or full-reset.

1. Open the System Properties by tapping “3: System Properties” in the System Menu.
2. Tap the “Startup Config” icon in the System Properties.
3. Tap the Password tab to display the screen shown on the right.
4. Check the “Enable Application Launcher” check box.

Refer to “4.4.3 System Properties, [12] Startup Configuration” for further details about enabling Application Launcher.



- (2) Settings for the Application Launcher

Tap the “Settings” button to set up the Application Launcher. The values set in the Settings menu are saved in the \Flash\system\CeAdmin.ini. (The file is not a registry file.) A setup file created in the host computer or the other BHT can be copied to the CeAdmin.ini file instead of using the Settings menu. Reset or full reset is required after the initial setup

4.11.3 User mode

The Application Launcher automatically starts up in the user mode. In the user mode, only the listed applications determined by the administrator can be used.

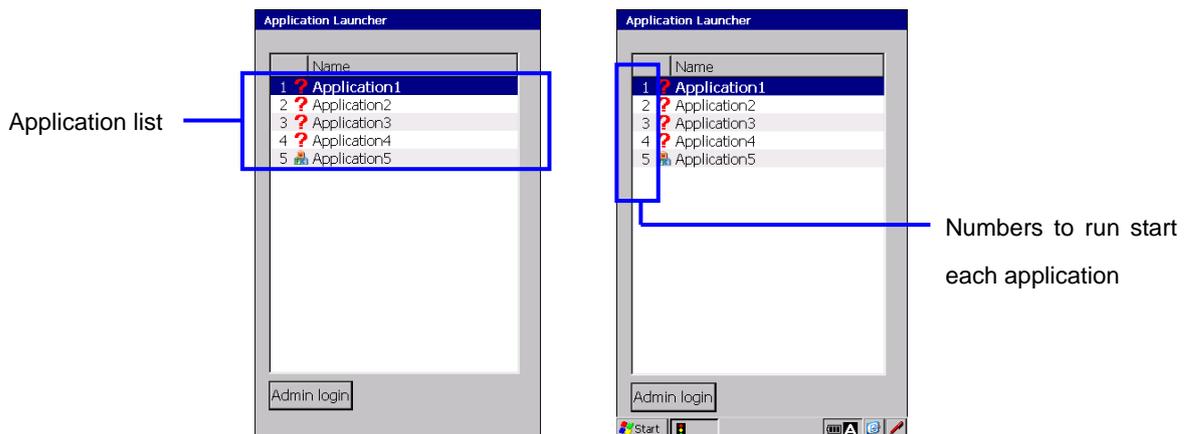
The task bar is not displayed when the administrator sets the task bar to “Hide” in the “Settings” menu (screen shown on the left below). The end users do not have access to the Start Menu and icons (such as the battery capacity, wireless LAN, SIP (Software Input Panel)) when the task bar is not displayed.

The task bar is displayed when set to “Show” by the administrator.

The end users have access to the Start Menu and icons when the task bar is displayed.

However if the end user starts up any non-listed application from the Start Menu, the Application Launcher shuts them down immediately.

Refer to “Settings” section for how to set the task bar to “Hide” or “Show”.



Task bar is not displayed

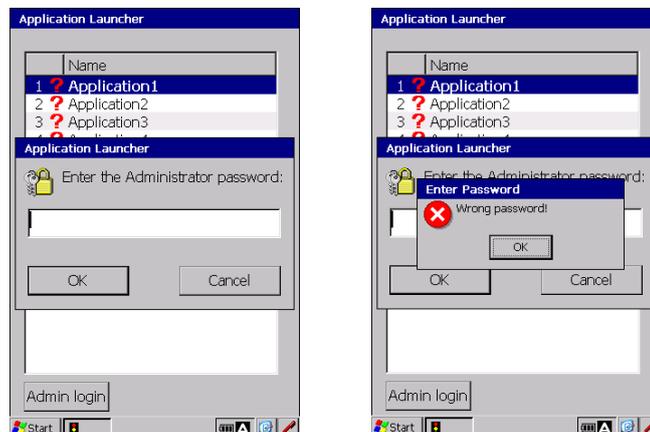
Task bar is displayed

The listed applications can be started up by simply double tapping the application displayed on the list with a stylus. The numeric key or up/down arrow keys can also be used to select applications.

The Application Launcher displays an icon if the application icon is registered, and displays a “?” icon if not registered. If an application already running is started up again, the same application pops up in front of the screen instead of starting up the same application.

Applications can be added to the list without being shown in the list if the applications run in the background (such as ActiveSync/W/MDC).

The “Admin Login” button is used to enter administrator mode. When the button is tapped, the Application Launcher prompts for the password. If the password is incorrect, the pop-up message shown on the right is displayed.



4.11.4 Administrator mode

In administrator mode, the administrator has full control of all applications.

The taskbar is displayed regardless of the taskbar settings in the Application Launcher "Settings" menu, however Windows CE taskbar settings override this administrator mode function.

The taskbar is not displayed when "Auto Hide" is set in the Windows "Taskbar and Start menu" (Start - Settings - Taskbar and Start – General menu).

The administrator mode provides the following functions.



Hide : The "Hide" button is used to minimize the application so as to access to other applications.

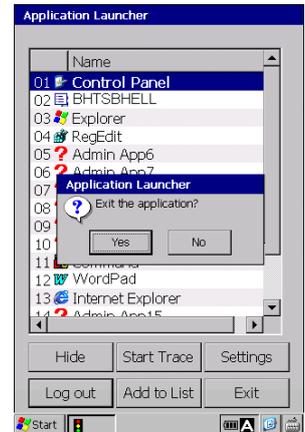
Log out : The "Log out" buttons is used to return to the user mode.

Start Trace : The "Start Trace" button is used to trace non-listed applications.
Non-listed application full paths are found by tracing.

Add to List : The "Add to List" button is used to add the traced applications to the user or admin list.

Settings : The "Settings" button is used to change password, font size and other options.

Exit : The "Exit" button shuts down the Application Launcher.



◆ Trace (Start / Stop Trace)

The “Start Trace” button is used for the administrator to find non-listed application full paths and to add to the application list.

An application full path is displayed when a non-listed application is started up during the trace mode, then a pop-up dialog is displayed to prompt to save the path.

A list of all saved application paths is displayed when the trace mode is stopped.

The listed application can be added to the user or admin list.

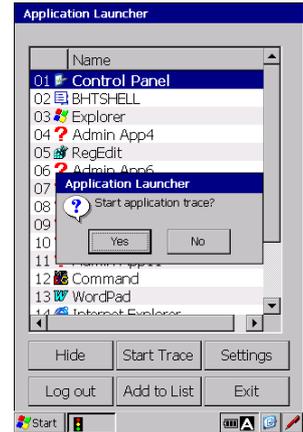
For example; To add Windows Explorer to the user list, follow the steps below.

1. Tap the “Start Trace” button.

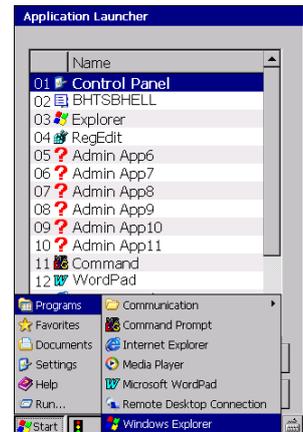
The pop-up dialog shown on the right is displayed, then tap the “Yes” button to start trace mode.

The “Start Trace” button text changes to “Stop Trace”.

The “Stop Trace” button is used to stop trace mode.



2. Tap the “Start” menu, then select Windows Explorer from the Programs folder.



3. The message dialog that shows Windows Explorer full path is displayed when the Application Launcher detects that Windows Explorer has been started.

The message is displayed when the detected application is not listed in the user mode or traced for the first time.

Tap the “Yes” button to add Windows Explorer to the trace results list.



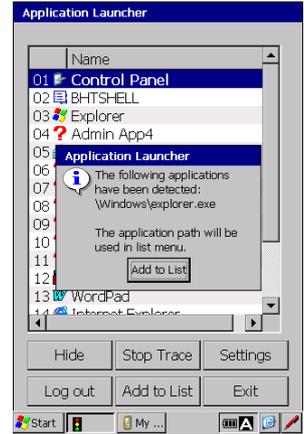
4. Tap the “Stop Trace” button to stop trace mode.

The pop-up message dialog that shows Windows Explorer full path is displayed.

Tap the “Add to List” button to add Windows Explorer to the user list,.

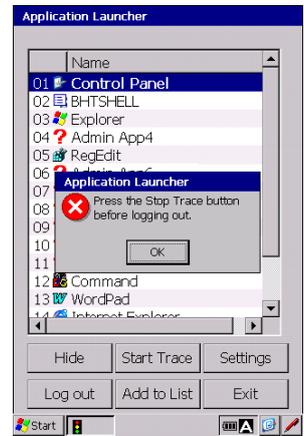
The “Add to List” screen is displayed.

Refer to the next section “Adding applications (Add to List)” for how to add applications to the user or admin list.



5. If the “Log out” button is pressed during the trace mode, the message dialog shown on the right is displayed.

Always stop the trace mode with the “Stop Trace” button before logging out from the admin mode.



◆ Adding applications (Add to List)

- To add applications to the user or admin list,
 - Press the “Add to List” button in the trace mode, or
 - Press the “Add to List” button in the admin mode.

The screen on the right is displayed, then follow the steps below

1. Select the “User App List” or “Admin App list” radio button whichever applications are added to.
 - User App List: Application list for the user mode.
 - Admin App List: Application list for the admin mode.
 The selected application list (user or admin) is shown on the screen above. The application list order can be changed by using the “Up/Down” button next to the list.

2. Select an application to be added from the trace results list shown on the bottom screen, then tap the “Up” button next to the “Trace Results” text.
 - The selected application is added to the list.
 - Up button: Adds the selected application to the list.
 - Down button: Removes the selected application from the list.
 - [...] button: Opens File select dialog.
 - An application can also be selected from the dialog, regardless of the trace results.

The message dialog shown on the right is displayed if the selected application already exists in the list.

Tap “No” not to add the same application to the list.

Tap “Yes” to add the same application to the list.

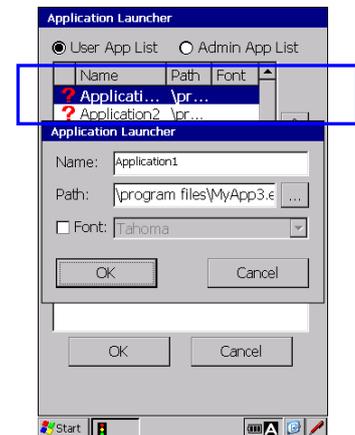
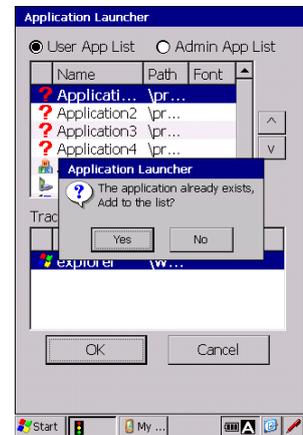
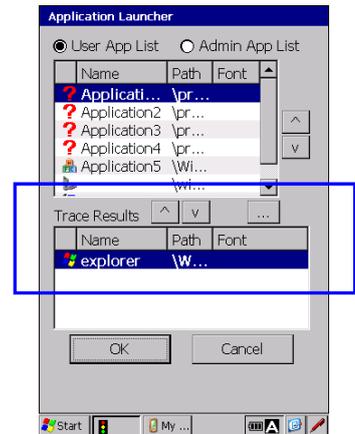
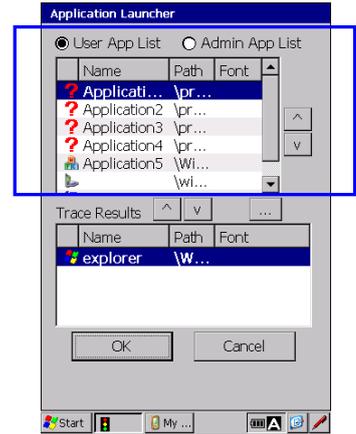
If the same application is added, two of the same application will be displayed in the list.

3. Select the “OK” button to add the application to the application list.
 - “OK” button: Saves the changes to the ini-file.
 - “Cancel” button: Discards any change in the menu. (No change)

4. The application name, font and full path can be changed.

To change, tap the application in the list. The pop-up window shown on the right is displayed.

- Name: Enter the new application name
- Path: Enter the new application path
- Font: Check the box to change the font, then select the font from the pull-down list. The font can be changed for each application in order to support multi-language and so on.
- If the box is not checked, the font set in the “Settings” menu is used to display application names.



◆ Settings

The Settings menu is used to change the password, font size and other options. The settings are saved to the ini-file when the OK button is pressed.

Password : Administrator password (Default : no password)

Taskbar : Taskbar Hide/Show in the user mode (Default : Show)

Enable 10-key : When checked, the applications start up by pressing the numeric key corresponding to the number displayed in the list. Default is unchecked.

Keystroke time interval : Time intervals between each keystroke determines the application number. (Default: 2 seconds)

The specified time interval takes effect when the menu has over 10 applications. If there are more than 10 applications in the list, the application numbers are displayed as two digits numbers.

For example, when the both application number “01” and “10” exist, the “01” application starts up if the “0” key is not pressed within 2 seconds after the “1” key is pressed.

Menu Font / Size : The list is displayed with the selected font and size. (Default : Tahoma)

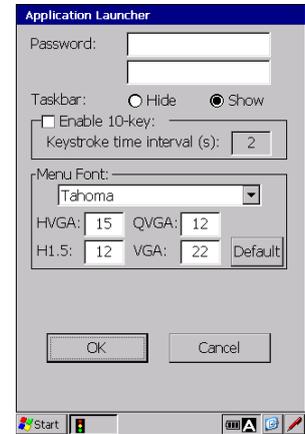
HVGA: HVGA mode font size: 1 to 72pt, Default:15 pt

QVGA: QVGA mode font size: 1 to 72pt, Default:12 pt

H1.5: HH.15 mode font size: 1 to 72pt, Default:12 pt

VGA: VGA mode font size: 1 to 72pt, Default:22 pt

Default: Restore the font and size to default.



Refer to “Value List” in the “Configuration file (CeAdmin.ini file)” section for each value range of the settings.

◆ Configuration file (CeAdmin.ini)

The configuration file called CeAdmin.ini is created in the \Flash\System folder of the BHT when the Application Launcher is opened and closed for the first time.

The file is not a registry file and does not exist at default.

```
\Flash\system\CeAdmin.ini
```

The Application Launcher reads the file when started up.

The settings changed in the “Settings” menu is also saved in the file.

When the file is changed, the changes take effect after the Application Launcher is restarted.

To specify an argument to an application, enclose an application and argument in double quotes with a space between the two quoted characters.

An application can be run by specifying the file linked to the application.

The sample configuration file:

Lines start with the semicolon character (;) are treated as remarks.

```
[Common]
;enter password
pwd=mypassword
;value 0 -> hide, 1-> show
taskbar=0

[Applications]
;enter path and friendly name for each application
;friendly is optional and is only used if the application should be included in the list
;use | as separator
; *** APP1 ***
;
\program files\Application | Application1
; *** APP2 ***
;"\program files\Application" "argument-list" | Application1 ; Argument
; *** APP3 ***
\Flash\RDP1setting.rdp | RDP1 ; RemoteDesktop setting
; *** ActiveSync / WMDC ***
\windows\rnaapp.exe
; *** CAB files ***
\windows\wceload.exe
```

- Note - This configuration file can be copied to other BHTs, and work the same.
Copying the device lock function configuration file (Setup.ini) together with the configuration file (CeAdmin.ini) is recommended when using the device lock function.
Refer to “4.4.3System Properties, [12] Startup Configuration-Password tab” for details of the device lock function.

- Note - When the application name, full-path or password includes Unicode fonts, this configuration file is created with Unicode. In this case, use the Unicode compatible software to edit the configuration file in the host computer.

Value List

Parameter	GUI screen	Value
Common	Application Launcher function settings	
Pwd	Password	Enter the administrator password Maximum 255 characters. Default: ""(blank), No password
Taskbar	Taskbar	Use this parameter to show or hide the taskbar. 0: Hide, 1: Show (Default)
TenKey	Enable 10-key	0: Disabled (Default), 1: enabled
TenKeyInterval	Keystroke time interval	1 to 5 seconds, Default: 2 seconds
MenuFontName	Menu Font	BHT font Default: ""(blank), Tahoma
MenuFontSizeHvga	HVGA	1 to 72pt. A value exceeding maximum size is set to 72pt.
MenuFontSizeQvga	QVGA	
MenuFontSizeH1_5	H1.5	
MenuFontSizeVga	VGA	
Applications	Application information allowed in the user mode.	
Path | Name | Font	'|': Separation character. Enter "|" after each application path as a separation. Name and font can be omitted.	
Path	Path	Maximum 255 characters. Enter full path of an application. (ex.) "\\path\app.exe"
Name	Name	Maximum 255 characters. An application name entered can be selected from the application list. When the apostrophe (") is entered, an application will not be displayed in the application list and cannot be selected from the list. (*1)
Font	Font	BHT font When the check box is checked, an application name is displayed in a selected font. When unchecked, the font set in the "Settings" menu is used to display an application name.
AdminApplications	Application information allowed in the admin mode.	
Parameters are the same as "Applications" in the user mode.		

(*1) The apostrophe (") is used for applications that are not necessary to display (not run manually) or not allowed to display, such as an ActiveSync/WMDC auto-execute application or CAB install application.

Example:

```
\windows\rnaapp.exe      ' ActiveSync / WMDC autoconnect
\windows\wceload.exe     ' Install CAB files
```

◆ Error message list

Message	Problem	Solution
User mode		
Failed to start application. Contact your administrator.	The listed application could not be found.	Replace the ini file with the correct file.(Correct the application path.)
Wrong password!	Password is incorrect.	Enter the correct password.
Administrator mode		
Failed to write the ini file.	Failed to write the ini file.	Delete the ini file then restart the Application Launcher, and then reconfigure the application settings.
Passwords do not match. Please retype identical passwords in both boxes.	Password entered is incorrect.	Enter the identical password.

4.12 Session Keeper

Session Keeper is an application that sends dummy packets periodically, and is used, for example, to keep a WWAN data connection alive by preventing an internet service provider from disconnecting the BHT,

— Note — This application does not guarantee that a network between an internet service provider will never be disconnected.

◆ Session Keeper Menu



Set the following parameters.

Parameter	Meaning	Default
IP Address	Packet destination IP address	192.168.0.1
Port	Packet destination port number	10001
Interval	Packet interval (in seconds)	60 seconds
Off timer	Packet stop timer (in seconds)	Enabled, 600 seconds
Monitoring	Monitors communication interfaces. Dial-up only : Sends packets only while connecting to a WWAN. All : Sends packets if connecting to either one of the following, WWAN, LAN cradle, wireless LAN.	Enabled, Dial-up only
Run at startup	Start sending packets at Session Keeper startup.	Disabled

Packet sending starts by tapping the "Start" button. The menu screen will disappear.

Packet sending starts at application startup if the "Run at startup" parameter is enabled.

To cancel the parameters set, tap the "X" button. The menu screen will disappear.

— Note — Packet sending is settable to start automatically at BHT startup.

- (1) Make the shortcut of \Windows\SessionKeeper.exe on \Flash\Startup.
- (2) Launch this application then enable the "Run at startup" parameter and set other parameters as needed, and then tap the "Start" button.
- (3) Back up the registries.

◆ Status Icon

The icon on the taskbar displays the application status.

- While not sending packets (Gray arrow)



- While sending packets (Blue arrow)



The following menus are displayed by tapping the icon.

Tap "Show" to display the menu screen.

Tap "Exit" to exit from the application.



Outline

BHT Preparation

Basic Operation

System Operation

Communication

Maintenance

Error Messages

Specifications

Appendices

BHT-1200 Series

Chapter 5

Communication

This chapter describes technical information about Connector communication, Bluetooth® Communication and Wireless communication.

5.1	Connector Communication	196
5.2	Bluetooth® Communication	197
5.2.1	Notes for Bluetooth® communication	197
5.2.2	Setting Parameters	198
5.3	Wireless Communication	199
5.3.1	Usage Precautions	199
5.4	3G/GSM Communication	200
5.4.1	Starting 3G/GSM Communication	200
5.4.2	Usage Precautions	200
5.5	ActiveSync/Windows Mobile Device Center	201
5.5.1	ActiveSync / WMDC Installation	201
5.5.2	Connecting with ActiveSync or WMDC	201
5.5.3	Setting Up a Partnership	202

5.1 Connector Communication

The BHT has an interface port to connect to the CU and communicate with other devices.

With the CU-1211, the BHT can communicate with other devices via Ethernet.

With the CU-1233, the BHT can communicate with other devices via USB / RS-232C.

5.2 Bluetooth[®] Communication

The BHT has an internal Bluetooth[®] wireless module.

5.2.1 Notes for Bluetooth[®] communication

- The 2.4 GHz band used in the BHT travels in a straight line and has a trouble passing through human bodies and other objects. Pointing the BHT directly at the other Bluetooth[®]-enabled devices may avoid communication failure.
- Using the BHT near microwave ovens, industrial heaters, high-frequency medical equipment, and other sources using the 2.4 GHz band may interfere with Bluetooth[®] communication.
- Electromagnetic noise from personal computers, refrigerators, and other home appliances may also interfere with Bluetooth[®] communication.
- Environmental factors that can also interfere with Bluetooth[®] communication are listed below.
 - Near large metallic objects or metallic dust
 - Places surrounded by metallic walls
 - Places subject to strong vibration

– Point –

Requests to System Designers

- Make sure that the environment is free of said interference factors and capable of Bluetooth[®] communication before developing the application.
- Use the program that resends data when communication failure occurs.
- Make sure that the BHT communicates properly with all equipment in the environment where other equipment using the 2.4 GHz band is already operated or newly added to the existing system.
- If the environment changes (e.g., newly installed household appliances and movement/addition of shelves or objects), make sure that the BHT communicates properly with all equipment again before actual use.

5.2.2 Setting Parameters

◆ Bluetooth® device address

The remote devices return these addresses, uniquely assigned to each Bluetooth® device by the Bluetooth® SIG, during device detection.

◆ Bluetooth® device name

The bluetooth® device name is a user-friendly name (Robert or Sandra, for example) which allows users to identify devices more easily.

◆ Bluetooth® passkey (Bluetooth® PIN)

The bluetooth® passkey (Bluetooth® PIN) is an encryption key used for mutual authentication and Bluetooth pairing to establish secure links between two Bluetooth devices.

◆ Security Modes

The BHT supports the following three security modes.

- (1) No security: No security authentication.
- (2) Service level security: Security authentication is required.
- (3) Link level security: Security authentication using point-to-point encryption keys are required.

Setting “No security” sometimes interferes with connecting to remote devices using “Service level security” or “Link level security”--unless both devices use the same Bluetooth® passkey.

Use the same Bluetooth® passkey used for the target device when setting the BHT to “Service level security” or “Link level security”.

5.3 Wireless Communication

The BHT has a wireless module using the 2.4 GHz and 5GHz bands.

5.3.1 Usage Precautions

- The 2.4 GHz band used in the BHT travels in a straight line and has a trouble passing through human bodies and other objects. Pointing the BHT directly at the other wireless devices may avoid communication failure.
- Using the BHT near microwave ovens, industrial heaters, high-frequency medical equipment, and other sources using the 2.4 GHz band may interfere with wireless communication.
- Electromagnetic noise from personal computers, refrigerators, and other home appliances may also interfere with wireless communication.
- Environmental factors that can also interfere with wireless communication are listed below.
 - Near large metallic objects or metallic dust
 - Places surrounded by metallic walls
 - Places subject to strong vibration

– Point –

Requests to System Designers

- Make sure that the environment is free of the interference factors and capable of wireless communication before developing the application.
- Use the program that resends data when communication failure occurs.
- Make sure that the BHT communicates properly with all equipment in the environment where other equipment using the 2.4 GHz band is already operated or newly added to the existing system.
- If the environment changes (e.g., newly installed household appliances and movement/addition of shelves or objects), make sure that the BHT communicates properly with all equipment again before actual use.

– Point –

Wireless LAN Interference

Industrial, scientific, and medical equipment such as microwave ovens, static wireless stations (permit required) used for mobile identification in places such as plant manufacturing lines, amateur wireless stations, and specified low-power wireless stations (no permit required) operate in the same frequency band as this device.

1. Make sure that no static wireless stations or specified low-power wireless stations for mobile identification are not used in the vicinity before using this device.
2. Change the frequency or stop the electromagnetic discharge when electromagnetic interference from this device to a static wireless station used for mobile identification occurs.

5.4 3G/GSM Communication

5.4.1 Starting 3G/GSM Communication

Insert a registered SIM card and run a Wireless WAN application.

5.4.2 Usage Precautions

1. Keep the BHT at least 22 cm apart from the position where a cardiac pacemaker is implanted.
Radio waves emitted by the BHT may interfere with pacemaker function.
2. Follow instructions given by medical institutions when using the BHT in hospitals or near medical equipment. Turn off the BHT or disconnect all wireless connections* by using each wireless network management application in places where the use of the BHT is prohibited by medical institutions such as operating rooms, intensive care units and coronary care units.

*Refer to “4.5. Wireless Network Settings”, “4.6. Bluetooth Manager” and “4.7. WWAN Manager” for details on how to disconnect each wireless connection.

3. Turn off the BHT or disconnect all wireless connections by using each wireless network management application in crowded places such as packed trains in which there may be a person with a cardiac pacemaker nearby.
Radio waves emitted by the BHT may interfere with pacemaker function.

Turn off the BHT or disconnect all wireless connections by using each wireless network management application on airplanes.
Failure to follow instruction may cause malfunction in electric devices resulting in serious accident.

5.5 ActiveSync/Windows Mobile Device Center

ActiveSync or Windows Mobile Device Center (WMDC) provides the following functions by connecting the BHT to a host computer via USB.

- Data synchronization
- Data back-up
- Data copy or transfer
- User program debugging

Download WMDC 6.1 or ActiveSync 4.2 from the Microsoft Web site depending on the host OS as shown below.

WMDC 6.1: For Windows 7 / Vista / Server 2008

ActiveSync 4.2: For Windows XP / Server 2003

5.5.1 ActiveSync / WMDC Installation

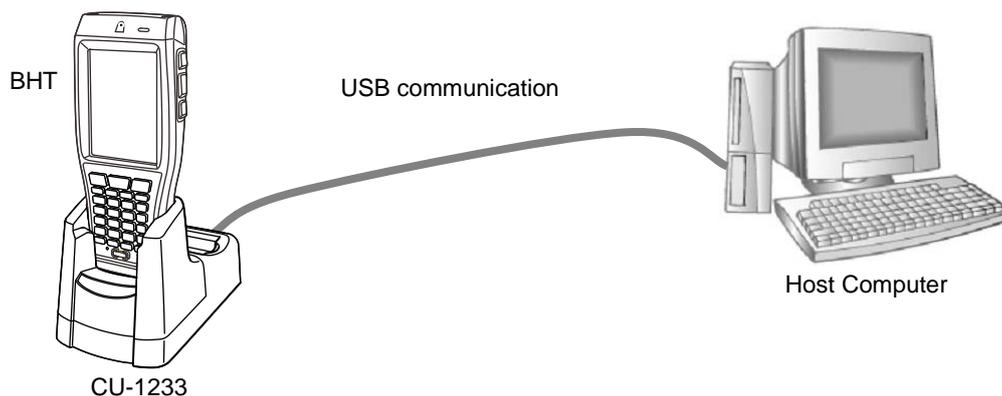
A host computer with USB interface port is required to install ActiveSync or WMDC.

Install ActiveSync or WMDC on the host computer before connecting the BHT to a host computer.

– Point – RS-232C, CU (LAN) or wireless LAN cannot be used for ActiveSync or WMDC connection between the BHT and host computer.

5.5.2 Connecting with ActiveSync or WMDC

Connect the USB interface ports on the host computer and CU to each other.



Refer to “Chapter 4 System Operation” – “4.4.2 Communication Menu” for details on how to run ActiveSync on the BHT.

5.5.3 Setting Up a Partnership

1. The screen on the right is displayed on the host computer when a connection between the host computer and BHT is established. (example screen using ActiveSync)

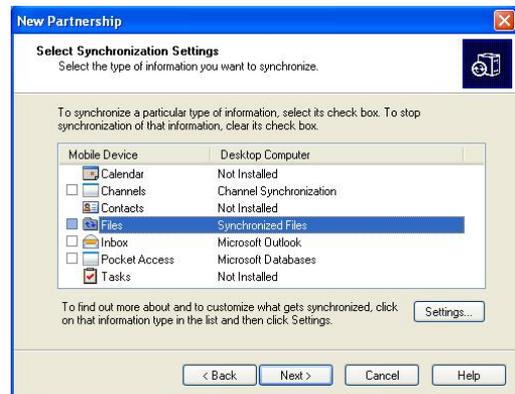
Set up the partnership between the host computer and BHT.

Check the “Yes” radio button and click the “Next >” button.



2. The screen on the right is displayed.

To synchronize files, select the “Files” check box and click the “Next >” button.



3. Click the “Finish” button to complete the setup wizard and return to Windows.



Setting up a partnership between the BHT and host computer is now completed.

Refer to the ActiveSync Help on the host computer for details on how to use ActiveSync/WMDC.

Refer to "API Reference Manual" or "Class Library Reference Manual" for details on how to debug user programs using ActiveSync/WMDC.s

BHT-1200 Series

Chapter 6

Maintenance

This chapter describes battery and daily procedures for taking care of the BHT and CU.

6.1	Replacing the Battery.....	204
6.1.1	Battery Service Life	204
6.1.2	Battery Replacement	204
6.2	Replacing the Backup Battery	208
6.3	Replacing the hand belt	209
6.4	Using the BHT after Long Periods.....	211
6.5	Daily Maintenance.....	212
6.5.1	Proper Care of the BHT.....	212
6.5.2	Proper Care of the CU	212

6.1 Replacing the Battery

6.1.1 Battery Service Life

The battery has a limited service life. Replacing the battery after one year of usage or after 300 charges, whichever comes first is recommended.

The performance of the lithium-ion battery will deteriorate gradually with repeated charging, even during normal use. When the battery operation time becomes shorter even after charging for the specified length of time, replace the battery with a new one.

6.1.2 Battery Replacement

1. Press the **power** key to turn OFF the BHT.

The screen on the right is displayed.

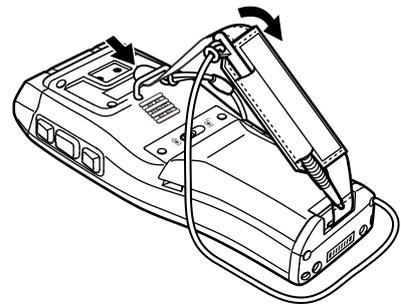
The message is displayed in the language used by application for the specific country.

– Point – Do not remove the battery until the power turns OFF and the screen disappears.

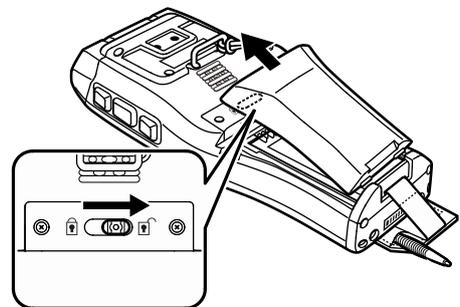
Shutdown
in progress.
Do not remove
the battery.

Full Reset: BKSP + ENT + L-Trigger + Power
Reset: BKSP + R-Trigger + Power

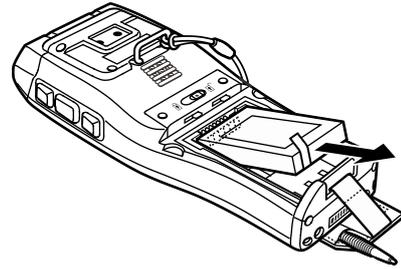
2. Loosen the hand belt.



3. Hold down and slide the cover lock to open the cover.

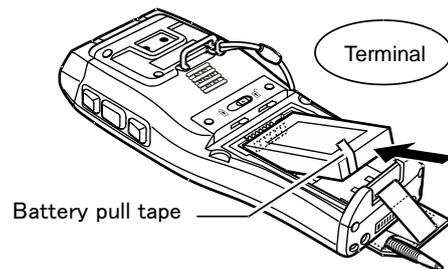


4. Remove the battery.



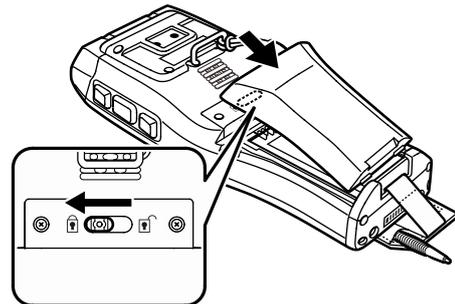
5. Load the new battery in the direction shown by the arrow.

- Point - Insert the new battery within 3 minutes of removal to avoid data loss.

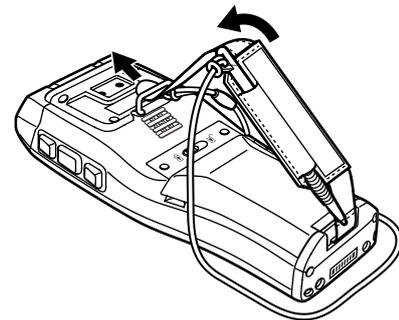


6. Replace the cover and slide shut the cover lock.

- Point - Do not pinch the battery pull tape between the battery cover.

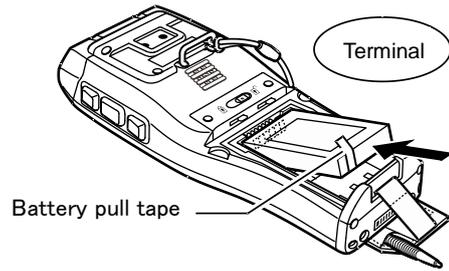


7. Fasten the hand belt to the same fit position.



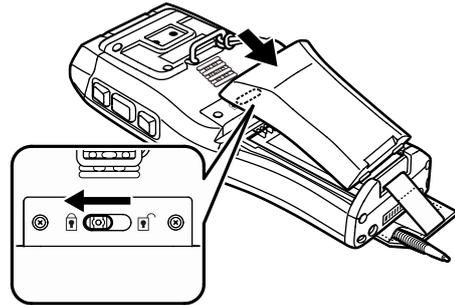
8. Load the new battery in the direction shown by the arrow.

— Point — Insert the new battery within 3 minutes of removal to avoid data loss.

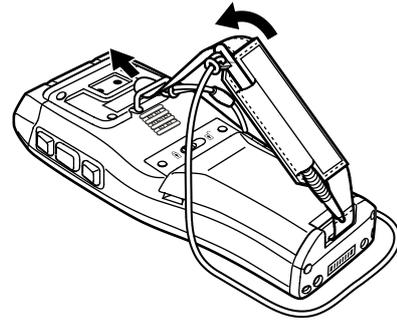


9. Replace the cover and slide shut the cover lock.

— Point — Do not pinch the battery pull tape between the battery cover.



10. Fasten the hand belt to the same fit position.



Battery Recycling Request

- This product uses a lithium-ion battery that contains recyclable rare earth metals. Please recycle the battery correctly to promote sustainable reuse of these resources.



The crossed-out wheeled bin is applicable for EU member status only.

- Used batteries must not be disposed of as combustibles.
- Contact your nearest local sales office for information on disposal procedures.
- When disposing used batteries, cover the terminals with vinyl tape to insulate and protect them from overheating or fire due to a short-circuit.
- Never disassemble batteries.

⚠ WARNING

Mishandling may result in battery overheating, smoking, explosion or fire.

Please read the following instructions prior to use.

- Never charge the battery near a fire or under a scorching sun.
- Always use a dedicated charger “CU” to charge the battery.

⚠ CAUTION

Mishandling may result in battery overheating, smoking, explosion or fire.

Please read the following instructions prior to use.

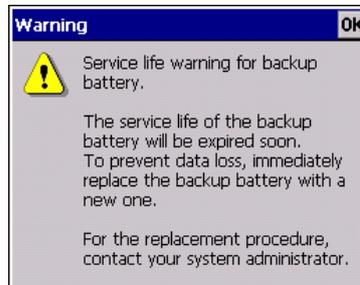
- Stop charging if the charge is not completed even after the specified time has elapsed.

– Note –

- Replace the battery promptly.
- If the BHT is left for a long period of time with the battery removed, all data including files and settings stored in the RAM will be lost and the RAM will restore to the factory default. Any important data should be backed up to the “FLASH” folder or to the computer. The BHT starts from the “Initial Setup” when the BHT turns ON after the data in the RAM is deleted.
- Always turn the BHT power OFF before replacing the battery. Replace the battery with a new one within three minutes of removal to avoid data loss. Turn ON the BHT power to check proper operation of the BHT after replacement.
- Use the CU to charge battery. Refer to “Chapter 9” for details of the charging method for the CU.
- “Replace the battery!” or “Charge the battery!” message may be displayed when the BHT is subject to impact. The battery may not have run out, reboot the BHT and check the battery voltage level.

6.2 Replacing the Backup Battery

Contact your dealer to replace the backup battery if the following warning message is displayed.



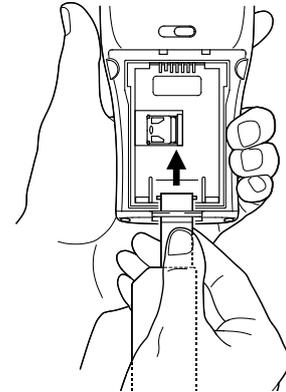
This warning message is displayed each time the power turns ON after the backup battery has fully discharged 200 times or more.

Tap the **OK** button on the top right corner of the message window to continue what you were doing.

- **Point** –
- If the backup battery is removed, all data including files and settings stored in the RAM will be lost and the RAM will restore to the factory default. Any important data should be backed up to the "FLASH" folder or to the computer. The BHT starts from the "Initial Setup" when the BHT turns ON after the data in the RAM is deleted.
 - The discharge counter is automatically increased by one (+1) each time the backup battery is fully discharged, but will not be reset automatically by replacing the backup battery.
Resetting the discharge counter is required when the backup battery is replaced. Refer to Chapter 4, 4.4.3 System Properties – [23] Resetting the Backup Battery Discharge count.
The backup battery discharge counter is set to "0" when purchased.

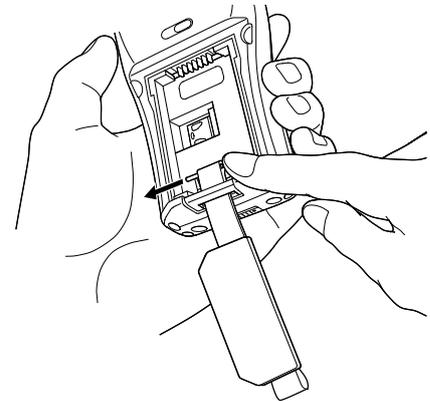
6.3 Replacing the hand belt

- 1 Loosen the hand belt by pushing up as shown by the arrow.

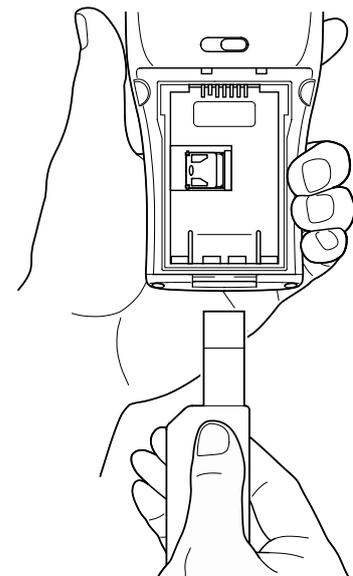


- 2 Remove the shaft pin from the loop.

— **Point** — Do not lose the pin.

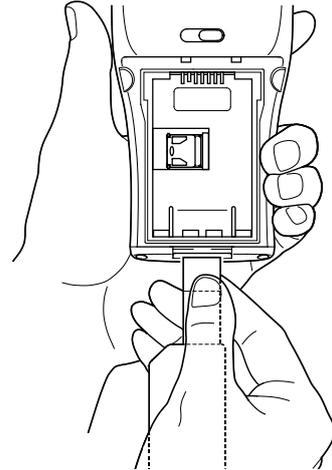


- 3 Pull out the belt from the BHT.

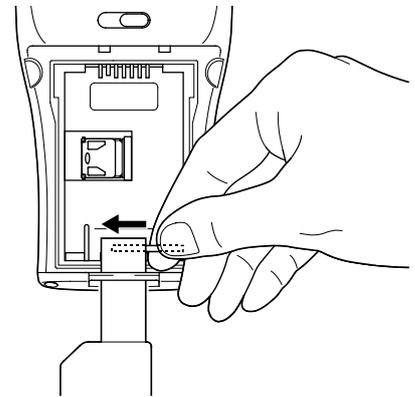


- 4** Insert a new hand belt (loop first) into the same slot.

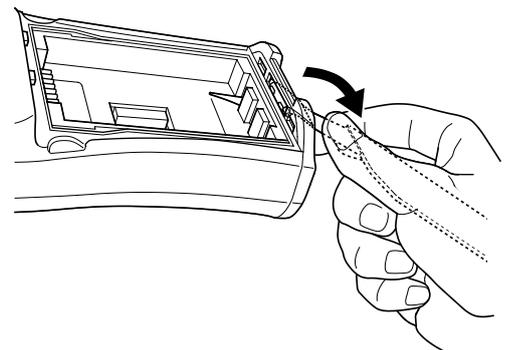
– **Point** – Make sure that the inside of the belt is facing up when inserting.



- 5** Insert the shaft pin through the loop.



- 6** Fasten the belt by pulling down the loop in the direction shown by the arrow until the pin snaps into the hooks.

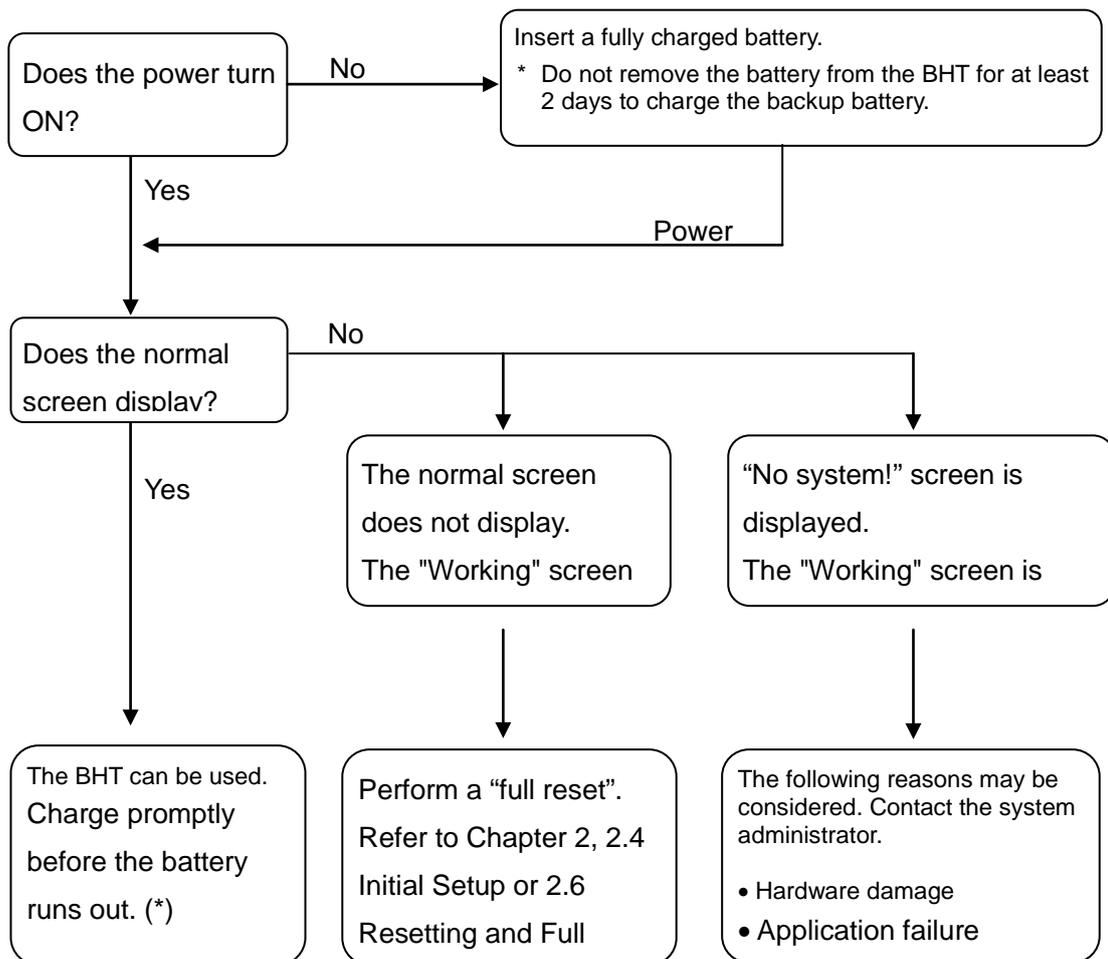


6.4 Using the BHT after Long Periods

Data including files and settings stored in the RAM may be lost and the calendar clock may stop if the BHT is left unused for long periods of time.

(The RAM will restore to the factory default. Any important data should be backed up to the "FLASH" folder or to the computer. The BHT starts from the "Initial Setup" when the BHT turns ON after the data in the RAM is deleted.)

Take appropriate measures by following the procedure below.



– **Point** – *: Files may become corrupted if left for a long period of time without charging or replacing the battery.

6.5 Daily Maintenance

6.5.1 Proper Care of the BHT

Wipe any dirt from the BHT housing, charge terminals, and battery terminals with a dry, soft cloth. Make sure to turn OFF the BHT before cleaning.

-
- **Notes** –
- Never use substances such as benzene or alcohol, as this may cause the housing to be marred or paint to be peeled off.
 - Never rub or strike the LCD with anything hard, as this may result in scratches on the screen or breakage.
 - When cleaning the keypad, do not scrub the surface too hard or pull on the keys, as this may break the keys.
 - If excessively dirty, wipe with a soft cloth that has been soaked in soapy water (always use a neutral detergent) and wrung out thoroughly.
-

Any dirt or dust adhering to the code reading window (clear plate) will degrade reading performance. Check regularly whether any dust has accumulated on the code reading window (clear plate), if using in dusty areas.

Follow the steps below to clean the code reading window.

- First, blow the dust away with an airbrush, and then gently wipe the plate with a cotton swab or similar soft object.
- Then blow any particles away with an airbrush or wipe with a soft brush.
If sand or hard particles have accumulated, rubbing the window may result in scratches.

6.5.2 Proper Care of the CU

Unplug the AC adapter from the socket when cleaning the CU for safety. Wipe any dirt from the housing or charge terminals with a dry, soft cloth.

Chapter 7

Error Messages

This chapter describes causes and countermeasures for error messages that display during BHT use.

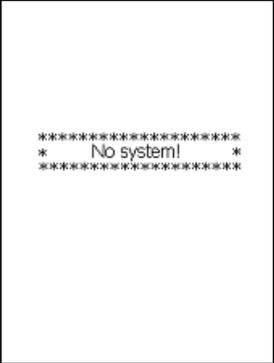
Refer to the BHT API Reference Manual “Section 17.4.4 Error Codes” for the errors while the application is running.

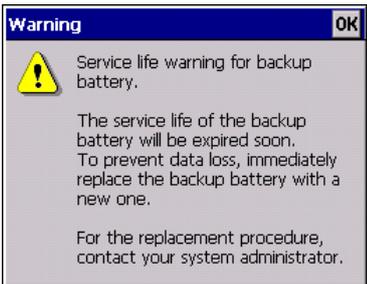
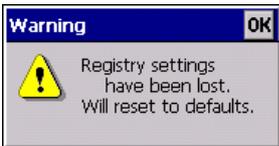
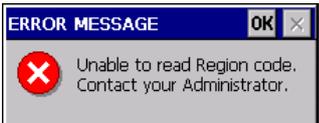
7.1 System Errors 214

7.1 System Errors

Error messages are displayed on the screen if an error occurs when the power is turned ON or while running a program. Error messages, causes and countermeasures are listed below.

Error messages are displayed in the language used by the application for the specific country.

Message	BHT Response	Cause	Countermeasure
 <pre> ***** * No system! * ***** </pre>	The beeper sounds 5 times (each beep lasts for 0.1 seconds) and then the power turns OFF.	System program abnormality	Contact the system administrator.
 <p>Battery voltage has lowered. Charge the Battery!</p>	The BHT displays a warning for approximately 2 seconds while sounding the beeper 3 times (each beep lasts for 0.1 seconds) before returning to the normal operation.	The battery voltage has dropped to a level that requires charging or battery replacement when turning the BHT ON, OFF or while running a program.	The battery will soon need to be charged. Replace or charge the battery promptly. If the BHT is left with the battery discharged, data including files and settings stored in the RAM may be lost.
 <p>Charge the Battery!</p>	The beeper sounds 5 times (each beep lasts for 0.1 seconds) and then the power turns OFF. Depending on the battery power level, the beeper may not sound 5 times.	The battery voltage has dropped to a level that stops BHT operation when turning the BHT ON, OFF or while running a program.	Replace or charge the battery immediately. If the BHT is left with the battery discharged, data including files and settings stored in the RAM may be lost.

Message	BHT Response	Cause	Countermeasure
	<p>The screen on the left is displayed when the power is turned ON.</p> <p>– Note – Refer to Chapter 4, 4.4.3 - [10] Startup Config to stop displaying the message. Default settings displays the message.</p>	<p>The backup battery discharge counter has exceeded the specified number of times and the battery power level has dropped below the specified level.</p>	<p>Replace the backup battery. Refer to Chapter 6 Maintenance.</p>
	<p>The screen on the left is displayed when the power is turned ON.</p> <p>– Note – Refer to Chapter 4, 4.4.3- [10] Startup Config to stop displaying the message. Default settings displays the message.</p>	<p>The message is displayed after full reset when the registry is not backed up.</p>	<p>Reset the registry as necessary.</p> <p>Follow the instructions on Chapter 2, 2.5.2 Turning the Power OFF after Registry Backup to backup the registry.</p>
	<p>The screen on the left is displayed when the wireless device is opened without setting the wireless region code.</p>	<p>The message is displayed when the wireless device is opened without setting the wireless region code.</p>	<p>Contact the system administrator.</p>
	<p>The screen on the left is displayed when the wireless device is working.</p>	<p>Fatal error most likely caused by hardware has occurred.</p>	<p>Contact the system administrator.</p>

Outline

BHT Preparation

Basic Operation

System Operation

Communication

Maintenance

Error Messages

Specifications

Appendices

BHT-1200 Series

Chapter 8

Specifications

This chapter describes the BHT specifications.

8.1	Specifications	218
8.1.1	Hardware Specifications	218
8.1.2	Code Specifications	219
8.1.3	Scanning Performance	223
8.1.4	Interface Specifications	225

8.1 Specifications

8.1.1 Hardware Specifications

Power supply (main power):	Rechargeable lithium-ion battery (3.7 V DC)
Dimensions (W) x (L) x (H):	[BHT-1260BWB-CE/BHT-1261BWB-CE] 77×178×38 mm [BHT-1260QWB-CE/BHT-1261QWB-CE] 77×178×43 mm [BHT-1261QWBG-CE] 77×186×43 mm
Weight:	[BHT-1260BWB-CE/BHT-1261BWB-CE] [BHT-1260QWB-CE/BHT-1261QWB-CE] Approx. 330 g (with standard battery) [BHT-1261QWBG-CE] Approx. 370 g (with standard battery)
Ambient operating temperature:	-20 °C to 50 °C
Ambient operating humidity:	20 % to 85 % (with no dew condensation)
Ambient operating brightness:	[BHT-1260BWB-CE/BHT-1261BWB-CE] 20 to 10,000 lx. Depth of field: 110 mm, EAN-13: 0.33 magnification, PCS value: min. 0.9, Reflection intensity: min. 85% for white and max. 5% for black [BHT-1260QWB-CE/BHT-1261QWB-CE] [BHT-1261QWBG-CE] 20~10,000 Lx. Depth of field: 110 mm, QR code ver.5 (37 x 37 cells), Error correction level M, Cell pitch: 0.5mm, PCS value: min. 0.9, Reflection intensity: min. 85% for white and max. 5% for black 500~3000 Lx. Under the conditions not specified above. Refer to 8.1.2 Supported code Types for details.
Controller:	CPU: 32-bit RISC RAM: 512 MB Flash memory: 2GB
Keypad:	Numerical keys etc.: 36 Trigger keys: 2
Display:	Type: Color TFT LCD (with touch panel and backlight) Formation: 320 dots wide by 480 dots high
Calendar clock:	Year, month, day, hour, minute, and second Year: 2 digits Auto leap year correction up to 2099
Scan confirmation:	Indicator LED (red & green & blue), speaker, and vibrator

(Note) Some of the pixels on the LCD may not illuminate or stay permanently illuminated.
There may also be inconsistencies in color and brightness. None of these aspects imply an LCD defect.

8.1.2 Code Specifications

Supported Code Types

[BHT-1260BWB-CE/BHT-1261BWB-CE]

Barcode Type	Bar Dimensions	Scan Magnification
Universal product codes JAN-13 (EAN-13) JAN-8 (EAN-8) UPC-A UPC-E JAN-13 (EAN-13) with add-on JAN-8 (EAN-8) with add-on UPC-A with add-on UPC-E with add-on 2-dgit add-on 5-dgit add-on	Min. 0.26 mm	Min. 0.8
Interleaved 2of5 (ITF) Standard 2of5 (STF) Codabar (NW-7) Code 39	Min. 0.125 mm PCS value ≥ 0.9 Black/white bar reflection intensity difference ≥ 0.8 Min. 0.15 mm (PCS value ≥ 0.45)	
Code 93 Code 128, GS1-128 (EAN-128, UPC-128)	Min. 0.15 mm (PCS value ≥ 0.45)	
MSI	Min. 0.20 mm (PCS value ≥ 0.45)	
GS1 DataBar TM (RSS) GS1 DataBar Omnidirectional GS1 DataBar Truncated GS1 DataBar Stacked GS1 DataBar Stacked Omnidirectional GS1 DataBar Limited GS1 DataBar Expanded GS1 DataBar Expanded Stacked	Min. 0.15 mm (PCS value ≥ 0.9) Black/white bar reflection intensity difference ≥ 0.8	

Required Optical Properties

White bars: Reflection intensity of 45 % or higher

Black bars: Reflection intensity of 25 % or lower

PCS value of 0.45 or higher

Thickness of Bars and Depth of Field

Minimum Narrow Bar Width	Depth of Field
0.125 mm	130 to 230 mm ^{*1}
0.33 mm	50 to 670 mm ^{*2}
1.0 mm	to 1300 mm ^{*3}

^{*1} Under the following conditions:
 - Ambient brightness: 500 lx. (Xenon arc lamp)
 - Code 39, 19-digits
 Narrow bar: Wide bar = 1 : 2.2
 - Reflection intensity of white bars: min. 85 %
 Reflection intensity of black bars: max. 5 %

^{*3} Under the following conditions:
 - Ambient brightness: 500 lx. (Xenon arc lamp)
 - ITF conforming to UPC Shipping Container Code
 Narrow bar : Wide bar = 1 : 2.2
 - Reflection intensity of white bars: 85 % min.
 Reflection intensity of black bars: 5 % max.
 - 1.0 magnification

^{*2} Under the following conditions:
 - Ambient brightness: 500 lx. (Xenon arc lamp)
 EAN-13
 - Reflection intensity of white bars: 85 % min.
 Reflection intensity of black bars: 5 % max.

[BHT-1260QWB-CE/BHT-1261QWB-CE/BHT-1261QWBG-CE]

The following values are in accordance with the scanning reference position specified in the section 8.13 "Reading Distance and Area".

QR code (Model 1, Model 2), Micro QR code

Code size	Cell pitch
QR code	
Model 1 :Ver.1~14 (360° Skew)	
Model 2: Ver.1~40 (360° Skew) Ver.1~14 (0° Skew)	0.167 mm
Model 1 :Ver.1~14 (360° Skew)	
Model 2: Ver.1~19 (360° Skew) Ver.1~30 (0° Skew)	0.25 mm
Micro QR code	
M1~4 (360° Skew)	0.2 mm

iQR code

Code size	Cell pitch
99 cells x 99 cells (360° Skew)	0.25 mm

PDF417

Digits/lines	Module dimensions
1 to 15 digits, 4 to 50 lines *1 (without start/stop codes and left/right indicators)	0.167 mm min.

*1 Maximum reading digits up to 15 and lines up to 50 are guaranteed performance.
The BHT may read more digits and lines than the guaranteed performance.

Micro PDF417

Digits/lines	Module dimensions
1 to 4 digits, 4 to 44 lines (without start/stop codes and left/right indicators)	0.167 mm min

MaxiCode

Module size	Module pitch
30 (29) modules x 33 modules	0.88 mm

Data Matrix

Code size	Cell pitch
52 cells x 52 cells (360° skew)	0.20 mm
96 cells x 96 cells (360° skew)	0.25 mm
120 cells x 120 cells (0° skew)	

COMPOSITE

Read digits	Module dimensions
RSS, EAN128, Universal product codes, PDF417, Micro PDF	0.167 mm min
The read digits varies depending on each code limits.	

Barcodes

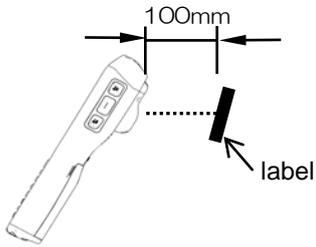
Supported Barcode Types	Bar Dimensions	Read digits
Universal product codes		
EAN-13	0.26 to 0.53 mm	13 digits
EAN-8	0.26 to 0.66 mm	8 digits
UPC-A	0.26 to 0.50 mm	12 digits
UPC-E	0.26 to 0.66 mm	7 digits
Interleaved 2of5 (ITF)	} Min. 0.125 mm	2 to 38 digits*
Codabar (NW-7)		3 to 29 digits
Code 39		1 to 20 digits
Code 93		1 to 20 digits
Code 128 (EAN-128)		1 to 25 digits
RSS-14		

* Even number digits only

Note: The above values are applied under the ambient illuminance 500~3000 Lx (xenon lamp).

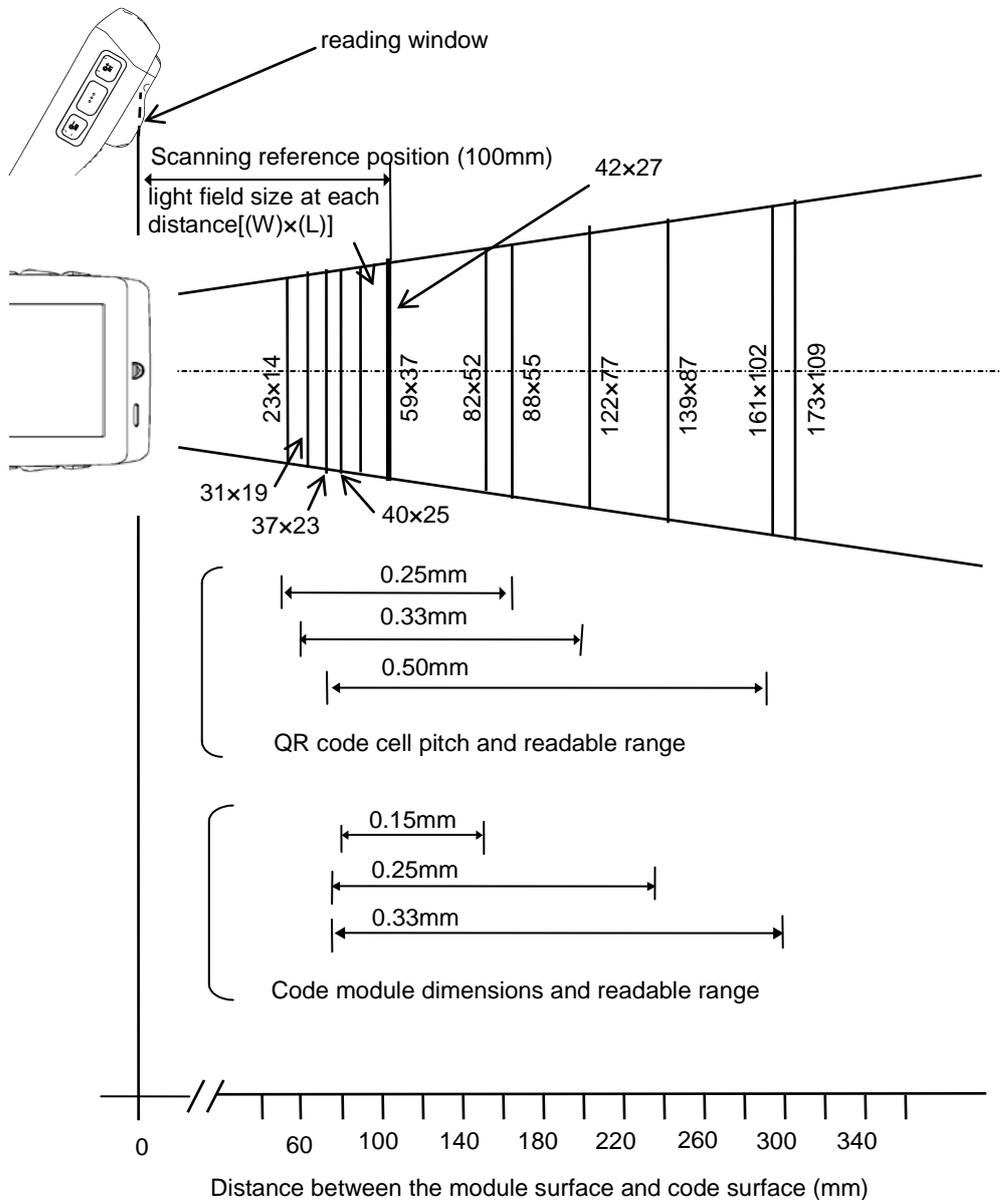
8.1.3 Scanning Performance

Scanning Reference Position



Point the reading window at the center of the label (code) as shown on the left.

Reading Distance and Area



QR code cell pitch dimensions	Valid reading distance
0.25 mm	40 to 145 mm *1
0.33 mm	60 to 205 mm *1
0.50 mm	70 to 275 mm *1

PCS value: 0.9 min., White reflection intensity: 85% min

*1 Under the following conditions:
 QR code model 2 Ver.5 (37 cells x 37 cells)
 Error-correcting level: M,
 Black & white label

Barcode module dimensions	Valid reading distance
0.15 mm	80 to 135 mm *2
0.25 mm	75 to 235 mm *3
0.33 mm	75 to 295 mm *4

PCS value: 0.9 min., White reflection intensity: 85% min

*2 Under the following conditions:
 Codabar 10 digits NarrowBar, NarrowSpace
 0.15mm

*3 Under the following conditions:
 Codabar 10 digits NarrowBar, NarrowSpace
 0.25mm

*4 Under the following conditions:
 EAN-8 Module dimensions 0.33mm

The BHT may fail to read codes due to specular reflection depending on conditions such as the light source and reading angle.

8.1.4 Interface Specifications

Connector Interface

Communication method: USB OTG 2.0, Full-speed compliant
RS-232C interface

Bluetooth® Interface

Specification: Bluetooth® Ver. 2.0 + EDR compliant
RF output: Class 2 (2.5 mW max.)
Supported profiles:

- DUN-DT
- Generic Access
- Serial-DevA
- Serial-DevB
- Service Discovery
- FTP
- OPP
- A2DP

[Notes]

The other profiles like HSP, HID and PAN are not supported.

Wireless LAN Interface

2.4GHz band

Specification: IEEE 802.11b/g/n
Frequency bands: 2.412 GHz – 2.472 GHz
Data rate: IEEE802.11b: 11/5.5/2/1 Mbps
IEEE802.11g: 54/48/36/24/18/12/9/6 Mbps
IEEE802.11n: 65/58.5/52/39/26/19.5/13/6.5 bps
(The data rate is automatically controlled.)
Channels: Varies depending on models and regions.

5GHz band (Only for the specific models and regions *1)

Specification: IEEE 802.11a/n
Frequency bands: W52 : 5.150 GHz – 5.250 GHz
W53 : 5.250 GHz – 5.350 GHz
W56 : 5.470 GHz – 5.725 GHz
W58 : 5.725 GHz – 5.850 GHz
Data rate: IEEE802.11a: 54/48/36/24/18/12/9/6Mbps
IEEE802.11n: 65/58.5/52/39/26/19.5/13/6.5bps
Channels: Varies depending on models and regions.

*1 496300-611x, 496300-596x, 496300-581x, 104969-165x, 104969-146x, 104969-137x.

Wireless WAN Interface

Frequency bands:	GSM	900/1800MHz: 104969-142x, 104969-150x, 104969-159x 850/1900MHz: 104969-149x
	3G	Band I: 104969-150x, 104969-159x Band II, V: 104969-149x Band I/VIII: 104969-142x
	Data transmission:	GPRS: Multislot class 12 EGPRS: Multislot class 12 UMITS: 3GPP Release 4 HSPA: 3GPP Release 6, 7
Output class:		Class 3 (+24dBm + 1/-3dB) UMTS 2100, WCDMA FDD Band I

BHT-1200 Series

Chapter 9

Appendices

This chapter describes the CU-1200 Series.

9.1	CU-1200 Functions.....	228
9.2	Components and Functions.....	229
9.3	CU-1200 Power Supply	230
9.4	Communicating with the Host Computer.....	231
9.4.1	Interface cable connection	231
9.4.2	Communication with the Host Computer.....	232
9.5	Charging the BHT and the Spear battery.....	233
9.5.1	Charging the BHT	233
9.5.2	Charging and LED Indicators.....	234
9.5.3	Charging the spare battery.....	235
9.5.4	The spare battery and charge LED.....	236
9.6	CU Specifications.....	237
9.6.1	Hardware Specifications	237
9.6.2	Charging Requirements.....	237
9.6.3	Interface Specifications	237
9.6.4	Interface Cable	238

9.1 CU-1200 Functions

The CU-1200 Series communication unit is available in two models: the CU-1211 and CU-1233.

The CU-1200 Series has the following functions.

1) Communication with the BHT and host computer

The CU-1211 exchanges data and programs with the BHT via an interface port, and with the host computer via Ethernet.

The CU-1233 exchanges data and programs with the BHT via an interface port, and with the host computer via RS-232C or USB.

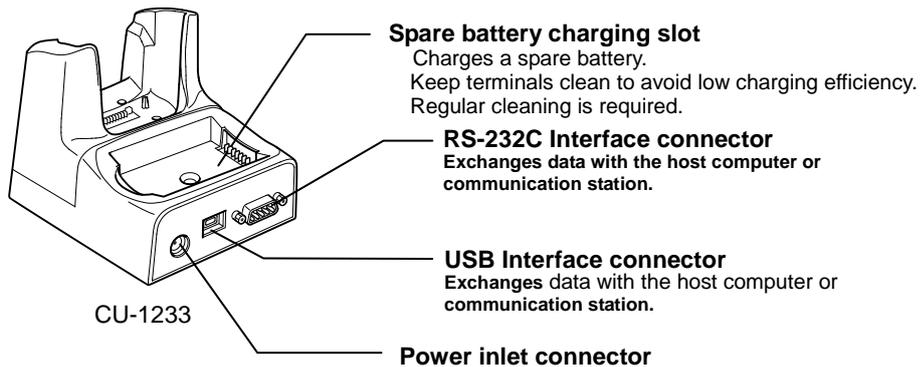
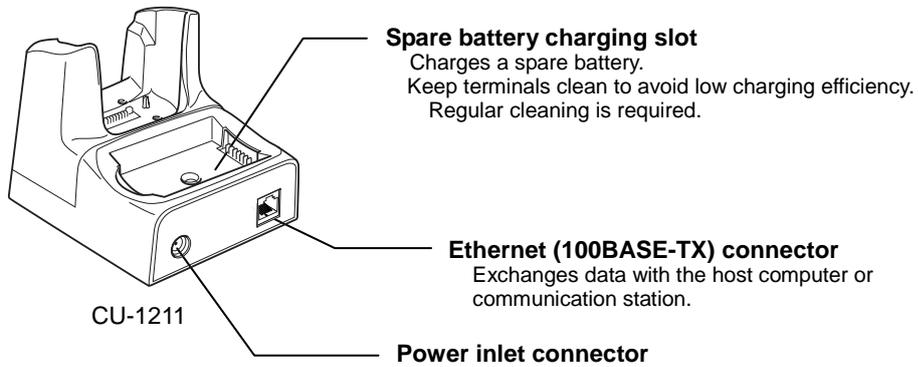
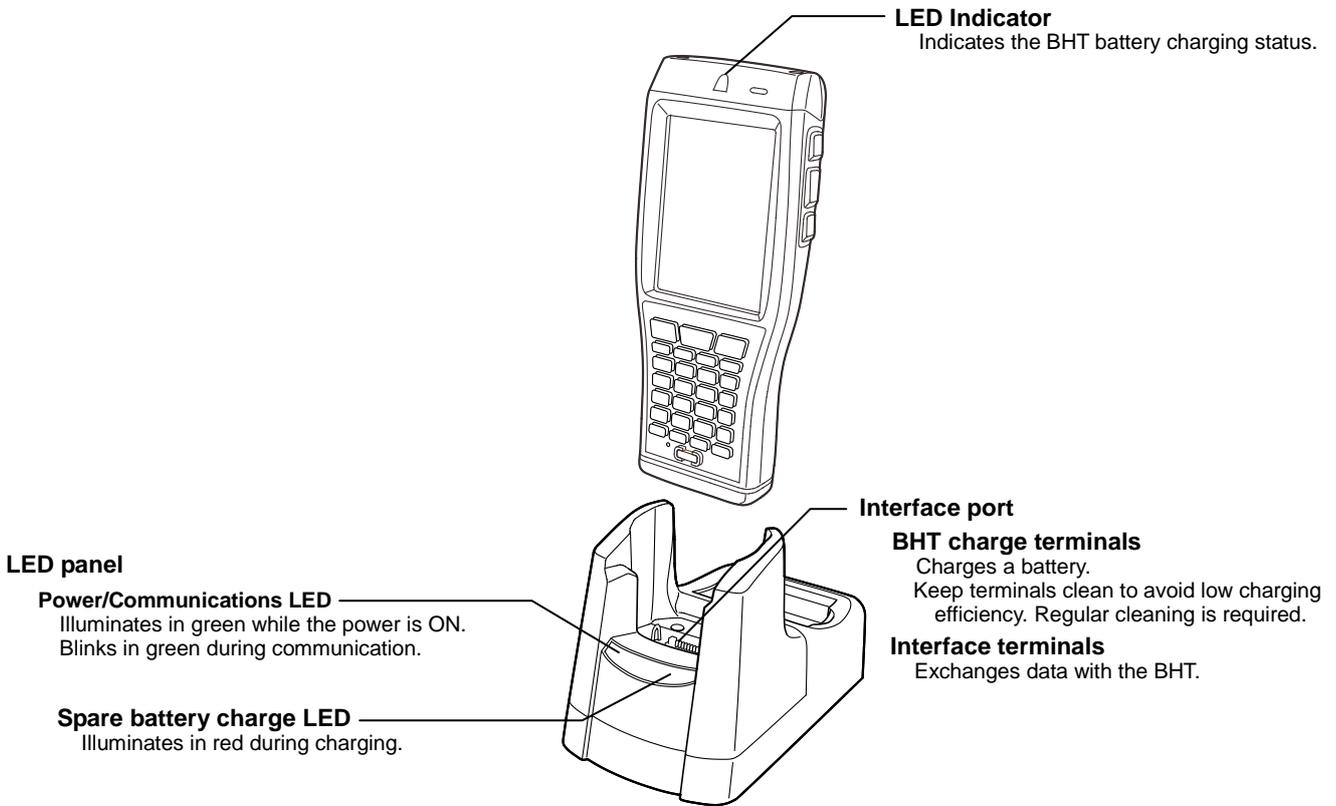
2) Charging the BHT

To charge the battery, place the BHT in the CU.

3) Charging the spare battery

To charge the spare battery, place the spare battery in the charging slot.

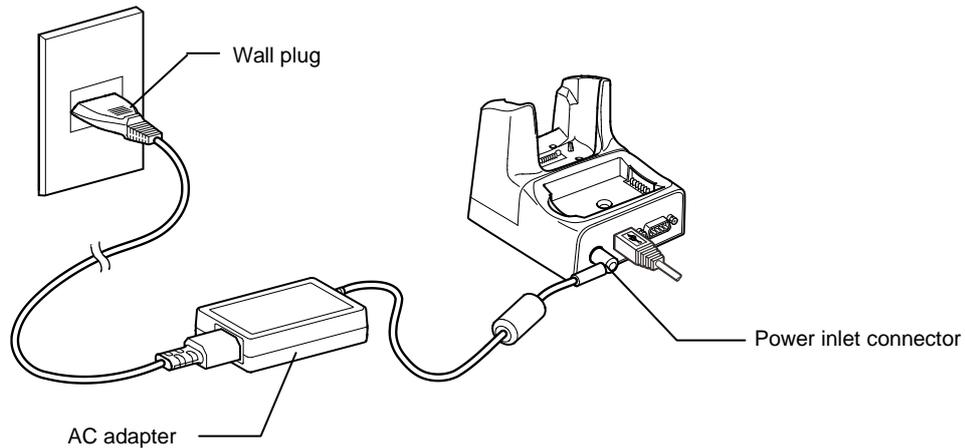
9.2 Components and Functions



9.3 CU-1200 Power Supply

Power for the CU is supplied from a wall socket via the dedicated AC adapter.

Connect the AC adapter outlet plug to the CU power inlet connector, then plug in the adapter into the wall socket.



Mishandling of the CU may result in electric shock, overheating or smoking.

Read the following instructions prior to use.

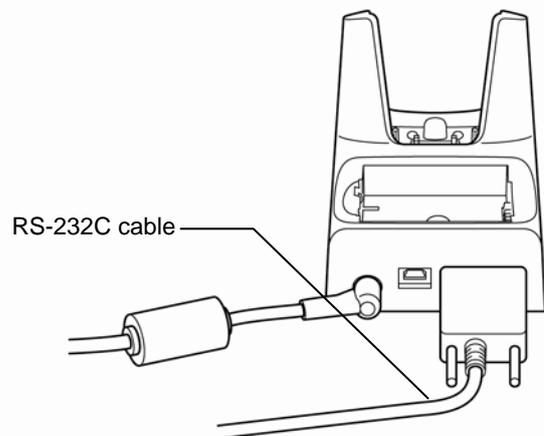
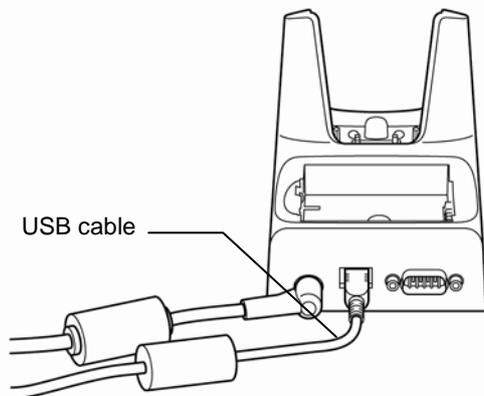
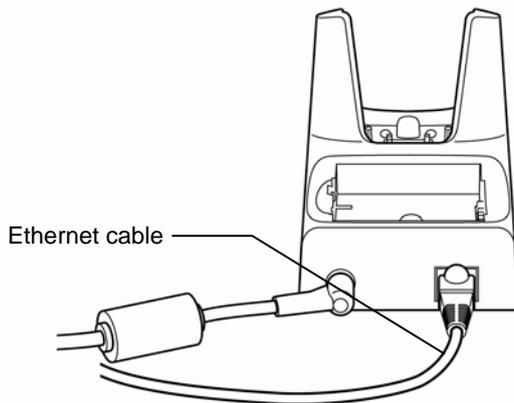
- Never disassemble or modify the CU.
- Never place the CU in a microwave oven or high-pressure container.
- Never use the CU if smoke, abnormal noises or odors are being emitted.
- If any of the above abnormalities occur, immediately unplug the AC adapter.
- If foreign material or water gets into the CU, immediately unplug the AC adapter from the wall socket or CU.
- If the CU housing is damaged by being dropped, immediately unplug the AC adapter from the wall socket or CU.
- Never use the CU to charge a non-dedicated battery.
- Never touch the output terminals with any metal object.
- Use the dedicated AC adapter only.
- Use only specified voltage.
- Never use the AC adapter if the power cord is damaged (e.g., exposed or broken lead wires).

⚠ WARNING

9.4 Communicating with the Host Computer

9.4.1 Interface cable connection

1. Unplug the CU-1211/1233 AC adapter from the wall socket.
2. Turn OFF the host computer.
3. CU-1211: Connect the Ethernet cable to the CU-1211 Ethernet connector.
CU-1233: Connect the USB or RS-232C cable to the CU-1233 interface connector.

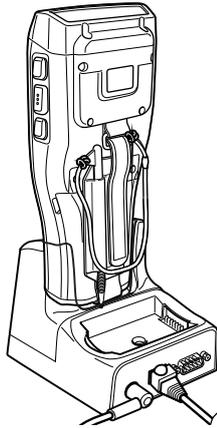


4. CU-1211: Connect the other end of the Ethernet cable to the Ethernet hub.
CU-1233: Connect the other end of the RS-232C or USB interface cable to the host computer interface port.
The USB interface cable can also be connected to the host computer via a USB hub.

9.4.2 Communication with the Host Computer

This section describes how to communicate with the host computer by using the System Menu. The same method applies when using the user programs.

1. Turn ON the host computer to run Windows.
2. Plug the AC adapter into the wall socket.
3. Turn OFF the BHT and set it in the CU.



4. Run the communication server program (e.g. HTTP server, FTP server) on the host computer.
5. Turn ON the BHT, and then run the client software.

To communicate with the HTTP server, use Internet Explorer (Desktop)

To communicate with the FTP server, use the FTP Client (refer to Chapter 4, 4.4.2 Communication Menu – [3] FTP Menu)

6. Communication starts with the client software used.

Refer to Chapter 4, 4.2 for Internet Explorer. Refer to Chapter 4, 4.4.2 communication menu for FTP Client.

The Power Communication LED on the CU-1211 starts flashing when the CU-1211 is ready for LAN communication.

9.5 Charging the BHT and the Spear battery

9.5.1 Charging the BHT

To charge the battery, set the BHT in the CU.

– **Note** – Charge the battery after turned OFF the BHT.
Charging time may take longer if the BHT is ON while charging.

– **Note** – Battery Service Life

The performance of the battery's lithium-ion battery will deteriorate gradually with repeated charging, even during normal use. When the battery operation time becomes shorter even after charging for the specified length of time, replace the battery with a new one. Replacing the battery after one year of usage or after 300 charges, whichever comes first, is recommended.

1. Turn ON the CU.

The Power/Communications LED illuminates in green.

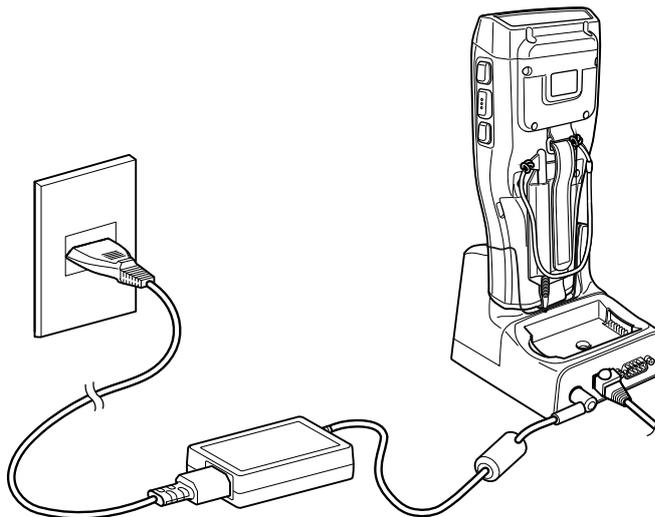
2. Set the BHT with the power OFF in the CU.

The LED Indicator on the BHT illuminates in red and the CU starts charging.

Charging Time

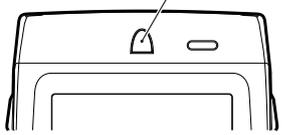
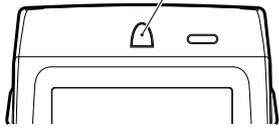
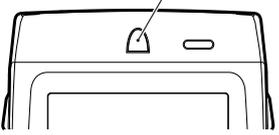
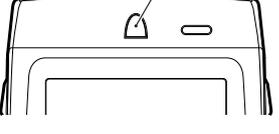
Standard rechargeable battery (BT-110LA)	Approx. 3 hours
Large-capacity rechargeable battery	Approx. 4.5 hours

The LED Indicator on the BHT changes to green when charging is completed.



3. Remove the BHT from the CU.

9.5.2 Charging and LED Indicators

Procedure	Charging Status	LED Indicator on the BHT
	Standby	OFF 
	⇓	
Place the BHT on the CU.	Charging	ON (red) 
⇓	⇓	
After approx. 3 hours (standard rechargeable battery) or 4.5 hours (large-capacity rechargeable battery)	Charging completed	ON (green) 
⇓	⇓	
Remove the BHT.	Standby	OFF 

- Point –
- Charging takes approximately 3 hours (standard rechargeable battery) or 4.5 hours (large-capacity rechargeable battery).
 - A slightly discharged battery takes less than 3 hours to fully charge.
 - If the LED indicator flashes in red the causes are as follows, and the proper action stated below must be taken.
 - Abnormal temperature of the battery is detected.
 - Charge the battery under the proper temperature (10° to 40°C).
 - Avoid places where there are objects generating heat nearby or exposed to direct sunlight.
 - Stop charging and replace the battery even though there are no objects generating heat nearby.
 - Charge terminal contact failure
 - Wipe any dirt or dust from the charge terminals as described in “Chapter 6 Maintenance” – “6.4 Daily Maintenance”.
 - Charging is not completed even after the specified time has elapsed.
 - Stop charging if not using a dedicated AC adapter to charge the battery.
 - The battery is broken or the battery life has ended.
 - Replace the battery.

The protection circuit stops charging when the charging current exceeds the limit during charging.
 The CU Power/Communication LED also keeps flashing in 1 second intervals.
 Unplug the AC adapter and plug in again to reset the protection circuit.
 If the protection circuit is activated again, stop using the CU and contact your system administrator.

9.5.3 Charging the spare battery

To charge the spare battery, set the spare battery in the CU.

1. Turn ON the CU.

The Power/Communications LED illuminates in green.

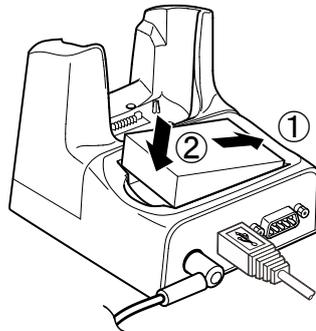
2. Load the battery in the CU spare battery charge slot.

The Spare battery charge LED illuminates in red and the CU starts charging.

Charging Time

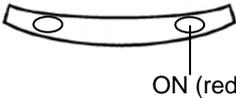
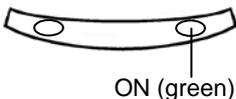
Rechargeable battery	Approx. 3 hours
Large-capacity rechargeable battery	Approx. 4.5 hours

The spare battery charge LED changes to green when charging is completed.



3. Remove the battery from the CU.

9.5.4 The spare battery and charge LED

Procedure	Charging Status	Spare battery charge LED
	Standby	 OFF
↓	↓	↓
Load the battery in the spare battery charge slot of the CU.	Charging	 ON (red)
↓	↓	↓
After approx. 3 hours (standard rechargeable battery) or 4.5 hours (large-capacity rechargeable battery)	Completed	 ON (green)
↓	↓	↓
Remove the battery	Standby	 OFF

- Point –
- Full charging takes approximately 3 hours (standard rechargeable battery) or 4.5 hours (large-capacity rechargeable battery).
 - A slightly discharged battery takes less than 3 hours to fully charge.
 - If the spare battery charge LED flashes in red the causes are as follows, and the proper action stated below must be taken.
 - Abnormal temperature of the battery is detected.
 - Charge the battery under the proper temperature (10° to 40°C).
 - Avoid places where there are objects generating heat nearby or exposed to direct sunlight.
 - Stop charging and replace the battery even though there are no objects generating heat nearby.
 - Charge terminal contact failure
 - Wipe any dirt or dust from the charge terminals as described in Chapter 6, 6.4 Daily Maintenance.
 - Charging is not completed even after the specified time has elapsed.
 - Stop charging if not using a dedicated AC adapter to charge the battery.
 - The battery is broken or the battery life has ended.
 - Replace the battery.

9.6 CU Specifications

9.6.1 Hardware Specifications

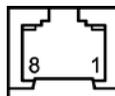
Power supply:	100/240 V AC, 50/60 Hz (12 V DC: Using dedicated AC adapter)
Rated input voltage/current :	12 V DC, 1.8 A
Dimensions (W) x (L) x (H):	94 x133 x111 mm
Weight:	Approx. 235 g
Ambient operating temperature:	0°C to 40°C
Ambient operating humidity:	20% to 85% (with no dew condensation)

9.6.2 Charging Requirements

- Charge current: Approx. 1150 mA
- Charge time: Approx. 3 hours (Standard rechargeable battery)
Approx. 4.5 hours (large-capacity rechargeable battery)

9.6.3 Interface Specifications

The CU-1211 has an IEEE802.3-compliant Ethernet interface port (100Base-TX).



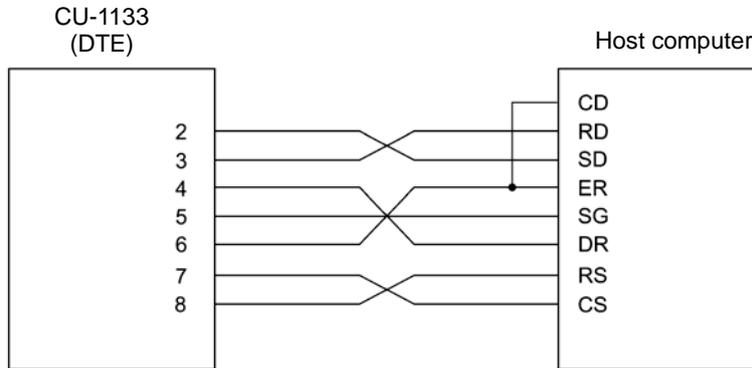
Ethernet Port (RJ45 jack) on the CU-1211

Pin No.	Signal	Functions
1	TD+	Send data
2	TD-	Send data
3	RD+	Receive data
4	N.C.	No connection
5	N.C.	No connection
6	RD-	Receive data
7	N.C.	No connection
8	N.C.	No connection

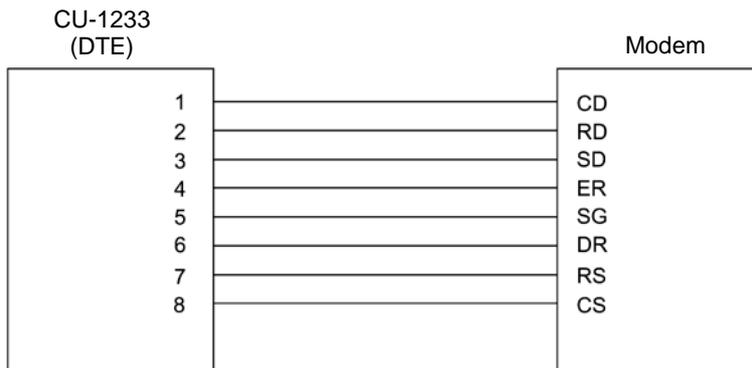
The CU-1211 MAC address is labeled on the back of the product.

9.6.4 Interface Cable

- Ethernet: Use a TIA/EIA Category 5 cable or higher.
- USB: Use a USB compliant cable.
- RS-232C: As shown in the figure below, connect the CU-1233 to the host computer with a crossover cable, and to the modem with a straight cable.



Cable connection between CU-1233 and host computer



Cable connection between CU-1233 and modem

DTE and DCE

The RS-232C specification defines that a crossover cable is used for connecting two DTE devices (Data Terminal Equipment), and a straight cable is used for connecting a DTE device to a DCE device (Data Circuit Endpoint) .

The DTE is a device connected at both ends of a communication line as a sender or receiver. This refers to devices such as the BHT placed on the CU-1233 and the host computer.

The DCE is a device connected between the DTE device and a transmission circuit such as a communication line. The DCE device interconverts the signals without any change in content and terminates the connection. This refers to devices such as modems and TAs (Terminal Adapter).

Barcode Handy Terminal/2D code Handy Terminal

BHT-1260BWB-CE/BHT-1261BWB-CE
BHT-1260QWB-CE/BHT-1261QWB-CE/BHT-1261QWBG-CE

User's Manual

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The purpose of this manual is to provide accurate information in the handling and operating of the BHT-1260BWB-CE/BHT-1261BWB-CE and BHT-1260QWB-CE/BHT-1261QWB-CE/BHT-1261QWBG-CE.

Please feel free to send your comments regarding any errors or omissions you may have found, or any suggestions you may have for generally improving the manual.

In no event will DENSO WAVE be liable for any direct or indirect damages resulting from the application of the information in this manual.