

DENSO

2D code
Handy Terminal

BHT-1336Q Series User's Manual



Preface

Thank you for using the DENSO WAVE 2D Code Handy Terminals BHT-1336Q series. Please read this manual thoroughly prior to the operation to ensure full use of the product's functionality, and store safely in a convenient location for quick reference even after reading.

This instruction manual is for the BHT-1336QWB with built-in Bluetooth® and wireless LAN.

The BHT-1336QWB is developed as wireless stations for the low-power data communication system and have been given a certificate of technological conformance defined by the applicable radio law, allowing users not to apply for or obtain a license to use a wireless station. Any modification or reconstruction of the radio station is strictly banned by the radio law and anyone who has violated this regulation is subject to penalties.

Bluetooth® is a registered trademark of Bluetooth SIG and DENSO WAVE is using it under its license.

The firmware of this product shall not be reverse-engineered, decompiled, disassembled, integrated, modified or transformed in anyway or any form.

Revision History

Contents of this manual are described corresponding to the following OS versions.

Version	Update contents	BHT-1336QWB BHT-1336QWB-D	BHT-1336Q
1st Edition		1.02	-
2nd Edition	Chapter 2 BHT Preparation 2.4 Initial Setup Added Korean to the display language. Chapter 4 System Operation 4.1 Initializing the BHT System Added Korean to the display language. 4.5 SYSTEM MENU 4.5.1.1 Supported CLONE using USB communication. 4.5.5 Added Korean to the display language.	1.03	1.01
3rd Edition	Chapter 4 System Operation 4.5 SYSTEM MENU 4.5.1.1 Added function to clone only firmware. 4.5.9.1 Added RF mode setting function Appendix 5 Points When Switching from BHT-1306QWB to BHT-1336Q Series Added If your application's execution speed is slow.	1.05	1.01

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Various inquiries

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<https://www.denso-wave.com/en/adcd/contact/>

Download service

Offers downloads of repair modules for the latest BHT Series systems or software, sample programs, and manuals.

BHT-1336Q Series



https://www.denso-wave.com/en/adcd/product/handy_terminal/bht-1336/dl/

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– Technical Inquiries (QBdirect)

- BHT product programming method
- Product setup method, 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.

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– General Inquiries

- BHT product price, quotes, distributors, sales channels
- Repair, maintenance, and service
- Inquiries about product specifications
- Other general questions

Inquires relating to the above can be made at our Web site.

Access the link below.

<https://www.denso-wave.com/en/adcd/contact/inquiry/?answer1=Inquiry>



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Manual Composition

This manual is made up of the following 8 chapters and 5 appendix.

Chapter 1 Outline

Describes the BHT system and provides an overall outline of the BHT.

Chapter 2 BHT Preparation

Describes information required by the user and procedures that must be performed prior to commencing operation.

Chapter 3 Basic Operation

Describes basic operations performed by the operator and how to make basic changes to settings such as the speaker volume.

Chapter 4 System Operation

Describes how to initialize and update the system, start up a user program, and operate System Mode.

Chapter 5 Communication

Describes interfaces and communication specifications.

Chapter 6 Maintenance

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

Chapter 7 Error Messages

Describes causes and countermeasures for error messages expected to occur during basic operation.

Chapter 8 Specifications

Describes specifications for hardware, readable barcodes, and interfaces.

Appendix 1 CU-1300 Series Specifications (Option)

Describes the main specifications for the CU-1300 Series (option).

Appendix 2 Battery and battery cover combinations

There are similar batteries and battery covers, so here are some points to note.

Appendix 3 How to check the rating name plate

This section explains how to check the rating name plate.

Appendix 4 When File Transfer is Not Possible Using the Transfer Utility

Describes causes and countermeasures when unable to transfer files.

Appendix 5 Points When Switching from BHT-1306Q series to BHT-1336Q series

Describes the key points for switching between the old and new BHT-1300 series.

Related Documentation

- BHT-BASIC Programmer's Manual (for BHT-1336Q series)

This is an instruction manual used to create handy terminal programs with BHT-BASIC.

- BHT-BASIC 4.0 Transfer Utility User's Guide

This is an instruction manual for software relating to data transfer between the computer and BHT and comes bundled with the BHT-BASIC 4.0 Transfer Utility.

- Easy Pack Ad for BHT-1300 User's Manual

This is an instruction manual for the simplified operating applications installed in the BHT-1300 Series at shipping.

- BHT-Setting User's Manual (for BHT-1300)

This is a software manual for making various settings and installing applications required for introducing BHT on a PC. Enclosed in BHT Setting.

- BHT-Manager User's Manual

This is an instruction manual for software that supports BHT operation. Enclosed in BHT Manager.

SAFETY PRECAUTIONS

Be sure to observe all these safety precautions.

- Please read through this manual carefully. It will enable you to use the BHT and communication unit correctly.
- Always keep this manual nearby for speedy reference.

Strict observance of these warnings and cautions is a **MUST** for preventing accidents that could result in bodily injury and substantial property damage. Make sure you fully understand all definitions of these terms and symbols given below before you proceed to the text itself.

 DANGER	Alerts you to those conditions that could imminently lead to serious bodily injury or death if the instructions are not followed correctly.
 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 (▲) 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 (●) with a picture inside alerts you to something you MUST do. This example shows that you MUST unplug the power cord.

 **DANGER**

Handling the battery

Wrong handling of the battery may affect normal operation or result in a heat, smoke, or scanner failure.

Be sure to observe the following.

	<ul style="list-style-type: none"> • Never disassemble or modify the battery.
	<ul style="list-style-type: none"> • Do not connect the battery positive (+) and negative (-) terminals with metals such as wires. • Do not carry or store the battery together with metallic ball-point pens, necklaces, coins, hairpins, etc. • Do not get the battery wet or put it in water. • Do not heat up the battery or put it into fire. • Never charge or leave the battery near a fire or an electric heater (high temperature places of more than 50°C) or under the scorching sun. • Never charge the battery in places where any inflammable gases may be emitted. • Do not drive a nail into the battery nor hit it with a hammer or otherwise stomp on it. • Do not let the battery undergo any strong shock or impact. • Do not use the battery that is damaged on the surface or in unstable conditions. • Do not solder the battery. • Do not use the battery for other purposes than the BHT.
	<ul style="list-style-type: none"> • If abnormal odor, heat, discoloration, deformation or any other abnormal conditions are observed, immediately stop using the battery. • Do not use other than the dedicated charger when charging the battery. • If liquid leakage of the battery gets into your eyes, wash it off immediately with clean water and then seek medical care. Be careful not rub your eyes at this time. Failure to do so may cause damage to your eyesight.

WARNING

To system designers:

	<ul style="list-style-type: none"> When introducing BHTs in those systems that could affect human lives, develop applications carefully through redundancy and safety design which avoids the feasibility of affecting human lives even if a data error occurs.
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Handling the battery

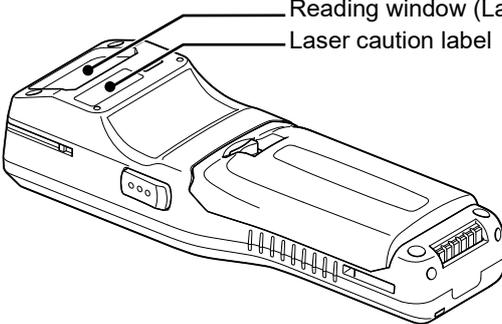
Wrong handling of the battery may affect normal operation or result in a heat, smoke, or scanner failure.

Be sure to observe the following.

	<ul style="list-style-type: none"> Never put the battery in a microwave oven or high-pressure container.
	<ul style="list-style-type: none"> Stop charging if the charging is not completed within the specified period of time.

Handling the BHT

Wrong handling of the BHT may affect normal operation or result in vision disturbance. Be sure to observe the following.

	<ul style="list-style-type: none"> Never stare into the laser light. Never point the code reading window at someone's eyes. <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> <p>Reading window (Laser light emission window)</p> <p>Laser caution label</p> </div>  </div> <div style="margin-top: 20px; text-align: center;">  <p>Laser caution label example.</p> </div>
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Wrong handling of the BHT may affect normal operation or result in vision disturbance. Be sure to observe the following.

	<p>Be sure to use an appropriate combination of the battery and battery cover.</p> <ul style="list-style-type: none"> Applicable batteries are BT-20LB only. <ul style="list-style-type: none"> When using the BT-20LB, use the BT-20LB battery cover. <p>*See Appendix 2 Batteries and Battery Cover Combinations for details.</p>
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	<ul style="list-style-type: none"> • The adapter B-130D for dry cells and BT-130LA are not supported.
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Wrong handling of the battery may affect normal operation or result in a heat, smoke, or scanner failure. Be sure to observe the following.

	<ul style="list-style-type: none"> • Never disassemble or modify the BHT.
	<ul style="list-style-type: none"> • Do not insert any foreign materials into the battery. • Do not get the BHT wet or put it in water. • Never put the BHT in a microwave oven or high-pressure container. • Never put the BHT in places where there are excessively high temperatures, such as inside closed-up automobiles, or in places exposed to direct sunlight. • Avoid using the BHT in extremely humid or dusty areas, or where there are drastic temperature changes. • Stop using the BHT if its case is broken.
	<ul style="list-style-type: none"> • Do not use a battery or power source other than the specified one. • If the LCD screen is broken by mistake, care must be taken not to get the liquid crystal into your eyes or mouth or drop it on your skin.
	<ul style="list-style-type: none"> • If smoke, abnormal odor or noise comes from the BHT, immediately turn off the power and remove the battery from the scanner case. • If the LCD screen is accidentally broken and liquid crystal gets into your eyes or mouth, wash it off immediately with clean water and then seek medical care. Or, if it is attached to your skin or cloths, wipe it off immediately and then wash it using soap and water. Failure to do so may lead to vision loss or cause trouble in the skin. • Be careful of broken glass if the LCD screen is accidentally cracked or broken. It may cause bodily injury.



WARNING

Handling battery

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

	<ul style="list-style-type: none"> • The battery is exclusively for the BHT. Do not use the battery for purposes other than charging the BHT. • To charge the battery, be sure to use the specified charger, the charging cable. • The battery may be warm immediately after charging or use. • If abnormal odor, heat, discoloration, deformation or any other abnormal conditions are noticed when the battery is in use, being charged, or is in storage, remove it from the scanner, BHT or charger and avoid further use. • If the battery does not finish recharging within the specified time, stop recharging. • Battery life is when the scanner or BHT becomes available for less time even after a properly charged battery is loaded. Please purchase a new battery. • A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.
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Storing the battery

	<ul style="list-style-type: none"> • Remove the battery from BHT, or charger and store at cool and dry place, when you don't use your scanner or BHT for an extended period of time.
	<ul style="list-style-type: none"> • Check the condition of battery on the following points before you store it for a long time: <ul style="list-style-type: none"> - Never store the battery in a fully charged state (immediately after charging is complete). - Never store the battery in low battery level (there is not enough power left to activate BHT). • Storing the battery in the above conditions for an extended period of time can cause a decrease in the battery's performance and lifespan. • You are recommended to ensure that the battery cartridge is at least at the  charge level required for long-term storage. • If you will not be using the battery for an extended period of time, check the charge state about once a year to maintain its functionality. • The battery may swell over the years. This is a natural characteristic of a lithium-ion battery and is not safety hazard. Nevertheless, replacing the battery sooner is recommended.

 **CAUTION**

Handling the BHT

Wrong handling of the BHT may affect normal operation or result in vision disturbance. Be sure to observe the following.

	<ul style="list-style-type: none"> • When using the hand strap or neck strap, exercise due care to avoid getting them caught in other objects or entangled in rotating machinery. Failure to do so could result in accident or injury. • The battery may be warmed up after it is charged or immediately after it is used.
	<ul style="list-style-type: none"> • Do not use the BHT near a wireless transmitter such as a personal radio or ham radio. Doing so could result in malfunction or mechanical failure. • Keep magnetic cards such as a cash card or a credit card away from the BHT. Failure to do so could cause loss of magnetic data. • Do not move your ear close to the speaker while the Buzzer is beeping. Doing so could lead to hearing difficulty. • Do not use excessive force when inserting or removing the battery. Doing so could result in malfunction or mechanical failure.
	<ul style="list-style-type: none"> • Do not operate the BHT in environments where static electricity can build into significant charges. Doing so could result in malfunction or mechanical failure. • Avoid dropping the battery or letting it undergo any strong shock or impact. Doing so could result in malfunction or mechanical failure. • When condensation forms on the external surfaces of the BHT, make sure that the BHT is left unwiped and unused until external condensation dries out naturally. Condensation on external surfaces indicates existence of internal condensation which may cause problems for electronic components.

To system designers

	<ul style="list-style-type: none"> • Using a WAV file that causes sound cracking may result in a failure of the speaker. Check the sound produced when the WAV file is played back and make adjustments so that sound cracking does not occur.
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Chapter 1 Outline

1.1 System Configuration

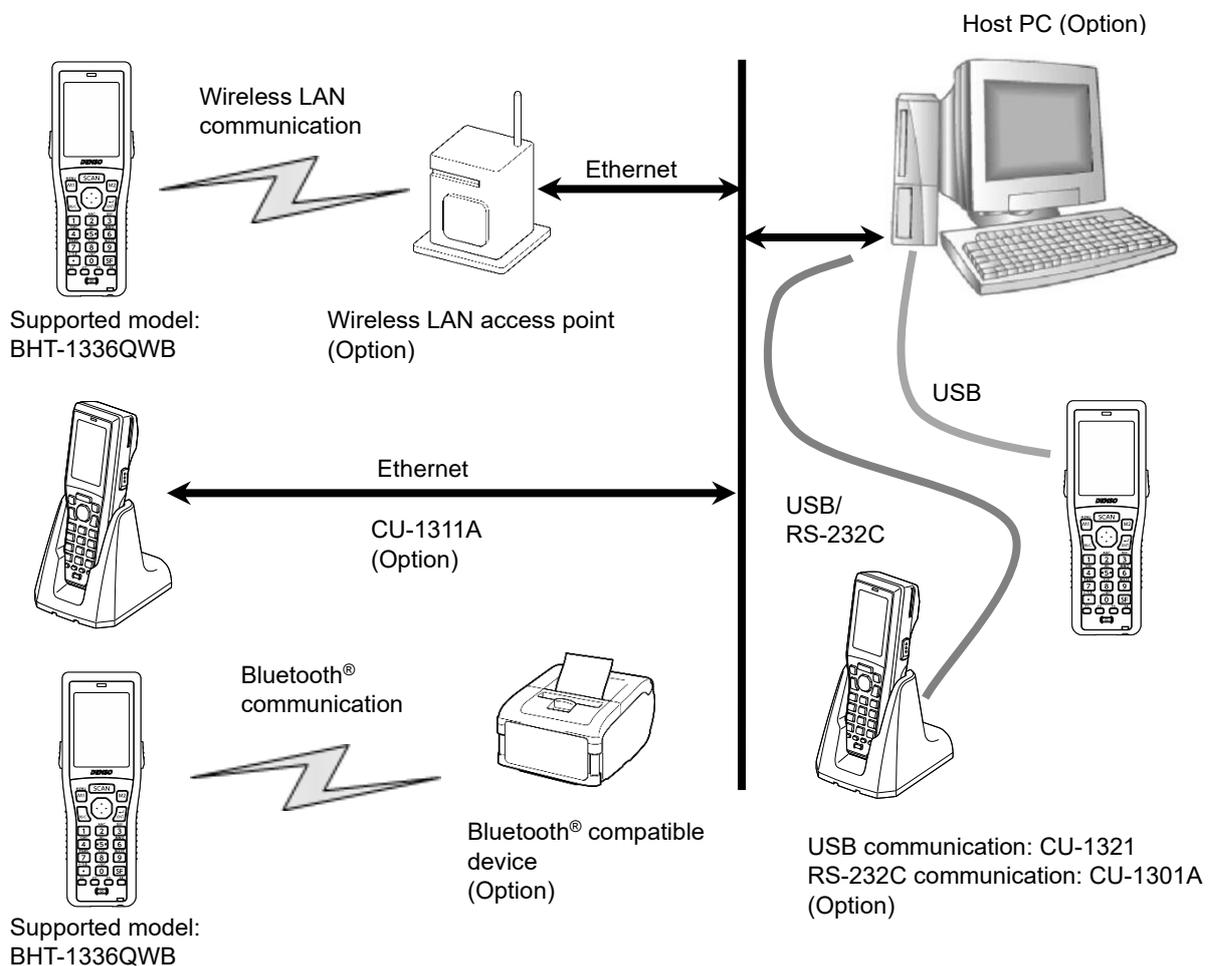
This section describes the hardware and software required for the code data collection system using the BHT.

1.1.1 Hardware Configuration

In addition to the BHT, the following hardware and software are required for the code data collection system using the BHT.

Please note that certain components of the required hardware will differ depending on the type of communication used. For the required software, please refer to "[1.1.2 Software Configuration](#)."

- Host computer
- BHT communication unit (option): CU-1300 series
- Connection cable (option): Used to connect the CU-1300 series and host computer
- Wireless LAN access point (option)
- Bluetooth® compatible device (option)



- Devices required for system configuration

	Host computer	BHT	Communication Unit (CU)	Wireless LAN AP	Bluetooth®	Reference Page 5. Communication
USB communication	√	√	√	–	–	5.3 USB Communication
Wireless LAN communication	√	√	–	√	–	5.1 Wireless Communication
Wired LAN communication	√	√	–	–	–	5.3 USB Communication ^{*3}
Bluetooth® communication	√ ^{*1}	√	√	–	√	5.2 Bluetooth® Communication
RS-232C Communication	√ ^{*2}	√	–	–	–	5.3 USB Communication ^{*3}

*1 When the host computer is equipped with the Bluetooth® wireless communication device.

*2 When the host PC is equipped with RS-232C communication.

*3 The BHT communicates with the communication unit is via USB, and the communication unit converts the communication to a wired LAN or RS-232C.

◆ CU-1300 Series (Option)

Used for communication between the BHT and the host computer.

Communication with the host computer is performed with an RS-232C, Ethernet (100BASE-T) or USB interface. The following three types of communication unit are available depending on the interface used to communicate with the host computer.

- CU-1301A: RS-232C interface
- CU-1311A: Ethernet interface
- CU-1321: USB interface

* CU-1301 and CU-1311 can be used only for charging. Since the BHT-1336QWB does not have an IrDA interface, communication with the host PC is not supported. The communication units with the communication function and charging function are CU-1301A, CU-1311A and CU-1321.

◆ **Connection Cable (Option or Commercially Available Product)**

Used for connecting the host computer and CU-1300 Series.

Select a cable suited to the CU-1300 Series interface to be used.

- CU-1301A: RS-232C cable (Optional)
- CU-1311A: Ethernet cable (100BASE-T) (Commercially available product)
- CU-1321: USB cable (Type-B compatible with USB 2.0) (option)

* Refer to "[Appendix 1 CU-1300 Specifications](#)" for the combination of a communication unit, connection cable, and AC adapter.

* The BHT-1336Q series main unit has a USB connector (USB Type-C®). The host computer can be connected with the BHT directly when using a USB cable (USB Type-C®).

◆ **Wireless LAN Access Point (Option)**

Used for wireless communication between the BHT and host computer.

The BHT is compatible with wireless LAN standard IEEE 802.11b/g/n and can therefore be used with existing wireless LAN infrastructure (max. wireless communication speed: 54 Mbps).

Furthermore, the BHT is WPA/WPA2 is made compatible to ensure security.

◆ **Bluetooth® compatible device (Option)**

Used for Bluetooth® wireless communication between the BHT and a device such as the Bluetooth® compatible host computer, printer, mobile phone, etc.

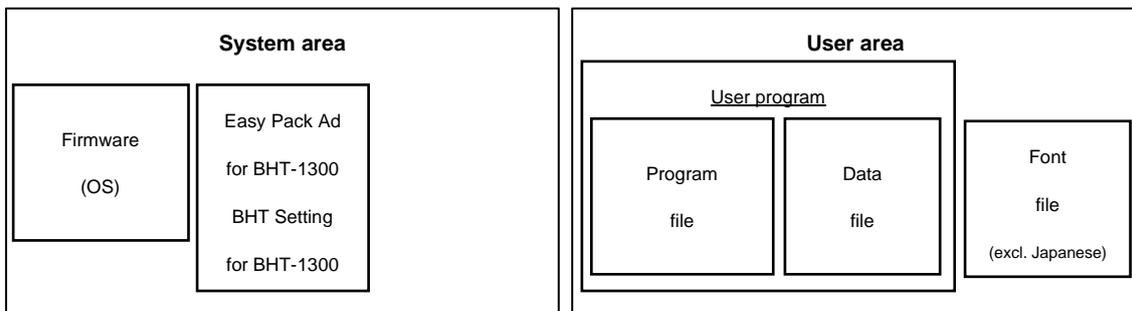
1.1.2 Software Configuration

The BHT 1336Q Series is composed of the following software products.

- Firmware (OS):
Provided with the BHT operating system optimized for the BHT Series.
- Font files:
Provided with a font file that displays the Japanese Kanji characters together with the traditional and simplified Chinese characters in the factory default settings. If the Japanese character is specified, any other font files are automatically deleted. Refer to "[2.4 Initial Setup](#)" for further details.
- User programs:
Provided with operating applications and their data files. Two types of operating applications, i.e., application that is preinstalled as a standard feature (Easy Pack Ad for BHT-1300) and applications that can be developed and downloaded to the BHT by users.

All these software products are located in the BHT's flash memory. The flash memory has the system area for storing firmware (OS), Easy Pack Ad for BHT-1300 and BHT Setting for BHT-1300, and the user area for storing font files and user programs. The firmware (OS), Easy Pack Ad for BHT-1300, BHT Setting for BHT-1300, and font files are preinstalled when the product is shipped.

Flash memory



◆ **Operating applications**

Operating applications are required to use the BHT-1336Q Series. The following operating applications are available for the BHT-1336Q series.

- Application as standard feature (Easy Pack Ad for BHT-1300)
- Applications developed for other BHT Series
- Applications to be created for the BHT-1336Q Series

1. Application as standard feature

The BHT-1336Q series comes with a simplified operating application "Easy Pack Ad for BHT-1300" as a standard feature at shipping. This Easy Pack Ad for BHT-1300 supports a data collection function, 1-to-1 verification and 1-to-n verification. For further details, refer to "[2.5 About Easy Pack Ad for BHT-1300](#)".

2. Applications for the other BHT Series

Applications used for other BHT Series are available on the BHT-1336QWB.

To operate the applications used for other BHT Series on the BHT-1336QWB, the screen display compatible mode, key compatible mode, and the application conversion are required depending on the applicable model as shown in the table below.

(√: necessary, -: Unnecessary)

Compatible models	Screen compatible mode *1	Key compatible mode*2	Application converter *3
BHT-1500 Series	-	-	-
BHT-1300 Series	-	-	-
BHT-900 Series	√	√	-
BHT-800 Series	-	-	-
BHT-600 Series	-	-	-
BHT-500 Series	-	√	-
BHT-300 Series	√	-	-
BHT-100 Series	√	-	√
BHT-8000 Series	√	-	√
BHT-7500 Series	√	-	√

*1 Refer to "[4.5.5 System Environment Settings \(SET SYSTEM Menu\)](#)" for how to set the screen display compatible mode.

*2 Refer to "[4.5.5 System Environment Settings \(SET SYSTEM Menu\)](#)" for how to set the key compatible mode.

*3 The BHT-BASIC4.0 converter can be downloaded from our [QBdirect](#) website (<https://www.denso-wave.com/en/adcd/login/>) for free of charge. Refer to readme provided with the downloaded BHT-BASIC4.0 converter for how to use it.

3. Applications to be created for the BHT-1336Q series

The operation applications for the BHT-1336Q series can be created either by:

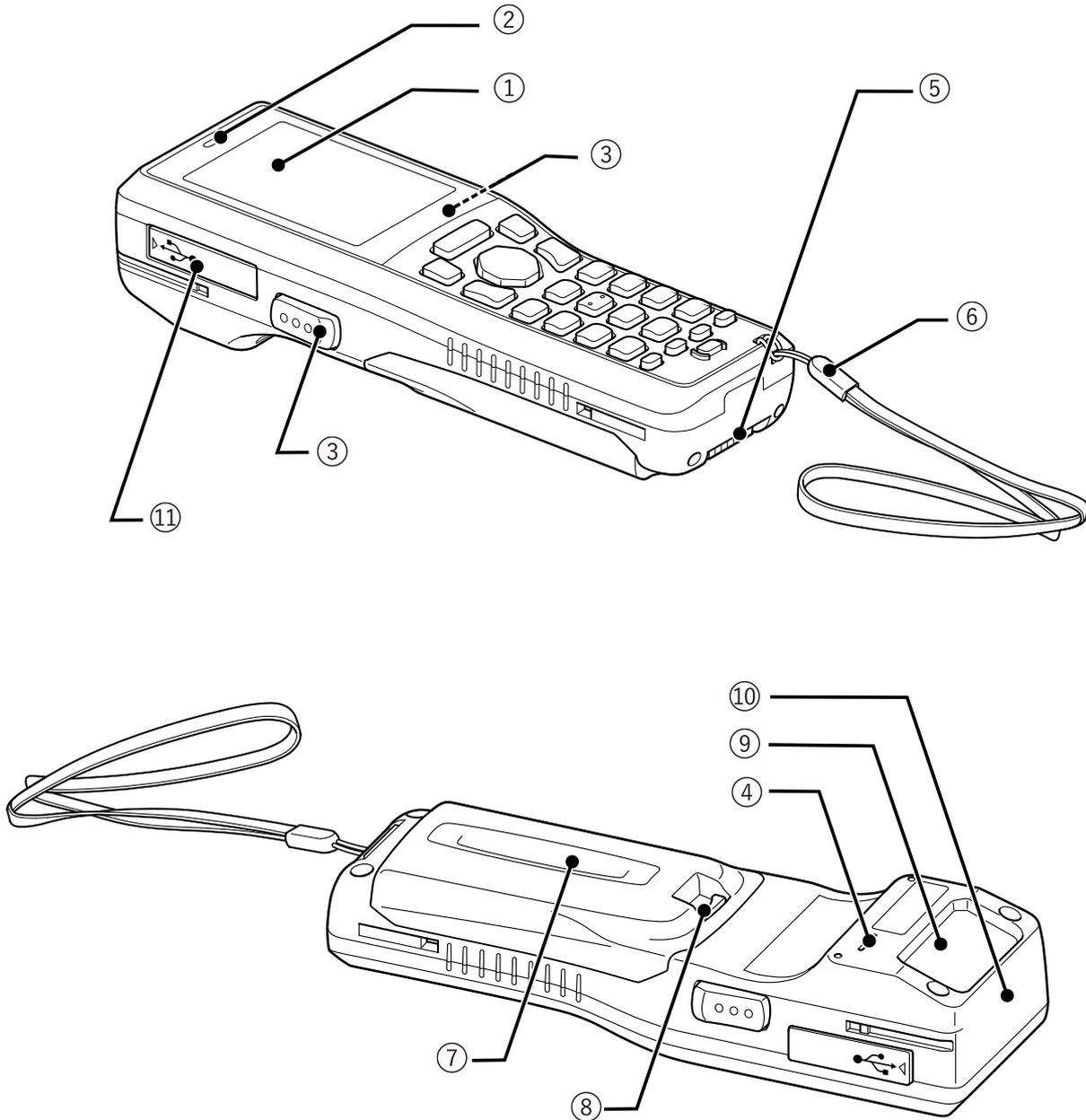
- Changing "Easy Pack Ad for BHT-1300" that is preinstalled as a standard feature. With the Easy Pack Ad for BHT-1300 Setting Tool, you can change the type of code to be read, the number of digits, the item to be displayed, etc. according to your operation.

The Easy Pack Ad for BHT-1300 Setting Tool can be downloaded from the [QBdirect](#) Service.

- Creating operating applications by the mouse without a coding.
With the Advanced Pack II, you can create new work flows or tasks, such as stack-taking, ordering, inventory control, picking and inspection, without the use of complicated coding by using the mouse via GUI interface. Provided samples for display, data entry and file reference are useful in creating new applications.
 - Creating operating applications with HTML.
You can use the operating application as a WEB client on the BHT Browser. The BHT Browser that supports HTML, XHTML, CSS, DOM and Java Script is featured with the plug-in object of JavaScript. The BHT Browser also works with the programs created by BHT-BASIC4.0.
 - Using the online applications created with the 5250 protocols.
You can use the online applications for the AS/400 on the BHT Term Emulator. For the use of BHT Term Emulator, each BHT shall have its own license.
 - Creating operating applications with BHT BASIC 4.0.
With the BHT-BASIC4.0 Creator, you can develop all types of operating applications for the BHT using BHT-BASIC4.0. The BHT-BASIC4.0 Simulator supports a debugging on the computer without the use of physical devices.
- ◆ **Downloading user programs to the BHT**
- Download the user programs to the BHT by using:
- The BHT-BASIC4.0 Transfer Utility, or
 - The Windows Explorer drag-and-drop feature by connecting the BHT directly to your computer via USB cable. Refer to "[5.3.2 Communication via MTP Connection](#)".

1.2 Components and Functions

1.2.1 BHT Front/Rear

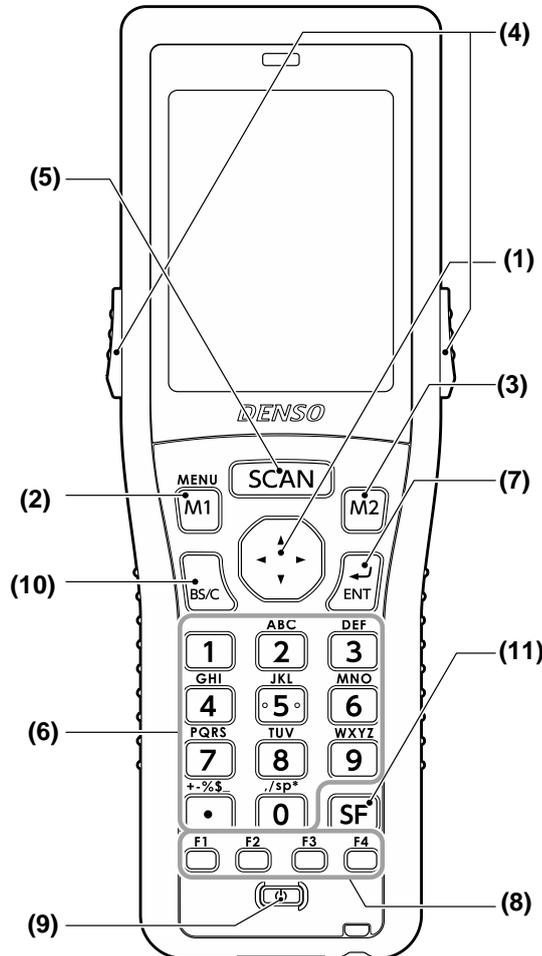


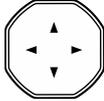
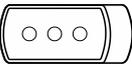
No.	Name	Function and Description
①	LCD (Liquid crystal display)	Displays the characters and graphic patterns.
②	Indicator	Indicates the code read status. Illuminates in blue when the BHT has successfully read a code.
③	Trigger switches (M3 and M4 Magic keys)	Press this when scanning a code. The SF and ENT key functions can be assigned to these magic keys by making settings at the SYSTEM MENU. Character strings can be assigned at user programs. Refer to " Chapter 4 System Operation " for details on how to operate the SYSTEM MENU.
④	Speaker	Emits sound.
⑤	Charging/communication terminal	Used to communicate and charge the BHT that is set on the communication unit.
⑥	Hand strap	Be sure to put your hand through this strap to prevent you from dropping the BHT accidentally.
⑦	Battery cover	Remove this cover to replace the battery.
⑧	Battery cover lock	Used to lock or unlock the battery cover.
⑨	Code reading window	Align the reading window with codes to perform code reading.
⑩	Wireless LAN / Bluetooth [®] communication antennas	Used to communicate with the wireless LAN access point and the Bluetooth device. Note: BHT-1336QWB and BHT-1336QWB-D only.
⑪	USB connector (Only for models equipped with USB connector)	Used for charging and communication via a USB Type-C [®] cable.

1.2.2 Keypad/Display

The BHT key functions can be set at user programs.

The diagram below shows an example of settings for each key function.



No.	Key	Name	Function and Description
(1)		Cursor keys	Used to move the cursor and select menus.
(2)		Magic key [M1]	<ul style="list-style-type: none"> • Each of the M3 and M4 keys is assigned a trigger switch by default. • The SF, ENT, Backlight, MENU or BS/C key functions can be assigned to these magic keys by making settings at the SYSTEM MENU. • Character strings can be assigned at user programs. • Hold down the M1 key to display the following setting screens when set to the default. <ul style="list-style-type: none"> - Volume - Vibrator - LCD brightness - Power save
(3)		Magic key [M2]	
(4)		Magic key [M3] Magic key [M4]	
(5)		Scan key [M5]		Used to read a code. Equipped with the same function with the trigger key.

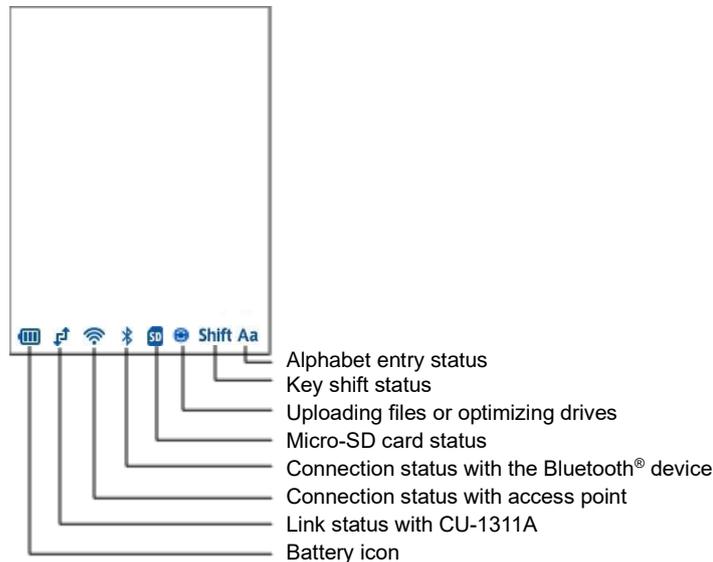
No.	Key	Name	Function and Description
(6)		Numerical keys	Used to enter data.
(7)		Enter key	Press to finalize entered data or execute operations.
(8)		Function keys	Used to select functions. *Function key functions are assigned at user programs. Refer to the " BHT-BASIC Programmer's Manual " for further details
(9)		Power key	Turns the BHT power ON or OFF.
(10)		Backspace/clear key	Deletes the last entered character (backspace). When pressed and held for 1 second or more, cancels entry and returns the LCD to the previous screen (clear.)
(11)		Shift key	Used in combination with other keys such as the numerical keys and  key for special input procedures.

There are two types of key input methods: the "numerical input method" and the "alphanumeric input method."

Normally, the "numerical input method" is used, but it can be switched to the "alphanumeric input method" by the user program. The key input method can be switched using the SF key (Shift Key). In the case of the "alphanumeric input method," pressing the numeric keypad will display characters as shown in the table below, cycling through the characters each time the same key is pressed, and the character is entered when confirmed.

Key	Character															
[2]	A	B	C	a	b	c										
[3]	D	E	F	d	e	f										
[4]	G	H	I	g	h	i										
[5]	J	K	L	j	k	l										
[6]	M	N	O	m	n	o										
[7]	P	Q	R	S	p	q	r	s								
[8]	T	U	V	t	u	v										
[9]	W	X	Y	Z	w	x	y	z								
[0]	,	/		*	#	&	~	?	!	"	'	^	`	.	:	;
[.]	+	-	%	\$	_	\	=	@	<	>	[]	()	{	}

If the system display is set to ON at the system settings or in the user program, icons display at the bottom of the screen (default) indicating the key shift status, alphabet entry status, and status of the link with the CU-1311A.



	This is the battery icon. Shows battery level.
Shift	Shows that the  key is pressed when the keys are in the shift-mode.
Aa	Shows that the “alphabet entry” mode is set. Press the  key to change the “numeric entry” to the “alphabet entry” when the alphabet entry mode is set by the user program. (See “Programming manual, Chapter 7.2.1”) Alphabet entry is used for setting up the FTP.
	Shows that the CU-1311A is connected. Blinks when the CU-1311A which is not connected tries to connect. The icons are displayed in the following order, when; - No response from the CU-1311A. - Waiting for the connection to the CU-1311A. - Waiting for the disconnection from the CU-1311A.
	Shows the radio field strength when the BHT is connected to the access point. More bars equal the stronger connection  Weak Strong  shows that the BHT is not connected to the access point.
	Shows the Bluetooth® status. The icon changes according to the status of Bluetooth® device as follows:  : Shows that the Bluetooth® device is turned ON.  : Shows that the Bluetooth® device is connected.
	 : Shows that the inserted card is valid.  : The SD color becomes red while the card is being accessed.  : Shows that the format is other than FAT32 (Note 1).  : Shows that accessing is possible with read-only (Note 2). Note 1: Use the FAT32 format card. Note 2: The card data is broken and writing is prevented. Format the card for writing data to it.

	Displayed when the file is being uploaded or the drive is being optimized.
---	--

It is possible to set the icon display position while the program is operating. For details, refer to “[4.5.5 System Environment Settings \(SET SYSTEM Menu\)](#).”

Chapter 2 BHT Preparation

2.1 “BHT Preparation” Procedure

Follow the steps below to prepare the BHT for use.

2.2 [Loading and Charging the Battery](#)

First load and charge the battery.



2.3 [Attaching the Hand Strap](#)

Attach the hand strap to prevent the BHT from being dropped.



2.4 [Initial Setup](#)

Set the calendar clock when the power is turned ON for the first time.

2.2 Loading and Charging the Battery

The chargers that can be used with this product are the communication units (CU-1301*¹, CU-1301A, CU-1311*¹, CU-1311A and CU-1321) and battery chargers (CH-201B*², CH-1104*² and CH-1354).

*¹ Communication units CU-1301 and CU-1311 for the BHT-1306 Series are only used for charging.

*² The CH-201B and CH-1104 chargers are used for charging individual batteries.

The charging time is approximately 3 hours to charge the BT-20LB.

- If the power is supplied via the CU-1321 from the device connected to the USB port, charging takes approximately 7 hours for the BT-20LB.
- An only slightly discharged battery should take less time to become fully charged.

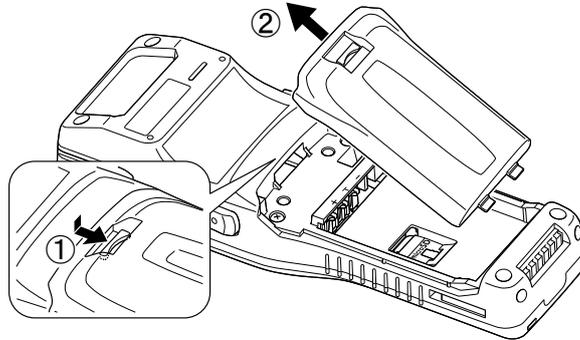
microSD card slot is located in the battery compartment. When using a microSD card, it is recommended to insert it before attaching the battery. For more details, please refer to "[2.7 Attaching/Removing the microSD Card.](#)"

Charging Precautions

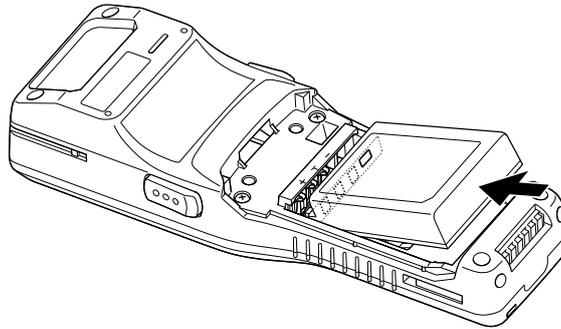
- Do not touch the BHT, battery, or charger terminals by hand or stain them. Doing so could result in a contact failure or prevent charging.
- Never charge the battery near fire or in a high-temperature environment. High-temperatures may activate the charger's protective device, preventing from charging, and lead to protective device damage, overheating, blowout or combustion.
- Terminate charging if not completed even after the specified time has elapsed.
- Do not use battery other than that specified by DENSO WAVE.

Charging with the communication unit (CU-1301, CU-1301A, CU-1311, CU-1311A, CU-1321) and charger (CH-1354)

- 1) Slide the battery cover release button (1) in the direction indicated by the arrow and remove the battery cover (2) .

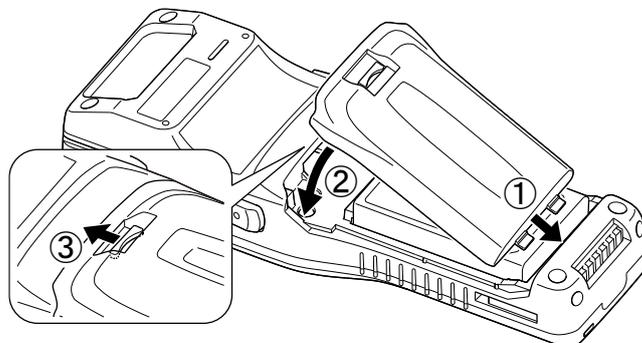


- 2) Check the battery terminals and indication on the BHT unit, and then insert the in the direction indicated by the arrow.

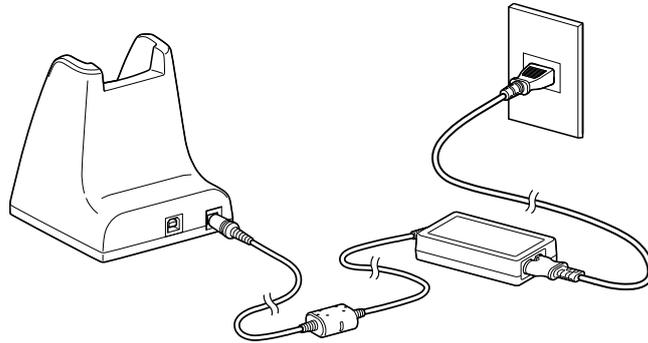


– Point – Be sure to use the batteries (BT-20LB only) specified by DENSO WAVE.
Refer to “[Appendix 2 Battery and battery cover combinations](#)”.
When the combination is wrong, the battery may be disengaged and the data may be lost.

- 3) Insert the battery cover tab (1), and then close the battery cover (2) to lock the cover in position. Press the battery cover into place until a click is heard.



- 4) Connect the dedicated AC adapter to the DC input connector on the charger and plug the adapter into the wall socket.

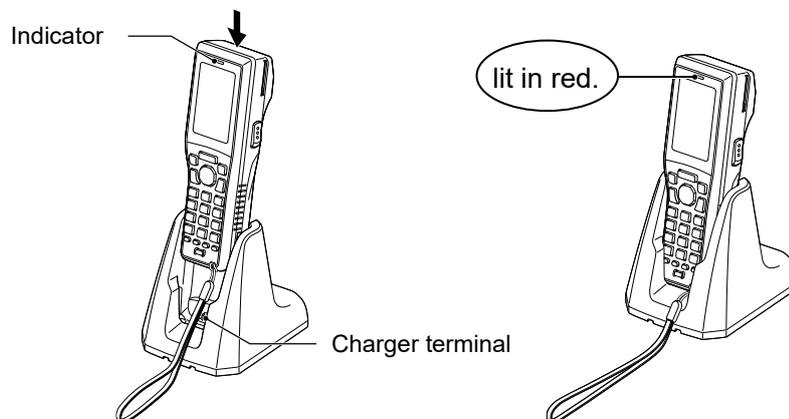


-
- Note -** Power for the CU-1321 can be obtained from a USB connection port (host computer or hub), however, charging is not possible while the host computer is in suspend mode. Charging is resumed when suspend mode is exited. This can be avoided using a dedicated AC adapter to supply power. Suspend mode is a power saving function used to temporarily put the computer on standby when not in use.
-

- 5) Place the BHT on the charger.

The LED illuminates in red and charging begins.

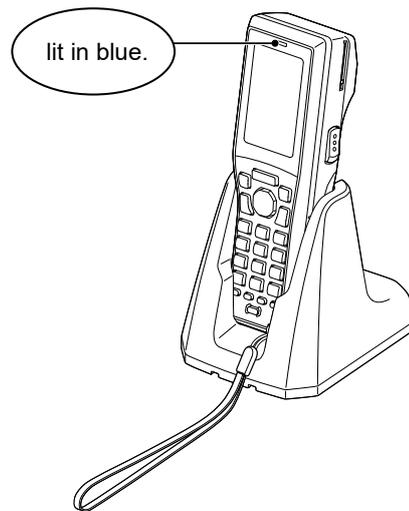
(The LCD will momentarily turn gray when the BHT is set on the charger.)



-
- Point -**
- After placing the BHT on the charger when using the BHT for the first time or when left unused for long periods of time, do not remove from the charger for approximately 10 minutes.
 - When setting the BHT to the communication unit, do not press the BHT hard or twist it back, forth, left, or right
 - . Doing so can damage the charger contacts.
 - When setting the BHT to the communication unit, be careful not to allow the hand strap to be caught between the BHT and the communication unit.
-

- Note -** The BHT is equipped with a back-up battery used to back up the internal memory and calendar clock. The internal back-up battery is charged first when charging is commenced.
- Do not remove the BHT from the charger for at least 10 minutes when using the BHT for the first time or when using after long periods of time.
-

6) The BHT indicator will change to blue when charging is complete.



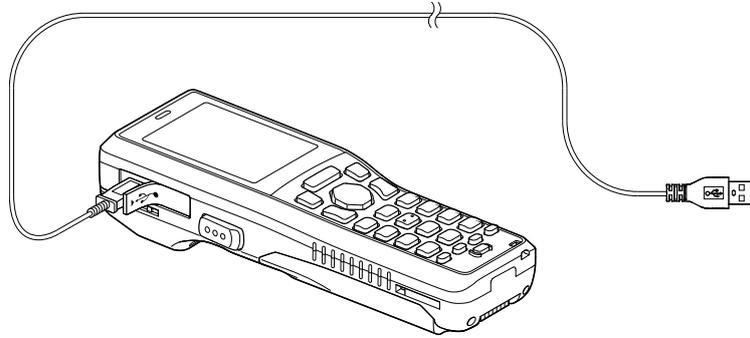
When the LED turns blue, charging is complete.

– Point –

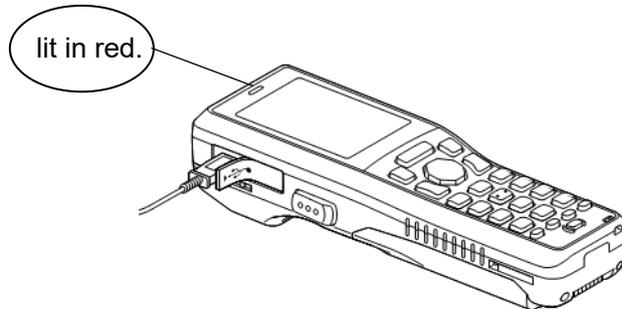
- Charging takes approximately 3 hours to charge the BT-20LB.
 - If the power is supplied via the CU-1321 from the device connected to the USB port, charging takes approximately 7 hours for the BT-20LB.
 - When charging the battery that has not been used for a long time and is completely discharged, charging may not be possible by supplying power from the USB connection using the CU-1321. In that case, please supply power from the AC adapter for charging.
 - The time required for full charge may be shortened for the battery of less discharged capacity.
 - The indicator blinks in red under the conditions described below. You should take appropriate measures.
 - Abnormality detected in the battery temperature
Be sure to charge the BHT under environmental temperature of 0 °C to 40 °C.
Do not use the battery in places exposed to excessively high temperatures or to direct sunlight.
If no particular problem is found in the operating environments, stop charging and replace the battery with a new one.
 - Loose connection of the terminal
Wipe the dirt off the terminal. See “[6.3 Daily Maintenance](#)”.
 - Charging not completed even if the specified charging time elapsed
Retry charging with the specially designed AC adapter if the power is provided via USB connection from a device that has no supply capacity.
 - Battery broken or its product life expired
Replace the battery with a new one.
-

Charging with the USB cable (Only for models equipped with USB connector)

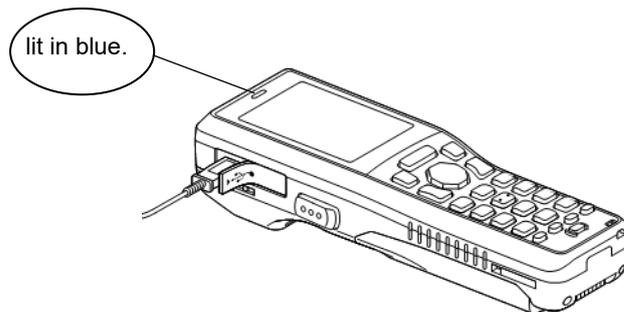
1. Connect the USB connector (USB Type-C® side) to the USB connector on the side of the handy terminal.
2. Connect the USB connector (Type-A side) to the USB power adapter.



3. The LED illuminates in red and charging begins.



4. The BHT indicator LED will change to blue when charging is complete.



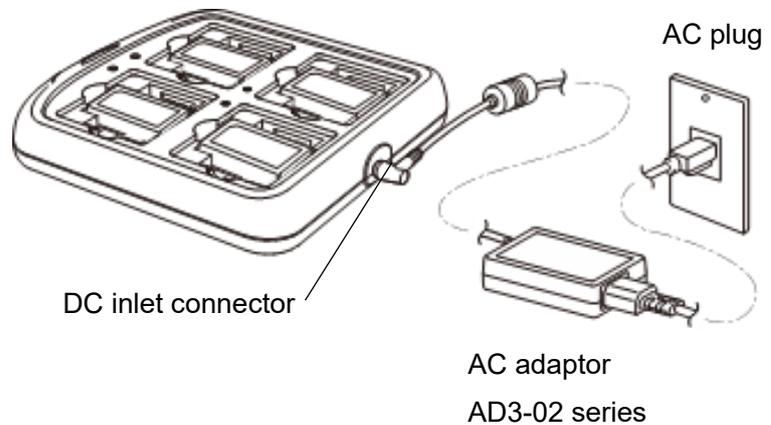
– Point –

- Charging takes approximately 3 hours for BT-20LB when using the USB power supply adapter for charging.
- If the power is supplied from the device connected to the USB port such as a PC, charging takes approximately 7 hours for the BT-20LB.
- When charging the battery that has not been used for a long time and is completely discharged, charging may not be possible by supplying power from the USB connection. In that case, please supply power from the AC adapter for charging using the communication unit.
- The time required for full charge may be shortened for the battery of less discharged capacity.
- Do not place the main unit on the communication unit with the USB Type-C® cable plugged in. The BHT's indicator LED may flash red. In this case, remove the USB cable from the main unit, remove the BHT from the communication unit, and then insert it again.
- The indicator blinks in red under the conditions described below. You should take appropriate measures.

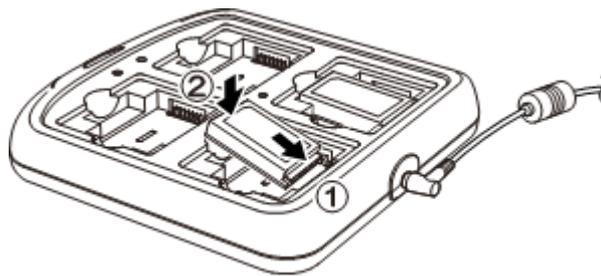
-
- Abnormality detected in the battery temperature
Be sure to charge the BHT under environmental temperature of 0 °C to 40 °C (32°F to 104°F). Do not use the battery in places exposed to excessively high temperatures or to direct sunlight. If no particular problem is found in the operating environments, stop charging and replace the battery with a new one.
 - Charging not completed even if the specified charging time elapsed
Retry charging with the specially designed AC adapter if the power is provided via USB connection from a device that has no supply capacity.
 - Loose connection of the terminal
Wipe the dirt off the terminal. See "[6.3 Daily Maintenance](#)".
 - Battery broken or its product life expired
Replace the battery with a new one.
-

Charging with the battery charger

1. Connect the power cable to the battery charger and connect the plug to a commercial AC power source.
(Figure shows CH-1104.)



2. Check the battery terminals and the AC adapter. The LED will turn red when charging is commenced.

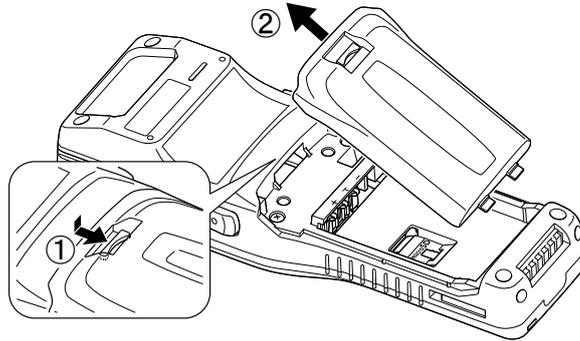


3. The LED will turn OFF when charging is complete.

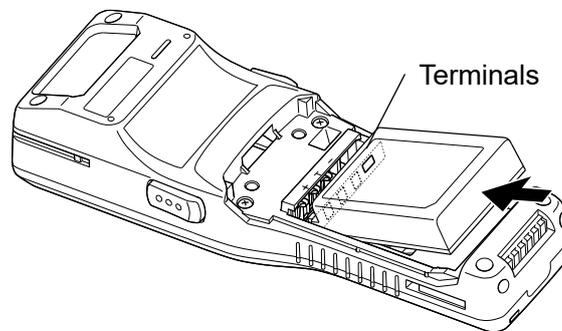
– Point –

- Charging takes approximately 3 hours to charge the BT-20LB.
 - The time required for full charge may be shortened for the battery of less discharged capacity.
 - The indicator blinks in red under the conditions described below. You should take appropriate measures.
 - Abnormality detected in the battery temperature
Be sure to charge the BHT under environmental temperature of 0 °C to 40 °C (32°F to 104°F). Do not use the battery in places exposed to excessively high temperatures or to direct sunlight. If no particular problem is found in the operating environments, stop charging and replace the battery with a new one.
 - Loose connection of the terminal
Wipe the dirt off the terminal. See “[6.3 Daily Maintenance](#)”.
 - Battery broken or its product life expired
Replace the battery with a new one.
-

- Slide the battery cover release button (1) in the direction indicated by the arrow and remove the battery cover (2).

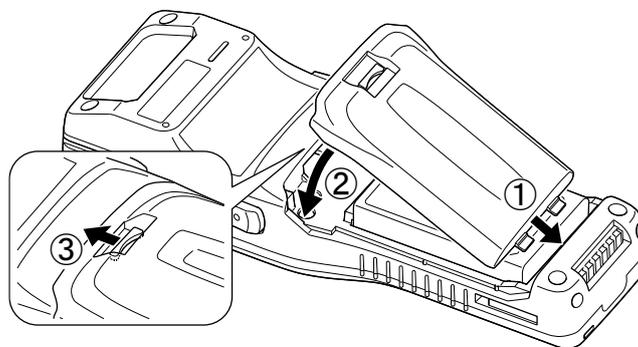


- Check the battery terminals and indication on the BHT unit, and then insert the in the direction indicated by the arrow.



– Point – Be sure to use the batteries (BT-20LB only) specified by DENSO WAVE.
Refer to "[Appendix 2 Battery and battery cover combinations](#)".
When the combination is wrong, the battery may be disengaged and the data may be lost.

- Insert the battery cover tab (1), and then close the battery cover (2) to lock the cover in position. Press the battery cover into place until a click is heard.





CAUTION

Incorrect handling of the battery could cause the batteries to generate heat or smoke, or to rupture or burn. This is DANGEROUS. Be sure to observe the following:

- Never disassemble or modify the battery.
 - Never connect the positive (+) and negative (-) terminals of the battery with a wire or other metallic materials.
 - Do not carry or store the battery together with ballpoint pens, necklaces, coins, hairpins, or anything else metallic.
 - Never burn or heat the battery.
 - Do not use or leave the battery anywhere there is excessively high temperature (60 °C or higher), such as near fire or stoves.
 - Do not put the battery into water of any kind or moisten it.
 - Never charge the battery near a fire or anywhere exposed to direct sunlight.
 - Do not stick a needle into the battery, hammer at it, or tread on it.
 - Do not let the battery undergo any shock or impact or throw it at something hard.
 - Do not use battery that are deformed, scratched or cracked remarkably.
 - Solder nothing to the battery directly.
 - If battery fluid leaks from the battery and it gets into your eyes, rinse them with clean water thoroughly without rubbing and then consult a doctor immediately. Otherwise, you may damage your eyes.
-



WARNING

Mishandling of the charger may result in charger overheating, smoke generation, blowout or combustion. Please read the following item prior to use.

- Terminate charging if not completed even after the specified time has elapsed.
-

– Note –

- The BHT is equipped with a back-up battery used to back-up the internal memory and calendar clock when the battery is removed or the battery voltage falls below the stipulated level. It is therefore necessary to charge the internal back-up battery when using the BHT for the first time or when it is left unused for long periods of time.
The back-up battery is charged automatically when a fully-charged battery is loaded. To ensure that the back-up battery is fully charged, do not remove the battery for at least 10 minutes when using the BHT for the first time or when using it after long periods of time.
 - If you leave the BHT without the battery for a long time, the data stored in the memory may not be restored and the message "Contact your administrator. Note the error number. (XXXX)" or "Set the current date and time." may appear on the LCD.
 - Refer to ["6.2 Using the BHT after Long Periods"](#) and ["6.3 Daily Maintenance"](#).
 - 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 get them dirty. Doing so may result in a BHT operation defect or battery charging failure. It is recommended that dirt on the battery terminals or BHT battery terminals be periodically wiped with a soft, dry cloth.
-

2.2.1 Battery Level Indicator

Confirming at the Level Icon

The battery level can be confirmed at the battery icon () that is displayed in the bottom left of the LCD.

The battery is displayed in four levels.

The battery level indicator is a guideline to notify the operator to charge the battery promptly when discharged.

-  Sufficient battery remains.
-  The battery is partially depleted. Charge promptly.
-  The battery is almost fully depleted. Charge immediately.
-  The battery is fully depleted. Charge immediately or replace with a fully charged.
-  Battery Charging.

About the Battery Level

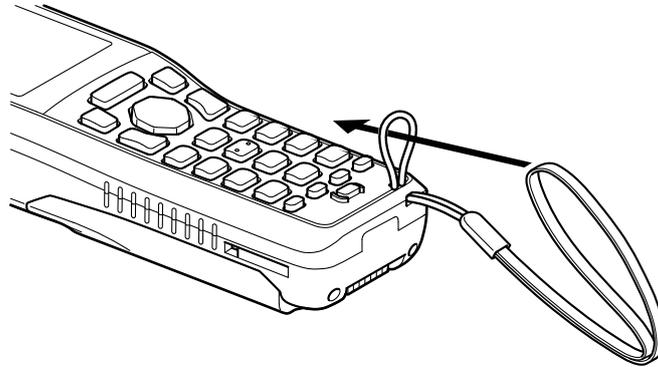
- The battery level indicator does not accurately reflect the battery residual power and should only be used as a guideline.
- The battery level will fluctuate due to BHT operation and so disparities may occur between the actual battery remains and the display indicator.
- Ensure to charge the battery before the battery is depleted.
- Please make sure to charge the battery before it runs low. If the battery level drops quickly even after charging, it indicates that the battery has reached the end of its lifespan. Please replace new battery.

2.3 Attaching the Hand Strap

Attach the hand strap to prevent the BHT from being accidentally dropped during use.

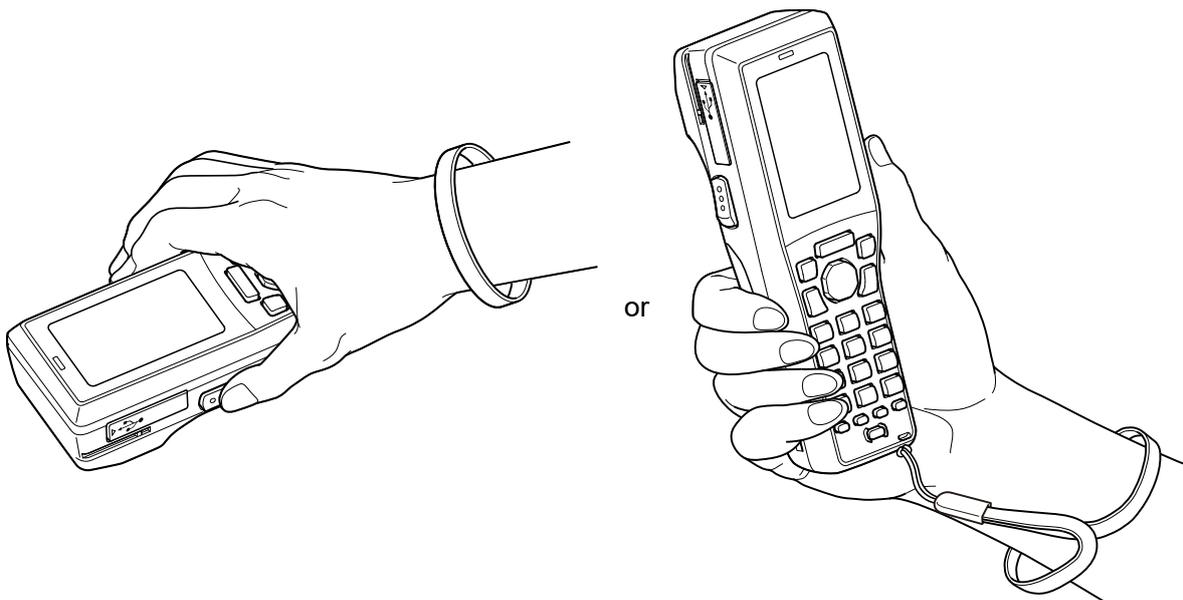
2.3.1 Attaching the Hand Strap

Attach the hand strap as shown below.



2.3.2 Holding the BHT

Attach the hand strap to your wrist and hold the BHT as shown below.



2.4 Initial Setup

Turn ON the power after inserting the fully charged battery into the BHT.

The clock will not have been set at the time of purchase, and therefore it is necessary to set the date and time when turning ON the power for the first time.

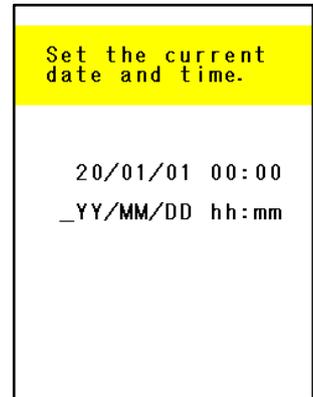
1. Press the Power key (⏻) to turn ON the BHT power.

The screen on the right is displayed.

– Point – Press the **Power** key at least 1 second after data backup. Refer to “[2.6 Turning OFF the Power](#)” on data backup.

Enter the date and time using the numeric keys.

– Point – Enter the last two digits for the year and enter the time in 24-hour clock format.



2. Press the ENT key to set the date and time.

The screen on the right is displayed when the data and time are set. Press the numerical key of the desired message language.

- 1: English Displays the message in English.
- 2: Japanese Displays the message in Japanese.
- 3: Chinese Displays the message in Chinese (Simplified Chinese).
- 4: Taiwanese Displays the message in Chinese (Traditional Chinese).
- 5: Korean Displays the message in Korean.
- 6: Thai Displays the message in Thai.

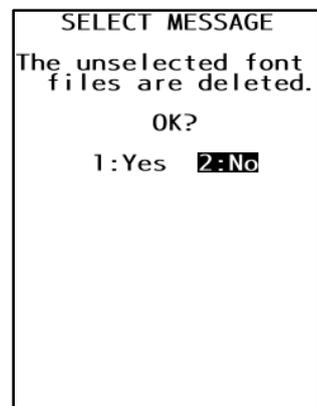


3. Press the ENT key to fix the message language you want to display.

The screen on the right is displayed when the message language is determined.

- 1: Yes Confirms the selected message language.
- 2: No Returns to the message language selection screen.

– Point – Any font files other than the specified language file are removed.
The font files can be downloaded from our [QBdirect](#) website for free of charge.



4. Select either of the following with the numeric key 1 or 2, then press the ENT key.

1: Easy Pack Ad

The simplified operating application Easy Pack Ad is initiated.

For more information, refer to the manual on the operating application.

2: Code scanning demo

A code scanning demo is started.

The scanning demo is a program capable of reading a bar code or 2D code without a user program. Press the trigger switch to enable code scanning.

Refer to "[3.1 Reading Barcodes or 2D Codes](#)" for code reading.



- Point - Select [1: Easy Pack Ad] to start the simplified application software Easy Pack Ad for BHT-1300.

2.5 About Easy Pack Ad for BHT-1300

The BHT-1336Q series is equipped with the simplified operating application “Easy Pack Ad for BHT-1300” for the BHT in the factory default setting.

2.5.1 Features

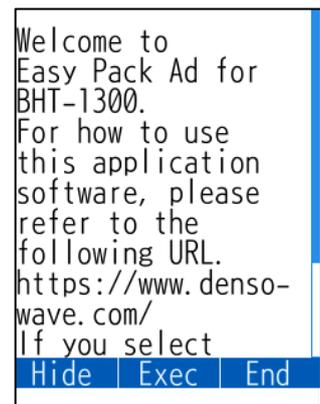
This software can handle the following three tasks.

Collect (data collection)	Repeatedly enters the data on the product number and its quantity and then saves that data in the JISSEKI.CSV file.
1-to-1 Verify:	Scans the data on the item and compares that data against the master data. If there is a mismatch between these data sets, an error message is issued.
1-to-n Verify	Scans the data on each of the “n” number of items and compare that data against the master data. If there is a mismatch between these data sets, an error message is issued.

2.5.2 How to Start

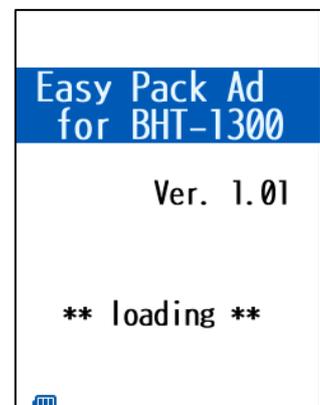
1. In Step 4 in [Chapter 2.4](#), select “1: Easy Pack Ad” and press the ENT key.

The screen on the right is displayed.



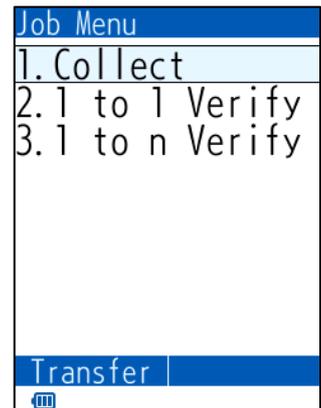
2. Press the SCAN key to start Easy Pack Ad for BHT-1300.

The screen on the right is displayed.



– **Point** – You can also use the **M1** key to start Easy Pack Ad for BHT, but the screen in Step 1 is not shown on the screen when you operate next time. To turn off Easy Pack Ad, press the **M2** key.

3. The screen on the right is displayed on completion of the reading.



– Point – For how to use Easy Pack Ad for BHT-1300, obtain the product from our [QBdirect](#) Service and check it.

2.6 Turning OFF the Power

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

Methods	Operation	Data Backup Timing
1) Normal power OFF	Press the Power key (⏻).	After 20 minutes from turning off
2) Turning the power OFF after data backup	Hold down the Power key (⏻) for at least 3 seconds.	When the power turns off
3) Auto power OFF	The power turns OFF itself when the BHT is not used for the specified period of time set.	After 20 minutes from turning off

2.6.1 Normal Power OFF

1. Press the Power key (⏻).

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

```
Shutdown
in progress.

Do not remove the
battery.
```

– Point – Do not remove the battery while the message on the right is displayed.
When the power is next turned ON, there are times when a message (XXXX) appears asking the user to contact the administrator.

2.6.2 Turning the Power OFF after Data Back-up

1. Hold down the Power key (⏻) for at least 3 seconds.

The message right is displayed and data back-up is commenced.

```
Now saving data.
Do not remove
batteries until
saving process
complete.
```



2. The power turns OFF automatically when the back-up is complete.

– Point – Do not remove the battery while the message on the right is displayed.
The back-up process may take several tens of seconds depending on the amount of data.

2.6.3 Auto Power OFF

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

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

*Refer to "BHT-BASIC Programmer's Manual" (for BHT-1336Q series) for details of auto power OFF.

2.6.4 If the BHT Is Shut Down Abnormally

If the BHT is shut down abnormally and is left without a battery or with a discharged battery loaded, then unsaved data may be **corrupted** or lost.

(The BHT properly shuts down only when it is turned off with the Power key (⏻), Auto Power OFF mode or user program.)

If unsaved data is **corrupted** or lost, the error message appears at the time the BHT is turned OFF.

1. The message on the right appears when the BHT is turned ON next time.



2. The message "Testing" is displayed on the screen. In some instances testing may take up to 20 to 30 seconds. When complete, the system starts.



If Scandisk finds a broken file(s), the right screen will appear.

(As long as a broken file exists, the screen is displayed every time the BHT System is started up.)

(Refer to "[About "\\$\\$BRKLST.SYS"](#)" on the following page.)

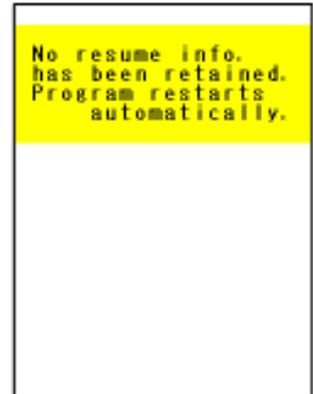


Scandisk when the resume function is enabled

If Scandisk runs when the resume function is enabled, the screen given right may appear.

The BHT displays the screen for three seconds and then automatically runs the execution program from the beginning.

(The screen may also appear when the calendar clock built in the BHT stops, even without running Scandisk.)



-
- Point – The resume function is used to return the display to the status (screen) where the power was last turned OFF when the power is next turned ON.
- Resume function settings are made at the “SET SYSTEM” menu. Refer to [“4.5.5 System Environment Settings \(SET SYSTEM Menu\)”](#) for further details.
-

About “\$\$BRKLST.SYS”

If Scandisk finds a broken file(s), it will automatically create the "\$\$BRKLST.SYS" file. To check the contents of the file, upload the file in System Mode to the host computer. (Refer to [“4.5.4 Uploading Files \(UPLOAD Menu\).”](#))

Contents of the “\$\$BRKLST.SYS” file

Records

- (1) File name
- (2) Error factor + (Broken since the BHT has not been turned off normally)
 * (Broken due to any other causes)
- (3) Broken records e.g., 01000-01200 (Data in records numbered 1000 to 1200 is lost)

[Ex.]

```
SAMPLE1.DAT + 01000-01050
SAMPLE1.DAT + 01200-01250
SAMPLE1.DAT + 01600-01650
SAMPLE2.DAT * 00250-00275
SAMPLE3.DAT * 00100-00150
      ↑      ↑      ↑
      (1)   (2)   (3)
```

} If more than one sequence of records is broken in a same file, they will be written into the subsequent records in the "\$\$BRKLST.SYS."

2.6.5 If Broken Files Are Found

Even broken files can be uploaded, so upload them to the host computer according to your needs.

After uploading,

- Delete those broken files.
(Refer to [“4.5.10 Deleting Program/Data Files \(DELETE FILE Menu\).”](#))
- Download valid files having the same names as the broken ones.
(Refer to [“4.5.3 Downloading Files \(DOWNLOAD Menu\).”](#))

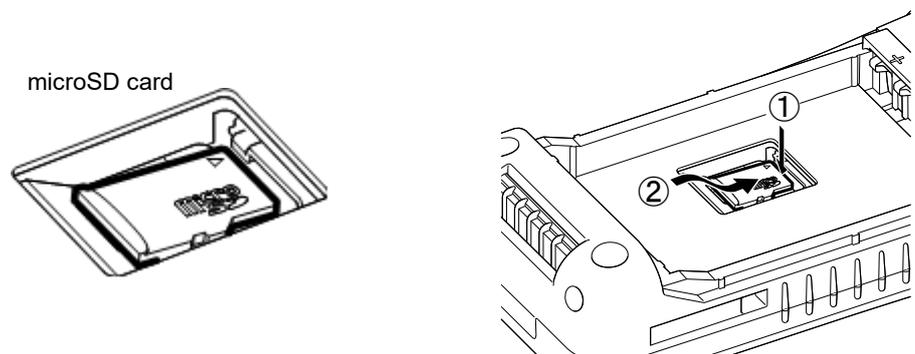
2.7 Attaching/Removing the microSD Card Inserting and Removing the microSD Card

2.7.1 How to attach the microSD card

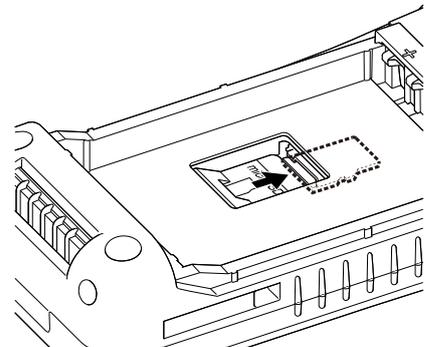
Attach the microSD (option) card in the following procedure.

– **Point** – The usable microSD cards are those formatted in FAT32 and up to 32GB.

1. Remove the battery cartridge.
2. Slide the microSD card cover in the OPEN direction ① to unlock the cover and open the microSD card cover in the direction ②.

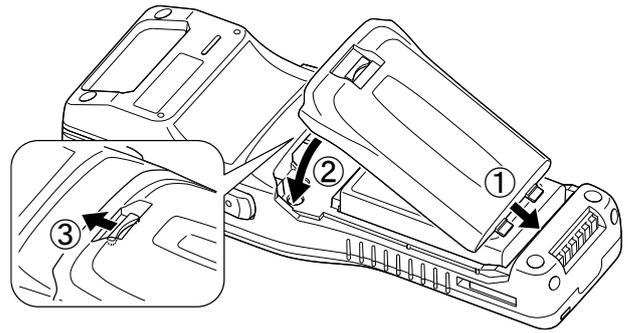


3. Insert the microSD card into the slot of its card cover.



– **Point** – Insert the microSD card directly into the slot along its lines.
Do not push the card too hard when inserting the card. The microSD card or its card cover may be broken if excessive strength is applied.

4. Install the battery.

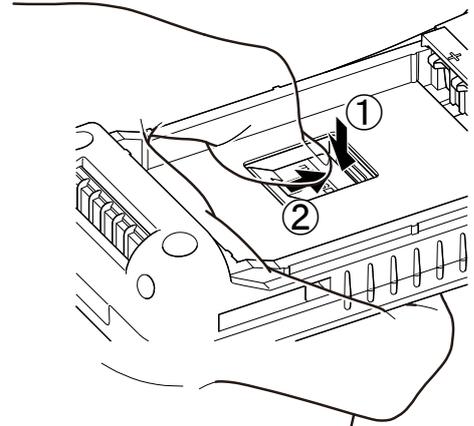


2.7.2 How to remove the microSD card

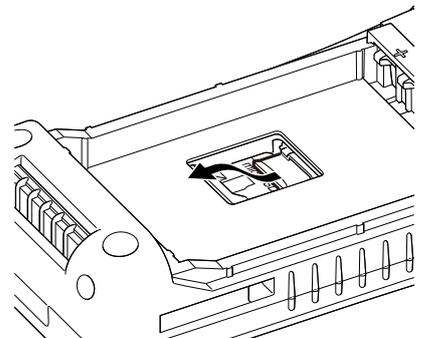
Remove the microSD (option) card in the following procedure.

– **Note** – Make sure that the BHT is turned OFF before inserting the microSD card.
Otherwise, the data saved in the card may be broken or lost.

1. Remove the battery.
2. Slide the microSD card cover in the OPEN direction ① to unlock the cover and open the microSD card cover in the direction ②.

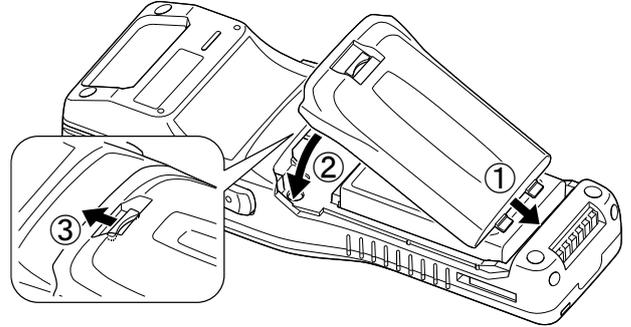


3. Remove the microSD card from its slot card cover.



- **Point** – Remove the microSD card directly from the slot along its lines.
Do not pull the card too hard when removing the card. The microSD card or its card cover may be broken if excessive strength is applied.
-

4. Install the battery.

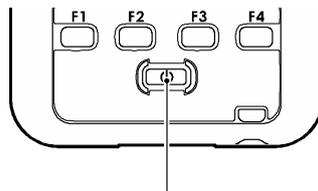


Chapter 3 Basic Operation

3.1 Reading Barcodes or 2D Codes

Follow the procedure below to scan 2D codes.

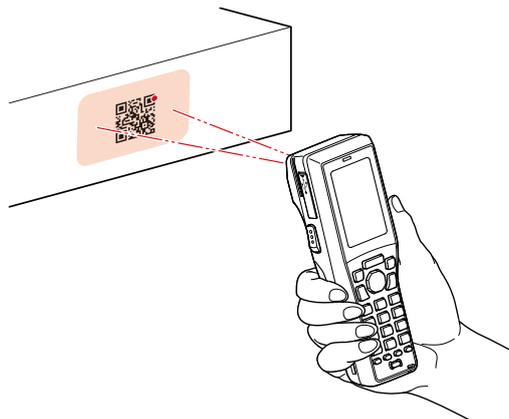
1. Turn the BHT power ON.



Power key (⏻)

2. Press the trigger switch.

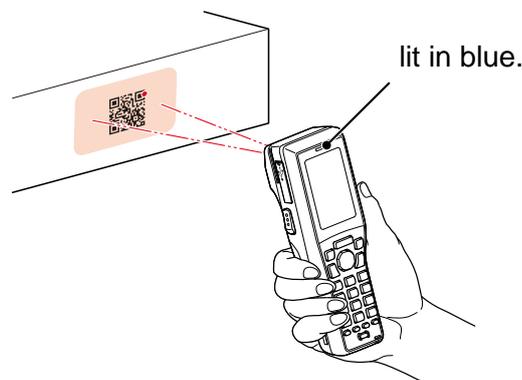
The BHT emits a guide marker (laser light) and the light for reading.



– Point – The trigger switch is assigned to magic keys **M3** and **M4** when shipped from the factory.

3. Hold the BHT close to the code to align the guide marker.

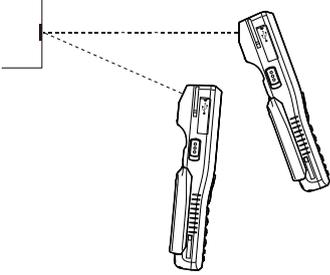
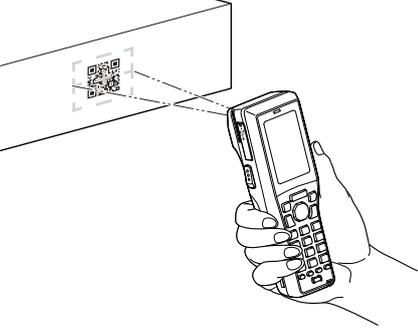
When the BHT has read the code successfully, the indicator will illuminate in blue.



– **Point** – The code reading method may differ depending on the application. Select the most appropriate in accordance with the instructions provided in the application User's Manual.

-
- **Note** –
- If required, clean dirty labels before reading.
 - It may not be possible to perform reading in direct sunlight.
 - If the code is on a curved surface, flatten the label surface and read it again.
 - If the code reading window is pulled away from the code, the readable code range will become narrower than that of the light emission.
-

When unable to successfully read codes...

Cause		Countermeasure
Specular reflection	When the light is focused on the printed surface of the code from directly above, the BHT may not read the code due to specular reflection.	Change the BHT reading angle and try again. 
Distance from code	The code may not be read if it is too close to or too far from the BHT reading window.	Move the BHT slowly toward off away from the code and try again. Use the display range of the guide marker as a guide. The valid reading range is approx. 64x45 mm if the reading distance is 100 mm. 
Code surface curvature	The code may not be read if surface is extremely curved.	Flatten the label surface and read it again.
Code surface dirt	The code may not be read if its surface is dirty.	Wipe the dirt from the code and try again.
Code reading window dirt	The code may not be read if the code 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	Code reading may be adversely affected by direct sunlight or the brightness of the surrounding light.	Read the code away from direct sunlight. Adjust the brightness of the surrounding light when reading indoors.

3.2 Numeric Data Entry

Enter numeric data such as product volume with the numeric keys and Enter () key.

If numeric data is entered incorrectly, use the backspace/clear key () to delete the data and then reenter with the numeric keys.

When entering "120"	Key Operation
Press numeric keys 1, 2, and 0 followed by the Enter key.	   

3.3 Task Selection

If a selection item "such as "1:XXX 2:XXX" with numeric values displays, enter the values with the numeric entry keys and then press the Enter key.

When Selecting Task 2:XXX	Key Operation
Press numeric key 2 followed by the Enter key.	 

If a YES/NO selection screen such as "1: YES 2:NO" displays, press numeric key 1 to select "YES", and 2 to select "NO".

When Selecting "1: YES"	Key Operation
Press numeric key 1 followed by the Enter key.	 

3.4 Changing the Default Settings

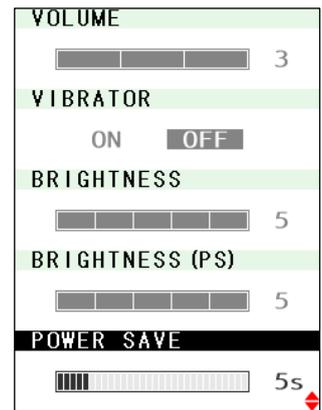
The volume, vibrator, LCD brightness and power save settings can be changed at the MENU screen.

Item	Details	Setting
VOLUME	Used to set the volume of the speaker that notifies the user when barcode scanning is complete. The volume can be adjusted in 4 levels: Hi, Lo, Mid and Mute.	Mute → Lo → Mid → Hi
VIBRATOR	Used to turn ON/OFF the vibrator that notifies the user when barcode scanning is complete.	ON, OFF
BRIGHTNESS (Normal)	Used to display the current setting for brightness (normal). The brightness can be adjusted in 5 levels.	Levels 1 to 5
BRIGHTNESS(PS)	Used to display the current setting for brightness (PS). The brightness can be adjusted in 6 levels.	Levels 0 to 5
POWER SAVE	Used to set the time until the LCD backlight is dimmed when not in use in order to save power.	1 second units (max. 30 seconds)
KEY BACKLIGHT	Used to set the key backlight ON/OFF.	ON, OFF

3.4.1 Procedure

1. Hold down magic key M1 for at least 1 second.

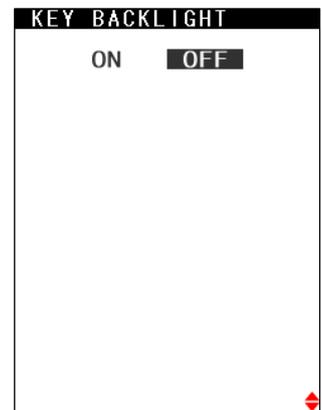
The MENU screen displays



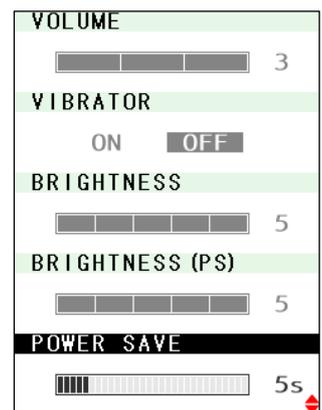
2. Use the [▲] and [▼] cursor keys to select the item to be changed.



The selected item is highlighted.



3. Use the [◀] and [▶] cursor keys to select the setting.



4. Press any of the following keys to exit the settings screen.

- M1 key long press
- Backspace/clear key
- Enter key



The settings screen is exited.

3.5 Transmitting Data

Data collected by the BHT can be transmitted to the host computer by infrared communication, wireless communication and Bluetooth® wireless communication.

(Compatible models for wireless and Bluetooth® communications: BHT-1336QWB series)

The data transmission method and BHT setting method will differ depending on the system used. For more information on the operation, contact your system administrator.

Request

Data collected by the BHT should be promptly uploaded to the host computer.

3.5.1 Communication with the Host Computer

1. Serial Communications

Place the BHT on the communication unit (CU-1301A) for data communication.

For the CU-1301A, BHT-BASIC 4.0 Transfer Utility (option) are required for serial communication between the CU and the host computer.

Requests

- Use the RS-232C cable (sold separately).
- The CU-1301 used for the BHT-1306 Series is not equipped with the IrDA interface and not applicable.



CU-1301A



2. USB communication unit

- When using the communication unit

Place the BHT on the communication unit (CU-1321) for data communication.

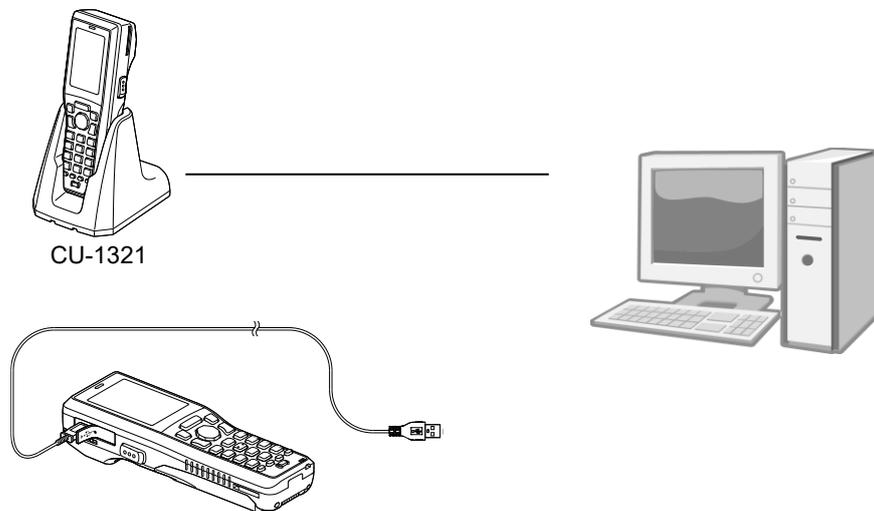
- When using the USB connector (USB Type-C[®]) on the main unit

Connect a USB cable (USB Type-C[®]) (option) for data communication.

Even if both the communication unit and the main unit USB connector are connected, the unit will operate according to the set COM. For details, please refer to "[4.5.5.5 Setting the communication environment](#)". Communication between communication unit and host PC is serial communication and requires BHT-BASIC4.0 Transfer Utility (option).

Requests

- USB Type-C[®] cable is sold separately. Use a Type-B cable that conforms to USB 2.0 standard as follows when using the communication unit or use a USB Type-C[®] cable when using the USB connector on the main unit.
- Connect the BHT directly to the USB port on the host computer.
- Communication may be deteriorated if the BHT is connected to the host computer by way of the USB hub.
- Do not keep plugging and unplugging the USB cable repeatedly in a row. The host computer may be locked.



Only for models equipped with USB connector.

3. Socket Communication

When using BHT and communication unit (CU-1311A), communication between CU and host PC is socket communication and FTP communication.

Requests

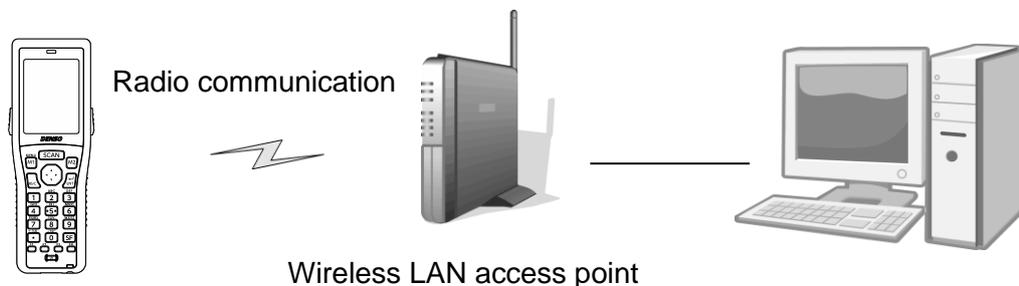
- Use an Ethernet cable (100BASE-T) (sold separately).
- The CU-1311 used with the BHT-1306 series cannot be used because it is not equipped with an IrDA interface.



4. Wireless LAN Communication

Data is transmitted to the host computer via the wireless LAN access point.

To perform radio communication, it is necessary to configure the wireless local area network (wireless LAN) at the BHT and access point.

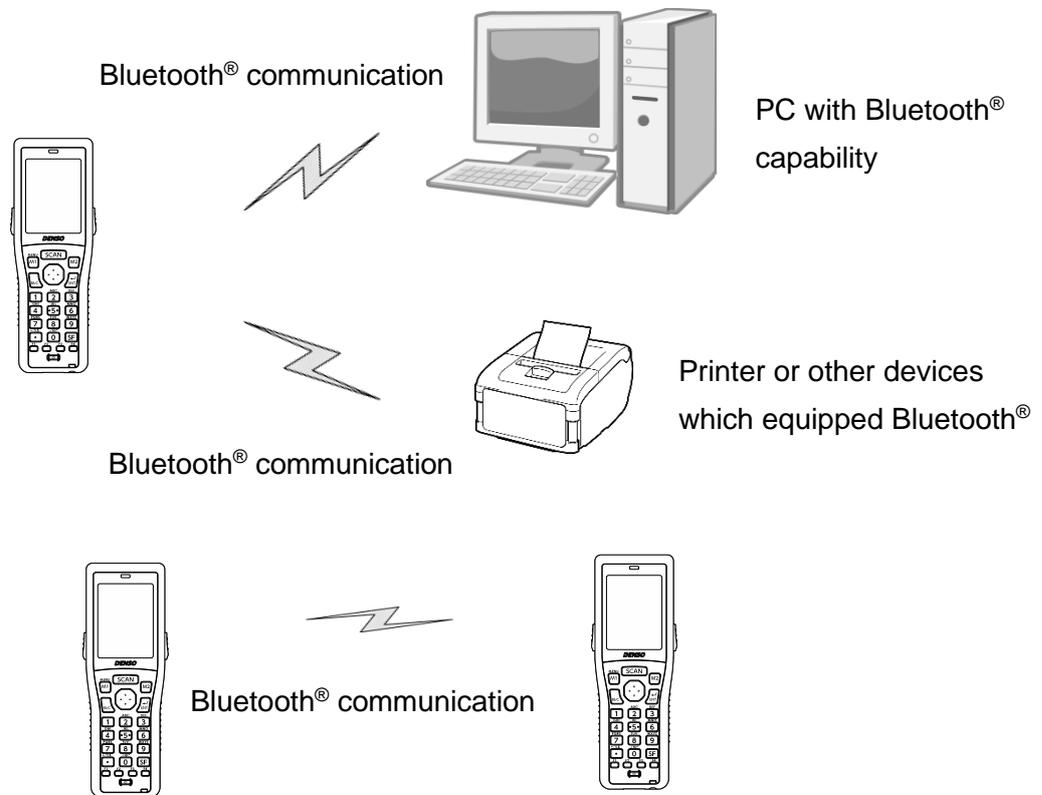


Requests

- Point the antenna on top of the BHT toward the access point to improve communication performance.
- Communication may not be possible at the following locations.
 1. In the vicinity of devices, such as microwave ovens industrial heating equipment, or high-frequency medical equipment operating on the same 2.4 GHz waveband used by the BHT.
 2. In the vicinity of computers or household appliances such as refrigerators that emit electromagnetic noise.
 3. In the vicinity of 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.

5. Bluetooth® Communication

This interface permits wireless communications with other Bluetooth® devices.



Requests

- Point the antenna on top of the BHT toward the access point to improve communication performance.
- Communication may not be possible at the following locations.
 1. In the vicinity of devices, such as microwave ovens industrial heating equipment, or high-frequency medical equipment operating on the same 2.4 GHz waveband used by the BHT.
 2. In the vicinity of computers or household appliances such as refrigerators that emit electromagnetic noise.
 3. In the vicinity of 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.

Chapter 4 System Operation

4.1 Initializing the BHT System

By initializing the system, program files and data files downloaded to the BHT user area are deleted, and system settings are returned to the default status when shipped from the factory.

The system must be initialized when:

- Deleting all program files and data files downloaded to the BHT user area (font files are also deleted by selecting the area subject to initialization.)
- The following message appears on the screen when the BHT is turned on.



```
Contact your
      administrator.
Note the error
      number.
(XXXX)
```

– Point – By initializing the system, all files in the user area are deleted, and therefore all files that need to be backed up should be uploaded to the host computer in advance.
Refer to “[4.5.4 Uploading Files \(UPLOAD Menu\)](#)” for details of uploading.

The initialization procedure is described on the following pages.

Perform operation in accordance with the procedure for each item.

- Selecting the Memory Area to be Initialized
↓
- Selecting the Message Version (English, Japanese, Simplified Chinese, Traditional Chinese, Korean, Thai)
↓
- Confirming the Memory Area to be Selected for Initialization
↓
- Performing System Initialization

4.1.1 Selecting the Memory Area to be Initialized

1. Press the Power key () while holding down the SF, M1 and 0 keys together.

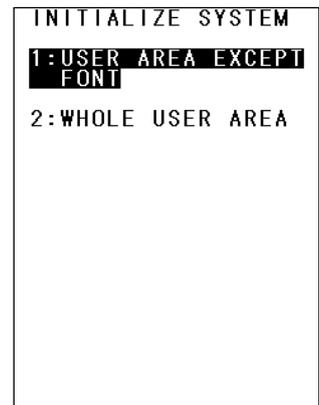
The screen on the right is displayed.

“1: USER AREA EXCEPT FONTS”

The user area is initialized without deleting file fonts.

“2: WHOLE USER AREA”

The entire user area is initialized and therefore file fonts are also deleted.



2. Select the memory area to be initialized.

(1) To exempt font files from deletion:

Ensure that “1:USER AREA EXCEPT FONTS” is selected and press the **ENT** key.

Go to [“4.1.2 Selecting the Message Language \(English/Japanese/Simplified Chinese/Traditional Chinese/Korean/Thai\)”](#).

(2) To delete font files:

Press the **2** key while holding down the **SF** key.

The screen on the right is displayed.

Next, press the **2** key, select “2: WHOLE USER AREA”, and press the **ENT** key.

Go to [“4.1.2 Selecting the Message Language \(English/Japanese/Simplified Chinese/Traditional Chinese/Korean/Thai\)”](#).

– Point – If a “Contact the administrator. (2XXX)” message appears when the BHT power is ON, select “2: WHOLE USER AREA”.

4.1.2 Selecting the Message Language (English/Japanese/Simplified Chinese/Traditional Chinese/Korean/Thai)

1. When the screen on the right is displayed, select the message display language with the numerical keys.

- | | |
|-----------------|--|
| "1: English" | Changes the message language to English. |
| "2: Japanese" | Changes the message language to Japanese. |
| "3: Chinese": | Changes the message language to Simplified Chinese. |
| "4: Taiwanese": | Changes the message language to Traditional Chinese. |
| "5: Korean": | Changes the message language to Korean. |
| "6: Thai": | Changes the message language to Thai. |



2. Press the ENT key.

Proceed to the operation at "3 Confirming the Memory Area Selected for Initialization".

3. Confirming the Memory Area Selected for Initialization

1. To exempt font files from deletion:

When the screen on the right is displayed, select the item and press the **ENT** key.

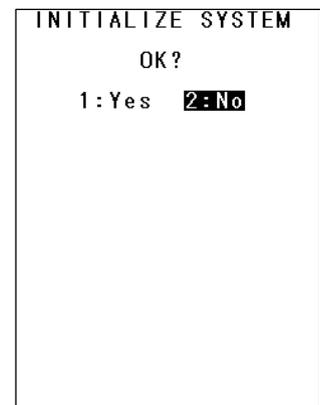
Press the **BS/C** key to return to the screen to select the area for initialization.

- "1: Yes":

The system will be initialized without deleting font files.

- "2: No":

Cancels system initialization and turns the BHT power OFF.



- To delete font files:

When the screen on the right is displayed, select the item and press the **ENT** key.

Press the **BS/C** key to return to the screen to select the area for initialization.

“1: Yes”:

The system will be initialized, and all files in the user area, including font files, will be deleted.

“2: No”:

Cancels system initialization and turns the BHT power OFF.

- Note - Font files can be downloaded from the following website
https://www.denso-wave.com/en/adcd/product/handy_terminal/bht-1336/dl/

```
INITIALIZE SYSTEM
      OK?
      1:Yes  2:No
Warning
Initializing the
whole user area
will lose the font
files.
```

4.1.3 Performing System Initialization

- The screen on the right is displayed during system initialization.

```
INITIALIZE SYSTEM
** Initializing **

██████████████████
```

- Upon completion of system initialization, the screen on the right is displayed for a second and then turns OFF automatically.

```
INITIALIZE SYSTEM
** Completed **
```

-
- Point -
- Never turn OFF the BHT power during system initialization. Turning the power OFF too early will interrupt the process, requiring initialization to be performed again.
 - If a “Contact your administrator. Note the error number. (XXXX)” message appears even although initialization has been completed, initialize the BHT again.
 - Following initialization, all programs and data files stored in the target memory area will be lost. Download them again if necessary. (Refer to [“4.5.3 Downloading Files \(DOWNLOAD Menu\)”](#) for details of downloading.)
 - Always set the calendar clock following initialization. (Refer to [“2.4 Initial Setup”](#) or [“4.5.5.3 Setting the calendar clock”](#))
 - Initialization will restore the display contrast level, communication conditions and other settings to their default values when shipped from the factory, and therefore they should be edited if necessary.
-

4.2 Updating the System

4.2.1 Updating the BHT System

The BHT system update procedure is as follows.

BHT System Update File Download (in the microSD card or flash ROM *)



BHT System Update

- * If the BHT system update files are present in both the microSD card and the flash ROM, higher priority is given to the microSD card.

When using the BHT system update file in the microSD card, place the data on the route directory of the microSD card.

1. BHT System Update File Download

Refer to "[4.5.3 Downloading Files \(DOWNLOAD Menu\)](#)" and "[4.5.8 Downloading / Uploading Files by FTP \(FTP MENU\)](#)", and download the BHT system update file to the BHT.

- Note - The BHT system update file can be downloaded from the following website.
https://www.denso-wave.com/en/adcd/product/handy_terminal/bht-1336/dl/

2. BHT System Update

Refer to "[4.5.16 Updating the System \(MODIFY MENU\)](#)" and update the BHT system.

- Important - In order to prevent the battery running low during the system update process, perform the system update with the battery sufficiently charged, or with the BHT placed in the CU-1300 Series. If the BHT power turns OFF due to a low battery and so on during the system update, the system update will continue when the power is next turned ON. Furthermore, during system update, the power will not turn OFF even if the **Power** key (⏻) is pressed. Wait until the system update process is complete before operating the BHT.

4.3 How to execute User Programs

User programs (application programs) can be executed using the following methods.

Select the most appropriate method to meet the objective.

4.3.1 Executing from the SYSTEM MENU “EXECUTE PROGRAM”

Select the program to be executed at the SYSTEM MENU “EXECUTE PROGRAM” menu.

In such a case, the selected program will always be executed from the start.

Refer to [“4.5.2 Executing User Programs \(EXECUTE PROGRAM Menu\)”](#) for details.

4.3.2 Automatically Executing the Program Set at the SYSTEM MENU when Turning the Power ON

Select the program to be executed at the SYSTEM MENU “EXECUTE PROGRAM” menu, and then turn the BHT power OFF. The selected program will execute automatically the next time the BHT power is turned ON.

If the resume function has been set, the BHT will resume from the position in the program that was stopped when the BHT power was last turned OFF.

Refer to [“4.5.5 System Environment Settings \(SET SYSTEM Menu\)”](#) for details.

4.3.3 System Environment Settings (SET SYSTEM Menu) Executing the First Registered Program by Turning the Power ON (BHT System Directory Management Program Function)

If no program has been selected at the SYSTEM MENU "EXECUTE PROGRAM" menu and the BHT power is turned ON, control will switch to the directory management program, and the first of the programs (.PD4) registered in the BHT will be executed.

If the resume function has been set, the BHT will resume from the position in the program that was stopped when the BHT power was last turned OFF.

If you want to execute program from the beginning, see "[4.3.6 Executing by Auto-Start Execution Program](#)".

If downloading multiple programs after system initialization, programs are registered in the system in the order in which they are downloaded, and therefore ensure that the program to be executed is the first program downloaded.

If a program is later downloaded for purpose of upgrading the version, use the same program name. The order in which programs are registered in the system will not change, and therefore the same program will be executed even after upgrading the version. (*)

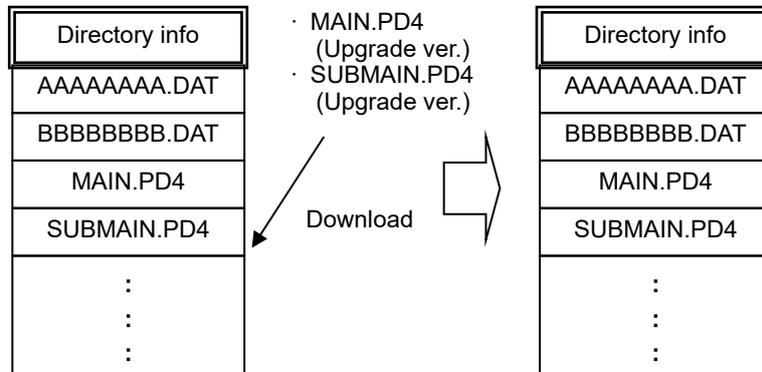
- * The system directory management program also manages files with other extensions simultaneously. If the top file from the first registered program is deleted and a new program is downloaded, the new program will be registered in the position vacated by the deleted file and therefore caution is advised. It is recommended that the program to be execute after turning on the BHT power is first downloaded following system initialization.

Several directory management program examples are given below.

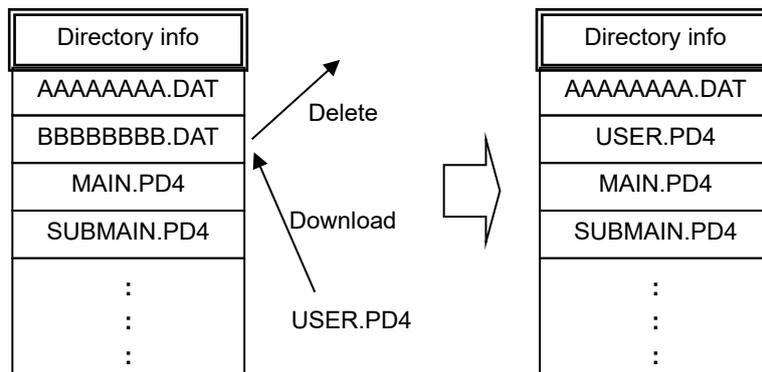
The names of the files used in these examples are as follows.

MAIN.PD4:	Program to be executed by pressing the Power key (⏻) only
SUBMAIN.PD4:	Program chained from MAIN.PD4 using the BHT-BASIC CHAIN statement
USER.PD4:	New program
AAAAAAAA.DAT:	Data file 1 used at the user program
BBBBBBBB.DAT:	Data file 2 used at the user program

- (Example 1) When downloading the MAIN.PD4 and SUBMAIN.PD4 upgrade version
In the above case, the registration order does not change and therefore MAIN.PD4 starts up by pressing the **Power** key (⏻).



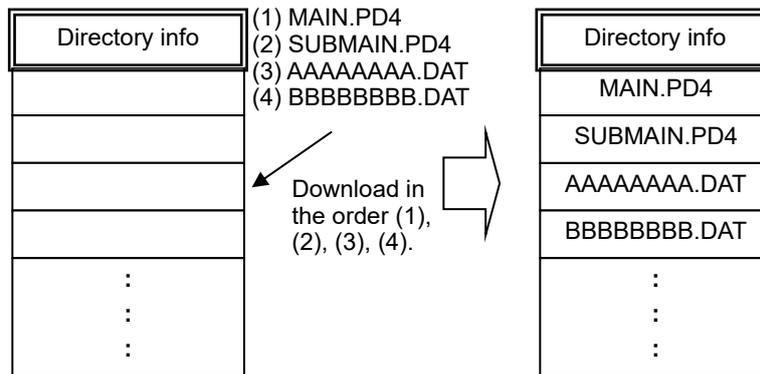
- (Example 2) When newly downloading USER.PD4 after deleting BBBBBBBBB.DAT
In the above case, USER.PD4 is registered after BBBBBBBBB.DAT, and therefore USER.PD4 will be the first registered program. Press the **Power** key (⏻) to start up USER.PD4.



3. (Example 3) Recommended download method

After system initialization, first download the program to be executed simply by pressing the **Power** key (⏻). In this case, this program is always registered at the beginning of the system directory management unless the program has been deleted and another file downloaded.

<Status following system initialization>



4.3.4 Executing by Wake-up

By specifying the wake-up time at the user program, the BHT can be started up at the wake-up time and a program executed.

If an auto-start execution program has been selected at the System Mode "[4.5.5.1 Setting the auto-start execution program](#)", the selected program will be executed.

If no auto-start execution program has been selected, the first registered program from among the programs (.PD4) registered in the BHT will be executed.

Refer to the "BHT-BASIC Programmer's Manual (for BHT-1336Q series)" for details.

4.3.5 Executing by Remote Wake-up

If remote wake-up is enabled, the BHT can be started up by receiving a control command from the host computer. If a fixed file called "BHTRMT.PD4" exists in the BHT at this time, BHTRMT.PD4 will be executed.

In other words, it is possible to execute the desired program by chaining from BHTRMT.PD4 using a BHT-BASIC CHAIN statement.

Refer to "[4.5.13 Setting the Remote Wake-up \(SET REMOTE WAKEUP Menu\)](#)" and the "BHT-BASIC Programmer's Manual (for BHT-1336Q series)" for details.

4.3.6 Executing by Auto-Start Execution Program

By turning ON the BHT while holding the **ENT** key, the auto-start execution program is started from the beginning. This procedure also applies when restarting the operating application from the begging or if wireless communication is not connected.

4.4 System Mode

By starting up the BHT in System Mode and selecting each menu, the following operations can be performed individually.

- Setup initialization
- Executing user programs
- File download/upload
- System environment setting
- BHT operation test
- System information display
- Downloading/uploading files by FTP
- WLAN setting
- Bluetooth® setting
- USB communication setting
- File deletion
- Font file deletion
- System settings parameter file download/upload
- Remote wake-up setting
- File copy
- System message file download/upload
- System update

Refer to “[4.5 SYSTEM MENU](#)” for details of the above operations.

4.4.1 Starting Up System Mode

Use the following procedure to start up System Mode.

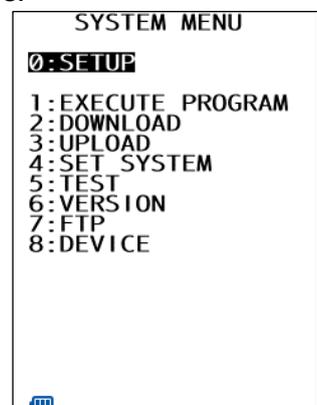
1. Press the Power key (🔌) while holding down the SF and 1 keys.

System Mode starts up and the SYSTEM MENU (screen on right) is displayed.

Select and display each menu from the SYSTEM MENU and perform each operation.

Hold down the **SF** key and press the appropriate numerical key to display items not displayed at the SYSTEM MENU.

Refer to “[4.4.3 SYSTEM MENU Configuration](#)” for details.



4.4.2 System Mode Basic Operation

1. Menu Selection and Display

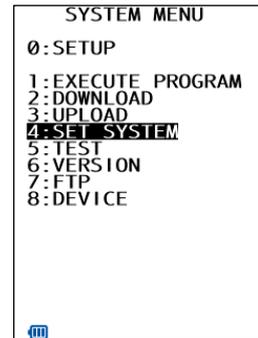
Use the following procedure to select and display each menu.

◆ Operation example

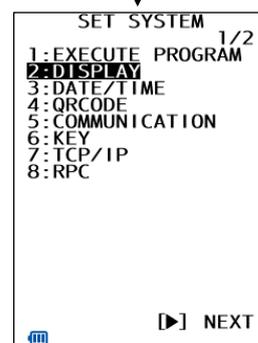
- Press the numerical key corresponding to the menu to be selected.
Alternatively, press the cursor keys ([▲] [▼]) to select the menu. The selected menu item will be highlighted.
" SETUP" will be highlighted when System Mode is started up.

Select [4: SET SYSTEM] with the [4] or [▲]/ [▼] keys.

Select [2: DISPLAY] with the [2] or [▲]/ [▼] keys.



ENT key



BS/C key

- Press the **ENT** key. The selected item is set and the next screen is displayed.

Press the **BS/C** key to return to the previous screen.

The selected item will be highlighted when returning to the previous screen.

- Repeat the above operation to display the target menu.

2. Setting Value Selection

Use the following procedure to select setting values.

1. Press the numerical key corresponding to the item to be selected. Alternatively, press the cursor keys ([▲] [▼]) to select the item. The selected item will be highlighted.

2. Select the setting value with the cursor keys ([◀] [▶]).

3. Press the **ENT** key. The selected setting value will be set.

◆ Operation example



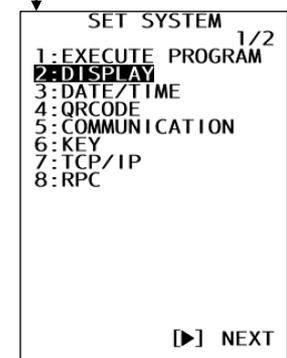
Select the setting item with the [2] key or [▲]/[▼] keys.



Select the setting value with the cursor keys ([◀] [▶]).



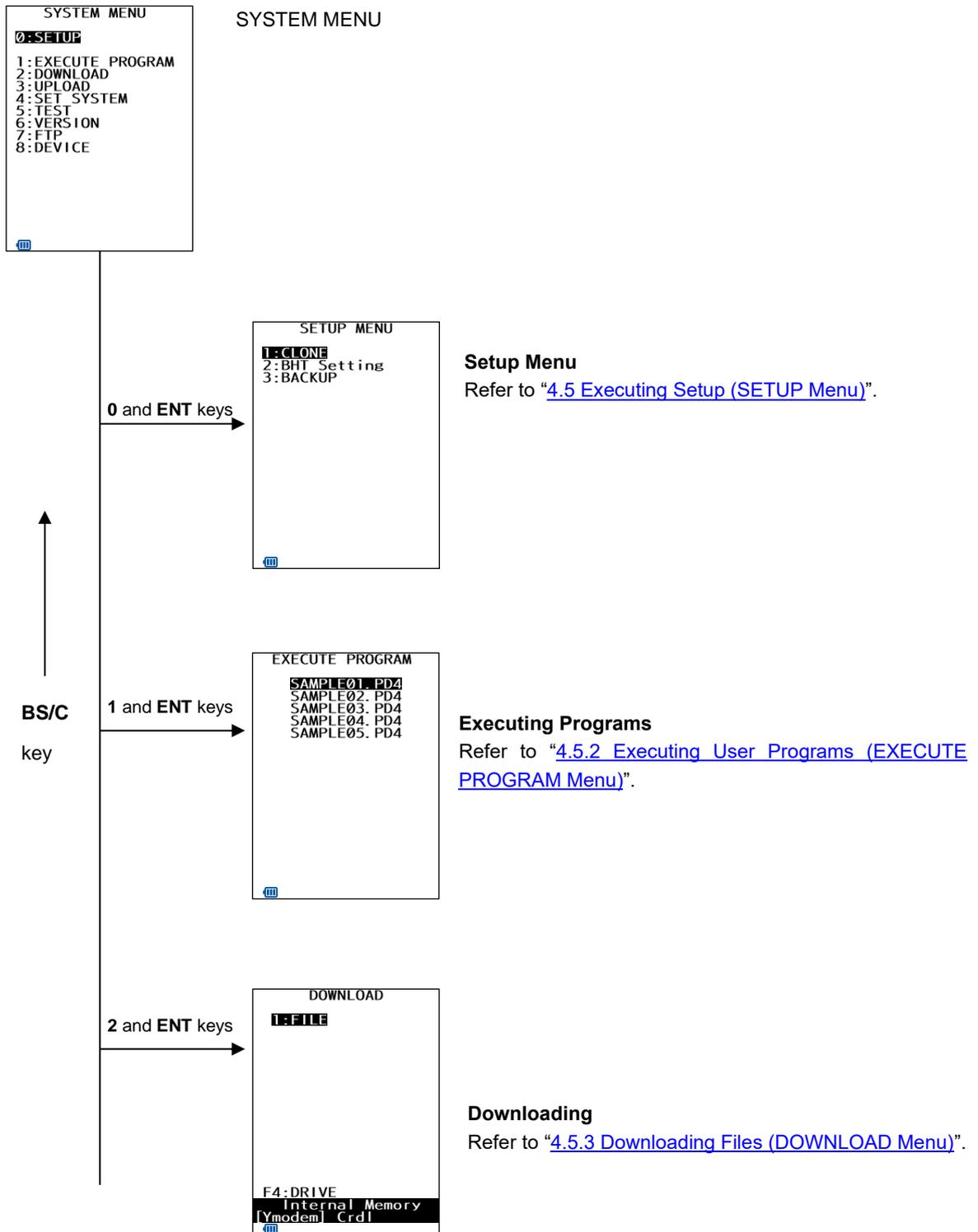
ENT key

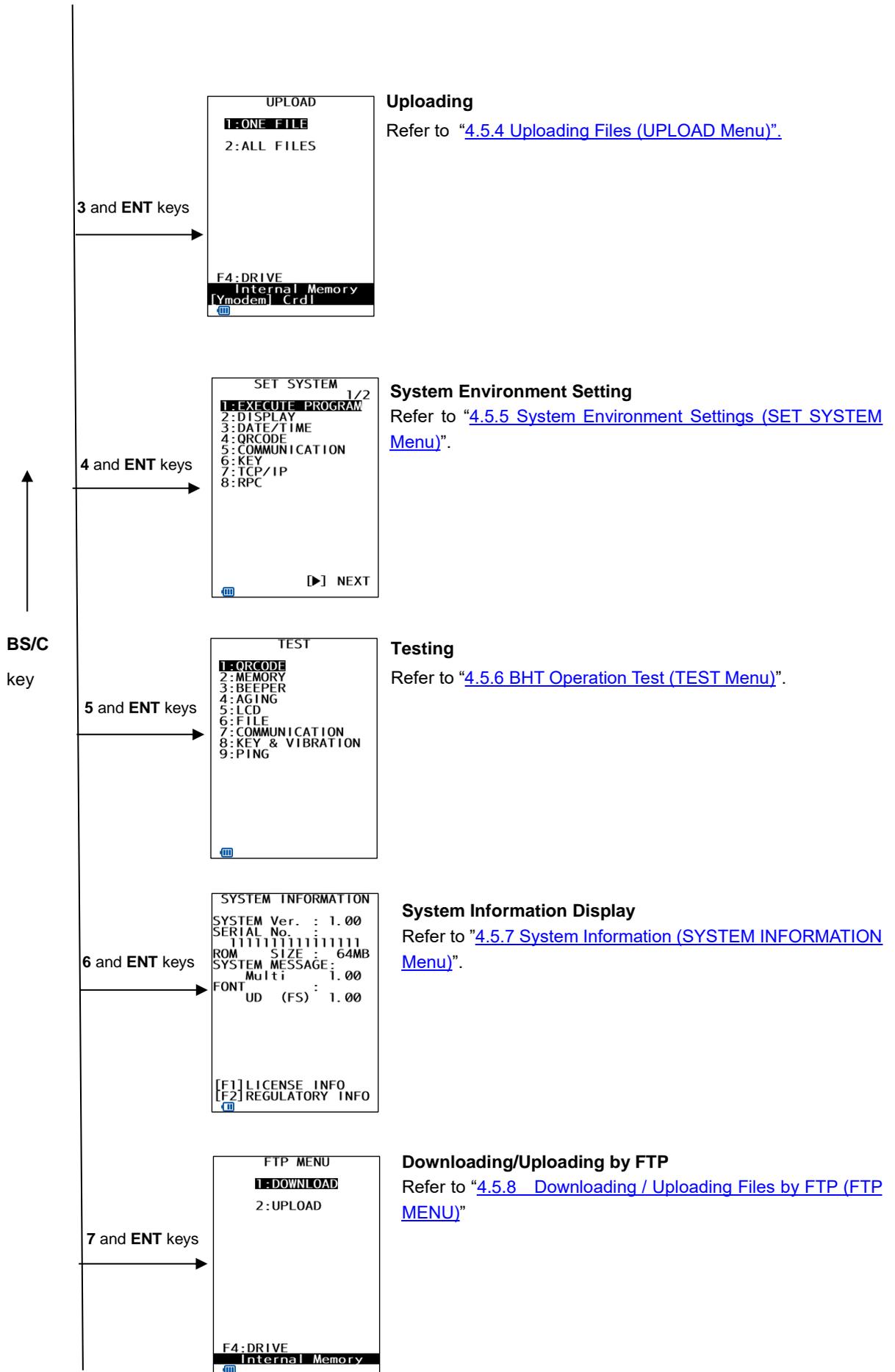


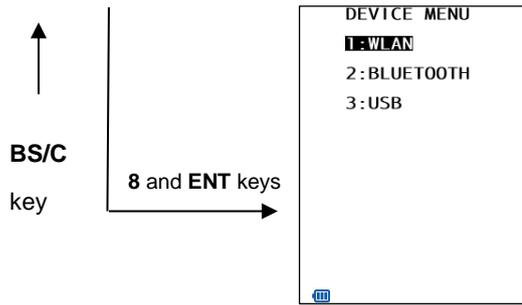
4.4.3 SYSTEM MENU Configuration

1. Menu Configuration for Items Displayed at the SYSTEM MENU Screen

Select the item with the numerical keys or cursor keys ([▲] [▼]) and press the **ENT** key.





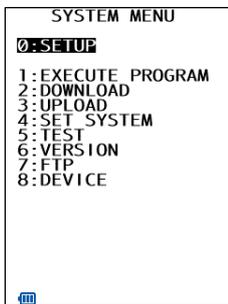


DEVICE MENU

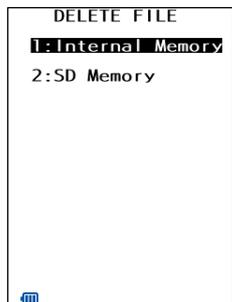
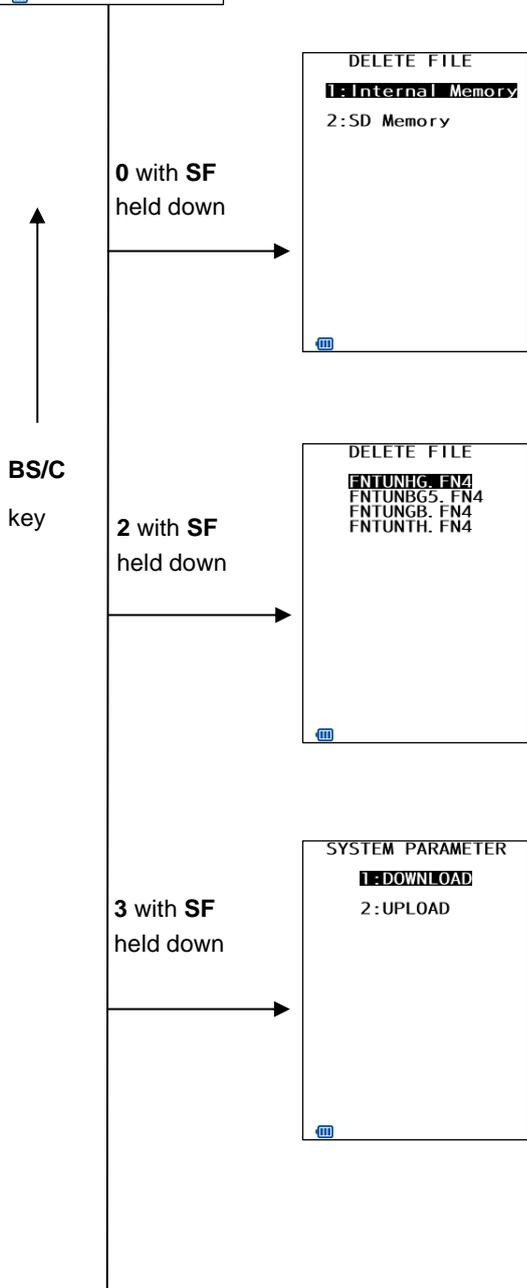
Refer to [“4.5.9 Communication Settings \(DEVICE MENU\)”](#).

2. Menu Configuration for Items Not Displayed at the SYSTEM MENU Screen

Press the corresponding numerical key while holding down the **SF** key.



SYSTEM MENU



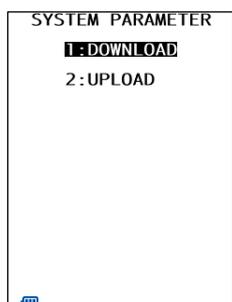
Deleting Program/Data Files

Refer to [“4.5.10 Deleting Program/Data Files \(DELETE FILE Menu\)”](#)



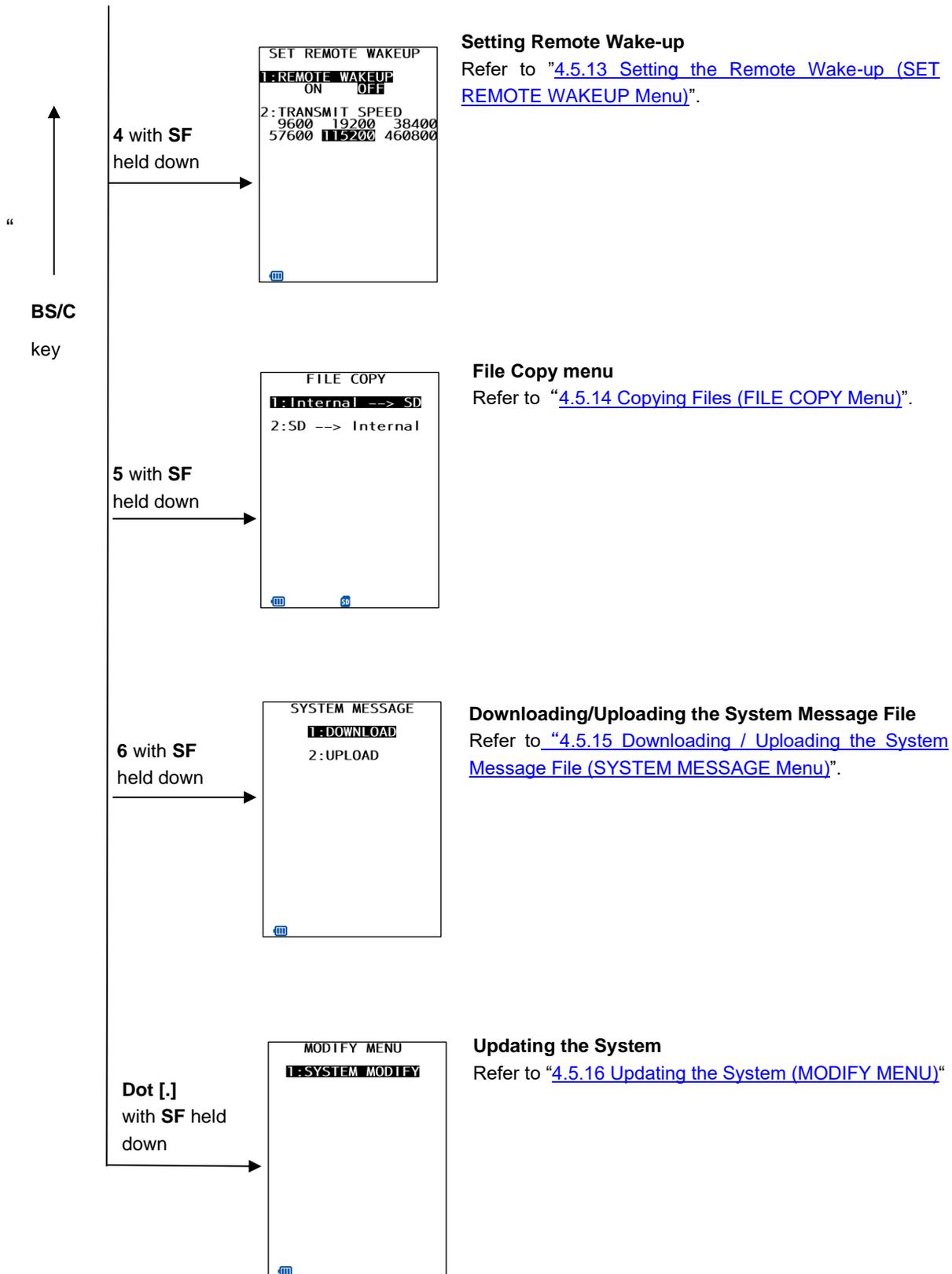
Deleting Font Files

Refer to [“4.5.11 Deleting Font Files \(DELETE FILE Menu\)”](#).



Downloading/Uploading the BHT System Parameter File

Refer to [“4.5.12 Downloading / Uploading the BHT System Parameter File \(SYSTEM PARAMETER Menu\)”](#).



4.5 SYSTEM MENU

4.5.1 Executing Setup (SETUP Menu)

The BHT setup can be effectively executed using the BHT Setting and clone functions. The following explains setup using two BHTs with the clone function. Use the procedure below for BHT setup.

1. Select "0: SETUP" at the SYSTEM menu and then press the **ENT** key.

The screen on the right is displayed.

"1: CLONE":

Select to use two BHTs to create a BHT clone (s).

The clone function resembles the conventional HT-HT copy function,

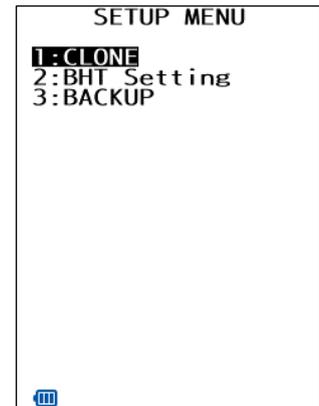
but differs according to the points in the table below.

"2: BHT Setting":

For details, refer to the BHT Setting User's Manual.

"3: BACKUP":

Select to back up the data to the microSD card.



2. Press the **BS/C** key to return to the system menu.

4.5.1.1 CLONE

A cloning feature that is similar to the conventional HT-HT copying but is different as follows is available.

Function		Clone	HT-HT Copy
OS Copy		Available	Not Available
File Copy	Overwrite copy (The file in the receiving device is overwritten by the file from the transmitting device.)	Available	Available
	Clone (Files in both the receiving and transmitting devices are identical.) [Default]	Available	Not Available
OS Setting Values Copy	General system setting values (excluding the items below.)	Available	Available
	Password settings for wireless/FTP, etc.	Available	Not Available
	IP characteristic value (only when "0.0.0.0") copy	Available	Not Available
Display	Progressive display	Displayed for Each Item	File Forwarding Progression Only
	History (usage history)	Available	Not Available
Setting Values	Target clone selection (OS)	Available	Not Available
	Post-function execution operations (re-boot designations, etc.)	Designations Available	No Designations Available
	Copy mode (overwrite/clone)	Available	Not Available
	Authentication key (*1)	Available	Not Available
Operational Environment	Communication settings	Fixed	Optional

(*1): The authentication key is protected due to password cloning for wireless/FTP, etc...

1. Perform the settings for the master-side clone using “1: CLONE” and “3: OPTION” from the SETUP menu.

“OPTION” menu content is as per the table below.

Item	Setting Content	Default	Remarks
1: CLONE NO.	1 to 6-digit numeric values	“0”	Differentiates whether or not the beginning of the number is padded with a “0” so that the not only sequential numbers, but date settings can be performed as well. Ex.: The function differentiates between “1” and “000001”.
2: SOFTWARE TO CLONE	OS	YES	There are also OS settings and additional files, but the aforementioned items are always cloned.
3: AUTH KEY	Used 0 to 16 one-byte alphanumeric characters (Entry possible in ALP mode.)	Not used	
	Not used		
4: SLAVE ACTION	Clone menu	Clone menu	BHT reboot: Restarts the BHT, then starts the applications.
	BHT reboot		
5: FILE COPY MODE	Clone mode Makes the slave-side file structure identical to the master-side structure.	Clone mode	
	HT-HT copy mode Leaves a copy of the slave-side files.		

2. Select “1: MASTER” from the CLONE MENU on the master side.
3. Select “2: SLAVE” from the CLONE MENU on the slave side.

```

CLONE MENU
1: MASTER
2: SLAVE
3: OPTION
4: CLEAR HISTORY

[HISTORY]
No.      :
Status   :
Source   :
Start    :
End      :
OBJECT STATUS
OS       :
OS Setting:
File     :
    
```

Master Side

```

CLONE MENU
1: MASTER
2: SLAVE
3: OPTION
4: CLEAR HISTORY

[HISTORY]
No.      :
Status   :
Source   :
Start    :
End      :
OBJECT STATUS
OS       :
OS Setting:
File     :
    
```

Slave Side

4. Wireless model (BHT-1336QWB series) :

The master device reads barcode from the slave device.

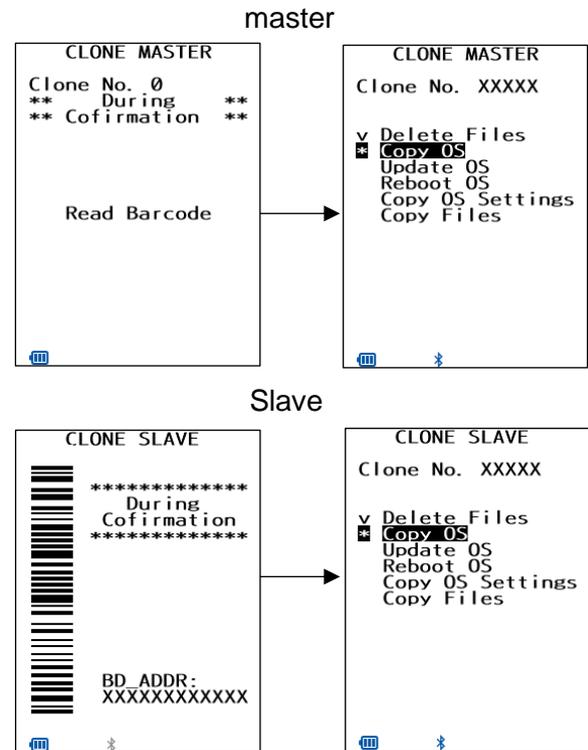
Non-wireless model (BHT-1336Q model) :

Connect the master device and slave device with a USB Type-C® cable..

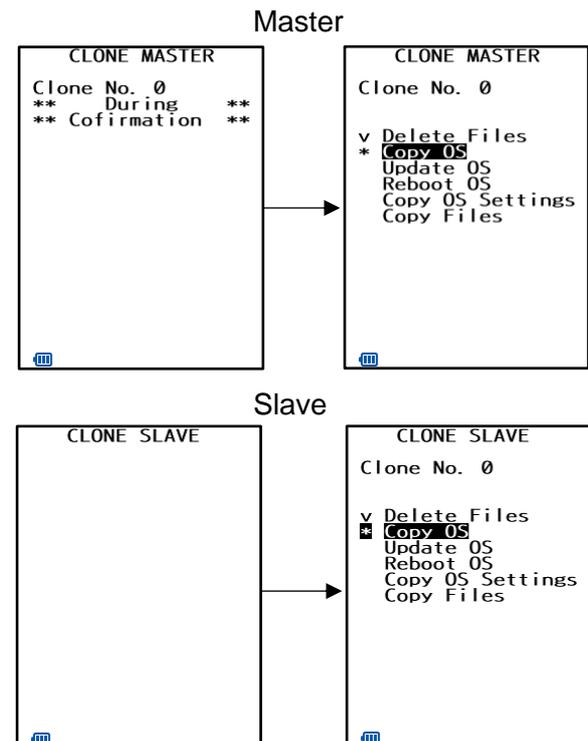
The data transmission progress status is shown as per the screens below:

- “v”: Data transmission complete.
- “*”: When flashing, data transmission is in progress.

Wireless model

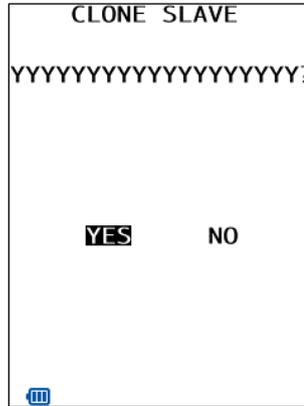


Non-wireless model

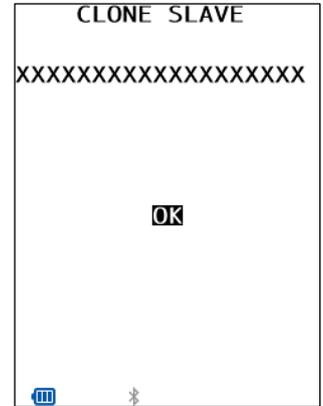


When communication is complete, the screen will return to the CLONE MENU (the previous screen.) In the event of a communication error, "Screen 2" below will appear.

Screen 1: Error occurrence



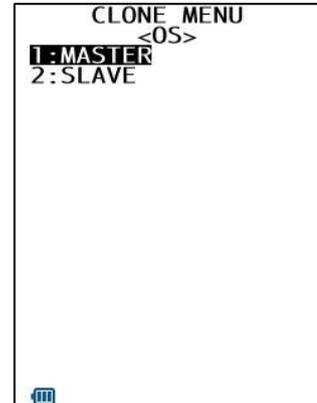
Screen 2: Error/correctly completed



CLONE (firmware (OS) only)

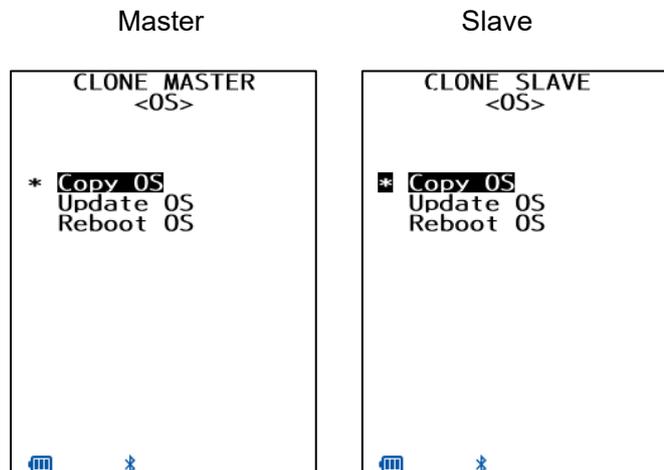
This function copies only the firmware (OS) to be cloned. Use this function when you want to copy only the firmware (OS) without updating the applications and settings installed on the device. The usage is as follows.

- 1) In the system menu, select "0:SETUP" to display the setup menu.
- 2) Press the [SF] key and the [.] key simultaneously to display the screen for cloning only the OS.



- 3) Select [MASTER] and [SLAVE] and connect as in steps (3) and (4) of CLONE in "4.5.1.1".
- 4) When CLONE starts, the following screen will be displayed.

When communication is complete, the master side will return to the clone menu and the slave side will reboot.



List of possible errors when cloning

Processing Phase	Outline	Displayed Message	Operations Following Error
Directly After Clone Start	BHT models are different.	Different model on master side (slave side). Continue?	When screen 1 appears, select Yes/No. Y: Continue processing (OS and OS settings will not be copied.) N: Suspend processing
	OS update not possible (when HT-HT copy mode designations, and initialization are required.)	OS cannot be updated. Cloning will be stopped.	Screen 2 appears, and processing is suspended.
	Number of files exceeded	Too many files. Cloning will be stopped.	
	Memory capacity exceeded	Insufficient memory on slave side. Cloning will be stopped.	
When Clone is Complete	OS settings cannot be performed. (No item/outside value range.)	Some items could not be set on slave side. (N items)	Screen 2 appears, and processing is complete.
During Communication	Communication error	Out of memory	
		File mismatch	
		Too many files	
		File error	
		Program file error	
		Communication error	
Bluetooth® connecting	Bluetooth® error	Bluetooth open failed	
		Bluetooth connect failed	
		Bluetooth connect timeout	

4.5.1.2 BHT Setting

For details, refer to the BHT Setting User’s Manual (for BHT-1300).

4.5.1.3 BACKUP

- Select “3: BACKUP” at the SETUP menu and press the **ENT** key. The following BACKUP menu is displayed.

“1: BACKUP”:

Backs up the BHT information to the microSD card.

“2: RESTORE” :

Restores the BHT information backed up in the microSD card.

“3: CLONE”:

Selects and restores the BHT information backed up in the microSD card.

“4: DELETE BACKUP”:

Deletes the BHT information backed up in the microSD card.



Use “2: RESTORE” to restore the BHT to the state when the data was backed up, while use “3: CLONE” to set up multiple BHTs.

The table shows functional difference between “2: RESTORE” and “3: CLONE”.

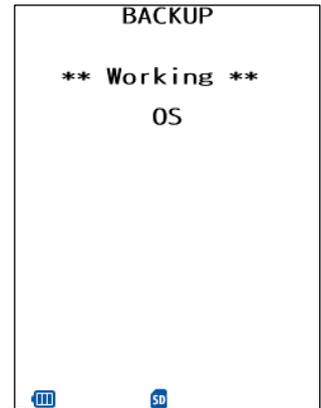
Object restored	2: RESTORE	3: CLONE
OS	Supported	Supported/Unsupported
OS settings	Supported (All the settings)	Supported/Unsupported (Set value of non-IP address is 1*)
Copying Files	Supported	Supported/Unsupported
Files	Supported (Existing files deleted)	Supported/Unsupported (Whether to delete existing files selectable)

* The IP address that has its own unique value can also be copied (“0.0.0.0” if the DHCP function is valid).

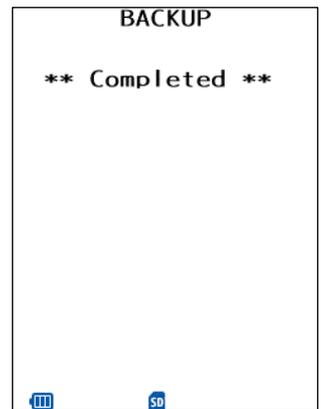
1. BACKUP: Backing up the data

1) Select "1: BACKUP" at the BACKUP menu and press the **ENT** key.

The screen on the right is displayed and backup of the BHT information to the microSD card is started.



2) When the backup is complete, the Buzzer beeps once and the screen on the right is displayed.



- Point - • The backed up information is saved in the folder "HT_BKUP/xxxxxxxxxxxxxxx" in the microSD. (xxxxxxxxxxxxxxx is the serial number of the BHT)

2. RESTORE: Restoring the data

1) Select "2: RESTORE" at the BACKUP menu and press the **ENT** key.

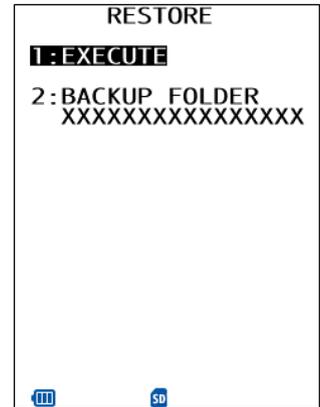
The following RESTORE menu is displayed.

"1: EXECUTE":

Restores the information specified by "2: BACKUP FOLDER"

"2: BACKUP FOLDER":

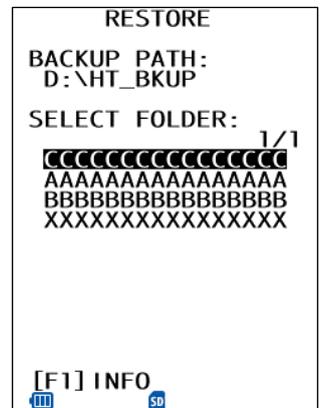
Selects the information to be restored.



2) Select "2: BACKUP FOLDER" at the RESTORE menu and press the **ENT** key.

The menu for the selection of restore information is displayed.

The list of backup information stored on the microSD is displayed. The backup information to be restored is highlighted.



3) Use the cursor keys ([▲] [▼]) to select the backup information to be restored and press the **ENT** key.

4) Press the **F1** key to check the details of the highlighted backup information.

The backup information is displayed on the right screen.

BHT TYPE: Model identification information
(Code below)
BHT-1336QWB: BHT13QW2
BHT-1336Q: BHT13Q2

SYSTEM Ver.: Version of firmware (OS)

SERIAL No.: Device number of BHT (16 digits)

DATE/TIME: Date and time of backup

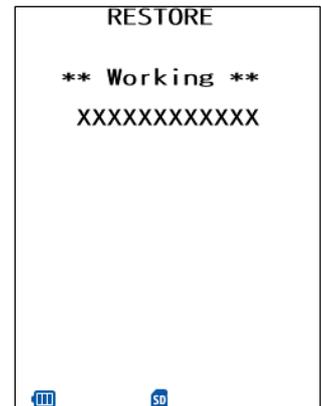


5) Press and hold the **BS/C** key to return to the backup information selection menu screen.

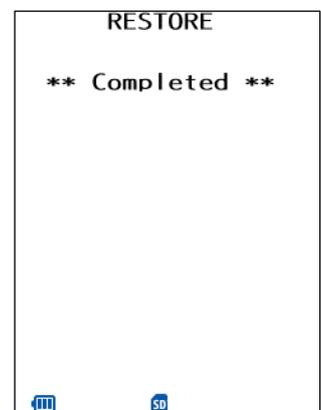
6) Press and hold the **ENT** key or **BS/C** key to return to the RESTORE menu screen.

7) Select "1: EXECUTE" at the RESTORE menu and press the **ENT** key.

The screen on the right is displayed and restoring the information specified by "2: BACKUP FOLDER" is started.



8) When the restoring is complete, the Buzzer beeps once and the screen on the right is displayed.



3. CLONE: Cloning the backed up data

1) Select “3: CLONE” at the BACKUP menu and press the **ENT** key.

The following CLONE menu is displayed.

“1: EXECUTE”:

Clones the information specified by “2: BACKUP FOLDER”.

“2: BACKUP FOLDER”:

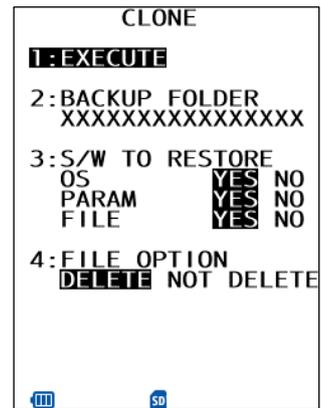
Selects the backed up information to be cloned.

“3: SW TO RESTORE”:

Selects the object to be cloned from the backup folder.

“4: FILE OPTION”:

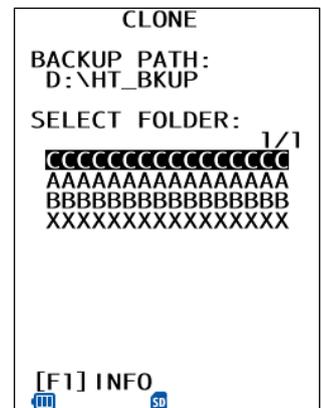
Selects whether to remove the existing files at cloning.



2) Select “2: BACKUP FOLDER” at the CLONE menu and press the **ENT** key.

The menu for the selection of clone information is displayed.

The list of backup information stored on the microSD is displayed. The backup information to be cloned is highlighted.



3) Use the cursor keys ([▲] [▼]) to select the backup information to be cloned.

4) Press the **F1** key to check the details of the highlighted backup information.

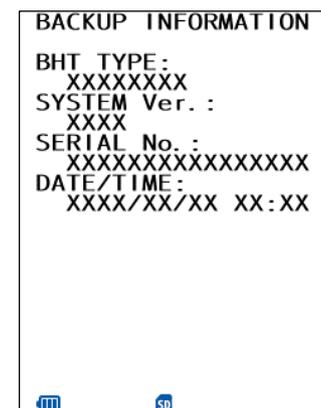
The backup information is displayed on the right screen.

BHT TYPE: Model identification information
(Code below)
BHT-1336QWB: BHT13QW2
BHT-1336Q: BHT13Q2

SYSTEM Ver.: Version of firmware (OS)

SERIAL No.: Device number of BHT (16 digits)

DATE/TIME: Date and time of backup



5) Press and hold the **BS/C** key to return to the backup information selection menu screen.

6) Press and hold the **ENT** key or **BS/C** key to return to the CLONE menu screen.

7) Select “3: S/W TO RESTORE” at the CLONE menu and press the **ENT** key.

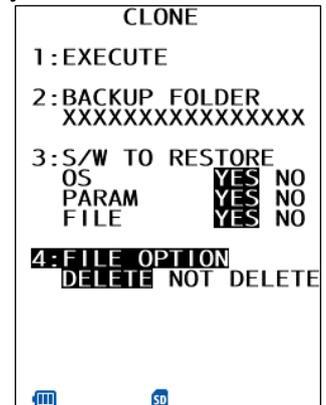
The following “OS” item is highlighted.

“OS”: Selects whether or not to clone the OS.

“PARAM”: Selects whether or not to clone the OS settings.

“FILE”: Selects whether or not to clone the files.

Select "YES" to make it a clone target, or "NO" to not make it a clone target.



8) Use the cursor keys ([▲] [▼]) to highlight the item to be set, highlight the setting value using the cursor keys ([◀] [▶]).

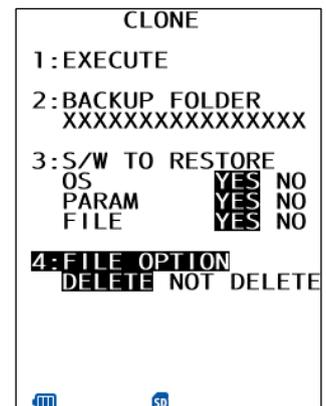
9) Press and hold the **ENT** key or **BS/C** key to confirm the item to be cloned.

10) Select “4: FILE OPTION” at the CLONE menu.

The following “4: FILE OPTION” item is highlighted.

“DELETE” Removes the existing files at cloning.

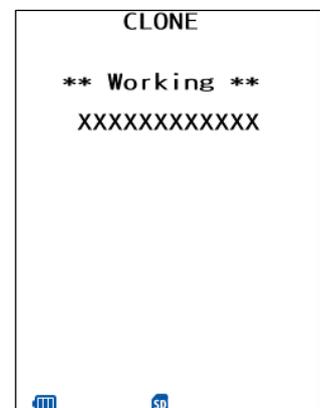
“NOT DELETE” Does not remove the existing files at cloning.



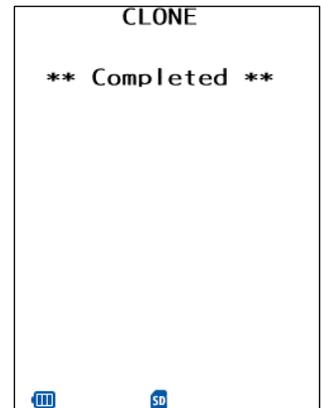
11) Use the cursor keys ([◀] [▶]) to highlight the item to be set.

12) Select “1: EXECUTE” at the CLONE menu and press the **ENT** key.

The screen on the right is displayed and cloning the information specified by “2: BACKUP FOLDER” is started.



13) When cloning is complete, the Buzzer beeps once and the screen on the right is displayed.



4. DELETE BACKUP: Deleting the backed up data

1) Select “4: DELETE BACKUP” at the BACKUP menu and press the **ENT** key.

The following DELETE BACKUP menu is displayed.

“1: EXECUTE”:

Deletes the information specified by “2: BACKUP FOLDER”.

“2: BACKUP FOLDER”:

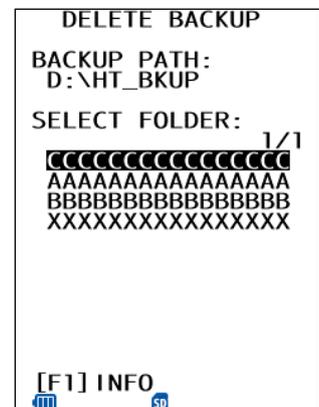
Deletes the backed up information.



2) Select “2: BACKUP FOLDER” at the DELETE BACKUP menu and press the **ENT** key.

The menu for the selection of delete information is displayed.

The list of backup information stored on the microSD is displayed. The backup information to be cloned is highlighted.



3) Use the cursor keys ([▲] [▼]) to select the backup information to be deleted.

4) Press the **F1** key to check the details of the highlighted backup information.

The backup information is displayed on the right screen.

BHT TYPE:	Model identification information (Code below)
	BHT-1336QWB: BHT13QW2
	BHT-1336Q: BHT13Q2
SYSTEM Ver.:	Version of firmware (OS)
SERIAL No.:	Device number of BHT (16 digits)
DATE/TIME:	Date and time of backup

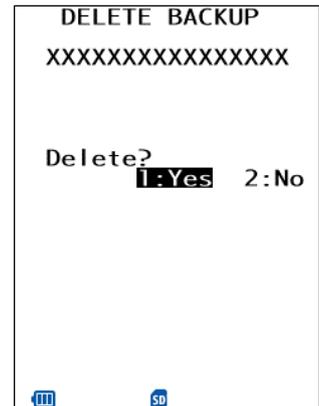


5) Press and hold the **BS/C** key to return to the backup information selection menu screen.

6) Press and hold the **ENT** key or **BS/C** key to return to the CLONE menu screen.

7) Select “1: EXECUTE” at the DELETE BACKUP menu and press the **ENT** key.

The screen on the right is displayed.



How to delete the backup information

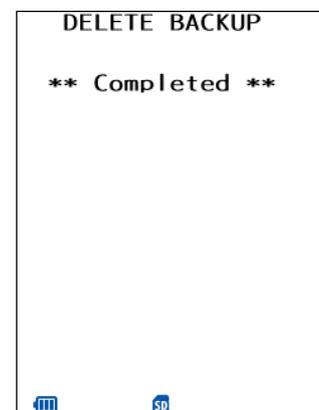
Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: Yes] and press the **ENT** key. The backed up information selected is deleted and the screen on the right is displayed.

Press and hold the **BS/C** key to return to the BACKUP menu.

How to cancel

Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: No] and press the **ENT** key.

The screen returns to the BACKUP menu.



List of errors that may occur in the backup/restore operations

Message displayed	Meaning
Out of memory	Available memory in the BHT or microSD card is insufficient.
Too many files.	The number of files in the BHT exceeded the limit and operation becomes impossible.
File error	Some files are broken and cannot be backed up or restored.
Program file error	Some programs are broken and cannot be backed up or restored.
Aborted.	Operation is aborted by the BS/C key.
Battery voltage has lowered.	Cannot continue the operation due to low battery voltage.
Model mismatch	Cannot continue the operation as the information in the BHT does not match the backed up information.
Media not inserted	No microSD is inserted.
Media illegal	The microSD card is invalid.
** Completed ** (Some items cannot be set.)	The operation is completed but some system settings are rejected.

4.5.2 Executing User Programs (EXECUTE PROGRAM Menu)

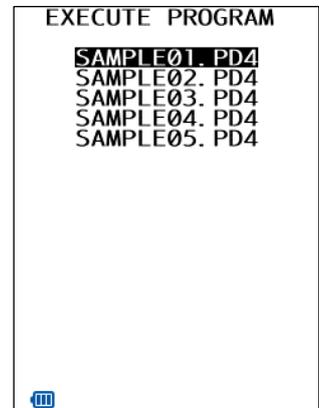
Individually select and execute user programs downloaded to the BHT.

Use the following procedure to execute user programs.

1. Select "1: EXECUTE PROGRAM" at the SYSTEM menu and then press the **ENT** key.

The screen on the right is displayed.

Press the **BS/C** key to return to the SYSTEM menu.

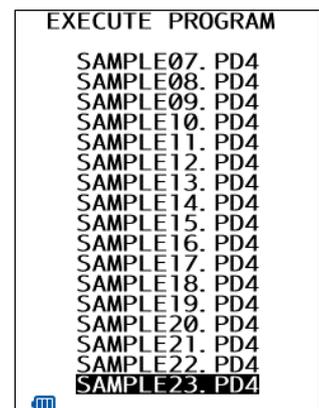


2. Use the cursor keys ([▲] [▼]) to select the target program.

The selected program will be highlighted.

Use the [▼] key to scroll down when more than 18 programs have been downloaded to the user area.

The screen on the right shows an example in which 23 programs have been downloaded.

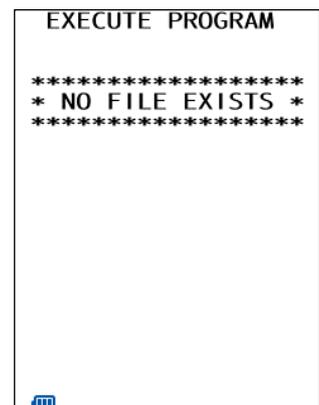


3. When the target program is highlighted, press the **ENT** key.

The selected program will be executed.

The screen on the right is displayed when no program files exist in the user area.

Press the **BS/C** key to return to the SYSTEM MENU.



4.5.3 Downloading Files (DOWNLOAD Menu)

Download files to the BHT user area from other devices such as the host computer.

-
- Point -
- If a file with the same name as one already used in the user area of the target memory in the BHT is downloaded, the newly downloaded file replaces the old one.
 - If an auto-start execution program has not been specified (Refer to "[4.5.5.1 Setting the auto-start execution program](#)"), the directory management program will execute the first managed program from among the programs (.PD4) downloaded to the BHT when the BHT power is turned ON. (Program displayed at the top of the "EXECUTE PROGRAM" menu) Take this into account when determining the file download order.
Refer to "[4.3 How to execute User Programs](#)" for details.
-

- Note -
- A file can also be downloaded via the USB communication port with the MTP. Refer to "[5.3.2 Communication via MTP Communication](#)" for details.



-
- Note - HT<-->HT", which was available on BHT-1306 series, has been removed from this menu. HT<-->HT" can be realized with the clone function. For details, see "[4.5.1.1 CLONE](#)".
-

Use the following procedure to download files.

1. Select “2: DOWNLOAD” at the SYSTEM menu and then press the **ENT** key.

The screen on the right is displayed.

“1: FILE”:

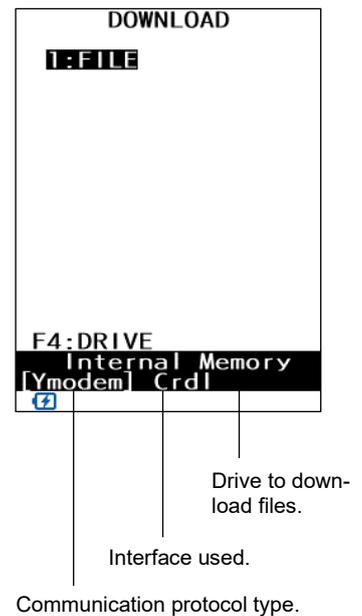
Select to download a specific file.

“F4: DRIVE”:

Select the drive to download files.

Press the **BS/C** key to return to the SYSTEM menu.

The current communication settings display at the bottom of the screen.

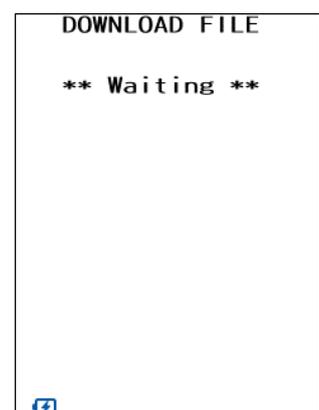


Drive for the file to be downloaded	Internal Memory SD Memory	Memory in the BHT microSD
Communication protocol type	Ymodem BHT-Ir BHTp	Ymodem protocol BHT-Ir protocol BHT protocol
Interface used	Crdl USB	Communication with the communication unit USB cable

Refer to [“4.5.5.5 Setting the communication environment”](#) for details of communication environment settings.

2. Select “1: FILE” and press the **ENT** key.

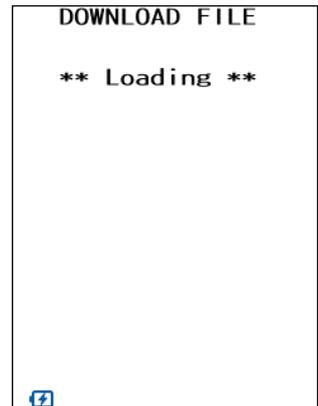
The screen on the right is displayed indicating that the BHT is waiting for the file to be downloaded.



3. By executing the BHT-BASIC 4.0 Transfer Utility or similar program, the screen on the right is displayed and file downloading is commenced.

(Refer to the “BHT-BASIC 4.0 Transfer Utility User’s Guide.”)

```
DOWNLOAD FILE
** Loading **
```



4. The screen on the right is displayed during downloading. The screen on the right is displayed indicating the file name and the number of received records/the total number of records is displayed.

Press the **BS/C** key to abort the download process and return to the DOWNLOAD menu.

```
DOWNLOAD FILE
XXXXXXXX. XXX
** Loading **
XXXXXX/YYYYY
```



5. When downloading is complete, the Buzzer sounds once and the screen on the right is displayed.

When the number of received records equals the total number of records, downloading is complete.

(When using the Ymodem protocol, the received file size equals the total file size.)

With this screen displayed on the BHT, downloading another new file from the host computer allows the BHT to begin receiving.

(Refer to the “BHT-BASIC 4.0 Transfer Utility User’s Guide.”)

```
DOWNLOAD FILE
XXXXXXXX. XXX
** Completed **
```



6. Press and hold the **BS/C** key to return to the DOWNLOAD menu.

If an error message (screen below) appears during downloading, refer to [“Chapter 7 Error Messages”](#).

4.5.4 Uploading Files (UPLOAD Menu)

Upload files stored in the BHT user area to another device.

Use the following procedure to upload files.

- Note - ● A file can also be uploaded via the USB communication port with the MTP. Refer to [“5.3.2 Communication via MTP Connection”](#) for details.



- Note - HT<-->HT", which was available on BHT-1306 series, has been removed from this menu. HT<-->HT" can be realized with the clone function. For details, see [“4.5.1.1 CLONE”](#).

1. Select “3: UPLOAD” at the SYSTEM MENU and then press the **ENT** key.

The screen on the right is displayed.

“1: ONE FILE”:

Select to upload a specific file.

“2: ALL FILES”:

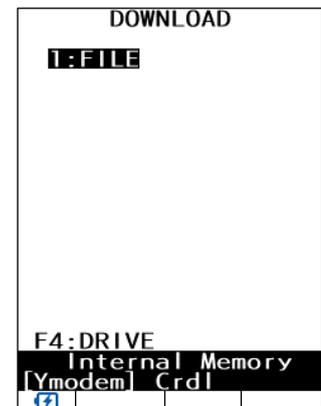
Select to upload all files, excluding font files.

“F4: DRIVE”:

Select to upload data to the microSD card.

Press the **BS/C** key to return to the SYSTEM MENU.

The current communication settings display at the bottom of the screen.



Drive to download files.

Interface used.

Communication protocol type

Drive for the file to be uploaded	Internal Memory SD Memory	Memory in the BHT microSD
Communication protocol type	Ymodem BHT-lr BHTp	Ymodem protocol BHT-lr protocol BHT protocol
Interface used	Crdl USB	Communication with the communication unit USB cable

System Environment Settings (SET SYSTEM Menu) Refer to "[4.5.5.5 Setting the communication environment](#)" for details.

- Point - If BHT protocol or BHT-Ir protocol is selected for the communication protocol, BHT-BASIC 4.0* specification files will not display at the file selection screen, and therefore cannot be downloaded.

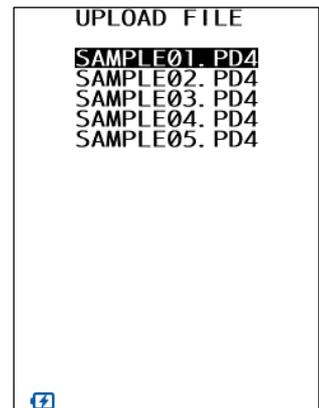
(*Applications with extension ".PD4", extension libraries with extension ".FN4", and data files that have any of the following structures: the number of fields is 17 or more, the total of the number of fields and each field length is 255 or more, and the number of records is 32768 or more)

2. Select "1: FILE" or "2: ALL FILES" and press the **ENT** key.

When "1: FILE" is selected:

The screen on the right is displayed. Select the file to be uploaded and press the **ENT** key.

Next, proceed to step 3.

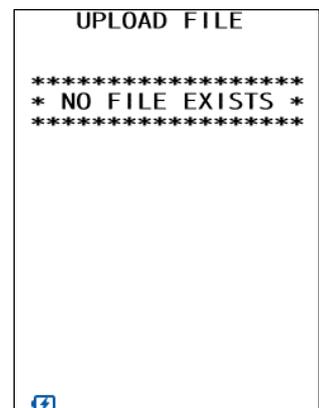


When "2: ALL FILES" is selected:

Proceed to step 3.

The screen on the right is displayed if no files that can be uploaded exist in the user area.

Press the **BS/C** key to return to the UPLOAD menu.

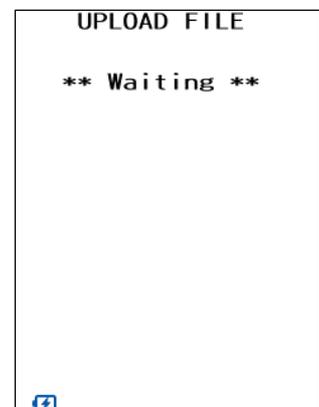


3. The screen on the right indicating that the BHT is waiting for the file to be uploaded is displayed.

The screen on the right is displayed only when "1: FILE" is selected.

If "2: ALL FILES" is selected, "ALL" is displayed in the center of the second row of the screen.

If "3: HT<-->HT COPY" is selected, "HT<-->HT" is displayed in the center of the second row of the screen.



4. By executing the BHT-BASIC 4.0 Transfer Utility or similar program, the screen on the right is displayed and file uploading is commenced.

(Refer to the “BHT-BASIC4.0 Transfer Utility User’s Guide.”)

```
UPLOAD FILE
XXXXXXXX. XXX
** Loading **
```



5. The screen on the right is displayed during uploading. The screen on the right indicating the file name and the number of sent records/the total number of records is displayed.

Press the **BS/C** key to abort the download process and return to the UPLOAD menu.

```
UPLOAD FILE
XXXXXXXX. XXX
** Loading **
XXXXXX/YYYYY
```



6. When uploading is complete, the Buzzer sounds once and the screen on the right is displayed. When the number of sent records equals the total number of records, downloading is complete.

If “2: ALL FILES” is selected, repeat the above operation until all files are uploaded.

```
UPLOAD FILE
XXXXXXXX. XXX
** Completed **
```



7. Press the **BS/C** key to return to the UPLOAD menu. If an error message is displayed during uploading, refer to “[Chapter 7 Error Messages](#)”.

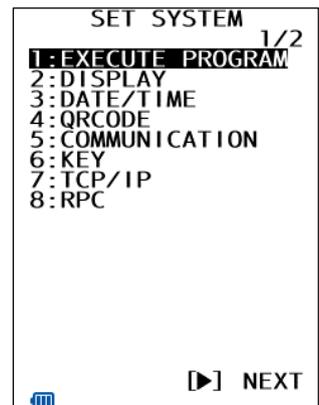
4.5.5 System Environment Settings (SET SYSTEM Menu)

Use the following procedure to set the system environment.

1. Select “4: SET SYSTEM” at the SYSTEM MENU and then press the **ENT** key.

The system menu has two screens, which can be switched using the cursor keys ([◀][▶]).

The SET SYSTEM menu screen on the right is displayed.



SYSTEM MENU 1/2

“1: EXECUTE PROGRAM”:

Sets the auto-start execution program to be executed when the power is turned ON.

“2: DISPLAY”:

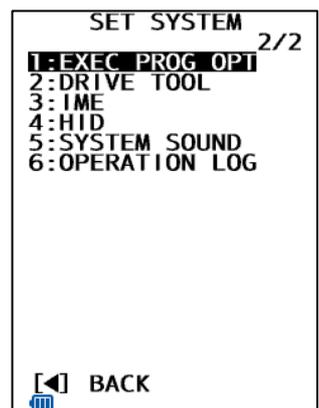
Sets the message version (Japanese, English, Chinese (Simplified, Taiwanese), Chinese (Traditional, Chinese), Korean or Thai).

“3: DATE/TIME”:

Sets the calendar clock (date and time).

“4: QRCODE”:

Sets the code scanning conditions (black/white inverted label scanning function, front/back inverted label scanning function, decode label, added option data for the 2D codes), minimum number of scan digits for scan codes (ITF, STF, Codabar), marker illumination, light and sensor off time, and “The function to assign scan settings with the system settings.”



“5: COMMUNICATION”:

Sets the communication environment (interface port and communication parameters).

“6: KEY”:

Defines the functions of the shift key and magic keys.

“7: TCP/IP”:

Displays the TCP/IP, FTP, and DHCP settings menu.

“8: RPC”:

Sets the communication method with the BHT Manager.

SYSTEM MENU 2/2

“1: EXEC PROG OPT”:

Sets the resume function.

“2: DRIVE TOOL”:

Performs the drive related operation.

“3: IME”:

Sets the Japanese language. Sets whether or not to create a log from data collected by the BHT Manager.

“4: HID”:

Sets the keyboard and data transfer settings.

“5: SYSTEM SOUND”:

Controls the startup sound.

“6: OPERATION LOG”:

The menu to set whether to create data collected by the BHT manager.

(This feature is intended for future expansion and is not currently functional.)

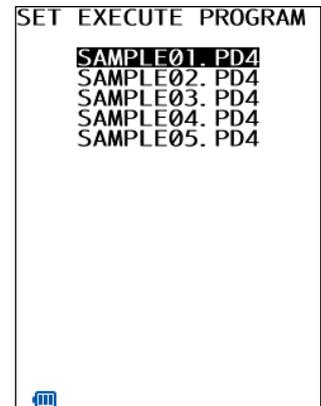
Refer to the following section for details of the above items.

2. Press the **BS/C** key to return to the SYSTEM MENU.

4.5.5.1 Setting the auto-start execution program

Use the following procedure to set the auto-start execution program.

1. Select “1: EXECUTE PROGRAM” at the SET SYSTEM menu and then press the **ENT** key. The SET EXECUTE PROGRAM menu screen on the right is displayed. The highlighted program will be the program currently set as the auto-start execution program.



2. Use the cursor keys ([▲] [▼]) to highlight the target program.
3. Press the **ENT** key. The selected program will be set as the auto-start execution program.

4. Press the **BS/C** key to return to the SET SYSTEM menu.

The screen on the right is displayed if no programs have been downloaded.

Press the **BS/C** key to return to the SET SYSTEM menu.

```
SET EXECUTE PROGRAM
*****
* NO FILE EXISTS *
*****

```

4.5.5.2 Setting the message version, system status indication and screen display compatible mode

Use the following procedure to set the display language, system status indication and screen display compatible mode.

1. Select "2: DISPLAY" at the SET DISPLAY menu and press the **ENT** key.
2. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to highlight "1: MESSAGE", "2: STATUS", "3: BOOT LOGO", or "LOGO DISPLAY TIME".

Press the **BS/C** key to return to the SET SYSTEM menu.

"1: MESSAGE":

Sets whether messages displayed at the screen are displayed in English or Japanese.

The default is the message version selected at the system initializing process.

The English and Japanese display changes at the following messages.

- System error messages
- Menu screen

"2: STATUS":

Sets whether to display or hide the system status displayed at the bottom of the screen.

Refer to ["System Status Indication"](#) on the following page for details of the system status indication.

- "ON": The system status is displayed.
- "OFF": The system status is hidden.

"3: BOOT LOGO":

Selects the logo displayed at startup.

The JPG file for the logo is downloaded, and then this menu is used to display the selected JPG file upon startup.

"4: LOGO DISPLAY TIME":

Sets the minimum time the selected logo is displayed.

- The time can be set between 9 and 255 (x 100 ms).
- When a number between 0 and 9 (x 100 ms) is set, the value is treated as a "9".
- The display time varies according to the logo file size.



The display time varies according to the file size.

- Note - The system status indication can be turned ON or OFF using the OUT statement in user programs. Refer to the "BHT-BASIC Programmer's Manual."

3. Highlight the target setting with the cursor keys ([◀] [▶]).
4. Press the **ENT** key to return to the SET SYSTEM menu.
5. Simultaneously press the **SF** key and "1: MESSAGE" at the SET DISPLAY menu.

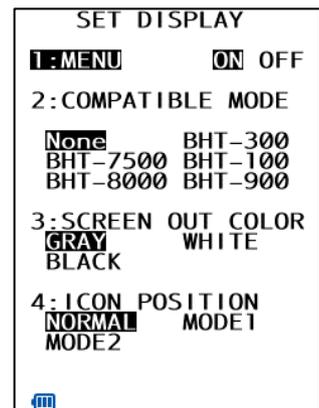
The SET DISPLAY menu on the right is displayed.

The highlighted settings will be the current settings.

"1: MENU":

Sets whether to permit or prohibit the menu screen (Buzzer volume, vibrator, screen brightness, power saving and lighting control setting) starting up while application program is running.

- "ON": Permits menu screen display.
- "OFF": Prohibits menu screen display.



"2: COMPATIBLE MODE":

Sets the screen compatibility mode setting.

Displays application programs for BHT-100/300/7500/8000/900 series without reprogramming them to fit the BHT-1336 display size.

"3: SCREEN OUT COLOR":

Changes the screen out color in the screen compatibility mode.

- "GLAY": The screen out color is displayed in GLAY.
- "WHITE": The screen out color is displayed in WHITE.
- "BLACK": The screen out color is displayed in BLACK.

"4: ICON POSITION":

Sets the icon display position during program operation.

- "NORMAL": Display in default position.
- "MODE1": Display in the same position as BHT-500/-600/-800/-1300/-1500 series.
- "MODE2": Display at the top of the screen.

6. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to highlight "1: MENU" , " 2:

COMPATIBLE MODE”, “3:SCREEN OUT COLOR” and “4:ICON POSITION”.

7. Highlight the target setting with the cursor keys ([◀] [▶]) and press the **ENT** key.
8. Press and hold the **ENT** key or **BS/C** key to apply the set value and return to the setting menu for display language and system status display.

- Note - In compatible mode, the center of the screen will be the display for compatible models and the frame outside of the screen not used in compatible display will be paint-ed in the color specified by "SCREEN OUT COLOR."

9. Press and hold the **ENT** key or **BS/C** key to return to the SET SYSTEM menu.

Screen display specifications for each BHT series are as follows.

				BHT-100	BHT-300	BHT-7500	BHT-8000	BHT-900	BHT-500/-600/-800/-1300/1500 series
Font size	Standard font	Screen mode	ANK mode	16 x 25 chars (12 x 12 dots)	22 x 9 chars (6 x 8 dots)	26 x 20 chars (6 x 8 dots)	21 x 8 chars (6 x 8 dots)	21 x 12 chars (6 x 8 dots)	20 x 20 chars (12 x 16 dots)
	Small font			16 x 25 chars (12 x 12 dots)	22 x 12 chars (6 x 6 dots)	26 x 26 chars (6 x 6 dots)	21 x 10 chars (6 x 6 dots)	21 x 16 chars (6 x 6 dots)	20 x 20 chars (12 x 16 dots)
	Standard font		Kanji mode	12 x 19 chars (16 x 16 dots)	8 x 4 chars (16 x 16 dots)	10 x 10 chars (16 x 16 dots)	8 x 4 chars (16 x 16 dots)	8 x 6 chars (16 x 16 dots)	8 x 10 chars (30 x 30 dots)
	Small font			16 x 25 chars (12 x 12 dots)	11 x 6 chars (12 x 12 dots)	13 x 13 chars (12 x 12 dots)	10 x 5 chars (12 x 12 dots)	10 x 8 chars (12 x 12 dots)	10 x 13 chars (24 x 24 dots)
			Re-duced Kanji	(Not supported)	11 x 4 chars (12 x 16 dots)	(Not supported)	(Not supported)	(Not supported)	(Not supported)

The BHT-1336Q Series come with the screen compatibility modes for the following BHT Series.

				BHT-1336Q series					
				BHT-100 Mode	BHT-300 Mode	BHT-7500 Mode	BHT-8000 Mode	BHT-900 Mode	Normal Mode
Font size	Standard font	Screen mode	ANK mode	16 x 25 chars	22 x 9 chars	26 x 20 chars	21 x 8 chars	20 x 12 chars	20 x 20 chars (12 x 16 dots)
	Small font			16 x 25 chars	22 x 12 chars	26 x 26 chars	21 x 10 chars	21 x 16 chars	20 x 20 chars (12 x 16 dots)
	Standard font		Kanji mode	12 x 19 chars	8 x 4 chars	10 x 10 chars	8 x 4 chars	8 x 6 chars	8 x 10 chars (30 x 30 dots)
	Small font			16 x 25 chars	11 x 6 chars	13 x 13 chars	10 x 5 chars	10 x 8 chars	10 x 13 chars (24 x 24 dots)
			Re-duced Kanji	(Not supported)	11 x 4 chars	(Not supported)	(Not supported)	(Not supported)	(Not supported)

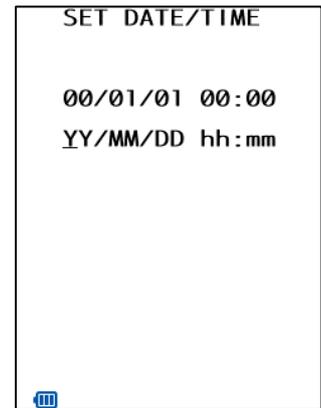
System Status Indication

Turning ON the system status indication displays the following icons at the bottom of the screen.

Indication	Icon	Description
Key Shift status		Displays when the keys on the keypad are in Shift mode.
Alphabet entry mode		Displays when the BHT is set to alphabet entry mode. (If the alphanumeric entry system has been selected in user programs, pressing the SF key switches from the numeric entry mode to alphabet entry mode.)
Communication link with the CU-1311A		Displays when a communication link is established with the CU-1311A. Flashes when the BHT tries to communicate with a CU-1311A that has not been linked with the BHT.
		Displays cyclically when the BHT receives no response from the CU-1311A, or when it is waiting for the link to be established with or severed from the CU-1311A.
Radio link with access point		If synchronization with the access point is established during wireless communication, the overall quality of communication with the access point is displayed incrementally. These respective icons indicate how good the communication environment is.
		Displays when synchronization with the access point has not been established, or when authentication fails.
Bluetooth® device status		Appears when the Bluetooth device power in on.
		Appears when the Bluetooth wireless link is established.
microSD card status		Appears when the correct card is inserted.
		The SD part of the icon turns to red while the card is being accessed.
		Appears when the card whose format is other than FAT32 *.
		Accessible as a read-only memory
		* Use a card in the FAT32 format. ** The card is broken and reading only is accepted. To write data, reformat the card.
File updating state		Displayed when the file is being uploaded or the drive is being optimized.

4.5.5.3 Setting the calendar clock

When resetting the date and time, refer to "[2.4 Initial Setup](#)".
Select "3: DATE/TIME" at the SET SYSTEM menu and press the **ENT** key to display the SET DATE/TIME menu screen on the right.



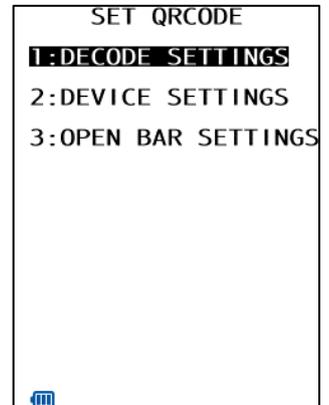
4.5.5.4 Setting the code scanning parameters

Use the following procedure to set the code scanning conditions.

1. Select "4: QRCODE" at the SET SYSTEM menu and then press the **ENT** key.

The SET QRCODE screen on the right is displayed.

The highlighted display and displayed values will be the current settings.



1: DECODE SETTINGS:

The DECODE SETTINGS screen is displayed.

2: DEVICE SETTINGS:

The DEVICE SETTINGS screen is displayed.

3: OPEN BAR SETTINGS:

The FUNCTION TO ASSIGN SCAN SETTINGS WITH THE SYSTEM SETTINGS VALUE screen is displayed.

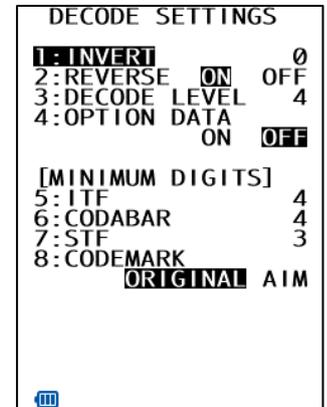
2. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to highlight the item to be set and press the **ENT** key.
3. Press the **BS/C** key to return to the SET SYSTEM menu.

1. "1: DECODE SETTINGS": Code reading conditions and minimum number of digits for the code to be read
 - 1) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6] [7] [8]) to highlight the item to be set, highlight the setting value using the cursor keys ([◀] [▶]) and press the ENT key. Press the **BS/C** key to return to the SET QRCODE menu.

"1: INVERT": Black/white inverted label reading function
Inverted 2D codes and barcodes can be read.

- "0": Disables black/white inverted label reading.
- "1": Enables black/white inverted label reading.
- "2": Enables black/white inverted label auto-detect reading.

- Point - Auto-detect reading may take longer than ordinary reading of black/white inverted labels or non-inverted labels.



"2: REVERSE": Inverted 2D code reading function.

Setting inverted 2D code reading to ON enables only inverted 2D code reading.

"3: DECODE LEVEL"

Set the decode level (code reading tolerance level).

Press [◀] to decrease the setting value and [▶] to increase the setting value.

Setting range: 1 – 9 (default: 4)

Setting a lower value improves the reading rate but increases the risk of incorrectly reading poor quality codes (split or dirty codes). Conversely, setting a higher value reduces the reading rate but decreases the risk of such errors.

"4: OPTION DATA"

If set to ON when 2D codes are read, option data for the 2D codes such as the model and the error-correcting level are added to the end of the reading data.

(For details on the optional data, please refer to "[Optional Data Format.](#)")

"5: ITF": Minimum number of digits to be read for ITF.

"6: CODABAR": Minimum number of digits to be read for Codabar.

"7: STF": Minimum number of digits to be read for STF.

Set minimum number of digits for the code to be read.

Press [◀] to decrease the setting value and [▶] to increase the setting value.

Setting range:	2–20	(default: 4)
Setting range:	3–20	(default: 4)
Setting range:	1–20	(default: 3)

Setting a small number of digits increases the frequency of missing digits when reading or incorrectly reading depending on how codes are read or the quality of codes.

On the other hand, setting a large number will decrease the possibility of such errors.

“8: CODEMARK”: Setting the types of Code mark.

Set the types of Code mark.

“ORIGINAL”: CODE MARK Type1

CODE MARK system is defined by DENSO Corporation.

“AIM”: CODE MARK Type2

CODE MARK system is compliant with “Guidelines on Symbology Identifiers” by AIM USA.

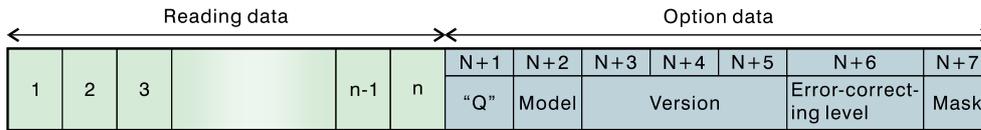
2) Press the **BS/C** key to return to the SET SYSTEM menu.

- Point - When using the white-black inversion label reading function, automatic detection may take longer to read compared to reading regular non-inverted codes or white-black inverted codes.

- Point - These settings are enabled even when system mode scanning tests are not being carried out. Do not change these settings unless necessary.

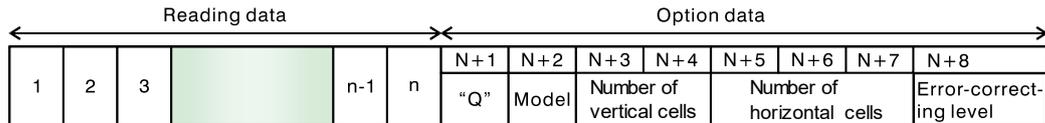
■ Option data formats

• QR Code



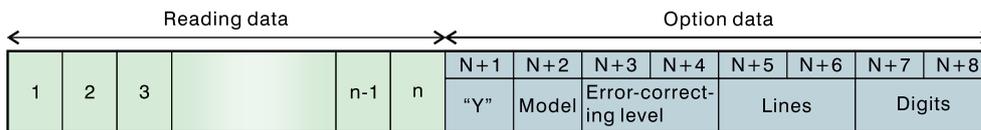
(Ex.) When scanned code is “QR Code, Model 2, Version 5, Error-correcting level M, Mask number 6” (Reading data) ... Q2v05M6

• rMQR Code



(Ex.) When scanned code is “rMQR Code, Version R7 x 43, Error-correcting level M, (Reading data) ... QR07043M

• PDF417



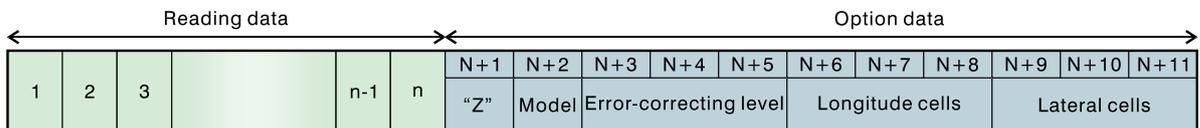
(Ex.) When scanned code is “PDF417 code, Error-correcting level 4, Lines: 12, Digits: 2” (Reading data) ... Y1041202

• MaxiCode



(Ex.) When scanned code is “MaxiCode, Mode 4” (Reading data) ... X4

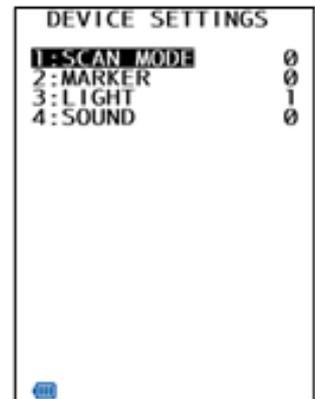
• DataMatrix



(Ex.) When scanned code is “DataMatrix, Error-correcting level ECC200, Longitudinal cells: 10, Lateral cells: 10” ...z0200010010

2. “2: DEVICE SETTINGS”: Device settings during reading

1) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to highlight the item to be set. Press [◀] to decrease the setting value and [▶] to increase the setting value.



“1: SCAN MODE”

Set the scan mode.

“0”: Normal mode

Codes within the field of view can be read.

Refer to [“Chapter 8 Specifications”](#) regarding the size of the field of view.

“1”: Point scan mode

Codes above the cross at the center of the marker can be read. Reading will be unsuccessful if there is no code above the cross or the marker cannot be detected due to external light. This kind of reading is only enabled if marker illumination is enabled.

“2”: Point scan mode 2

Code in the center of the marker can be read. When the marker cannot be detected due to external light, a code near the marker will be read. No reading can be performed if there is no code in the center of the image.

“2: MARKER”

Set whether the guide marker illuminates or not when the trigger switch is pressed.

“0”: Operated by trigger switch.

“1”: Locked ON (Illuminates)

“2”: Locked OFF (Does not illuminate)

- Point - When the marker is locked on, more power is used, and operating times are shorter compared to other modes. Do not change these settings unless necessary.

“3: LIGHT”

Set whether the INDICATOR illuminates or not when the trigger switch is depressed.

“0”: Auto

“1”: Always on

“2”: OFF

“4: SOUND”

Set the sound that notifies the completion of the reading.

"0": Monotone

"1": Chord 1

"2": Chord 2

"3": Compound sound

2) Press the **BS/C** key to return to the SET QRCODE menu.

3. “3: OPEN BAR SEETTINGS”: Setting “The FUNCTION TO ASSIGN SCAN SETTINGS WITH THE SYSTEM SETTINGS”

1) Select “3: OPEN BAR SEETTINGS” at SET QRCODE and then press the **ENT** key.

The OPEN BAR SETTING screen is displayed.

1: READ MODE: Read mode

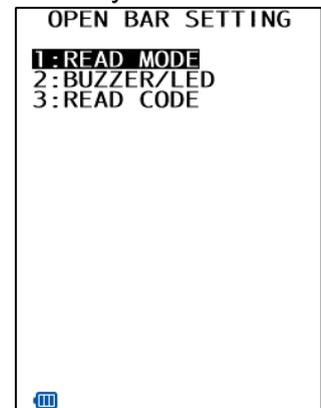
The READ MODE screen is displayed.

2: BUZZER/LED: Buzzer/LED control

The BUZZER/LED screen is displayed.

3: READ CODE: Read code

The READ CODE screen is displayed.



Refer to the following section for details of the above items.

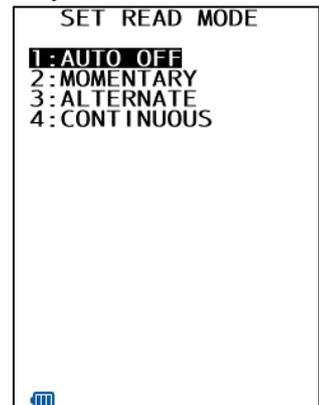
- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to select the item to be set and press the **ENT** key.
- 3) Press the **BS/C** key to return to the SET QRCODE menu.

◆ Read mode

- 1) Select "1: READ MODE" at OPEN BAR SETTING and then press the **ENT** key.

The SET READ MODE screen is displayed.

The highlighted settings are the current settings.



"1: AUTO OFF": Auto-off mode

If the trigger operation is not operated, it turns off the illumination LED after the certain amount of time.

"2: MOMENTARY": Momentary mode

Only while you hold down the trigger switch, the illumination LED lights.

"3: ALTERNATE": Alternate mode

The illumination LED is turned ON/OFF repeatedly, every time trigger switch is pressed over.

"4: CONTINUOUS": Continuous lighting mode

The illumination LED lights continuously.

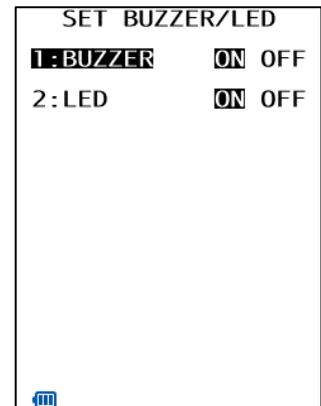
- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to select the item to be set and press the **ENT** key.
- 3) Press the **ENT** key or **BS/C** key to make the settings value valid and then return to the OPEN BAR SETTING screen.

◆ BUZZER/LED control

1) Select “2: BUZZER/LED” at OPEN BAR SETTINGS and then press the **ENT** key.

The Buzzer/LED control settings screen is displayed.

The highlighted settings are the current settings.



“1: BUZZER”:

Enable to set Buzzer/Vibrator beeping when a read of a code is successful.

“ON”: Buzzer/Vibrator beeps when a read of a code is successful.

“OFF”: Buzzer/Vibrator does not beep when a read of a code is successful.

“2: LED”:

Enable to set LED illuminations when a read of a code is successful.

“ON”: LED lights in blue when a read of a code is successful.

“OFF”: LED does not light when a read of a code is successful.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to select the item to be set and press the

ENT key.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or the **BS/C** key for the settings value to be valid and then return to the OPEN BAR SETTING screen.

◆ Read code setting

1) Select “3: READ CODE” at OPEN BAR SETTING and then press the **ENT** key.

The SET READ CODE screen is displayed.

“1: BARCODE”:

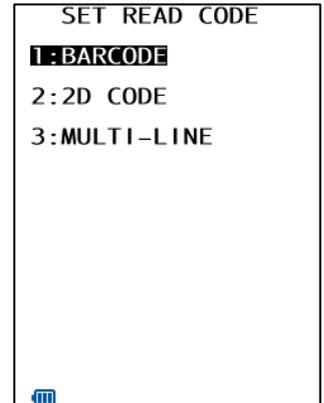
The BARCODE screen is displayed.

“2: 2D CODE”:

The 2D CODE screen is displayed.

“3: MULTI-LINE”:

The MULTI-LINE screen is displayed.



Refer to the following section for details of the above items.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to select the item to be set and press

the **ENT** key.

3) Press the **BS/C** key to return to the OEPN BAR SETTING menu.

➤ **“1: BARCODE”: Bar code**

Select “1: BARCODE” and press **ENT** key at SET READ CODE menu to display the SET BARCODE screen, allowing code reading to be set to enable (ON) or disable (OFF). The highlighted settings are the current settings.

1) To change the settings, use the cursor keys ([▲] [▼]) or numerical keys ([1][2][3][4][5][6][7][8]) to select the item to be set and select the setting value using the cursor keys ([◀][▶]).

- “1: EAN/UPC”:
Enable/disable EAN/UPC Code
- “2: ITF”:
Enable/disable Interleaved 2 of 5 (ITF)
- “3: CODABAR”:
Enable / disable Codabar (NW-7)
- “4: CODE39”:
Enable / disable Code 39
- “5: CODE93”:
Enable / disable Code 93
- “6: CODE128”:
Enable / disable Code 128
- “7: RSS”:
Enable/disable RSS (GS1 Databar)
- “8: STF”:
Enable/disable Standard 2 of 5 (STF).

SET BARCODE		
1: EAN/UPC	ON	OFF
2: ITF	ON	OFF
3: CODABAR	ON	OFF
4: CODE39	ON	OFF
5: CODE93	ON	OFF
6: CODE128	ON	OFF
7: RSS	ON	OFF
8: STF	ON	OFF
[ENT]DETAIL 		

2) Press **ENT** key for the detailed settings of the bar code being selected. Refer to the following section for the details.

3) Press the **BS/C** key for the settings value to be valid and then return to the SET READ CODE screen.

- Point - “1: EAN/UPC” and “7: RSS” have different types of code readings, which allows code readings to be set enable/disable at the detailed settings according to types of code readings. If enable, both this setting and the detailed settings need to be enabled.

“1: EAN/UPC”: Detailed settings for EAN/UPC

1) Select “1: EAN/UPC” at the SET BARCODE menu and then press the **ENT** key.

The SET EAN/UPC screen is displayed.

EAN/UPC 1/3

(EAN-13/UPC-A set)

“1: READING”:

Enable/Disable EAN-13/UPC-A

“2: 1ST CHARACTER”:

“3: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of EAN-13/UPC-A (country flags) .

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of EAN-13/UPC-A.

The BHT will carry on reading endlessly if “?” is allocated.

(Add-on set of EAN-13/UPC-A)

“4: READING”:

Enable/Disable EAN-13/UPC-A with Add-on.

EAN/UPC 2/3

(EAN-8 set)

“1: READING”:

Enable/Disable EAN-8

“2: 1ST CHARACTER”:

“3: 2ND CHARACTER”:

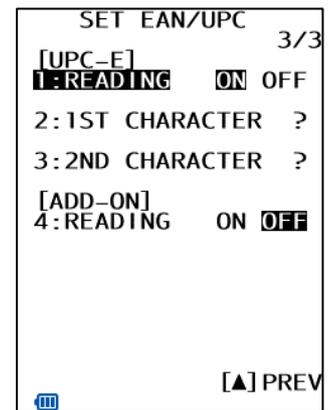
Allocate “?, 0–9” to the first and second characters of EAN-8 (country flags).

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of EAN-8. The BHT will carry on reading endlessly if “?” is allocated.

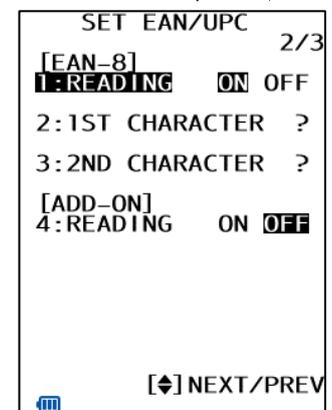
(EAN-8 Add-on set)

“4: READING”:

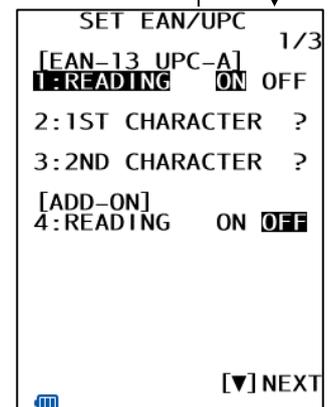
Enable/Disable EAN-8 with Add-on.



Changeover with
[▲] [▼] keys



Changeover with
[▲] [▼] keys



EAN/UPC 3/3

(UPC-E set)

“1: READING”:

Enable/Disable UPC-E.

“2: 1ST CHARACTER”:

“3: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of UPC-E (country flags).

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of UPC-E.

The BHT will carry on reading endlessly if “?” is allocated. (UPC-E add-on set)

“4: READING”:

Enable/Disable UPC-E with Add-on

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to select the item to be set and press the ENT key.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
- 4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET BAR CODE screen.

“2: ITF”: Detailed settings for Interleaved 2 of 5 (ITF)

1) Select “2: ITF” at the SET BARCODE menu and then press the **ENT** key.

The SET ITF screen is displayed.

“1: MIN”:

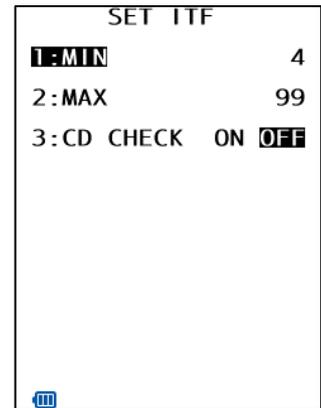
Set minimum number of digits of ITF.

Setting range: 2–99

“2: MAX”:

Set maximum number of digits of ITF.

Setting range: 2–99



- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

“3: CD CHECK”:

“ON”: Reading is impossible when check digits are incorrect or missing.

“OFF”: Reading is performed regardless of the use of check digits.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to select the item to be set and press the **ENT** key.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET BAR-CODE screen.

“3: CODABAR”: Detailed settings for Codabar (NW-7)

1) Select “3: CODABAR” at the SET BARCODE menu and then press the **ENT** key.

The SET CODABAR screen is displayed.

“1: MIN”:

Set minimum number of digits of Codabar.

Setting range: 3–99

“2: MAX”:

Set maximum number of digits of Codabar.

Setting range: 3–99

SET CODABAR	
1:MIN	3
2:MAX	99
3:START CODE	? A B C D
4:STOP CODE	? A B C D
5:CD CHECK	ON OFF

- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

“3: START CODE”:

“4: STOP CODE”:

Allocate “?, A, B, C, D” to start/stop code of Codabar.

If “A, B, C, D” is allocated at the menu, limitation is set for the BHT to read only when allocated characters match to the characters of CODABAR. The BHT will carry on reading endlessly if “?” is allocated.

“5: CD CHECK”:

“ON”: Reading is impossible when check digits are incorrect or missing.

“OFF”: Reading is performed regardless of the use of check digits.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET BAR CODE screen.

“4: CODE39”: Detailed settings for Code 39

1) Select “4: CODE39” at the SET BARCODE menu and then press the **ENT** key.

The SET CODE39 screen is displayed.

“1: MIN”:

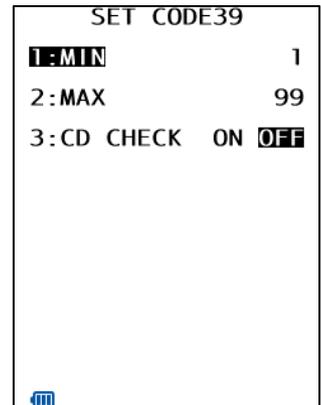
Set minimum number of digits of Code 39

Setting range: 1–99

“2: MAX”:

Set maximum number of digits of Code 39

Setting range: 1–99



- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

“3: CD CHECK”:

“ON”: Reading is impossible when check digits are incorrect or missing.

“OFF”: Reading is performed regardless of the use of check digits.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to select the item to be set.

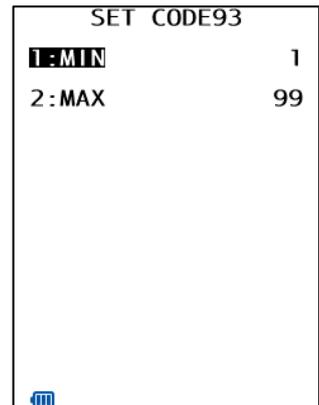
3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET BAR-CODE screen.

“5: CODE93”: Detailed settings for Code 93

1) Select “5: CODE93” at the SET BARCODE menu and then press the **ENT** key.

The SET CODE93 screen is displayed.



“1: MIN”:

Set minimum number of digits of Code 93

Setting range: 1–99

“2: MAX”:

Set maximum number of digits of Code 93

Setting range: 1–99

- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET BAR CODE screen.

“6: CODE128”: Detailed settings for Code 128

1) Select “6: CODE128” at the SET BARCODE menu and then press the **ENT** key.

The SET CODE 128 screen is displayed.

“1: MIN”:

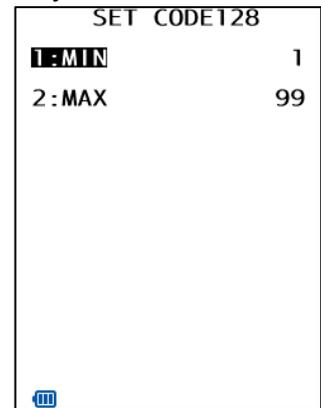
Set minimum number of digits of Code 128

Setting range: 1–99

“2: MAX”:

Set maximum number of digits of Code 128

Setting range: 1–99



- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to 4) the SET BARCODE screen.

“7: RSS”: Detailed settings for RSS (GS1 Databar)

1) Select “7: RSS” at the SET BARCODE menu and then press the **ENT** key.

The SET RSS screen is displayed.

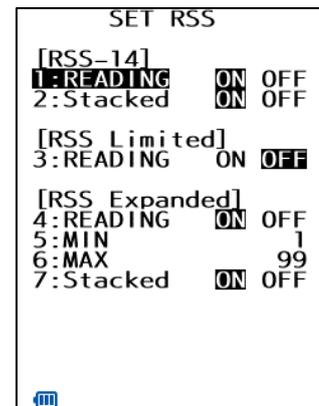
(RSS-14, RSS-14 Truncated set)

“1: READING”:

Enable/Disable RSS-14 (GS1 Databar Omnidirectional),
RSS-14 Truncated (GS1 Databar Truncated)

“2: Stacked”:

Enable/disable RSS-14 Stacked (GS1 Databar Stacked),
RSS-14 Stacked Omnidirectional (GS1 Databar Stacked
Omnidirectional)



- Point - To Enable Stacked type, both the “1: READING” and “2: Stacked” need to be enabled.

(RSS-Limited set)

“3: READING”:

Enable/disable RSS-Limited (GS1 Databar Limited)

(RSS-Expanded set)

“4: READING”:

Enable/disable RSS-Expanded (GS1 Databar Expanded)

“5: MIN”:

Set the minimum number of digits of RSS-Expanded (GS1 Databar Expanded), RSS-Expanded Stacked (GS1 Databar Expanded Stacked)

Setting range: 1–99

“6: MAX”:

Set the maximum number of digits of RSS-Expanded (GS1 Databar Expanded), RSS-Expanded Stacked (GS1 Databar Expanded Stacked)

Setting range: 1–99

- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

“7: Stacked”:

Enable/disable RSS-Expanded Stacked (GS1 Databar Expanded Stacked)

- Point - To Enable Stacked type, both the “4: READING” and “7: Stacked” need to be enabled.

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6] [7]) to select the item to be set.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
- 4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET BAR-CODE screen.

“8: STF”: Detailed settings for Standard 2 of 5 (STF)

- 1) Select “8: STF” at the SET BARCODE menu and then press the **ENT** key.

The SET STF screen is displayed.

“1: MIN”:

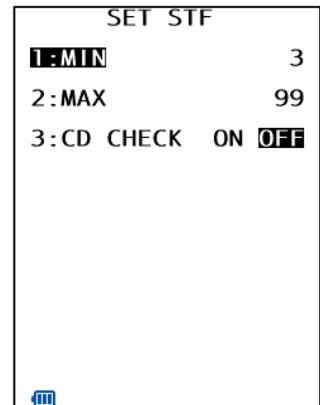
Set minimum number of digits of STF.

Setting range: 1–99

“2: MAX”:

Set maximum number of digits of STF.

Setting range: 1–99



- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

“3: CD CHECK”:

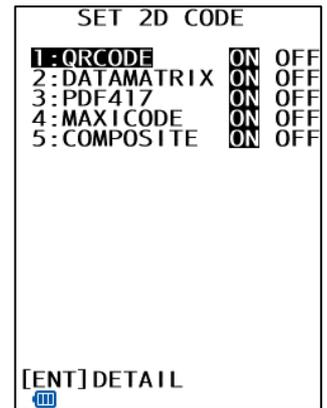
“ON”: Reading is performed only when the check digits are correct. Reading becomes impossible if check digits are incorrect or missing.

“OFF”: Reading is performed regardless of the use of check digits.

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to select the item to be set and press the **ENT** key.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to 4) the SET BARCODE screen.

➤ **“2: 2D CODE”: 2D Code**

Select “2:2D CODE” and press **ENT** key at SET READ CODE to display SET 2D CODE screen, allowing the code to be set to enable/disable. The highlighted settings are the current settings.



1) To change the settings, use the cursor keys ([▲] [▼]) or numerical keys ([1][2][3][4][5]) to select the item to be set and then select the setting value.

using the cursor keys ([◀] [▶]).

“1: QRCODE”:

Enable / disable QR Code.

“2: DATAMATRIX”:

Enable / disable DataMatrix.

“3: PDF417”:

Enable / disable PDF417.

“4: MAXICODE”:

Enable / disable MaxiCode.

“5: COMPOSITE”:

Enable / disable COMPOSITE.

2) Press **ENT** key for the detailed settings of the 2D code being selected. Refer to the following section for the details.

1) Press the **BS/C** key for the settings value to be valid and then return to the SET READ CODE screen.

- Point - “1: QRCODE”, “Q2: DATAMATRIX”, “Q3: PDF417Q” have different types of code readings, which allows code readings to be set enable /disable at the detailed settings according to the type of code readings. If enable, both this setting and the detailed settings need to be enabled.

- Note - No detailed settings for “4: MAXICODE” and “5: COMPOSITE”.

“1: QRCODE”: Detailed settings for QR Code

1) Select “1: QRCODE” at SET 2D CODE menu and then press the **ENT** key.

The SET QRCODE screen is displayed.

QR Code 1/3

(Concatenated QR Code set)

“1: READING”:

Enable/disable concatenated QR Code.

For QR Codes, there is a function where data is coded after being split into a maximum of 16 segments and original data is restored when the codes are read. These segmented codes are called concatenated codes.

“2: EDIT MODE”:

Set the scan mode of concatenated QR Code.

“EDIT”: Edit mode.

The data is stored in memory when all segmented codes have been read.

A reading error occurs if the volume of data exceeds 65,280 bytes. The buzzer sounds at 500 ms intervals, and all read data is discarded.

“BATCH”: Batch edit mode.

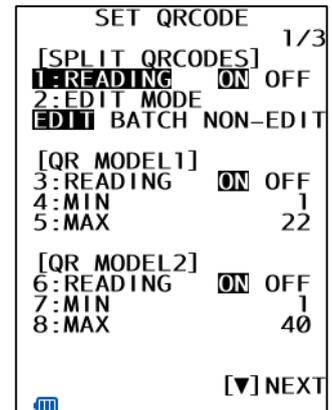
The data is stored in memory when all segmented codes within the scanning field of view have been read.

“NON-EDIT”: Non edit mode.

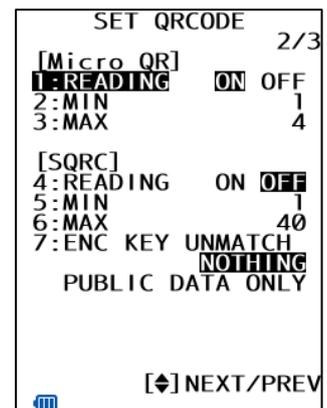
The data is stored in memory each time a segmented code is read.

In edit mode, when the first code of the concatenated code is read the buzzer sounds twice and the system enters concatenated code reading status.

When subsequent concatenated codes are read the buzzer sounds once. After the final code has been read, the buzzer sounds three times and reading is complete.



Changeover with
[▲] [▼] keys



-
- Point -
- If QR Codes other than concatenated codes are read during concatenated code reading then concatenated code reading ends, the read concatenated codes are discarded, and the data for the last QR Codes read is saved.
 - When the illuminating indicator is set to OFF in trigger switch operation (Auto-off mode, Momentary mode, and alternate) or when the reading of the next concatenated code is not completed within approx. 3 seconds in modes other than Auto-off mode, the data read so far is cleared and concatenated code reading ends.
 - When other concatenated codes are read before a concatenated code has been read completely, the data read so far is cleared and reading begins on the new code.
-

(QR Code Model 1 setting)

“3: READING”:

Enable/disable QR Code Model 1

“4: MIN”:

Set the minimum code version of QR Code Model 1.

Setting range: 1–22

“5: MAX”:

Set the maximum code version of QR Code Mode 1.

Setting range: 1–22

(QR Code Model 2 setting)

“6: READING”:

Enable/disable QR Code Model 2.

“7: MIN”:

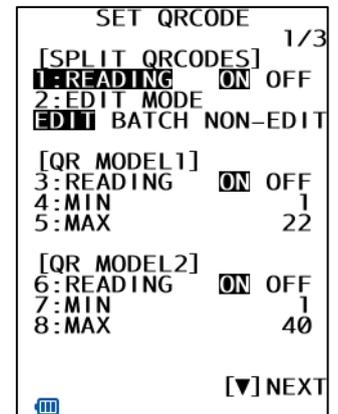
Set the minimum code version of QR Code Model 2.

Setting range: 1–40

“8: MAX”:

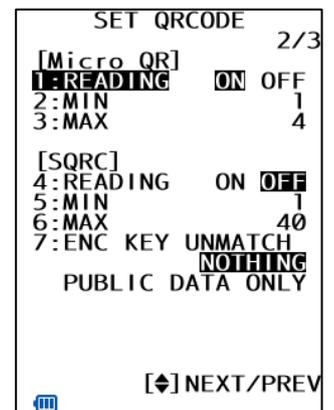
Set the maximum code version of QR Code Model 2.

Setting range: 1–40



Changeover with

[▲] [▼] keys



QR Code 2/3

(Micro QR Code setting)

“1: READING”:

Enable/disable QR Code Model 2.

“2: MIN”:

Set the minimum code version of QR Code Model 2.

Setting range: 1-4

“3: MAX”:

Set the maximum code version of QR Code Model 2.

Setting range: 1-4

(SQRC Code setting)

“4: READING”:

Enable/disable SQRC Code.

“5: MIN”:

Set the minimum code version of SQRC.

Setting range: 1-40

“6: MAX”:

Set the minimum code version of SQRC.

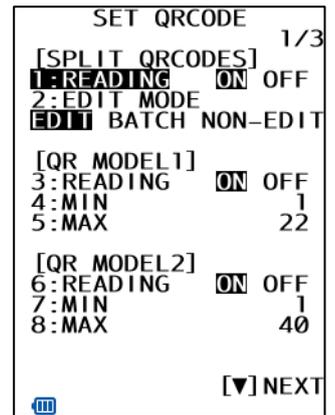
Setting range: 1-40

“7: ENC KEY UNMATCH”:

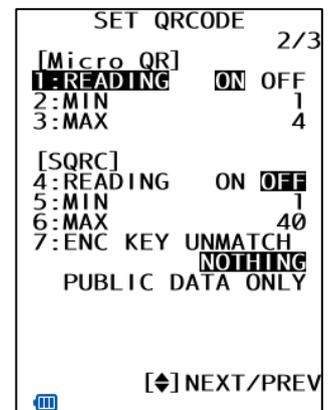
Enable/disable public data when encryption key is unmatched.

“NOTHING”: The public data is not read when the encryption key is unmatched.

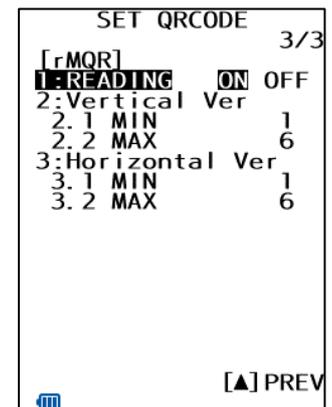
“PUBLIC DATA ONLY”: The public data is read when the encryption key is unmatched.



Changeover with
[▲][▼] keys



Changeover with
[▲][▼] keys



QR Code 3/3

(rMQR setting)

"1: READING":

Enable/disable reading of rMQR code.

"2: Vertical Ver":

Set the maximum/minimum cell version in the rMQR vertical direction.

"2.1 MIN":

Minimum cell version in the vertical direction

Setting range: 1-6

"2.2 MAX":

Maximum cell version in the vertical direction

Setting range: 1-6

"3: Horizontal Ver":

Set the maximum/minimum cell version in the rMQR horizontal direction.

"3.1 MIN":

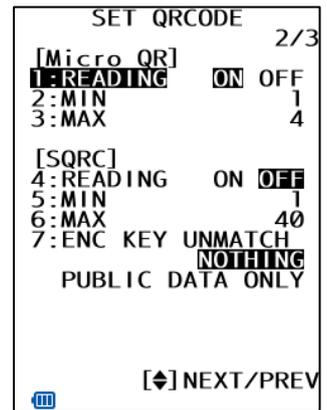
Minimum cell version in the horizontal direction

Setting range: 1-6

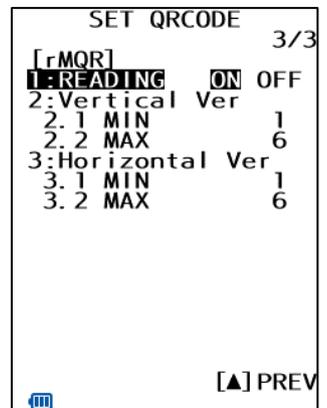
"3.2 MAX":

Maximum cell version in the horizontal direction

Setting range: 1-6



Changeover with
[▲][▼] keys



- Point -
- The minimum code version must be a value less than or equal to the maximum code version. When the minimum code version is larger than the maximum code version, an error occurs when reading.
 - Set the minimum and maximum code versions within the above range. Otherwise, an error occurs when reading.
 - Combinations of vertical/horizontal cell versions of rMQR are as listed below. An error occurs upon reading when the range without ✓ is specified.

		Horizontal cell version					
		1	2	3	4	5	6
Vertical cell version	1		✓	✓	✓	✓	✓
	2		✓	✓	✓	✓	✓
	3	✓	✓	✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓
	5		✓	✓	✓	✓	✓
	6		✓	✓	✓	✓	✓

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6] [7] [8]) to select the item to be set.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
- 4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET 2D CODE screen.

“2: DATAMATRIX”: Detailed settings for DataMatrix

- 1) Select “2: DATAMATRIX” at SET 2D CODE menu and then press the **ENT** key.

The SET DATAMATRIX screen is displayed.

(Square DataMatrix setting)

“1: READING”:

Enable / disable Square DataMatrix.

“2: MIN”:

Set the minimum code version of square DataMatrix Code.

Setting range: 1–24

“3: MAX”:

Set the maximum code version of square DataMatrix Code.

Setting range: 1–24

(Rectangular DataMatrix setting)

“4: READING”:

Enable/disable rectangular DataMatrix.

“5: MIN”:

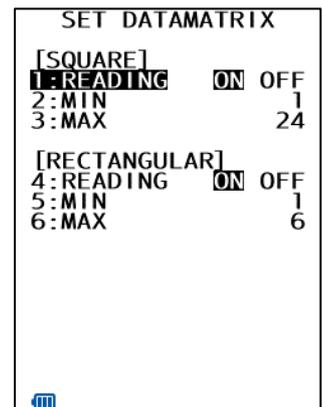
Set the minimum code version of rectangular DataMatrix.

Setting range: 1–6

“6: MAX”:

Set the maximum code version of rectangular DataMatrix.

Setting range: 1–6



- Point -
 - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.
 - Set the minimum/maximum code version within the setting range listed above. If the value is out of the setting range, error occurs.
 - The definition of the Data Matrix code numbers is as follows:

<Square DataMatrix>

Code No.	Number of cells (Row x COL)	Code No.	Number of cells (Row x COL)	Code No.	Number of cells (Row x COL)	Code No.	Number of cells (Row x COL)
1	10x10	7	22x22	13	44x44	19	88x88
2	12x12	8	24x24	14	48x48	20	96x96
3	14x14	9	26x26	15	52x52	21	104x104
4	16x16	10	32x32	16	64x64	22	120x120
5	18x18	11	36x36	17	72x72	23	132x132
6	20x20	12	40x40	18	80x80	24	144x144

<Rectangle DataMatrix>

Code No.	Number of cells (Row x COL)	Code No.	Number of cells (Row x COL)	Code No.	Number of cells (Row x COL)
1	8x18	3	12x26	5	16x36
2	8x32	4	12x36	6	16x48

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6]) to select the item to be set.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
- 4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET 2D CODE screen.

“3: PDF417”: Detailed settings for PDF417

- 1) Select “3:PDF417” at SET 2D CODE menu and then press the **ENT** key.

The SET PDF417 screen is displayed.

(PDF417 setting)

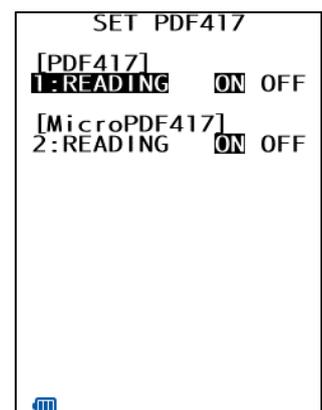
“1: READING”:

Enable/disable PDF417.

(Micro PDF417 setting)

“2: READING”:

Enable/disable Micro PDF417

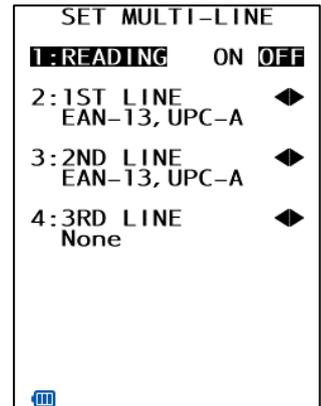


- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to select the item to be set.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
- 4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET 2D CODE screen.

➤ **“3: MULTI-LINE”: Multi-line code**

1) Select “3: MULTI-LINE” at SET READ CODE menu and then press the **ENT** key.

The SET MULTI-LINE screen is displayed, allowing the multi-line code to be set to enable/disable and the reading code can be set.



“1: READING”: Enable/disable multi-line code.

“2: 1ST LINE”: Set the first line of the barcode to be set.

“3: 2ND LINE”: Set the second line of the barcode to be set.

“4: 3RD LINE”: Set the third line of the barcode to be set.

Multiline is limited to 3 lines and is compatible with 9 types of the reading code.
(EAN-13 / UPC-A, EAN-8, UPC-E, ITF, Codabar, Code 39, Code 93, Code 128)

Press the cursor keys ([◀] [▶]) while “2: 1ST LINE”, “3: 2ND LINE” or “4: 3RD LINE” is being selected to change the barcode at the line where the cursor is located. Press **ENT** key for the detailed settings of the barcode being selected. Press the **BS/C** key for the settings value to be valid and then return to the SET READ CODE screen.

- Point - The Multi-line code and bar code don't interfere each other. EAN-13/UPC-A can be read when EAN/UPC -A is selected on the 1ST and 2ND LINE of Multi-line code even though “Disable EAN-13/UPC-A” is selected at SET BARCODE.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **BS/C** key for the settings value to be valid and then return to the SET READ CODE screen.

“EAN-13/UPC-A”: Detailed settings of EAN-3/UPC-A for the Multiline code

1) Select “EAN-13/UPC-A” at SET MULTI-LINE menu and then press the **ENT** key.

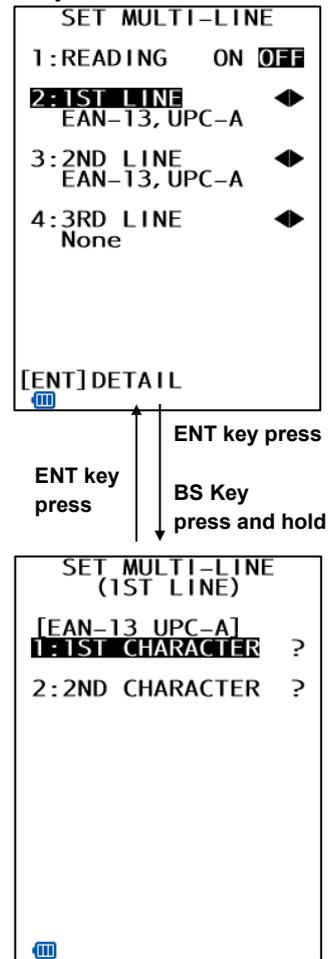
The SET MULTI-LINE [EAN-13 UPC-A] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?”, 0–9” to the first and second characters of EAN-13/UPC-A (country flags).

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of EAN-13/UPC-A. The BHT will carry on reading endlessly if “?” is allocated.



2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“EAN-8”: Detailed settings of EAN-8 for the Multiline code

1) Select “EAN-8” at SET MULTI-LINE menu and then press the **ENT** key.

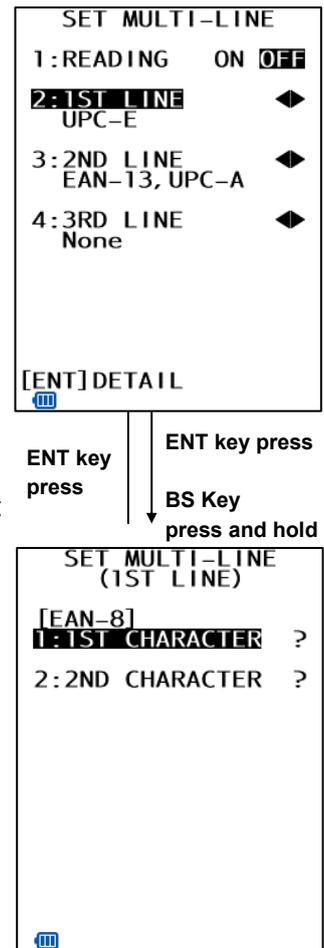
The SET MULTI-LINE [EAN-8] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of EAN-8 (country flags).

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of EAN-8. The BHT will carry on reading endlessly if “?” is allocated.



- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to select the item to be set.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
- 4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“UPC-E”: Detailed settings of UPC-E for the Multiline code

1) Select “UPC-E” at SET MULTI-LINE menu and then press the **ENT** key.

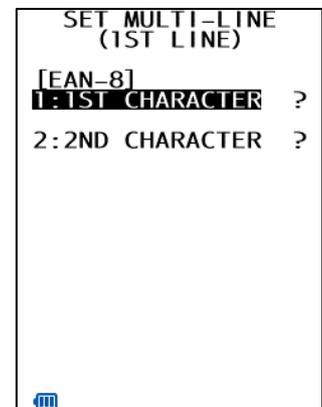
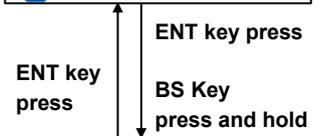
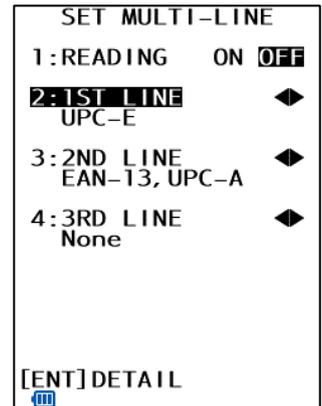
The SET MULTI-LINE [UPC-E] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of UPC-E (country flags).

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when allocated numeric characters match to the first and second numeric characters of UPC-E. The BHT will carry on reading endlessly if “?” is allocated.



2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“ITF”: Detailed settings of ITF for the Multiline code

1) Select “ITF” at SET MULTI-LINE menu and then press the **ENT** key.

The SET MULTI-LINE [IFT] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of ITF.

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of ITF. The BHT will carry on reading endlessly if “?” is allocated.

“3: MIN”:

Set minimum number of digits of ITF.

Setting range: 2–99

“4: MAX”:

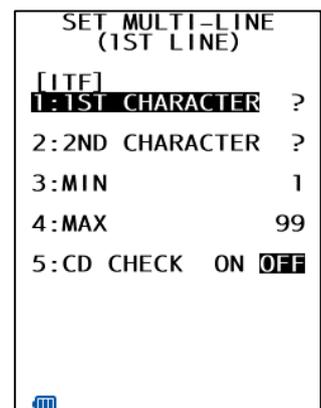
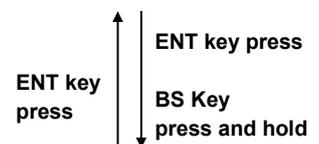
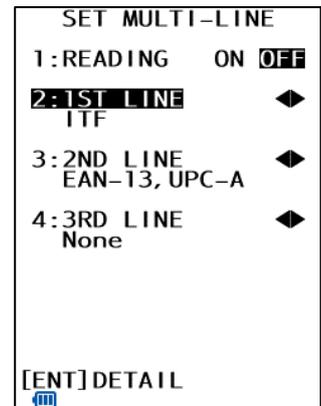
Set maximum number of digits of ITF.

Setting range: 2–99

“5: CD CHECK”:

“ON”: Reading is impossible when check digits are incorrect or missing.

“OFF”: Reading is performed regardless of the use of check digits.



-
- Point -
- Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.
 - Set the minimum/maximum number of digits within the setting range stated above. If the value is out of the setting range, error occurs.
-

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“CODABAR”: Detailed settings of Codabar (NW-7) for the Multiline code

1) Select “CODABAR” at SET MULTI-LINE menu and then press the **ENT** key.

The SET MULTI-LINE [CODABAR] screen is displayed.

“1: MIN”:

Set minimum number of digits of Codabar.

Setting range: 3–99

“2: MAX”:

Set maximum number of digits of Codabar.

Setting range: 3–99

“3: START CODE”:

“4: STOP CODE”:

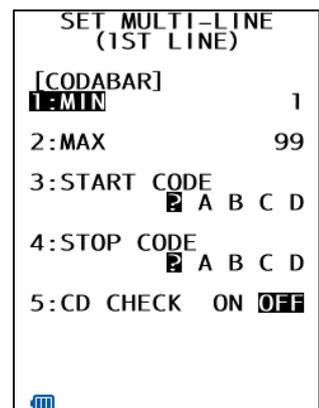
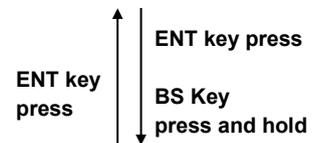
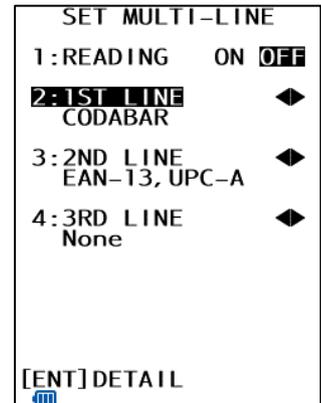
Allocate “?, A, B, C, D” to start/stop code of Codabar.

If “A, B, C, D” is allocated at the menu, limitation is set for the BHT to read only when allocated characters match to the characters of CODABAR. The BHT will carry on reading endlessly if “?” is allocated.

“5: CD CHECK”:

“ON”: Reading is impossible when check digits are incorrect or missing.

“OFF”: Reading is performed regardless of the use of check digits.



- Point -
- Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.
 - Set the minimum/maximum number of digits within the setting range stated above. If the value is out of the setting range, error occurs.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“CODE39”: Detailed settings of Code 39 for the Multiline code

1) Select “CODE39” at SET MULTI-LINE menu and then press the **ENT** key.

The SET MULTI-LINE [CODE39] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of Code 39.

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when allocated characters match to the characters of Code39. The BHT will carry on reading endlessly if “?” is allocated.

“3: MIN”:

Set minimum number of digits of Code 39.

Setting range: 1–99

“4: MAX”:

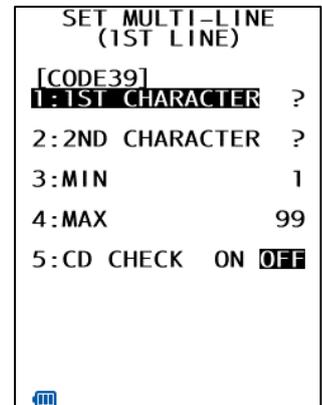
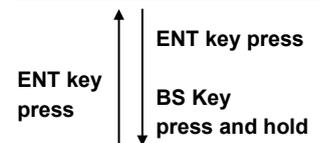
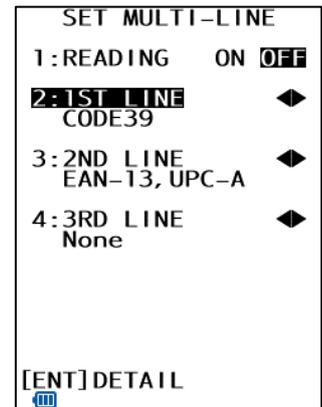
Set maximum number of digits of Code 39.

Setting range: 1–99

“5: CD CHECK”:

“ON”: Reading is impossible when check digits are incorrect or missing.

“OFF”: Reading is performed regardless of the use of check digits.



- Point - ● Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5]) to select the item to be set.
- 3) Use the cursor keys ([◀] [▶]) to select settings value.
- 4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“CODE93”: Detailed settings of Code 93 for the Multiline code

1) Select “CODE93” at SET MULTI-LINE menu and then press the **ENT** key.

The SET MULTI-LINE [CODE93] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of Code 93.

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when allocated characters match to the characters of Code93. The BHT will carry on reading endlessly if “?” is allocated.

“3: MIN”:

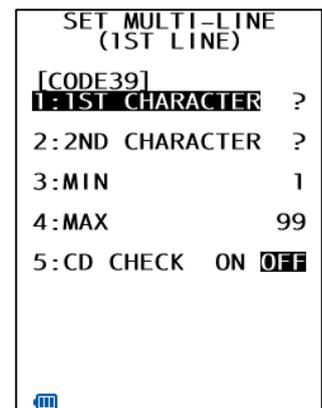
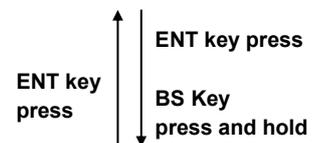
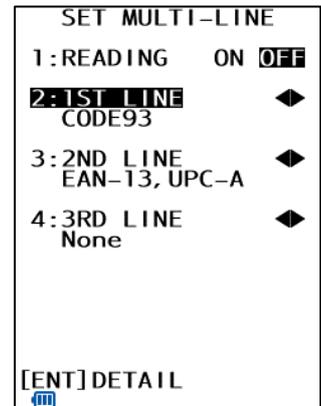
Set minimum number of digits of Code 93.

Setting range: 1–99

“4: MAX”:

Set maximum number of digits of Code 93.

Setting range: 1–99



- Point - Make sure that the minimum number of digits is less than the maximum number of digits. If the value of minimum number of digits is larger than the maximum number of digits, error occurs during the reading.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“CODE128”: Detailed settings of Code 128 for the Multiline code

1) Select “CODE128” at the SET MULTI-LINE menu and then press the **ENT** key.

The SET MULTI-LINE [CODE128] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?, 0–9” to the first and second characters of Code 128.

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of Code128. The BHT will carry on reading endlessly if “?” is allocated.

“3: MIN”:

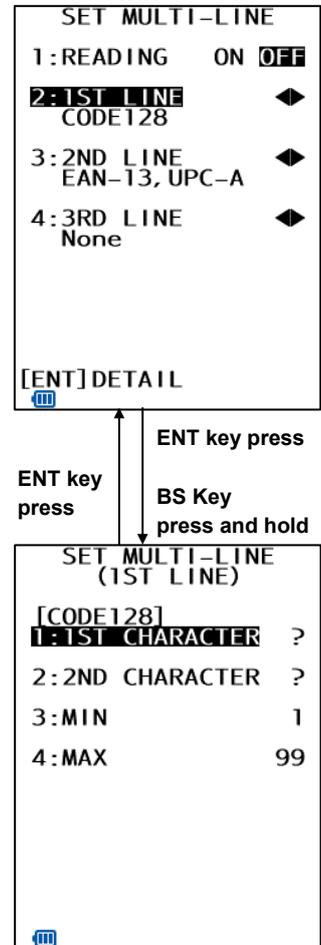
Set minimum number of digits of Code 128.

Setting range: 1–99

“4: MAX”:

Set maximum number of digits of Code 128.

Setting range: 1–99



— Point — Set the value of minimum number of digits to less than that of maximum number of digits. If the value of minimum number of digits is larger than that of maximum number of digits, error occurs when reading.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

“STF”: Detailed settings of STF for the Multiline code

1) Select “STF” at the SET MULTI-LINE menu and then press the **ENT** key.

The SET MULTI-LINE [STF] screen is displayed.

“1: 1ST CHARACTER”:

“2: 2ND CHARACTER”:

Allocate “?”, 0–9” to the first and second characters of Code 128.

If “0–9” is allocated at the menu, limitation is set for the BHT to read only when the allocated numeric characters match the first and second numeric characters of STF. The BHT will carry on reading endlessly if “?” is allocated.

“3: MIN”:

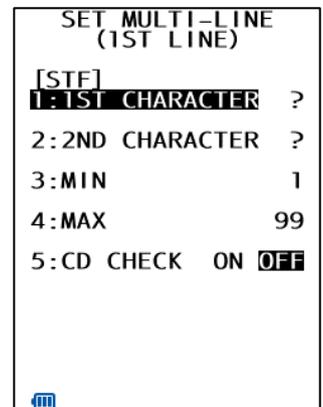
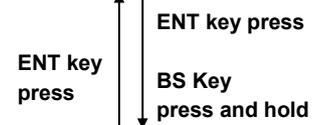
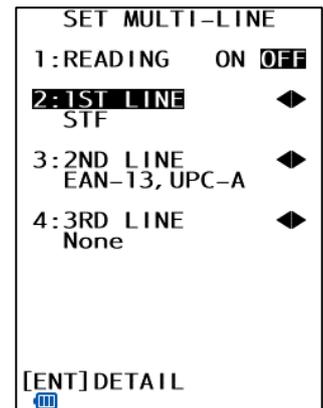
Set minimum number of digits of STF.

Setting range: 1–99

“4: MAX”:

Set maximum number of digits of STF.

Setting range: 1–99



— Point — Set the value of minimum number of digits to less than that of maximum number of digits. If the value of minimum number of digits is larger than that of maximum number of digits, error occurs when reading.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to select the item to be set.

3) Use the cursor keys ([◀] [▶]) to select settings value.

4) Press the **ENT** key or **BS/C** key for the settings value to be valid and then return to the SET MULTI-LINE screen.

4.5.5.5 Setting the communication environment

The communication environment settings following system initialization are follows.

Do not change these settings unless necessary.

Item	Default
Interface to be used	COM1 (Communication with the CU)
Communication protocol	Ymodem protocol
Communication Unit (COM 1) interface port	
TRANSMIT SPEED Baud rate	115200 bps
PROTOCOL Protocol options	SERIAL No.: ON (Adds serial numbers to data blocks.) H. PARITY: ON (Adds horizontal parity.) LINKUP TIME: 30 seconds FIELD SPACE: Ignore (Trim)
USB interface port (COM2)	
PROTOCOL Protocol options	SERIAL No.: ON (Adds serial numbers to data blocks.) H. PARITY: ON (Adds horizontal parity.) LINKUP TIME: 30 seconds FIELD SPACE: Ignore

Use the following procedure if necessary to change the communication environment settings.

- 1) Select "5: COMMUNICATION" at the SET SYSTEM menu and then press the **ENT** key.

The SET COMMUNICATION menu screen on the right is displayed.

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight the item to be set and press the **ENT** key.

"1: COM1":

Changes the Communication Unit (CU) communication parameter settings.

"2: COM2": (without Only models with USB connector)

Change the USB communication parameter settings.

"3: COM PORT:

Changes the USB communication parameter settings.

4: PROTOCOL TYPE:

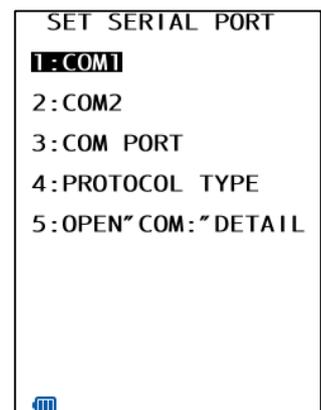
Changes the communication protocol settings.

5: OPEN" COM:" DETAIL:

Changes the communication conditions used by the user program (OPEN "COM:") developed with BHT-BASIC.

Refer to the following section for details of the above items.

- 3) Press and hold the **BS/C** key to return to the SYSTEM MENU.



1. “1: COM1”: Setting the Communication Unit (CU) communication parameters

1. Select “1: COM1” at the SET COMMUNICATION menu and then press the **ENT** key.

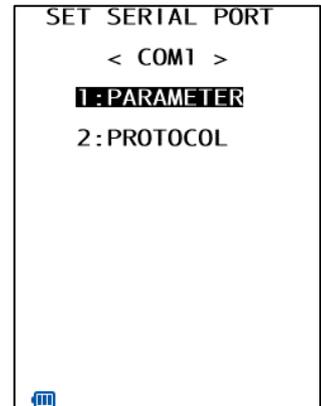
The SET SERIAL PORT <COM1> menu screen on the right is displayed.

“1: PARAMETER”:

Changes the transmit speed.

“2: PROTOCOL”:

Changes the communication protocol.



2. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight setting, and then press the **ENT** key.

3. Press and hold the **BS/C** key to return to the SET COMMUNICATION menu.

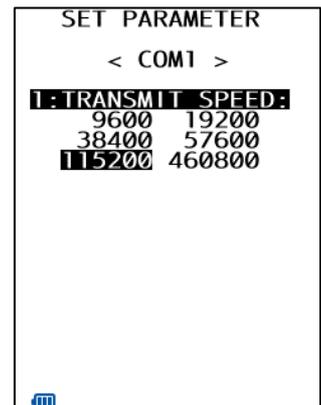
◆ **Setting the communication parameters**

- 1) Select “1: PARAMETER” to display the screen on the right.

The highlighted setting is the current setting.

“1: TRANSMIT SPEED”:

Setting the transmission speed.



- 2) To change the setting, highlight the transmission speed with the cursor keys ([◀] [▶]) and press the **ENT** key.

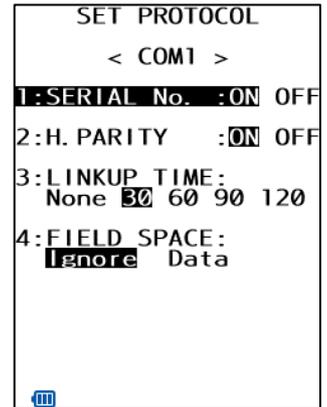
- 3) Press and hold the **BS/C** key to return to the SET SERIAL PORT <COM1> menu.

— Point — The transmission speed setting is ignored when using CU-1321.

◆ **Setting the communication protocol options**

1) Select “2: PROTOCOL” to display the screen on the right.

The highlighted setting is the current setting.



“1: SERIAL No.”:

Selects whether or not to add serial numbers to the data blocks.

“2: H. PARITY”:

Selects whether or not to add a horizontal parity.

“3: LINKUP TIME”:

Selects the timeout length (in seconds) to be applied when a link is established.

“4: FIELD SPACE”:

Specifies handling of the trailing spaces at the end of the field.

Select “Ignore” to trim the trailing spaces or “Data” to retain them as data.

1) To make changes, use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to highlight the item to be set, highlight the setting value using the cursor keys ([◀] [▶]), and then press the **ENT** key.

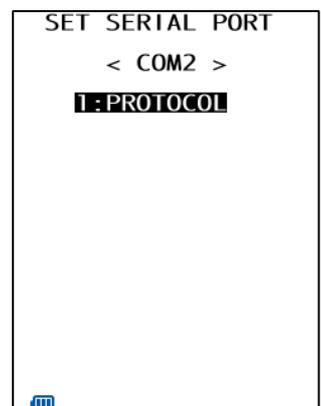
2) Press and hold the **BS/C** key to return to the SET SERIAL PORT <COM1> menu.

- Point - Selecting the BHT-Ir or YMODEM protocol ignores the serial number and horizontal parity settings.

2. “2: COM2”: Setting the USB communication environments (Only models with USB connector)

1. Select “2: COM2” at the SET COMMUNICATION menu and then press the **ENT** key.

The SET SERIAL PORT <COM2> menu screen on the right is displayed.



“1: PROTOCOL”:

Changes the communication protocol.

2. Press the **ENT** key.

3. Press and hold the **BS/C** key to return to the SET COMMUNICATION menu.

◆ **Setting the COM communication protocol options**

1) Select “1: PROTOCOL” to display the screen on the right.

The highlighted setting is the current setting.

“1: SERIAL No.”:

Selects whether or not to add serial numbers to the data blocks.

“2: H. PARITY”:

Selects whether or not to add a horizontal parity.

“3: LINKUP TIME”:

Selects the timeout length (in seconds) to be applied when a link is established.

“4: FIELD SPACE”:

Specifies handling of the trailing spaces at the end of the field.

Select “Ignore” to trim the trailing spaces or “Data” to retain them as data.

```

SET PROTOCOL
  < COM2 >
1: SERIAL No. :ON OFF
2: H. PARITY  :ON OFF
3: LINKUP TIME:
   None 30 60 90 120
4: FIELD SPACE:
   Ignore Data
    
```

2) To make changes, use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to highlight the item to be set, highlight the setting value using the cursor keys ([◀] [▶]), and then press the **ENT** key.

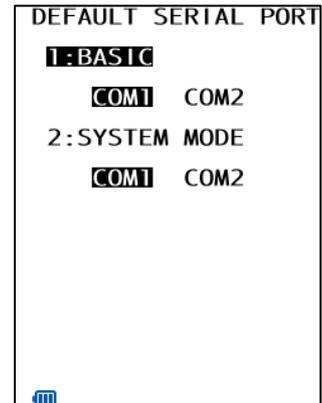
3) Press and hold the **BS/C** key to return to the SET SERIAL PORT <COM2> menu.

- Point - Selecting the BHT-Ir or YMODEM protocol ignores the serial number and horizontal parity settings.

3. “3: COM PORT”: Setting the communication port

1. Select “3: COM PORT” at the SET COMMUNICATION menu and then press the **ENT** key.

The DEFAULT SERIAL PORT menu screen on the right is displayed.



“1: BASIC”:

Sets the interface used by the user program (OPEN “COM:”) developed with BHT-BASIC.

“COM1”:
Uses Communication Unit (CU) communication.

“COM2”:
Uses USB communication. Note 1

“2: SYSTEM MODE”:

Sets the interface used for downloading or uploading the system mode.

“COM1”:
Uses Communication Unit (CU) communication.

“COM2”:
Uses USB communication. Note 1

Note 1: Support only models with USB connector.

- Point -** This setting is valid in the following cases:
- When OPEN “COM:” is specified in the communication port specification of the user program
 - When “SYSTEM” is selected for “1:SETTINGS FROM” in “5: OPEN”COM:”DETAIL”

2. To make changes, use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight the item to

be set, highlight the setting value using the cursor keys ([◀] [▶]), and then press the **ENT** key.

3. Press and hold the **BS/C** key to return to the SET COMMUNICATION menu.

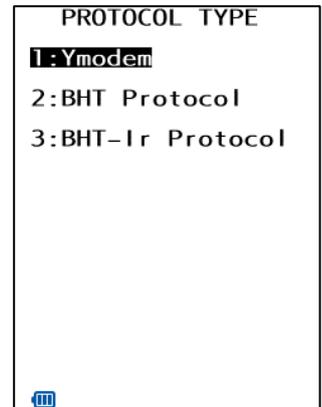
- Point -** This setting is effective in the following cases.
- When “OPEN ‘COM:’ is specified in the communication port of the user program.
 - When “SYSTEM” is selected for “1:SETTINGS FROM” in “5: OPEN ‘COM:’DETAIL”.

4. "4: PROTOCOL TYPE": Setting the communication protocol type

1. Select "4: PROTOCOL TYPE" at the SET COMMUNICATION menu and then press the **ENT** key.

The PROTOCOL TYPE menu screen on the right is displayed.

The highlighted setting is the current setting.



"1: Ymodem":

Selects Ymodem when uploading/downloading in System Mode or for the execution of the XFILE statement in BHT-BASIC.

"2: BHT Protocol":

Selects the BHT-protocol when uploading/downloading in System Mode or for the execution of the XFILE statement in BHT-BASIC.

"3: BHT-Ir Protocol":

Selects the BHT-Ir protocol when uploading/downloading in System Mode or for the execution of the XFILE statement in BHT-BASIC.

2. To make changes, use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to highlight the setting item, and then press the **ENT** key.

3. Press and hold the **BS/C** key to return to the SET COMMUNICATION menu.

- Point - When using the BHT-BASIC4.0 transfer utility, select the Ymodem or BHT-Ir protocol.

◆ **“Ymodem” setting**

- 1) Select “1: Ymodem” at the PROTOCOL TYPE menu to display the screen on the right. The highlighted setting is the current setting.

“1: CR/LF”:

Specifies line delimiters.

“2: CR/LF CODE”:

Specifies handling for line delimiters in records when data files are downloaded.

“Control code”:

Does not handle line-break codes as data.
(Handles as record delimiters.)

“Data”:

Handles line-break codes as data.

“3: BHT ID”:

Specifies whether or not to add the BHT ID number to packets when performing YMODEM transfer.

“None” should normally be selected. To add the BHT ID number to the transfer tool, select “Add”. (This setting is not supported. Changing this setting has no result.)

“4: INTERVAL”:

Specifies the retry interval within a range of 1 to 255 in units of 100 ms.

“5: COMPRESS UPLOAD”:

Specifies the compression for uploading.

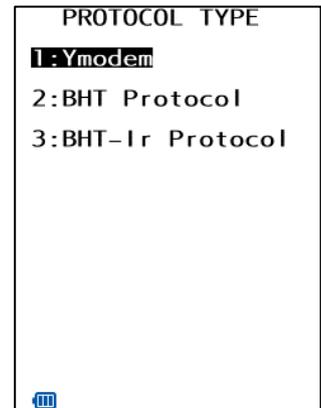
“None”:

Not compress the data upon transfer.

“ZIP”:

Compress and transfer the data.

This is enabled only when using the BHT-BASIC4.0 transfer utility.



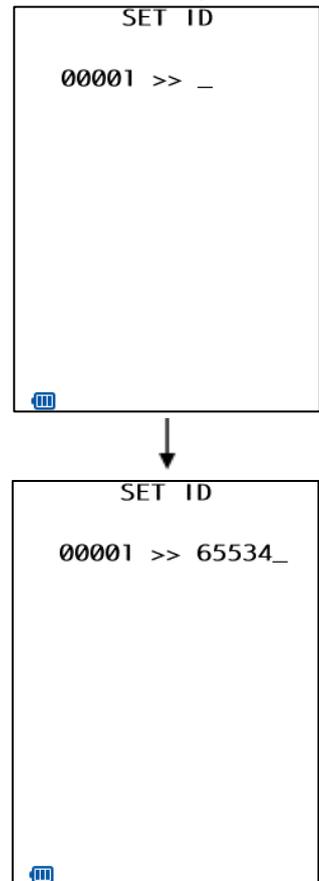
- 2) To make changes, use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5]) to highlight the item to be set, highlight the setting value using the cursor keys ([◀] [▶]), and then press the **ENT** key.
- 3) For “4: INTERVAL”, press the **ENT** key to change to entry mode. The cursor is displayed, allowing the previous setting to be deleted by pressing the **BS/C** key. Enter a new setting value with the numerical keys and press the **ENT** key.
- 4) Press and hold the **BS/C** key to return to the SET COMMUNICATION menu.

◆ “BHT-Ir Protocol” setting

1) Select “3: BHT-Ir Protocol” at the PROTOCOL TYPE menu to display the screen on the right.

Enter the ID number of the BHT using the numerical keys and then press the **ENT** key. If there is no need to edit the current setting, press the **ENT** key only.

If you have pressed a wrong key, use the **BS/C** key to delete it and then enter the correct data.



2) Enter the 5-digit BHT ID using the numeric keys and press the **ENT** key to update the setting and return to the communication environment setting menu.

If you do not want to change the current setting, just press the **ENT** key without entering anything.

If you press the wrong key, erase it with the **BS/C** key and enter ID again.

3) Press and hold the **BS/C** key to return to the SET COMMUNICATION menu.

- Point - The ID numbers shall be five-digit decimal numbers in the range between 00001 and 65534. If the entered value is less than five digits, the **ENT** key is rejected.

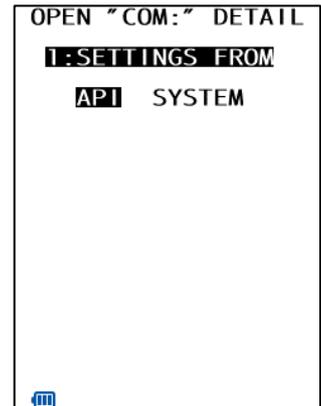
5. “5: OPEN “COM:” DETAIL”: Setting the OPEN “COM:” communication conditions

The system mode settings can be used for the communication conditions of the user program (OPEN “COM:”) developed with BHT-BASIC. This eliminates the need to change the user program and thus to rewrite the communication conditions in changing the communication speed.

1. Select “5: OPEN “COM:” DETAIL” at the SET COMMUNICATION menu and then press the **ENT** key.

The OPEN “COM:” DETAIL menu on the right is displayed.

The highlighted setting is the current setting.



“1: SETTINGS FROM”:

Sets up the setting values specified by the user program or the system mode settings of the communication conditions of the user program (OPEN “COM:”).

“API”:

Uses the setting value specified by the user program (default).

“SYSTEM”:

Uses the setting value of the system mode (the setting value specified by the user program is not used).

2. To make changes, use the cursor keys ([▲] [▼]) to highlight the setting item,
3. Press and hold the **BS/C** key to return to the SET COMMUNICATION menu.

The table below shows that either API is referenced complying with settings in the setting menu.

Communication conditions	System mode setting screen (SET COMMUNICATION menu)	API
Interface *1	“3: COM PORT” ↓ “1: BASIC”	OPEN "COM:"
Transmission speed	“1: COM1” ↓ “1: PARAMETER” ↓ “1: TRANSMIT SPEED”	
Serial communication protocol	“2: PROTOCOL TYPE”	Out .pnCmPrctl (6060)

The BHT operates using the interface specified by the System Mode regardless of the interface specified by the user program. For example, COM2 is enabled if the interface specified by the System Mode is COM1 and the interface specified by OPEN "COM:2" is ignored. However, if the interface is COM3 or COM4, the interface specified by the System Mode is enabled in the program.

4.5.5.6 Key setting

Use the following procedure to change the key settings.

1. Select "6: KEY" at the SET SYSTEM menu and then press the **ENT** key.
The SET KEY menu screen on the right is displayed.
2. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6] [7] [8]) to highlight the item to be set, and then press the **ENT** key.

- "1: SHIFT KEY": Displays the **SF** key definition screen.
- "2: M1 KEY": Displays the **M1** key definition screen.
- "3: M2 KEY": Displays the **M2** key definition screen.
- "4: M3 KEY": Displays the **M3** (left-hand trigger switch) key definition screen.
- "5: M4 KEY": Displays the **M4** (right-hand trigger switch) key definition screen.
- "6: M5 KEY": Displays the **M5** key (SCAN key) definition screen.
- "7: BS/C KEY": Displays the **BS/C** key definition screen.
- "8: MENU KEY": Displays the **M1–M4** key menu definition screen.



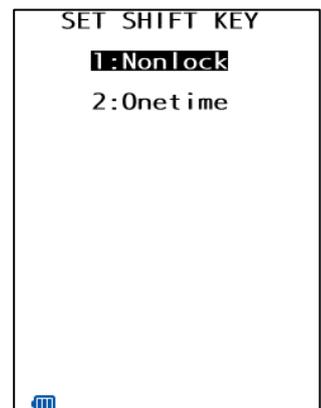
Refer to the following section for details of the above items.

3. Press and hold the **BS/C** key to return to the SET SYSTEM menu.
 1. "1: SHIFT KEY": Defining the Shift key function

- 1) Select "1: SHIFT KEY" at the SET KEY menu and then press the **ENT** key.

The SET SHIFT KEY menu screen on the right is displayed.
The highlighted setting is the current setting.

- "1: Nonlock": Shifts the keypad only when the **SF** key is held down.
- "2: Onetime": Shifts only the key pressed immediately after the **SF** key is pressed. (The following keys will not be shifted.)



- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight the item to be set, and then press the **ENT** key.

The selected item will be set and the screen will return to the SET KEY menu.

2. “2: M1 KEY” to “6: M5 KEY”: Defining the Mx key functions.

1) Select “2: M1 KEY” to “6: M5 KEY” at the SET KEY menu and then press the **ENT** key.

The SET M1 KEY menu screen on the right is displayed.

(In the example on the right, “2: M1 KEY” has been selected.)

The highlighted setting is the current setting.



“1: None”:

Ignores the key entry.

“2: Trigger Switch”:

Sets the magic key as the trigger switch.

“3: Shift Key”:

Sets the magic key as the **SF** key.

“4: Enter Key”:

Sets the magic key as the **ENT** key.

“5: Backlight Key”:

Sets the magic key as the backlight function ON/OFF key.

“6: MENU”:

Sets the magic key as a key used to start up the “Speaker/Vibrator/Backlight Adjustment Screen”.

“7: Clear Key”:

Sets the magic key as the **BS/C** key.

“8: SQRC MENU Key”:

Sets the SET SQRC menu.

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6] [7] [8]) to highlight the item to be set, and then press the **ENT** key.

The selected item is set and the screen returns to the SET KEY menu.

◆ **Magic keys (M1 to M5)**

Magic keys (**M1** to **M5**) can be set to function as the trigger switch, **SF** key, **ENT** key, backlight function ON/OFF key, **MENU** key or **BS/C** key.

If the **M1** key is defined as the backlight function ON/OFF key, pressing the **M1** key enables or disables the backlight function.

In user programs, data strings can be also assigned to these magic keys.

Magic keys **M3**, **M4** and **M5** are set as the trigger switch by default.

- Point - The backlight function ON/OFF key can be assigned only to one of the magic keys from **M1** to **M5**. The key defined more recently will act as the backlight function ON/OFF key and the previously defined key will be ignored.

If, for example, the **M1** and **M2** keys are defined as the backlight function ON/OFF key in this order, the **M2** key functions as the backlight function ON/OFF key and the **M1** key entry is ignored.

On the other hand, if the **M2** and **M1** keys are defined as the backlight function ON/OFF key in this order, the **M1** key functions as the backlight function ON/OFF key and the **M2** key entry is ignored.

3. Defining the backspace/clear key (**BS/C** key) function

The **BS/C** key deletes the last entered character (backspace), and when pressed and held, cancels entry and returns the LCD to the previous screen (clear). This menu sets the key hold time for “clear”.

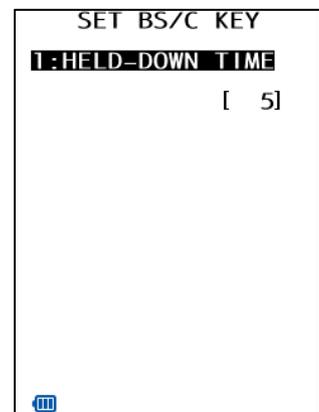
- 1) Select “7: **BS/C** KEY” at the SET KEY menu, and then press the **ENT** key.

The displayed setting is the current setting.

[1: HELD-DOWN TIME]:

Sets the time that the **BS/C** key must be pressed before it changes from the backspace key to the clear key.

The unit is 100 ms.



- 2) Press the **ENT** key to display the cursor.
- 3) Enter the desired numeric values.

Numeric values can be entered between 1 and 255 (× 100 ms.)

Press the **BS/C** key to erase one character. Pressing and holding the **BS/C** key or pressing the **SF** key and the **BS/C** key simultaneously will erase all entered settings.

- 4) Press and hold the **BS/C** key to return to the SET KEY menu.

4. Defining the MENU key setting

The **M1** to **M5** keys can be set as menu keys. When **M1** to **M2** set as menu keys are pressed and held, the menu screen is displayed. This menu sets the key hold time.

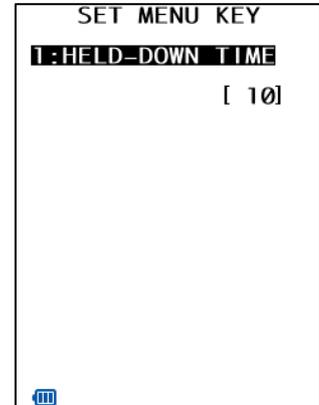
- 1) Select "8: MENU KEY" at the SET SYSTEM menu and then press the **ENT** key.

The displayed setting is the current setting.

[1: HELD-DOWN TIME]:

Sets the time that the **MENU** key must be pressed before it changes from the backspace key to the clear key.

The unit is 100 ms.



- 2) Press the **ENT** key to display the cursor.

- 3) Enter the desired numeric values.

Numeric values can be entered between 1 and 255 (× 100 ms.)

Press the **BS/C** key to erase one character. Pressing and holding the **BS/C** key or pressing the **SF** key and the **BS/C** key simultaneously will erase all entered settings.

- 4) Press and hold the **BS/C** key to return to the SET KEY menu.

5. Volume setting for key click sound.

1) The key click sound volume setting screen appears when the **SF** key and the “.” key are pressed simultaneously in the Key setting menu.

The highlighted setting is the current setting.

[1: KEYCLICK]:

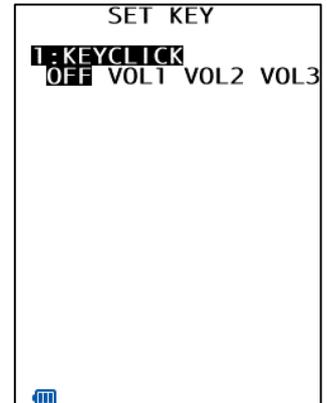
Sets the key click sound volume when the key is pressed.

“OFF”: Mute

“VOL1”: Low

“VOL2”: Mid

“VOL3”: High



2) Press and hold the **BS/C** key to return to the SET KEY menu.

6. Setting the Key Compatibility Mode

1) In the Key Settings menu, press the **SF** and **1** key simultaneously to display the Key Compatibility Mode setting screen.

The highlighted setting is the current setting.

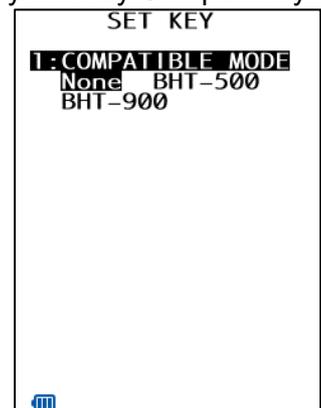
[1: COMPATIBLE MODE]:

Select compatibility when the key is pressed.

“None”: Set original key setting.

“BHT-500”: Set BHT-500 compatible setting.

“BHT-900”: Set BHT-900 compatible setting.



2) Press and hold the **ENT** key or **BS/C** key to save the setting and return to the SET KEY menu.

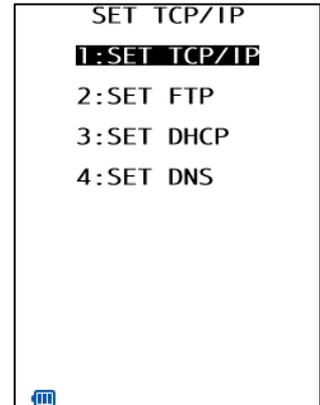
4.5.5.7 Setting the TCP/IP, FTP, DHCP and DNS

Use the following procedure to change the TCP/IP, FTP, DHCP and DNS settings.

1. Select "7: TCP/IP" at the SET SYSTEM menu and then press the **ENT** key.

The SET TCP/IP menu screen on the right is displayed.

- "1: SET TCP/IP": Changes the TCP/IP setting.
- "2: SET FTP": Changes the FTP setting.
- "3: SET DHCP": Changes the DHCP setting.
- "4: SET DNS": Changes DNS setting



Refer to the following section for details of the above items.

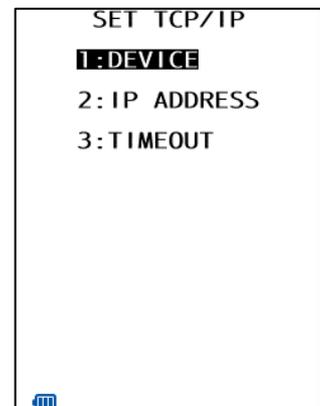
2. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to highlight the item to be set, and then press the **ENT** key.
3. Press and hold the **BS/C** key to return to the SET SYSTEM menu.

1. TCP/IP Setting

- 1) Select "1: SET TCP/IP" at the TCP/IP, FTP, DHCP or DNS menu and then press the **ENT** key.

The SET TCP/IP menu screen on the right is displayed.

- "1: DEVICE":
Set the device to be used for TCP/IP.
- "2: IP ADDRESS":
Set the IP address.
- "3: TIMEOUT":
Set the communication with CU-1311A when using COM1 (wired LAN).



- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to highlight the item to be set, and then press the **ENT** key.
- 3) Press and hold the **BS/C** key to return to the TCP/IP, FTP, DHCP and DNS menu.

◆ **“1: DEVICE”: Setting the TCP/IP device**

- (1) Select “1: DEVICE” at the SET TCP/IP menu to display the screen on the right where the current settings are displayed.

```

SET TCP/IP DEVICE
1: TCP/IP DEVICE
  COM1 COM3
2: LINK LAYER
  Ethernet
  
```

“1: TCP/IP DEVICE”:

Set the device to be used for TCP/IP communication (COM1: Wired LAN, COM3: Wireless).

(COM3 compatible models: BHT-1336QWB series)

“2: LINK LAYER”:

Only Ethernet is available and this is selected by default, so no setting is required.

- (2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight the item to be set and press the ENT key.
- (3) Use the cursor keys ([◀] [▶]) to highlight the item to be set and press the ENT key.
- (4) Press and hold the **BS/C** key to return to the SET TCP/IP menu.

◆ **“2: IP ADDRESS”: Setting the IP address**

- (1) Select “2: IP ADDRESS” at the SET TCP/IP menu to display the screen on the right where the current settings are displayed.

```

SET ADDRESS
1: IP ADDRESS
  [XXX. XXX. XXX. XXX ]
2: SUBNET MASK
  [YYY. YYY. YYY. YYY ]
3: DEFAULT GATEWAY
  [ZZZ. ZZZ. ZZZ. ZZZ ]
  
```

“1: IP ADDRESS”: Set the IP address.

“2: SUBNET MASK”: Set the subnet mask.

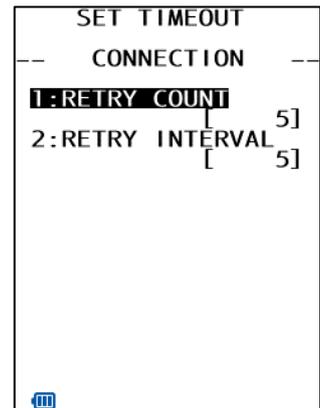
“3: DEFAULT GATEWAY”: Set the default gate way.

- (2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to highlight the item to be set and press the ENT key.
- (3) The mode changes to entry mode and the cursor are displayed, allowing the setting to be entered with the numerical keys and dot key.
- To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key, or press the **SF** key and **BS/C** key simultaneously.
- (4) Enter the desired value and then press the ENT key.
- If the IP address, subnet mask and default gateway are all set to [0.0.0.0], DHCP is enabled.
- (5) Press and hold the **BS/C** key to return to the SET TCP/IP menu.

◆ **“3: TIMEOUT”: Setting the timeout (only when COM1 selected)**

- (1) Select “3: TIMEOUT” at the SET TCP/IP menu to display the screen on the right where the current settings are displayed.

“1: RETRY COUNT”: Set the number of retransmissions.
 “2: RETRY INTERVAL”: Sets the retransmission interval.

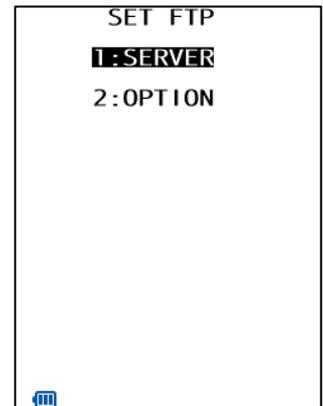


- (2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight the item to be set and press the **ENT** key.
- (3) The mode changes to entry mode and the cursor are displayed, allowing the setting to be entered with the numerical keys and dot key.
 To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key, or press the SF key and **BS/C** key simultaneously.
- (4) Enter the desired value, and then press the **ENT** key.
- (5) Press and hold the **BS/C** key to return to the SET TCP/IP menu.

2. Setting the FTP

- 1) Select “2: SET FTP” at the SET FTP menu and then press the **ENT** key.
 The SET FTP menu screen on the right is displayed.

“1: SERVER”:
 Set the parameters for connection to the FTP server.
 “2: OPTION”:
 Set the parameters for the file to be sent and received via FTP.



- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight the item to be set, and then press the **ENT** key.
- 3) Press and hold the **BS/C** key to return to the SET TCP/IP menu.

◆ **“1: SERVER”: Setting the FTP server connection environment**

- (1) Select “1: SERVER” at the SET FTP menu to display the screen on the right where the current settings are displayed.

```

SET SERVER
1: SERVER IP
  [XXX. XXX. XXX. XXX ]
2: USER ID
  [12345ABCDE      ]
3: PASSWORD
  [*****]
4: DEFAULT DIR
  [123456789012345]
  [678901234567890]
  [123456789      ]
  
```

“1: SERVER IP”:

Sets the IP address for the FTP server.

“2: USER ID”:

Sets the username.

“3: PASSWORD”:

Sets the password.

“4: DEFAULT DIR”:

Specifies an initial directory through which the FTP server will search for files for transfer first when the FTP client establishes a connection to the server.

- (2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4]) to highlight the item to be set and press the **ENT** key.
- (3) The mode changes to entry mode and the cursor are displayed, allowing the setting to be entered with the numerical keys and dot key.
 Press the **SF** key to change the entry mode [numeric entry (with no guidance display) and alphabet entry].
 To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the SF key and **BS/C** key simultaneously.
- (4) Enter the desired value, and then press the **ENT** key.
- (5) Press and hold the **BS/C** key to return to the SET FTP menu.

◆ **“2: OPTION”: Setting the FTP options**

- (1) Select “2: OPTION” at the SET TCP/IP menu to display the screen on the right where the current settings are displayed.

```

SET OPTION
1: CR/LF
  CR-LF LF CR None
2: CR/LF CODE
  Control code Data
3: FIELD SPACE
  Ignore Data
4: UPLOAD MODE
  Overwrite Append
5: VERBOSE MODE
  ON OFF
  
```

“1: CR/LF”:

Specifies line delimiters that should match ones used in the server OS.

“2: CR/LF CODE”:

Specifies the treatment of line delimiters in records when data files are downloaded.

“Control code”: Does not handle line-break codes as data. (Handles as record delimiters.)

“Data”: Handles line-break codes as data.

“3: FIELD SPACE”:

Specifies the treatment of trailing spaces in fields.

“Ignore”: Trims trailing spaces in fields.

“Data”: Retains trailing spaces as data.

“4: UPLOAD MODE”:

Specifies handling for overwriting or appending when files are uploaded.

” Overwrite”: Uploaded files will be written over the existing files.

“Append”: Uploaded files will be appended to the existing files.

“5: VERBOSE MODE”:

Specifies the command response display when using FTP.

“ON”: Displays a message to the response (number) from the FTP server when the BHT (FTP client) outputs a message.

“OFF”: Displays only messages output by the BHT (FTP client).

Refer to [“4.5.8 Downloading / Uploading Files by FTP \(FTP MENU\)”](#) for messages output by the BHT (FTP client).

Refer to [“4.5.8 Downloading / Uploading Files by FTP \(FTP MENU\)”](#) for messages to responses (numbers) from the FTP server.

- (2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5]) to highlight the item to be set and press the **ENT** key.
- (3) Use the cursor keys ([◀] [▶]) to highlight each setting value.
- (4) Press the **ENT** key.
- (5) Press and hold the **BS/C** key to return to the SET FTP menu.

- Point - For messages that the BHT (FTP client) side produces, refer to [“FTP Download/Upload Messages”](#) in [“4.5.8 Downloading/uploading files by FTP \(“FTP Download/Upload “menu\)”](#).

For the message corresponding to the response (number) from the FTP server, see [“Response Messages from the FTP server”](#) in [“4.5.8 Downloading/uploading files by FTP \(“FTP Download/Upload “menu\)”](#).

3. Setting the DHCP

1) Select “3: SET DHCP” at the SET TCP/IP menu and then press the **ENT** key.

The SET DHCP screen on the right is displayed.

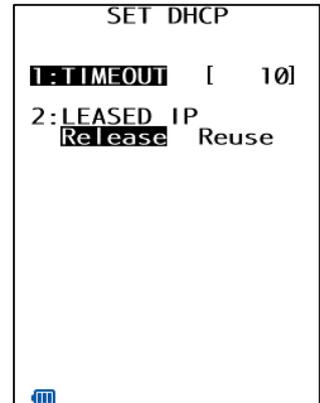
The highlighted setting is the current setting.

“1: TIMEOUT”:

Sets the timeout for acquiring the IP configuration from the DHCP server. The entry range is from 00001 to 32767 seconds.

“2: LEASED IP”:

Set the return and reuse of IP addresses obtained by DHCP.



2) Use the cursor keys ([▲] [▼]) or numerical keys ([2]) to highlight the item to be set and press the **ENT** key.

3) Use the cursor keys ([◀] [▶]) to highlight the item to be set and press the **ENT** key.

4) The mode changes to entry mode and the cursor are displayed, allowing the setting to be entered with the numerical keys.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key, or press the **SF** key and **BS/C** key simultaneously.

- Point - Up to 32767 seconds can be entered, but in actual operation, a maximum of 190 seconds is available since the number of retries and retry intervals are determined by the system.

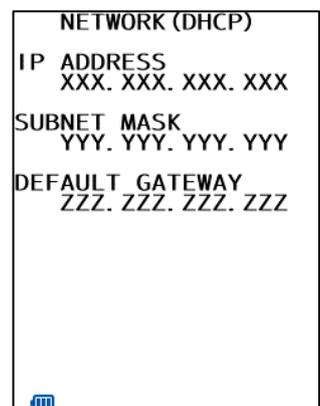
5) Enter the desired value, and then press the **ENT** key.

6) Press and hold the **BS/C** key to return to the SET TCP/IP, FTP, DHCP or DNS menu.

◆ Display the IP address

Press the dot key while holding down the **SF** key at the SET DHCP menu to display the NETWORK (DHCP) screen (acquisition check screen for IP address at DHCP).

Press the **BS/C** key at the NETWORK (DHCP) screen to return to the SET DHCP screen.



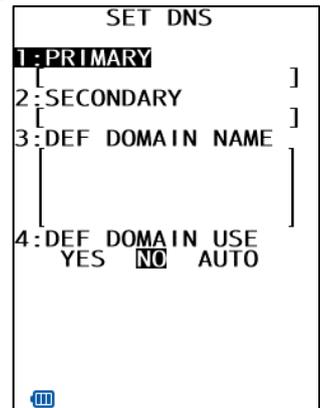
- Point - If the acquired IP configuration is displayed when the IP address, subnet mask or default gateway is set to a value other than “0.0.0.0”, the DHCP does not display on the screen shown on the right.

4. Setting the DNS

- 1) Select “4: SET DNS” at the SET TCP/IP menu and then press the **ENT** key.

The SET DNS screen on the right is displayed.

The highlighted setting is the current setting.



“1: PRIMARY”:

IP address of the primary DNS server

“2: SECONDARY”:

IP address of the secondary DNS server

“3: DEF DOMAIN NAME”:

Domain name

Press the **SF** key to switch between alphabet and numeric keys.

“4: DEF DOMAIN USE”:

Sets whether the domain is used or not.

When “AUTO” is selected, DNS server information obtained from DHCP is used.

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3]) to highlight the item to be set and press the **ENT** key

- 3) The mode changes to entry mode and the cursor are displayed, allowing the setting to be entered with the numerical keys and dot key.

To delete a single character, press the **BS/C** key. To delete the entire entry, press the **BS/C** key, or press the **SF** key and **BS/C** key simultaneously.

- 4) Press the **ENT** key.

- 5) Use the cursor keys ([▲] [▼]) or numerical keys ([4]) to highlight the item to be set and press the **ENT** key.

- 6) Use the cursor keys ([◀] [▶]) to highlight each setting value.

- 7) Press and hold the **BS/C** key to return to the SET TCP/IP, FTP, DHCP or DNS menu.

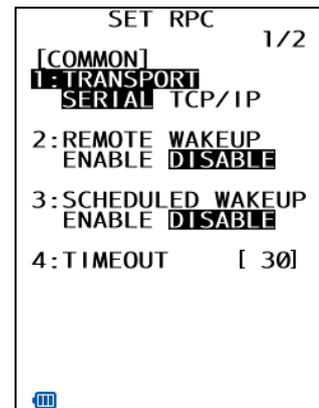
4.5.5.8 Setting Operational management

The BHT series is compliant with the BHT Manager software (host-side tool). The RPC screen displays the settings used to communicate with the BHT Manager software. For details, refer to the “BHT Manager User’s Manual”. The following explains only the operation of this menu and an outline of the settings.

1. Select “8: RPC” from the SET SYSTEM Menu 1/2 and then press the **ENT** key.

The SET RPC screen on the right will display.

The highlighted setting is the current setting.



“1: TRANSPORT”:

Selects the communication path for communicating with the BHT Manager.

“2: REMOTE WAKEUP”:

Sets the PRC remote wakeup.

“3: SCHEDULED WAKEUP”:

Sets the scheduled wakeup.

“4: TIMEOUT”:

Sets the communication time out interval.

“5: DEVICE COM1”:

Sets the COM port when a serial communication path is used.

“6: PORT”:

Sets the port number for RPC.

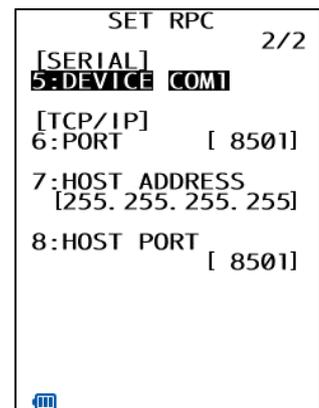
“7: HOST ADDRESS”:

Sets the BHT Manager HOST-IP.

“8: HOST PORT”:

Sets the port number for the BHT Manager line connection notification.

The selected value will then be set.



2. Use the cursor keys ([▲] [▼]) or numerical keys ([4] [6] [7] [8]) to highlight the item to be set and press the **ENT** key.
3. The mode changes to entry mode and the cursor are displayed, allowing the setting to be entered with the numerical keys and dot key.
4. Press the **ENT** key.

5. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [5]) to highlight the item to be set and press the **ENT** key.
6. Use the cursor keys ([◀] [▶]) to highlight each setting value.
7. Press and hold the **BS/C** key to return to the SET TCP/IP, FTP, DHCP or DNS menu.

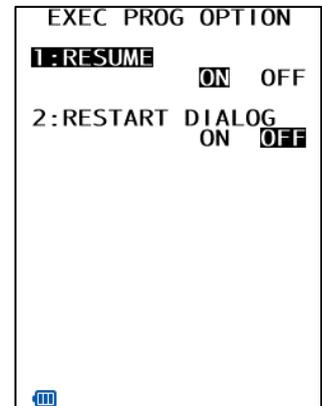
4.5.5.9 Setting the user program execution option

Use the following procedure to set the user program execution option.

1. Select "1: EXEC PROG OPTION" at the SET SYSTEM 2/2 menu and then press the **ENT** key.

The EXEC PROG OPTION screen appears.

The highlighted settings are the current settings.



"1: RESUME":

"ON": Enables the resume function.

"OFF": Disables the resume function.

"2: RESTART DIALOG":

Sets the presence of the confirmation screen when the auto-start execution program is re-launched. For the function where the auto-start execution program is re-launched, refer to "[4.3.6 Executing by Auto-Start Execution Program](#)".

"ON": The confirmation screen is displayed.

"OFF": The confirmation screen is not displayed.

2. Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2]) to change the setting and then press the **ENT** key.
3. Use the cursor keys ([◀] [▶]) to highlight each setting value.
4. Press the Backspace/clear key to return to the SET SYSTEM 2/2 menu.

– **Note** – The resume function is used to return the BHT to the status (screen) when the BHT power was turned OFF previously.

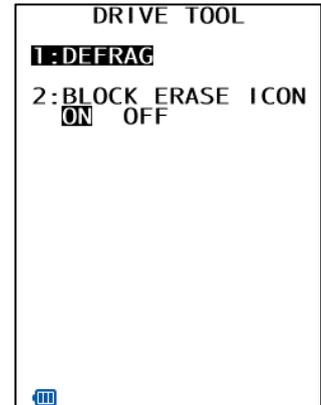
4.5.5.10 Drive related operation

Use the following procedure to perform drive related operations.

1. Select "2: DRIVE TOOL" from the SET SYSTEM Menu 2/2 and then press the **ENT** key to display the screen on the right.

The DRIVE TOOL screen appears.

The highlighted settings are the current settings.



"1: DEFRAG":

Start the defragmentation process.

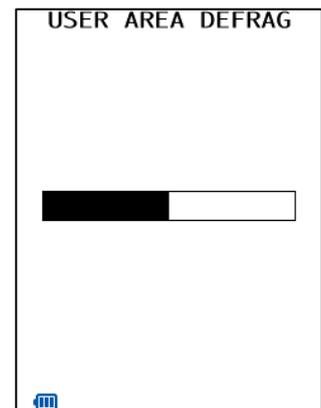
"2: BLOCK ERASE ICON":

"ON": The confirmation screen is displayed.

"OFF": The confirmation screen is not displayed.

2. Use the cursor keys ([▲] [▼]) or numeric keys ([1]) to change the setting and then press the **ENT** key.

The screen on the right is displayed and the defragmentation process is performed for the entire user area. The screen returns to the SYSTEM MENU when defragmentation is complete.



3. Select the "2: BLOCK ERASE ICON" from the DRIVE TOOL screen and use the cursor keys ([◀] [▶]) to select ON/OFF.
4. Press the Backspace/clear key to return to the SET SYSTEM 2/2 menu.

- **Note** - Defragmentation reorganizes the user area in order to increase the amount of available space.

If defragmented, the BHT may download files more efficiently than before performing defragmentation

4.5.5.11 Japanese Input Setting

Follow the procedure below to set input in Japanese.

1. Select "3: IME" at the SET SYSTEM Menu 2/2 and then press the ENT key.

The Japanese input setting screen is displayed.

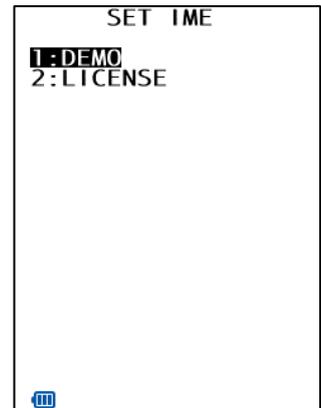
"1: DEMO":

Demonstrates input in Japanese.

Press the **M2** key to return to the Japanese input setting menu.

"2: LICENSE":

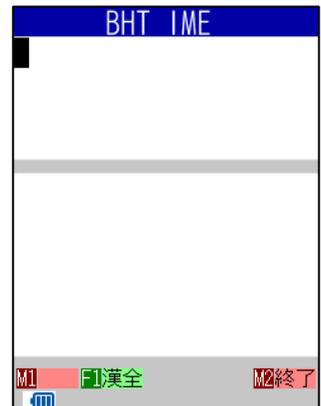
Registers a license.



2. Use the cursor keys ([▲] and [▼]) or numeric key ([1]) to highlight "1: DEMO" and then press the ENT key. You can try input in Japanese on the DEMO screen.

The screen on the right is shown on the demonstration screen.

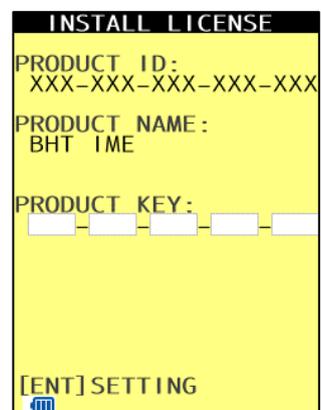
Press the **M2** key to return to the Japanese input setting menu.



3. Use the cursor keys ([▲] and [▼]) or numeric key ([2]) to highlight "2: LICENSE" and then press the ENT key.

The license registration screen appears and allows you to enter the license.

You can register a Japanese IME license on this screen.



4. Press and hold the **BS/C** key to return to the SET SYSTEM Menu 2/2 screen.

4.5.5.12 HID Setting Menu

Follow the procedure below to configure HID-related settings.
(Supported models: BHT-1336QWB series)

1. Select "4: HID" at the SET SYSTEM Menu 2/2 and then press the ENT key.

The Japanese input setting screen is displayed.

"1: KEYBOARD":

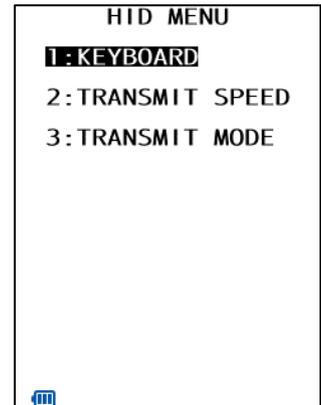
Keyboard settings

"2: LICENSE":

Communication speed setting

"3: TRANSMIT MODE":

Mode settings for numeric keys and CAPS key



Refer to the following for details of the above items.

2. Use the cursor keys ([▲] and [▼]) or numeric keys ([1] to [3]) to highlight the item to be set and then press the ENT key.
3. Press and hold the BS/C key to return to the SET SYSTEM Menu 2/2 screen.

1. "1: KEYBOARD": Keyboard settings

- 1) Select "1: KEYBOARD" at the HID setting menu and then press the ENT key.

The keyboard setting screen is displayed.

The settings shown under "1: KEYBOARD TYPE" are the current settings.

"1: KEYBOARD TYPE":

Set the keyboard type.

"SYSTEM MESSAGE":

Follow the procedure to select the message language.

"COUNTRY\$":

Follow the country setting designated by the BASIC function "COUNTRY\$." (Refer to "BHT-BASIC Programmer's Manual" (for BHT-1336Q series) for details.)

"JP/US/UK":

Lock the country settings.

"2: LICENSE":

Communication speed setting



"3: TRANSMIT MODE":

Mode settings for numeric keys and CAPS key

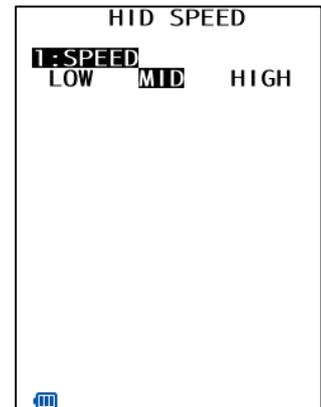
- 2) Use the cursor keys ([◀] [▶]) to select settings value.
- 3) Press and hold the **ENT** key or **BS/C** key for the settings value to be valid and then return to the HID setting menu.

2. "2: TRANSMIT SPEED": Transit speed setting.

- 1) Select "2: TRANSMIT SPEED" at the HID setting menu and then press the ENT key.

The transit speed setting screen is displayed.

The highlighted setting is the current setting.



"1: SPEED":

Set the transit speed.

- 2) Use the cursor keys ([◀] [▶]) to select settings value.
- 3) Press and hold the **ENT** key or **BS/C** key for the settings value to be valid and then return to the HID setting menu.

- **Note** - The transit speed set here works in conjunction with the value of the MAKE (press)/BREAK (release) interval time that can be set and obtained with HID.FN3. The setting of the MAKE (press)/BREAK (release) interval time is as follows.

HIGH = 1
MID = 10
LOW = 30

When the MAKE/BREAK interval time setting in HID.FN3 is set to the following range, the transit speed displayed in the system menu will be shown as follows.

1 = HIGH
0.2-29 = MID
30-255 = LOW

3. "3: TRANSMIT MODE": Mode settings for numeric keys and CAPS key.

1) Select "3: TRANSMIT MODE" at the HID setting menu and then press the **ENT** key.

The HID mode setting screen is displayed. The highlighted setting is the current setting.

"1: NUMERIC LEY": Set numeric key positions.

Set "KEYPAD" or "INBOARD" on the keyboard you use.

Refer to "Reference" below.

"2: CAPS MODE": Indicator (CAPS) operation settings

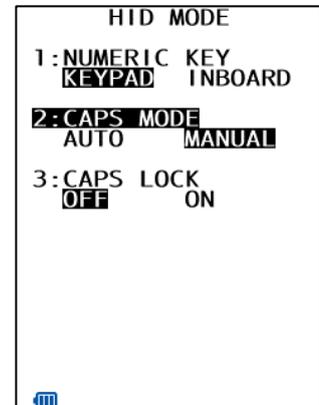
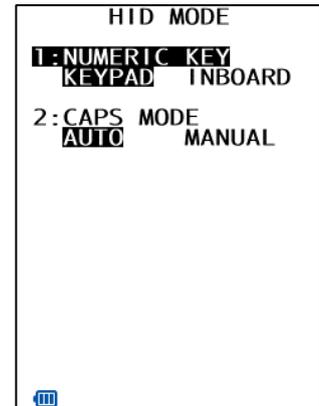
"AUTO": Automatic

"MANUAL": When MANUAL is selected, the screen shown at right is displayed.

"3: CAPS LOCK": CAPSLOCK

"OFF": Fixed to OFF (unlit)

"ON": Fixed to ON (lit)



2) Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2] [3]) to highlight the item to be set.

3) Use the cursor keys ([◀] [▶]) to highlight each setting.

4) Press and hold the **ENT** key or **BS/C** key for the settings value to be valid and then return to the HID setting menu.

4.5.5.13 Setting the operation log

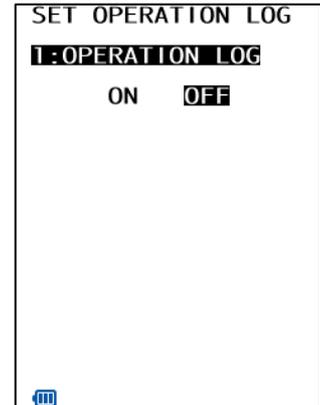
The BHT series is compliant with the BHT Manager software (host-side tool). The OPERATION LOG sets whether or not create log data that the BHT Manager collects.

For details, refer to the “BHT Manager User’s Manual”. The following explains only the operation of this menu and an outline of the settings.

1. Select “3: OPERATION LOG” from the SET SYSTEM Menu 2/2 and then press the **ENT** key.

The OPERATION LOG settings menu will display.

The highlighted setting is the current setting.



2. Use the cursor keys ([◀] [▶]) to select each setting value, and then press the **ENT** key.

“ON”: An operation log file is created.

“OFF”: An operation log file is not created.

3. Press and hold the **BS/C** key for the settings value to be valid and then return to the SET SYSTEM Menu 2/2.

4.5.5.14 Setting the auto power off time

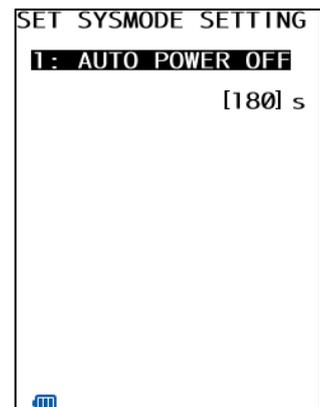
Set the auto power off time during system mode startup.

1. Press the **SF** key and the **F1** key simultaneously in the System Environment Menu to display the auto power off time setting menu screen.

"1: AUTO POWER OFF": Sets the time until auto power off.

The unit is seconds.

If 0 is specified, the auto power off function is disabled.



2. Press the **ENT** key to display the cursor. The display moves to the input mode and the cursor appears.
3. Use the numeric keys to enter the setting value. Enter any numerical value. The value that can be set is 1 to 999 (seconds). Press the **BS/C** key to erase one character. Press and hold the **BS/C** key or press the **SF** key and the **BS/C** key simultaneously.
4. Press and hold the **BS/C** key to return to the System Environment Menu.

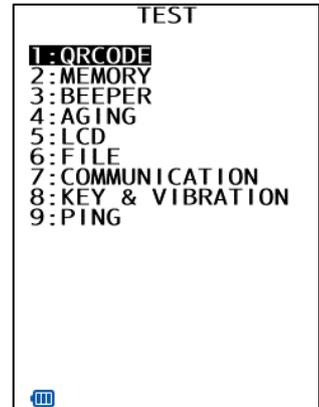
– **Note** – If the user program does not control the auto power-off function, the user program operates with the auto power-off time during system mode startup.

4.5.6 BHT Operation Test (TEST Menu)

Use the following procedure to perform a BHT operation test.

1. Select "5: TEST" at the SYSTEM MENU and then press the **ENT** key.

The TEST menu screen on the right is displayed.



"1: QRCODE":

Selects the code scanning test.

"2: MEMORY":

Selects the RAM read/write test.

"3: BEEPER":

Selects the speaker scale test.

"4: AGING":

Selects the aging test.

"5: LCD":

Selects the LCD and indicator tests.

"6: FILE":

Checks the file information.

"7: COMMUNICATION":

Selects the communication test.

"8: KEY & VIBRATION":

Selects the key entry, speaker and vibrator tests.

"9: PING":

Selects the PING test.

Refer to the following section for details of the above items.

2. Use the cursor keys ([▲] [▼]) or numeric keys ([1] to [9]) to highlight the item to be set and then press the **ENT** key.
3. Press and hold the **BS/C** key to return to the SYSTEM MENU.

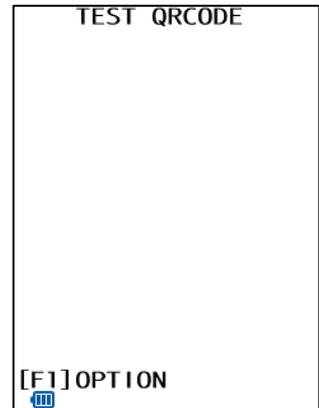
- Point - Contact your nearest dealer if an error occurs during any of the above tests.

4.5.6.1 Code scanning test

Use the following procedure to perform a barcode scanning test.

1. Select "1: QRCODE" at the TEST menu and then press the **ENT** key.

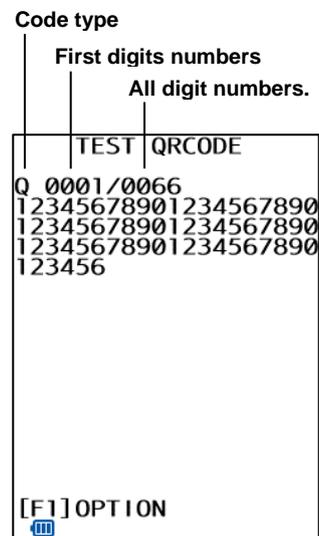
The screen on the right is displayed.



2. Scan a barcode or 2D with the BHT

Upon completion of barcode or 2D scanning, the speaker beeps once, and the indicator turns blue.

The scanned 2D code or barcode type, lead digits, total number of digits, and code data display on the screen. Ensure that the code data and screen display match.



3. Press and hold the **BS/C** key to return to the TEST menu.

- Point - QR Code has a function where data is coded after being split into a maximum of 16 segments and the segmented codes are read. Codes segmented using this function are called concatenated codes.

When reading concatenated codes, the beeper works differently than with normal reading.

The beeper sounds twice when the first code of the concatenated code is read, and the system enters the concatenated code reading mode. When subsequent concatenated codes are read, the beeper sounds once. After the final code has been read, the beeper sounds three times and reading is complete.

The reading data screen display will not be shown until after concatenated code reading is complete.

If QR Codes other than concatenated codes are read during concatenated code reading those codes are displayed, the concatenated code reading mode is cancelled and the read concatenated codes are discarded. This also happens if the trigger switch is released or the interval between reading of concatenated codes is over 5 seconds.

The order for reading concatenated codes is arbitrary. The same concatenated codes will not be read it again.

- Point - Option data is displayed at the end of the QR Code data when OPTION DATA is set to ON at the set code reading conditions screen of the SET SYSTEM menu. (Refer to "[4.5.5.4 Setting the code scanning parameters](#)")

◆ Code Type and Corresponding Characters Displayed on the Screen

Code type	Displayed characters		
	Code mark Type1	Code mark Type2 ²	
QR Code	Q	]Qm	
QR Code (Codes concatenated with unedited modes)	S	S ³	
Micro QR Code	Q	Q ³	
SQRC	Q	Q ³	
rMQR	Q	]Qm	
PDF417	Y	]L0	
MaxiCode	X	]Um	
DataMatrix	Z	]dm	
EAN-13	Without add-on	A	]E0
	With 2 digits add-on	A	]E3
	With 5 digits add -on	A	]E3
UPC-A	Without add-on	A	]X0
	With 2 digits add-on ²	A	]X3
	With 5 digits add -on	A	]X3
EAN-13 (JAN-13) COMPOSITE	Without add-on	A	]E0
	With 2 digits add-on	A	]E3
	With 5 digits add -on	A	]E3
UPC-A COMPOSITE	Without add-on	A	]X0
	With 2 digits add-on	A	]X3
	With 5 digits add -on	A	]X3
EAN-8	Without add-on	B	]E4
	With 2 digits add-on	B	]E5
	With 5 digits add -on	B	]E6
EAN-8 COMPOSITE	Without add-on	B	]E4
	With 2 digits add-on	B	]E5
	With 5 digits add -on	B	]E6
UPC-E	Without add-on	C	]X0
	With 2 digits add-on	C	]X3
	With 5 digits add -on	C	]X3
UPC-E COMPOSITE	Without add-on	C	]X0
	With 2 digits add-on	C	]X3
	With 5 digits add -on	C	]X3

Code type	Displayed characters	
	Code mark Type1	Code mark Type2 ^{*2}
Interleaved 2 of 5 (ITF) ^{*1}	I	]Im
Codabar (NW-7)	N	]Am
Code 39	M	]Fm
Code 93	L	]G0
Code 128	K	]Cm
GS1-128 (EAN-128)	W	]C1
GS1-128 COMPOSITE (EAN-128 COMPOSITE)	W	]em
GS1 DataBar (RSS)	R	]em
GS1 DataBar COMPOSITE (RSS COMPOSITE)	R	]em

*1: The codes with more than 4 digits are read for ITF.

*2: CODE MARK Type 2 is the Code Mark system that is compliant with “Guidelines on Symbology Identifiers” by AIM USA. Suffix “m” differs from the data format of bar code system, as shown in the table below.

e.g.]I1]: Flag Character (ASCII 93)

 I: Code Character (ITF)

 1: Modifier Character (tabel below)

For example, ITF is set to read with C/D, code mark is “]I1”.

Code type	Modifier Character	Comment	
2D Code			
QR Code	0	Model 1	
	1	Model 2	
	2	Model 2, ECI protocol applied	
	3	Model 2 (The first character from the start code is FNC1)	
	4	Model 2, ECI protocol applied, FNC1 applied (1st position)	
	5	Model 2, FNC1 applied (2nd position)	
	6	Model 2, ECI protocol applied, FNC1 applied (2nd position)	
	rMQR	1	ECI protocol not applied
		2	ECI protocol applied
		3	ECI protocol not applied, FNC1 applied (1st position)
		4	ECI protocol applied, FNC1 applied (1st position)
		5	ECI protocol not applied, FNC1 applied (2nd position)
		6	ECI protocol applied, FNC1 applied (2nd position)
	MaxiCode	0	mode4, mode5
		1	mode2, mode3
	DataMatrix	1	ECC-200
		2	ECC-200 (The 5th character from the start code is FNC1)
		3	ECC-200 (The 2nd or 6th characters from the start code is FNC1)
Bar code			
Interleaved 2of5 (ITF)	0	Read without C/D	
	1	Read without C/D C/D	
Code 39	0	Read without C/D	
	1	Read without C/D	
Codabar (NW7)	0	Read without C/D	
	1	Read without C/D	
Code 128	0	The 1st and 2nd characters from the start code does not include FNC1.	
	2	The 2nd character from the start code is FNC1	

C/D: check digits

*3: The code types that are not compliant with "Guidelines on Symbology Identifiers" by AIM USA use the Code mark Type 1.

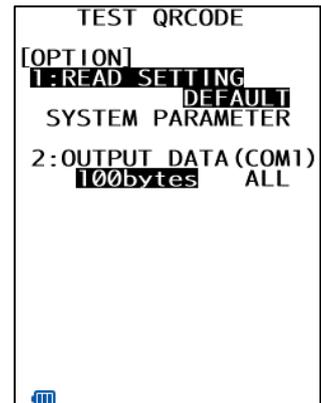
◆ Setting the Code Scanning Test Options

- 1) When performing the code scanning test, press the **F1** key to display the screen on the right, allowing code scanning test options to be set.

The highlighted setting will be the current setting.

To make changes, use the cursor keys ([▲] [▼]) or numerical keys ([1][2]) to highlight the setting item, and then highlight the setting values using the cursor keys ([◀] [▶]).

Press the **ENT** key or **BS/C** key to return to the Code scanning test menu.



“1: READ SETTING”:

Set the scanning conditions for code scanning test.

“DEFAULT”: Read under default scanning conditions.

“SYSTEM PARAMETER”: Specify scanning conditions with system setting values.

“2: OUTPUT DATA (COM1)”:

Under the code scanning test, code marks, digit numbers and the data, which are read from infrared communication ports when reading codes, are output. Use the values set at [“4.5.5.5 Setting the communication environment”](#) for the communication speed. The setting enables to limit the size of the output data.

“100bytes”: Output data is limited to 100 bytes.

“ALL”: The data read are output entirely.

Specifying with the system setting value enables to set the detailed scanning conditions. Refer to [“4.5.5.4 Setting the code scanning parameters”](#) for setting of the system setting value.

- 2) Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2] [3]) to highlight the item to be set.
- 3) Use the cursor keys ([◀][▶]) to highlight each setting.
- 4) Press and hold the **ENT** key or **BS/C** key for the settings value to be valid and then return to the HID setting menu.

— Point — "In '1: READ SETTING', select 'SYSTEM PARAMETER' to specify the reading conditions using the system settings. Detailed reading conditions can be configured using the system settings. For setting the system parameters, refer to [“4.5.5.4 Setting the code scanning parameters”](#).”

Codes that permit to read with "DEFAULT" settings

QR Code (Model 1, Model 2, Micro QR Code, rMQR)

PDF417, Micro PDF417

MaxiCode

DataMatrix

Composite

EAN-13, UPC-A *1

EAN-8 * 2

UPC-E *1

Interleaved 2 of 5 (ITF) * 2

Codabar (NW-7)

Code 39

Code 93

Code 128, GS1-128 (EAN-128)

RSS (GS1 DataBar)

*1: Exclude "with add-on".

*2: The codes with more than 4 digits are read for ITF.

— Point — When EAN/UPC Code with add-on or multiline code is read under the code scanning test, set the system setting value prior to setting of the "SYSTEM PARAMETER"

4.5.6.2 Memory test

Use the following procedure to perform a memory test.

1. Select "2: MEMORY" at the TEST menu and then press the **ENT** key.

The screen on the right is displayed, and the BHT reads and writes data to and from all areas of the RAM and performs an address check.

"XXXXX": Tested RAM capacity (unit: kilobytes)

"YYYYY": Total RAM capacity (unit: kilobytes)



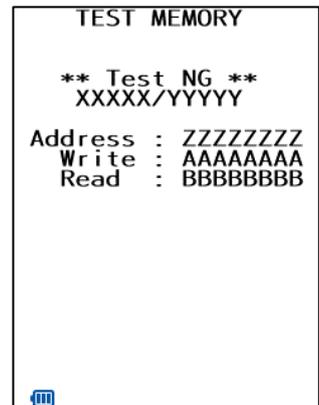
If any error is detected, the BHT speaker beeps three times, displays a message similar to that shown on the right, and aborts the memory test.

"ZZZZZZZZ": Address where the error occurred.

"AAAAAAAA": Data to write.

"BBBBBBBB": Data read out the RAM.

Press and hold the **BS/C** key to return to the TEST menu.



Upon normal completion of the RAM test, the BHT speaker beeps once, displays a message similar to that shown on the right, and returns to the TEST menu.



4.5.6.3 Scale test

Use the following procedure to perform a scale test.

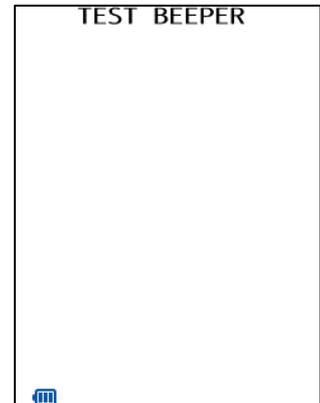
1. Select “3: BEEPER” at the TEST menu and then press the **ENT** key.

The screen on the right is displayed, and the beeper sounds at the three octaves listed below.

Upon completion of this test, the BHT automatically returns to the TEST menu.

To stop the speaker scale test while in progress, turn the BHT OFF.

Scale	Frequency (Hz)			
do	523	1046	2093	4186
re	587	1174	2349	–
mi	659	1318	2637	–
fa	698	1396	2793	–
sol	783	1567	3135	–
la	880	1760	3520	–
ti	987	1975	3951	–



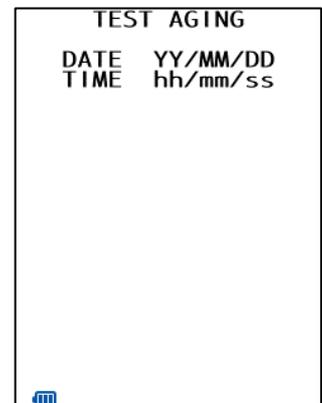
4.5.6.4 Aging test

Use the following procedure to perform an aging test.

1. Select “4: AGING” at the TEST menu and then press the **ENT** key.

The aging test begins and the current date and time display on the screen.

(This test is intended for personnel responsible for checking the BHT at the factory.)



- Point - The Auto OFF function is disabled during the aging test. To abort the test, Press and hold the **BS/C** key to return to the TEST menu, or turn the BHT power OFF.

4.5.6.5 LCD and indicator tests

Use the following procedure to perform an LCD and indicator test.

1. Select "5: LCD" at the TEST menu and then press the **ENT** key.
 The TEST BEEPER screen on the right is displayed.
 The indicator is turned OFF at this time.
 Press and hold the **BS/C** key to return to the TEST menu.



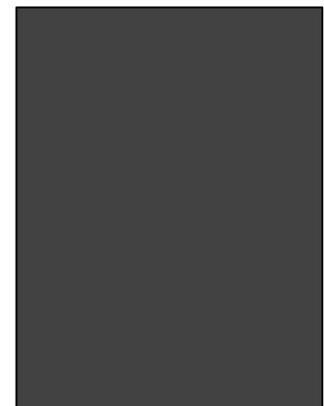
2. Press the **ENT** key.
 The entire screen turns black and the indicator illuminates in green.

Press and hold the **BS/C** key to return to the previous screen.
 Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.



3. Press the **ENT** key.
 The entire screen turns gray.

Press and hold the **BS/C** key to return to the previous screen.
 Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.

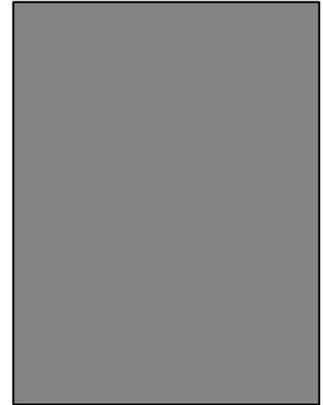


4. Press the **ENT** key.

The entire screen turns a lighter shade of gray.

Press and hold the **BS/C** key to return to the previous screen.

Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.

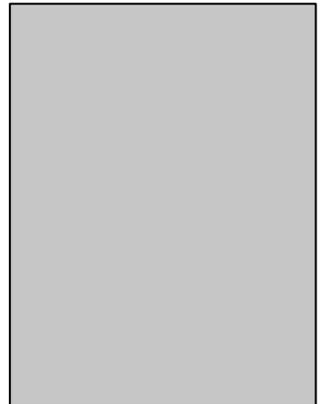


5. Press the **ENT** key.

The entire screen turns an even lighter shade of gray.

Press and hold the **BS/C** key to return to the previous screen.

Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.

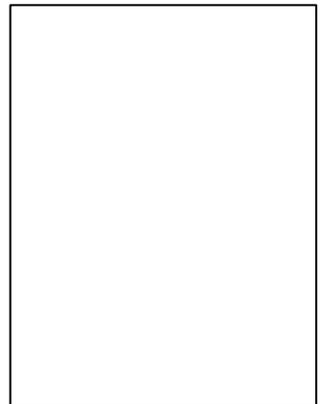


6. Press the **ENT** key.

The entire screen turns white.

Press and hold the **BS/C** key to return to the previous screen.

Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.

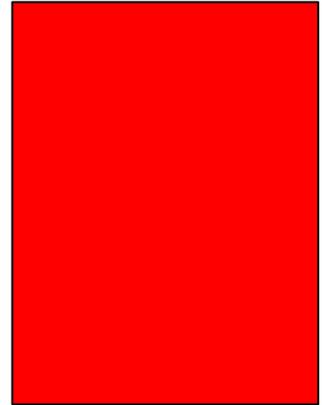


7. Press the **ENT** key.

The entire screen turns red, and at the same time, the indicator turns red.

Press and hold the **BS/C** key to return to the previous screen.

Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.

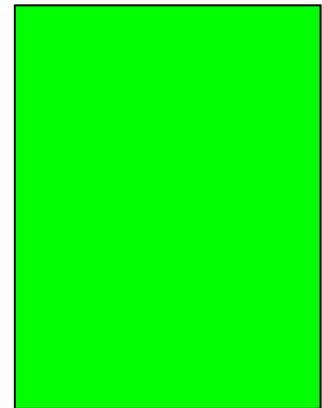


8. Press the **ENT** key.

The entire screen turns green, and at the same time, the indicator turns green.

Press and hold the **BS/C** key to return to the previous screen.

Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.

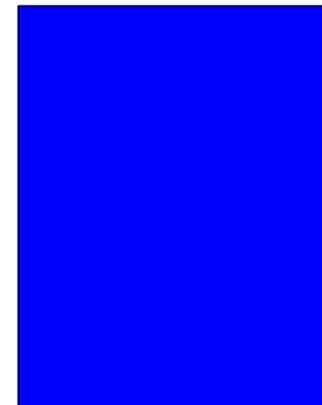


9. Press the **ENT** key.

The entire screen turns blue, and at the same time, the indicator turns blue.

Press and hold the **BS/C** key to return to the previous screen.

Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.

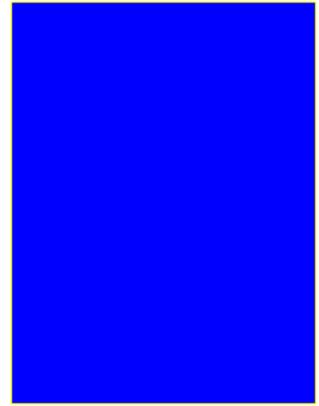


10. Press the **ENT** key.

A 1-dot thick frame is displayed around the screen.

Press and hold the **BS/C** key to return to the previous screen.

Press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to return to the TEST menu.



11. Press the **ENT** key.

The speaker sounds once, and the display returns to the TEST menu.

4.5.6.6 File test

The file test allows detailed information on program files, data files, audio files (*.WAV), and image files(*.JPG) to be checked. In addition, pressing the **M1** key sorts of the files.

1. Select “6: FILE” at the TEST menu and then press the **ENT** key.

The right screen is displayed. If any of the stored files are broken, an asterisk (*) or plus sign (+) is prefixed to the name of the defective file (s).

Refer to [About “[\\$\\$BRKLST.SYS](#)”] for details about the (*) and (+).

“SIZE: bbbbb”: Used memory size.

“FREE: yyyy”: Available memory size

Files can be sorted each time the **M1** key is pressed.

“TYPE”: Sorts files by type.

“BROKEN”: Displays broken files in descending order.

“BASIC”: Displays files in the following order: “B: BASIC files”, “C: C data files”, “None: Shared files and program files.”

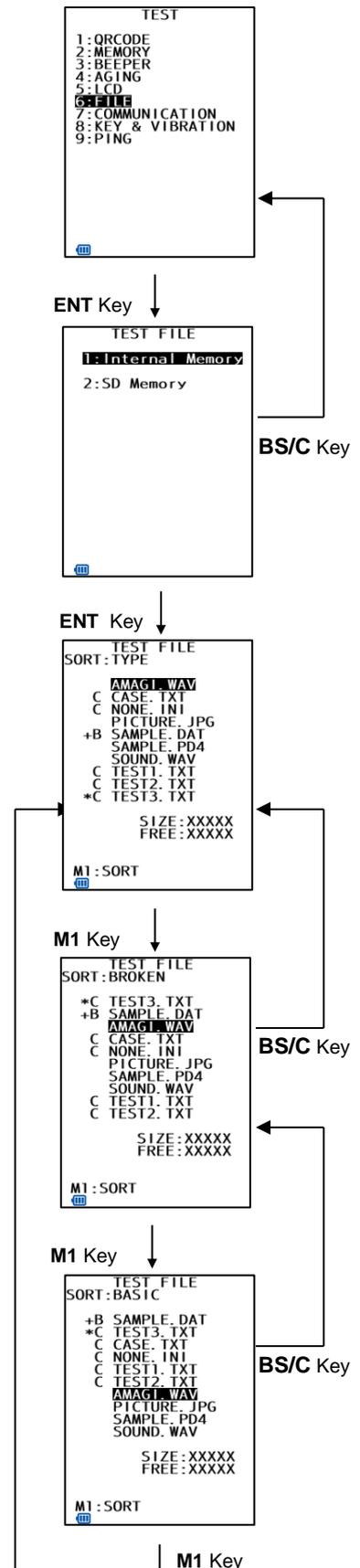
— Point —	<ul style="list-style-type: none"> • When a file contains an abnormality, the file must be deleted, or overwritten with a file of the same name. • Even files containing abnormalities can be uploaded with the upload menu. It is recommended to delete important files after uploading.
-----------	---

2. Select a file, and then press the **ENT** key.

The selected file will be set, and then the menu will return to the previous screen.

Press and hold the **BS/C** key to return to the previous screen.

When returning to the previous screen, the selected item will be highlighted.



◆ Sound files (*.WAV)

1) Use the cursor keys ([▲] [▼]) to select a *.WAV file, and then press the **ENT** key.

The screen on the right will appear, displaying the file size and creation date.

```
TEST FILE
SOUND. WAV
01548288 bytes
DATE MODIFIED
20/01/01 01:33

VOL ◀ 2 ▶

ENT:PLAY ▲PREV

```

2) Press the **ENT** key to play the file.

Press the **ENT** key while the file is playing to stop the file and return to the previous screen.

```
TEST FILE
SOUND. WAV
01548288 bytes
DATE MODIFIED
20/01/01 01:33

Now Playing

ENT:STOP ▲PREV

```

Use the cursor keys ([◀] [▶]) to adjust the volume. The volume can be adjusted in four levels from 0 (minimum) to 3 (maximum.)

```
TEST FILE
SOUND. WAV
01548288 bytes
DATE MODIFIED
20/01/01 01:33

VOL ◀ 3

ENT:PLAY ▲PREV

```

◆ Media files (*.JPG)

1) Use the cursor keys ([▲] [▼]) to select a *.JPG file, and then press the **ENT** key.

The screen on the right will appear, displaying the file size, creation date, and a preview image.

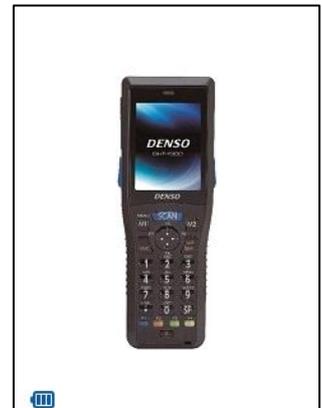
To display preview image, image files must be saved in the JPEG Baseline format.



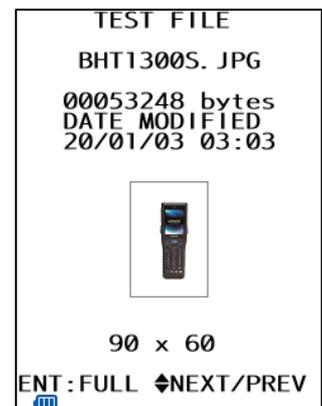
2) Press the **ENT** key to display the image in full screen.

If the actual image is larger than the screen, the image will be displayed at the actual size centered on the top left of the screen.

Press any key to return to the previous screen.



If the actual image size is smaller than the preview size, the image will be displayed at the original size.



◆ Font files (*.FN3/FN4)

1) Use the cursor keys ([▲] [▼]) to select a *.FNT file, and then press the **ENT** key.

Press and hold the **BS/C** key to return to the previous screen.

```
TEST FILE
FNTUNGB. FN4
02375680 bytes
DATE MODIFIED
20/01/01 02:58

UDGB (FS)
Version 1.00

◆NEXT/PREV
```

◆ BASIC User Program (*.PD3/PD4)

1) Use the cursor keys ([▲] [▼]) to select a *.PD3/PD4 file, and then press the **ENT** key.

Press and hold the **BS/C** key to return to the previous screen.

```
TEST FILE
SAMPLE. PD4
00253952 bytes
DATE MODIFIED
20/01/01 03:03

Version
1.00

◆NEXT/PREV
```

If the version cannot be acquired, the screen on the right will display.

```
TEST FILE
SAMPLE. PD4
00253952 bytes
DATE MODIFIED
20/01/01 03:23

Version
-.-

◆NEXT/PREV
```

◆ **Other files (*.DAT, *.TXT, etc.)**

1) Use the cursor keys ([▲] [▼]) to select a file, and then press the **ENT** key.

If field information is available, press the **F1** key to display the next screen. To return to the previous screen, press the **F1** key again, or press the **BS/C** key.

In addition, when there are four or more fields, "MORE FIELD LEN" and a guide will display.

```

TEST FILE
SAMPLE. DAT
FIELD LEN
0010, 0020, 0030,
0040, 0050, 0060,
0070, 0080, 0090,
0100, 0110, 0120,
0130, 0140, 0150,
0160
ENT : BACK
    
```

Switch with the F1 key ↑ ↓

```

TEST FILE
SAMPLE. DAT
00434176 bytes
DATE MODIFIED
20/01/01 04:22
RECORD NUM 00081
          MAX 14691
          LEN 01360
FIELD NUM 00016
        LEN
0010, 0020, 0030. . .
ENT : MORE FIELD LEN
      ◆NEXT/PREV
    
```

If field information is not available, the screen on the right will display.

Press and hold the **BS/C** key to return to the previous screen.

```

TEST FILE
SAMPLE. DAT
00004096 bytes
DATE MODIFIED
20/01/01 03:59

-NO FIELD-

      ◆NEXT/PREV
    
```

4.5.6.7 Communication test

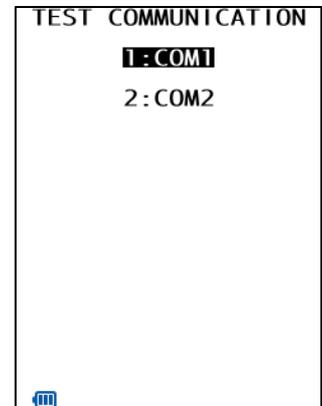
Use the following procedure to perform a communication test.

1. Select "7: COMMUNICATION" at the TEST menu and then press the **ENT** key.

The TEST COMMUNICATION screen shown on the right is displayed.

"1: COM1": Performs a Communication Unit (CU) communication test.

"2: COM2": Performs a USB communication test.
(Only for models equipped with USB connector)



Refer to the following section for details of the above items.

2. Press and hold the **BS/C** key to return to the TEST menu.

◆ **Communication Unit (CU) Connection Test**

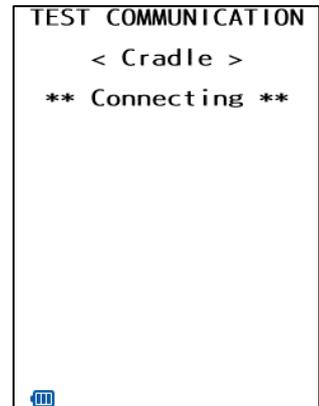
1) Prepare the BHT and CU-1321, connect the CU-1321 to the host computer, and set the BHT on the CU-1321.

2) Select "1: COM1" at the TEST menu and press the **ENT** key.

Then, select "1: Cradle" at the TEST menu and press the **ENT** key.

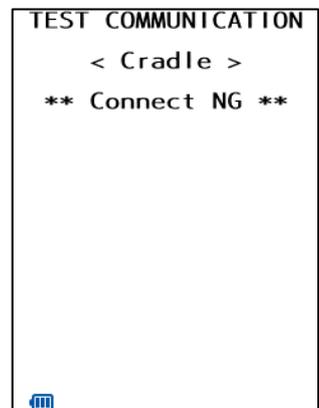
The TEST COMMUNICATION screen on the right is displayed during the test on the Communication Unit (CU) connection.

Press and hold the **BS/C** key to abort the test and then return to the TEST screen.



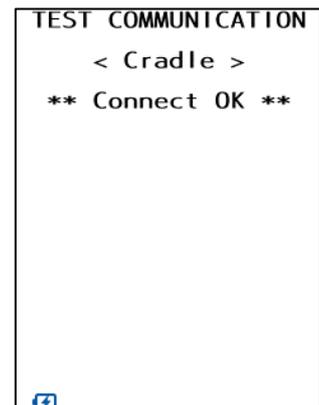
The buzzer sounds three times if the communication does not complete even if 15 seconds have elapsed.

Press and hold the **BS/C** key to return to the TEST screen.



Upon normal completion of the test, the buzzer sounds once and the screen on the right is displayed.

Press and hold the **BS/C** key to return to the TEST screen.



◆ USB Connection Test (Only models with USB connector)

- 1) Connect the BHT to the host computer via the USB cable.
- 2) Select "2: COM2" at the TEST menu and press the **ENT** key.

Then, select "1: USB" at the TEST menu and press the **ENT** key.

The TEST COMMUNICATION screen on the right is displayed during the test on the USB connection.

Press and hold the **BS/C** key to abort the test and then return to the TEST screen.

The buzzer sounds three times if the communication does not complete even if 15 seconds have elapsed.

Press and hold the **BS/C** key to return to the TEST screen.

Upon normal completion of the test, the buzzer sounds once and the screen on the right is displayed.

Press and hold the **BS/C** key to return to the TEST screen.

```
TEST COMMUNICATION
  < USB >
** Connecting **
```



```
TEST COMMUNICATION
  < USB >
** Connect NG **
```



```
TEST COMMUNICATION
  < USB >
** Connect OK **
```

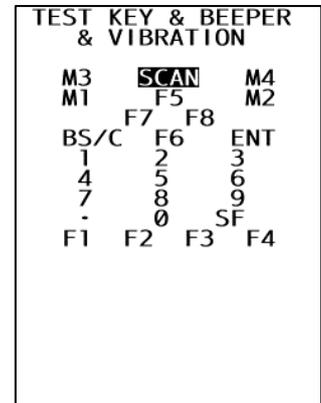


4.5.6.8 Key-entry, speaker and vibrator test

Use the following procedure to perform a key entry, speaker and vibrator test.

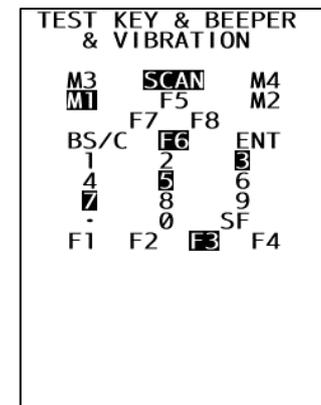
- 1) Select "8: KEY & VIBRATION" at the TEST menu and then press the **ENT** key.

The screen on the right is displayed, and the BHT waits for key entry.



- 2) Press the **ENT** key.

Pressing individual keys displays the identifier letters in the positions pre-assigned to those keys on the LCD, as well as sounding the speaker or activating the vibrator. (As long as the individual key is held down, the BHT continues to beep or vibrate.)



- 3) Press the same key again.

Highlighting is removed and unhighlight characters are displayed.

- 4) Repeat the above operation to display all keys on the screen.

Upon completion of the test, the BHT automatically returns to the TEST menu.

Turn OFF the power to abort the test during testing.

4.5.6.9 PING test

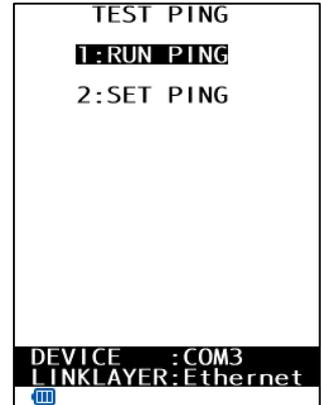
Use the following procedure to perform a PING test.

2. Select "9: PING" at the TEST menu and then press the **ENT** key. The TEST PING screen on the right is displayed.

"1: RUN PING": Runs the PING test.

"2: SET PING": Displays the PING parameter setting screen.

Refer to the following section for details of the above items.



3. Press and hold the **BS/C** key to return to the TEST menu.

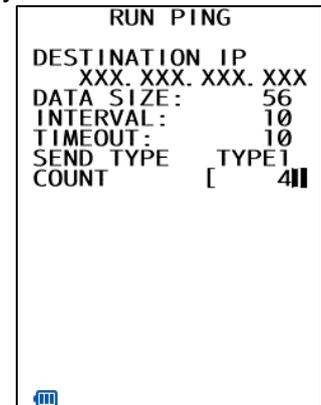
1. "1: RUN PING" (PING Test Screen)

- 1) Select "1: RUN PING" at the TEST PING menu and then press the **ENT** key.

The current setting values display, and the BHT waits for the transmission count to be entered.

To change the number of echo requests displayed, enter the desired value using the numerical keys.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key, or press the **SF** key and **BS/C** key simultaneously.



- 2) Press the **ENT** key.

When the PING test starts running, the message shown on the right is displayed.

Press the **BS/C** key to abort the PING test.



Upon completion of the PING test, the screen on the right is displayed.

The PING result may include the following:

OK: Displays the number of echo replies.

[XXXXX]: Echo reply time in milliseconds

NG: Displays the number of errors found during the PING test.

TIMEOUT: Displays the number of times the timeout for the echo reply occurred during the PING test.

IP: Displays the BHT IP address only while running the test.

```
      RUN PING
**** PING start ****
OK      :   XXXXX
        : [XXXXX]
NG      :   XXXXX
TIMEOUT :   XXXXX
***** PING end *****
```

Messages displayed during PING test (displayed in center of screen)

Waiting: Setting up the PING test.

Opening device: Opening devices.

Routing TCP/IP: Connecting to the TCP/IP communication pathway.

PING start: Starting the PING test.

Device error: Failed to open a device.

TCP/IP error: Failed to connect to the TCP/IP communication pathway.

PING termination messages (displayed at bottom of screen)

PING end: The PING test has ended normally.

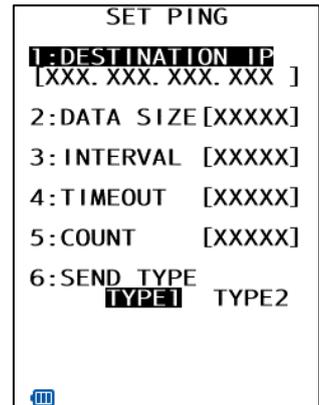
PING aborted: The PING test has been aborted.

PING error: An error has occurred during the PING test.

2. “2: SET PING” (PING Options Setting Screen)

1) Select “2: SET PING” at the TEST PING menu and then press the **ENT** key.

The current settings are displayed.



[1: DESTINATION IP]:

Specifies the IP address of the host computer to be pinged.

[2: DATA SIZE]:

Specifies the data size of the echo request.

[3: INTERVAL]:

Specifies the echo request interval (in units of 100 ms).

[4: TIMEOUT]:

Specifies the timeout period (in units of 100 ms) for the echo request.

[5: COUNT]:

Specifies the number of echo requests to be sent.

[6: SEND TYPE]:

Selects the echo request send timing (TYPE 1 or TYPE 2).

(Refer to “[PING Echo Request Transmission Timing \(SEND TYPE\)](#)” on the following page for details.)

2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6]) to highlight the item to be set, and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

Use the cursor keys ([◀] [▶]) to highlight the “6: SEND TYPE” setting.

3) Enter the setting values with the numerical keys and dot key.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

4) Enter the setting values and then press the **ENT** key.

Press and hold the **BS/C** key to return to the TEST PING menu.

Entry Range for DATA SIZE, INTERVAL, TIMEOUT, and COUNT

Item	Allowable Entry range	Default
DATA SIZE	4 – 1472	56
INTERVAL	0 – 65535	10
TIMEOUT	0 – 65535	10
COUNT	0* – 65535	4

* Specifying zero (0) will set the number of echo requests to “infinite,” meaning that echo requests will be sent continuously until the PING test is aborted.

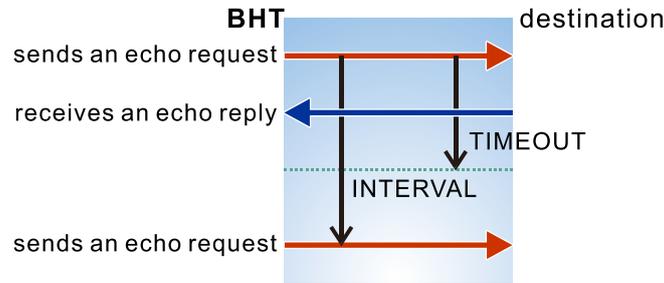
If a value outside the allowable entry range listed above is specified, the nearest value within the range will automatically be applied.

◆ **PING Echo Request Transmission Timing (SEND TYPE)**

Two types of echo request send timings are available: TYPE 1 and TYPE 2.

TYPE1

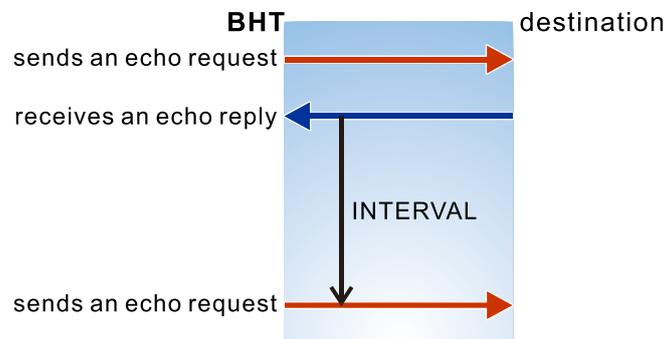
After sending an echo request, PING test program waits for the period specified at INTERVAL and then sends an echo request again. For TYPE 1, the relationship between the INTERVAL and TIMEOUT should be “INTERVAL ≥ TIMEOUT.”



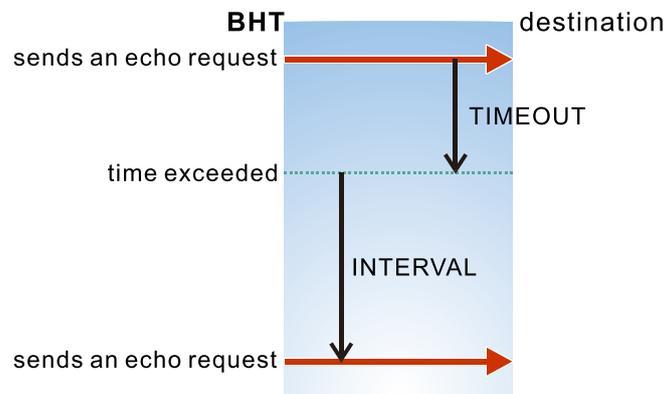
TYPE2

After sending an echo request, PING test program waits for an echo reply or for a time-exceeded event. Following that, PING test program waits for the period specified at INTERVAL and then sends the next echo request. For TYPE 2, no relationship between the INTERVAL and TIMEOUT is required.

If PING receives an echo reply:



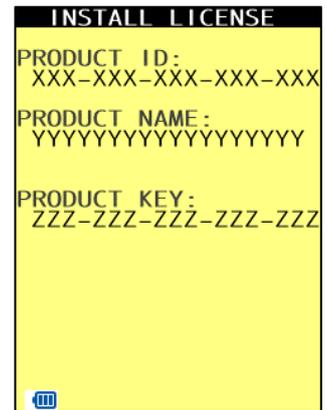
If a specified time exceeded:



◆ **Functions for which licenses have been registered (*)**

1) Use the cursor keys ([▲] [▼]) to highlight the name of a function that has been registered, and then press the **ENT** key to display a screen similar to that shown on the right containing the license registration details.

[PRODUCT ID]: Product ID
 [PRODUCT NAME]: Product name
 [PRODUCT KEY]: Product key

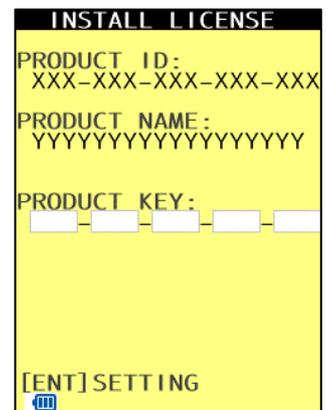


2) Press and hold the **BS/C** key to return to the LICENSE INFORMATION screen.

◆ **Functions for which licenses have not been registered (-)**

1) Use the cursor keys ([▲] [▼]) to highlight the name of a function that has not been registered, and then press the **ENT** key to display the license registration screen shown on the right.

[PRODUCT ID]: Product ID
 [PRODUCT NAME]: Product name
 [PRODUCT KEY]: Product key



3) Press the **ENT** key to display the cursor, allowing the product key to be entered.

Enter the product key for the product ID, and then press the **ENT** key.

If "*** Authorized ***" displays, license registration is complete.

If "*** Key NG ***" displays, the entered product key is incorrect.

Reenter the correct product key.

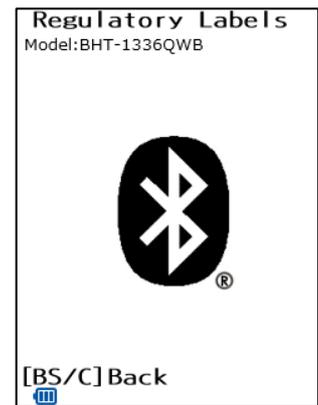
* The product key can be acquired when purchasing the product.

4) Press and hold the **BS/C** key to return to the LICENSE INFORMATION screen.

2. Displaying Electronic Certification

- 1) Press the **F2** key to display the electronic certification shown on the right. The certification label shows authentication information such as radio wave.

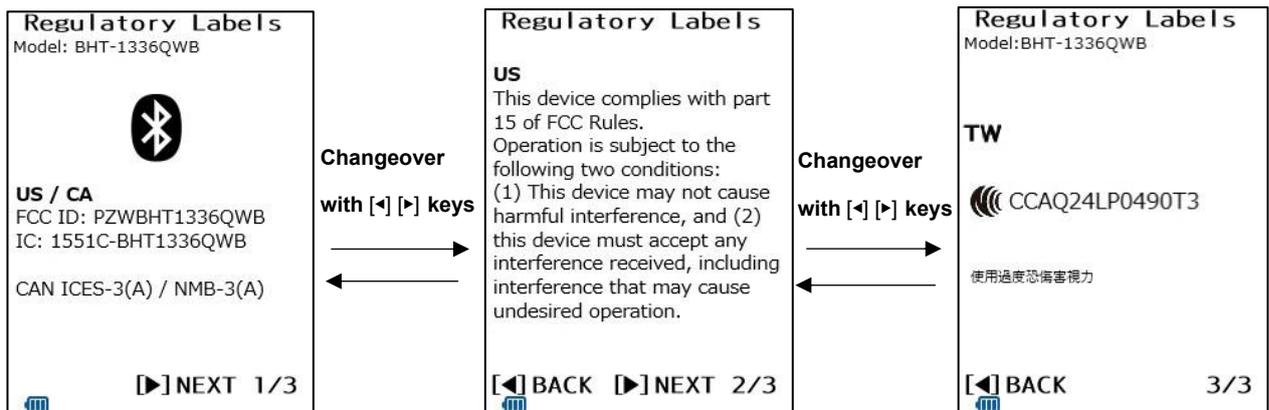
<Example of electronic certification label>



- 2) Press and hold the **BS/C** key to return to the system information screen.

If the electronic certification label is displayed across multiple pages, you can use the cursor keys ([◀] [▶]) to switch between pages of the electronic certification label.

(Ex.) North American and Taiwanese Model



- **Caution** - In the unlikely event that the electronic certification label does not appear, please contact your dealer.

4.5.8 Downloading/Uploading Files by FTP (FTP MENU)

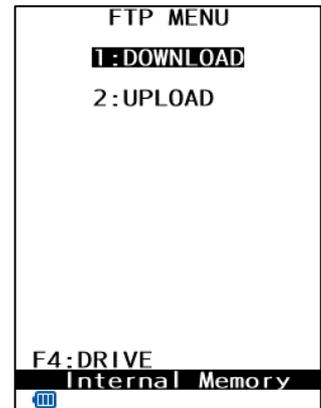
Use the following procedure to download and upload files by FTP.

1. Select “7: FTP” at the SYSTEM MENU and then press the **ENT** key.
The FTP MENU screen on the right is displayed.

“1: DOWNLOAD”: Downloads a file by FTP.
 “2: UPLOAD”: Uploads a file(s) by FTP.
 “F4: DRIVE”: Downloads a file to the microSD card.

Refer to the following section for details of the above items.

2. Press and hold the **BS/C** key to return to the SYSTEM MENU.

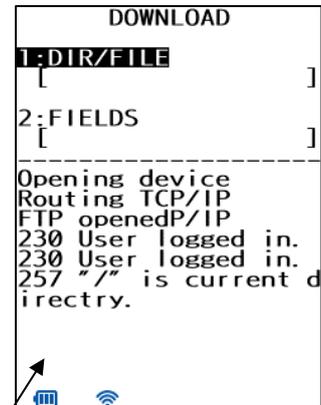


4.5.8.1 Downloading by FTP

1. Select “1: DOWNLOAD” at the FTP MENU and then press the **ENT** key.
The screen on the right is displayed.

[1: DIR/FILE]: Specifies the directory and/or file name.
 [2: FIELDS]: Specifies field information for data files.

Start the connection with the FTP server under the conditions set in “[4.5.5 System Environment Settings \(SET SYSTEM Menu\)](#)” and “[4.5.5.7 Setting the TCP/IP, FTP, DHCP and DNS](#)”. Once the connection is established, the following operations are available.



Message indicating the status is displayed at the bottom of the screen.

Press the **M2** key to display the screen on the right.

[SERVER IP]: Set IP address.

[CURRENT DIRECTORY]: Acquired current directory.

Press the **M1** key to return to the previous screen.

```
DOWNLOAD
SERVER IP:
  XXX. XXX. XXX. XXX
CURRENT DIRECTORY:
/
-----
Opening device
Routing TCP/IP
FTP openedP/IP
230 User logged in.
230 User logged in.
257 "/" is current d
irectry.
```

2. Use the cursor keys ([▲] [▼]) to highlight the item to be set, and then press the **ENT** key.

The mode changes to entry mode and the cursor is displayed.

3. Enter a setting value with the numerical keys and dot key.

Press the **SF** and the **BS/C** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key, or press the **SF** key and **BS/C** key simultaneously.

4. Enter a setting value and press the **ENT** key.
5. Press and hold the **BS/C** key to return to the FTP MENU screen.

DIR/FILE entry box: The FTP client will interpret a character string entered into this box as a directory name at first and will therefore send a Change Directory request to the FTP server. If the specified directory exists in the FTP server, the server will change a directory from the default to the specified one; if not, the FTP client will interpret the entered character string as a file name and send a Download request to the server.

FIELDS entry box: It is only necessary to enter field information in this box when downloading a data file. Before starting to download, enter field information using the numerical keys and dot key. Pressing the dot key will enter a comma (,). No entry is required to download program files.

4.5.8.2 Uploading by FTP

1. Select "2: UPLOAD" at the FTP MENU and then press the **ENT** key.

The screen on the right is displayed if uploadable files exist.

[1: DIR/FILE]:

Entry box for the directory and/or file name

[2: SELECT FILE]:

File name currently selected is displayed. (Initial state is blank.)

Start the connection with the FTP server under the conditions set in "[4.5.5 System Environment Settings \(SET SYSTEM Menu\)](#)" and "[4.5.5.7 Setting the TCP/IP, FTP, DHCP and DNS](#)". Once the connection is established, the following operations are available.



A message indicating the status is displayed at the bottom of the screen.

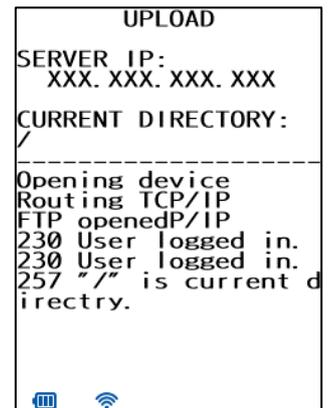
Press the **M2** key to display the screen on the right.

[SERVER IP]:

Set IP address.

[CURRENT DIRECTORY]: Acquired current directory.

Press the **M1** key to return to the previous screen.



2. Use the cursor keys ([▲] [▼]) to highlight the item to be set, and then press the **ENT** key.

1. When "1: DIR/FILE" is Selected

- 1) The mode changes to entry mode and the cursor are displayed, allowing directory and file names to be entered using the numerical keys and dot key.

Press the **SF** and the **BS/C** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

- 2) Enter the settings value and press the **ENT** key.

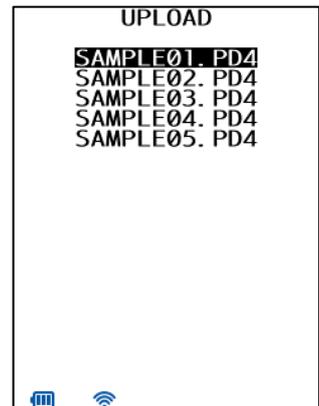
3) Press and hold the **BS/C** key to return to the FTP MENU screen.

2. When “2: SELECT FILE” is Selected

The screen on the right is displayed.

Use the cursor keys ([▲] [▼]) to highlight the upload file and then press the **ENT** key.

Return to the previous screen to display the selected file name in [2: FIELDS]



1) Enter the directory and file name, or select a file, and then press the **ENT** key.

2) Press and hold the **BS/C** key to return to the FTP MENU screen.

◆ **Upload process**

DIR/FILE entry box: The FTP client will interpret a character string entered into this box as a directory name at first and will therefore send a Change Directory request to the FTP server. If the specified directory exists in the FTP server, the server will change a directory from the default to the specified one; if not, the FTP client will interpret the entered character string as a file name and send a Download request to the server.

If the SELECT FILE entry box file name differs from the file name specified in the DIR/FILE entry box, the FTP client will upload with the file name specified in the DIR/FILE entry box.

If the **ENT** key is pressed without entering a character string in the DIR/FILE entry box, the FTP client will upload to the server with the SELECT FILE entry box file name.

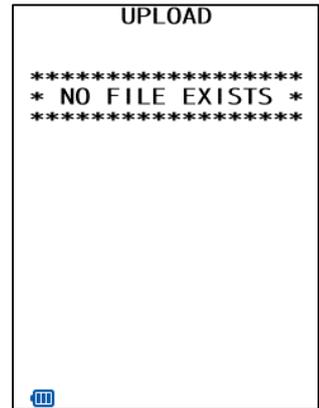
SELECT FILE entry box: For uploading, it is necessary to select a file to be uploaded to display the name in this entry box beforehand. Without a file name in this entry box, uploading will result in an error.

If the attributes (e.g., PD4, FN4, EX4, PD3, FN3, EX3, and data file extensions) of the selected file are different from those specified in the DIR/FILE entry box, an error will result.

◆ **If No Uploadable Files Exist**

If no file exists in the BHT when uploading by FTP is selected, the message shown on the right is displayed.

Press and hold the **BS/C** key to return to the FTP MENU screen.



◆ FTP Download/Upload Messages

When the BHT is uploading or downloading files by FTP, the following messages will appear at the bottom of the screen:

Aborted.	Uploading or downloading has been interrupted.
Connection error	The communication pathway is disconnected.
Device error	Failed to open a device.
Downloading	Downloading starts.
Download failed	Downloading has ended abnormally.
Download finished	Downloading has ended normally.
File broken!	The file being uploaded is corrupt.
File not found!	No file is found when downloading.
File not selected	No file has been selected.
File type mismatch!	When uploading, the attributes of the file selected in the SELECT FILE entry box are different from those in the DIR/FILE entry box.
FTP error	An error has occurred during execution of an FTP command.
FTP opened	Connection has been established by FTP.
Illegal text format!	The format of the received text is illegal.
Opening device	Opening a device.
Out of memory!	The memory is insufficient for storing files to be downloaded.
Out of range!	The specified parameter(s) is out of the allowable range.
Parameter error!	When downloading, the record length and/or field length specified in the FIELDS entry box exceed 255.
Program file error!	The received program file is illegal.
Routing TCP/IP	Connecting to the TCP/IP communications pathway.
Syntax error!	A syntax error has occurred.
TCP/IP error	Failed to connect to the TCP/IP communication pathway.
TCP socket error	An error occurred in the TCP layer during execution of an FTP command.
Too many files!	The current download will exceed the allowable number of files in the memory.
Uploading	Uploading starts.
Upload failed	Uploading has ended abnormally.
Upload finished	Uploading has ended normally.

◆ Response Messages from the FTP server

The messages that FTP servers send during and after FTP operations vary, but servers all use the same reply to codes as listed below.

- 110 Restart marker reply
- 120 Service ready in approx. nnn minutes.
- 125 Data connection has been established. Start transferring.
- 150 File status okay: establishing data connection.
- 200 Command okay
- 202 No response to this command. Not required at this site.
- 211 System status, or system help reply
- 212 Directory status
- 213 File status
- 214 Help message
- 215 NAME system type
- 220 Service ready for new users.
- 221 Service closing control connection.
- 225 Data connection established: no transfer in progress.
- 226 Closing data connection.
- 227 Entering Passive Mode.
- 230 User logged in. Proceed.
- 250 Requested file process completed normally.
- 257 "PATHNAME" created.
- 331 User name okay. Password required.
- 332 Login account required.
- 350 Requested file process awaiting further information.
- 421 Service not available. Closing control connection.
- 425 Unable to establish data connection.
- 426 Connection closed: transfer aborted.
- 450 Requested file action not taken.
- 451 Requested action aborted: processing local error.
- 452 Requested action not taken.
- 500 Syntax error; command not recognized.
- 501 Syntax error in parameters or arguments.
- 502 Command not supported.
- 503 Incorrect command sequence
- 504 Command parameter not supported.
- 530 Not logged in.
- 532 File storage account required.

550 Requested action not taken.

551 Requested action aborted: page type unknown.

552 Requested file processing aborted.

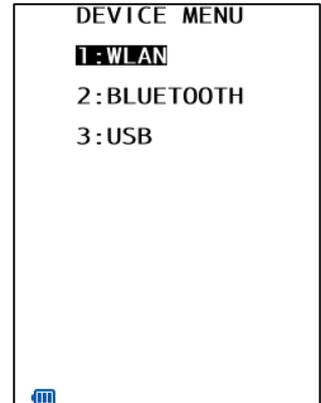
553 Requested action not taken.

4.5.9 Communcation Settings (DEVICE MENU)

Use the following procedure to set up wireless communication.

1. Select "8: DEVICE" at the SYSTEM MENU and then press the **ENT** key.

The DEVICE MENU screen on the right is displayed.



4.5.9.1 WLAN communication settings (supported model: BHT-1336QWB series)

1. Select "WLAN" at the DEVICE MENU and then press the **ENT** key.

The RF MENU screen on the right is displayed.

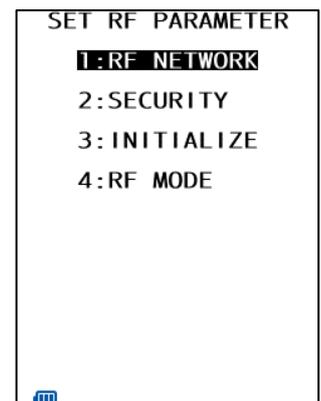
[1: PARAMETER]: Sets up the wireless parameter.

[2: SITE SURVEY]: Sets up the site survey.

[3: VERSION]: Displays the wireless version.

[4: RF MODE]: Sets up the wireless operating mode

Refer to the following section for details of the above menus.



2. Press and hold the **BS/C** key to return to the SYSTEM MENU.

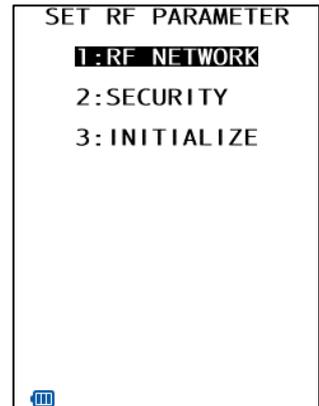
1. Wireless parameter menu (RF MENU)

- 1) Select “1: PARAMETER” at the RF MENU and then press the **ENT** key.

The SET RF PARAMETER screen on the right is displayed.

- [1: RF NETWORK]: Sets up the wireless network.
 [2: SECURITY]: Sets up the wireless security.
 [3: INITIALIZE]: Initialize the wireless parameter.

Refer to the following section for details of the above menus.



- 2) Press and hold the **BS/C** key to return to the RF MENU screen.

◆ Wireless Network Settings Menu

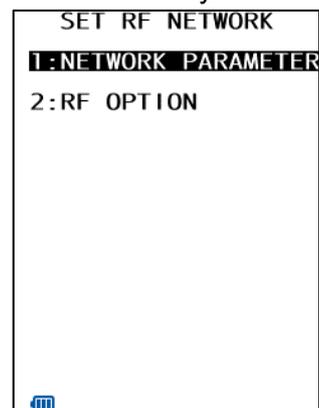
- 1) Select “1: RF NETWORK” at the SET RF PARAMETER menu and then press the **ENT** key.

The SET RF NETWORK screen on the right is displayed.

- [1: NETWORK PARAMETER]: Sets up wireless network parameter.
 [2: RF OPTION]: Sets up wireless network option.

Refer to the following section for details of the above items.

Press and hold the **BS/C** key to return to the SET RF PARAMETER screen.



Wireless Network Parameter Settings

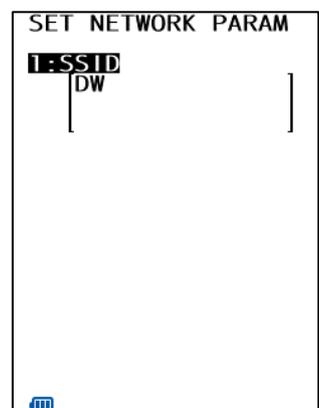
- 1) Select “1: NETWORK PARAMETER” at the SET RF NETWORK menu and then press the **ENT** key.

The screen on the right is displayed.

- [1: SSID]: Displays the current Service Set ID.

Refer to “[5.1 Wireless Communication](#)” for details on the Service Set ID.

- 2) Ensure that [1: SSID] is highlighted and press the **ENT** key.
 The mode changes to entry mode and the cursor are displayed.
 3) Use the numerical keys and dot key to enter the Service Set ID.



Press the **SF** and the **BS/C** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

- 4) Enter the Service Set ID and press the **ENT** key.

The entered Service Set ID is set.

- 5) Press and hold the **BS/C** key to return to the SET RF NETWORK screen.

Wireless Network Option Settings

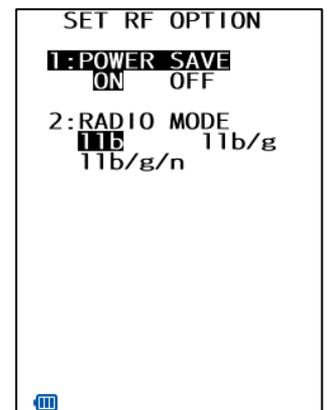
- 1) Select “2: RF OPTION” at the SET RF NETWORK menu and then press the **ENT** key.

The screen on the right is displayed.

The highlighted settings are the current settings.

[1: POWER SAVE]: Sets the power saving mode.

[2: RADIO MODE]: Sets the radio mode.



Refer to “[5.1 Wireless Communication](#)” for details of the above setting items.

- 2) Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5]) to highlight the item to be set.
- 3) Use the cursor keys ([◀] [▶]) to highlight each setting value.
- 4) Press the **ENT** key or **BS/C** key to return to the SET RF NETWORK menu.

◆ Wireless Security Settings

- 1) Select “2: SECURITY” at the SET RF PARAMETER menu and then press the **ENT** key.

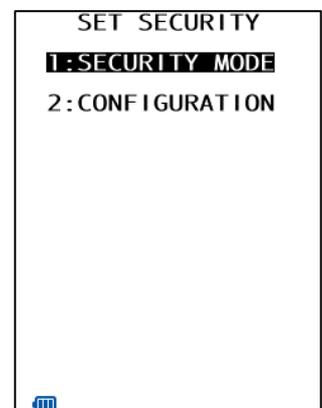
The screen on the right is displayed.

[1: SECURITY MODE]: Sets up the wireless security mode.

[2: CONFIGURATION]: Sets up the wireless security parameters.

Refer to the following section for details of the above items.

Press and hold the **BS/C** key to return to the SET RF PARAMETER screen.



- 2) Press and hold the **BS/C** key to return to the SET RF OPTION screen.

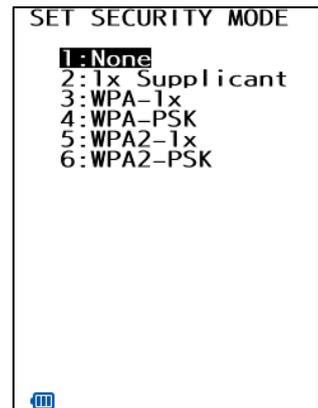
Wireless Security Mode Settings

- 1) Select “1: SECURITY MODE” at the SET SECURITY menu and then press the **ENT** key.

The screen on the right is displayed.

The highlighted setting is the current setting.

- [1: None]: None mode
- [2: 1x Supplicant]: 1x Supplicant mode
- [3: WPA-1x]: WPA 1x mode
- [4: WPA-PSK]: WPA-PSK mode
- [5: WPA2-1x]: WPA2-1x mode
- [6: WPA2-PSK]: WPA2-PSK mode



- 2) To change the settings, use the cursor keys ([▲] [▼]) or numerical keys ([1] [2] [3] [4] [5] [6]) to highlight each setting value.

- 3) Press the **ENT** key or **BS/C** key to return to the SET SECURITY menu.

Wireless Security None Mode

WEP can be used with the Wireless security None mode.

To enable WEP, WEP and WEP KEY settings are required.

The first WEP KEY setting is the encryption key, which can be set from WEP KEY 1 to 4.

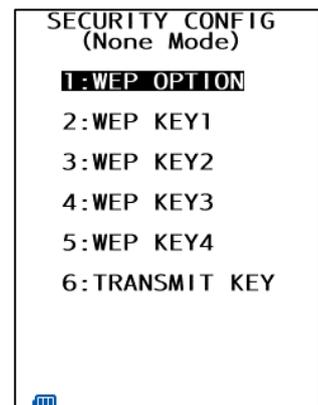
After setting the encryption key, the encryption key used is specified by setting the TRANSMIT KEY.

Refer to [“5.1 Wireless Communication”](#) for details of the WEP KEY and TRANSMIT KEY.

- 1) Select “2: CONFIGURATION” at the SET SECURITY menu and then press the **ENT** key.

The screen on the right is displayed.

- [1: WEP OPTION]: WEP option settings
- [2: WEP KEY1]: WEP KEY 1 settings
- [3: WEP KEY2]: WEP KEY 2 settings
- [4: WEP KEY3]: WEP KEY 3 settings
- [5: WEP KEY4]: WEP KEY 4 settings
- [6: TRANSMIT KEY]: TRANSMIT KEY settings.



Press and hold the **BS/C** key to return to the SET SECURITY menu.

2) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: WEP OPTION], and then press the **ENT** key.

The screen on the right is displayed.

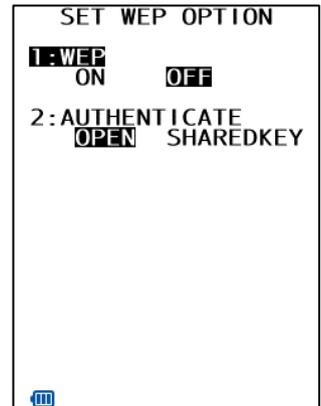
[1: WEP]: Selects whether to enable or disable WEP.

The highlighted setting is the current setting.

[2: AUTHENTICATE]: Selects open system settings or shared key authentication.

Select shared key authentication.

The highlighted setting is the current setting.



3) Press the **ENT** key or **BS/C** key to return to the SECURITY CONFIG menu.

4) Use the cursor keys ([▲] [▼]) or numerical keys ([2] [3] [4] [5]) to highlight a WEP KEY from 1 to 4, and then press the **ENT** key.

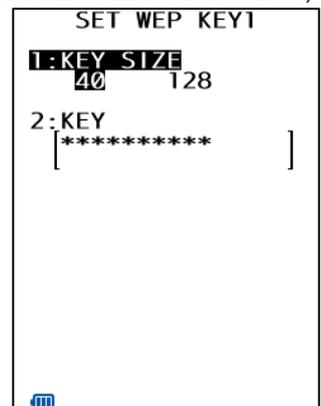
The screen on the right is displayed.

[1: KEY SIZE]: Select 40 (40 bits) or 128 (128 bits).

The highlighted setting is the current setting.

When no encryption key has been set, 40 will be highlighted.

[2: KEY]: The key size "*" is displayed.



5) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: KEY SIZE], and then use the cursor keys ([◀] [▶]) to select either 40 (40 bit) or 128 (128 bit).

Select 40 bit for a 10-digit encryption key.

Select 128 bit for a 26-digit encryption key.

6) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: KEY], and then press the **ENT** key.

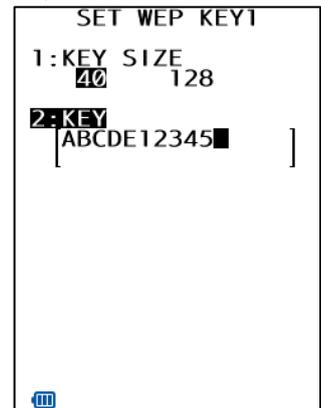
The mode changes to entry mode and the cursor are displayed.

7) Use the numerical keys to enter an encryption key and then press the **ENT** key.

Hexadecimal notation (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F) is used for the encryption key.

Press the **SF** and the **BS/C** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.



The existing key can be overwritten, however, cannot be edited or deleted.

The screen on the right shows an example in which "40 bit" has been set for "WEP KEY1" and the key setting is "ABCDE12345".

8) Press and hold the **BS/C** key to return to the SECURITY CONFIG menu.

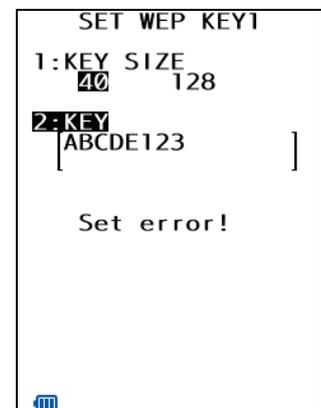
- Point - It is not possible to read a written WEP key, and therefore the WEP key setting must always be stored in a safe location. When not setting a WEP key, the WEP key will be the same as the previous setting.

If an attempt is made to save an incorrect encryption key, and error will occur, and the screen on the right is displayed.

Reset with a correct encryption key.

Incorrect Encryption Key Examples

- The encryption key length is incorrect.
- Characters other than hexadecimal notation (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F) are used.

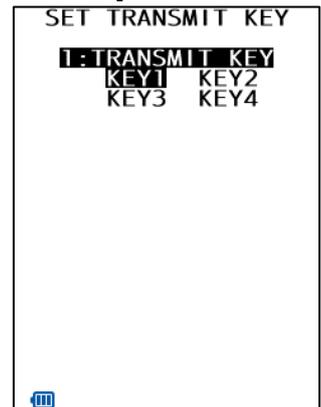


Repeat the above procedure to set the required number of encryption keys for WEP KEY 1 to 4.

Following that, set the transmit key.

9) Use the cursor keys ([▲] [▼]) or numerical key ([6]) to highlight [6: TRANSMIT KEY], and then press the **ENT** key.

The screen on the right is displayed.



10) Use the cursor keys ([◀] [▶]) to highlight the key number to be used.

- Point - Select a key number for which an encryption key has been set.

11) Press the **ENT** key or **BS/C** key.

Returning to the wireless security parameter setting menu for "Non Mode".

12) Press the **ENT** key or **BS/C** key to return to the SET SECURITY menu.

Wireless Security 1x Supplicant Mode

EAP authentication can be used with wireless security 1x Supplicant mode.

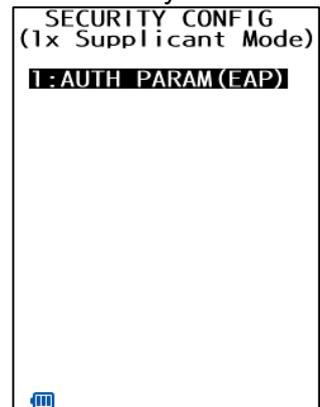
- 1) Select “2: CONFIGURATION” at the SET SECURITY menu and then press the **ENT** key.

The screen on the right is displayed.

[1: AUTH PARAM (EAP)]:

EAP authentication parameter setting

Press and hold the **BS/C** key to return to the SET SECURITY menu.



- 2) Ensure that [1: AUTH PARAM (EAP)] is highlighted and then press the **ENT** key.

The screen on the right is displayed.

[1: EAP TYPE]: Selects PEAP or EAP-TLS.

[2: IDENTITY]: ID

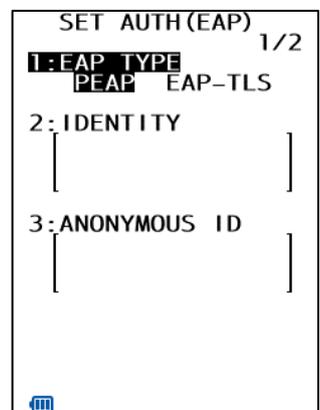
[3: ANONYMOUS ID]: Anonymous ID

[4: PASSWORD]: Password

[5: ROOT CERT]: Root certificate

[6: CLIENT CERT]: Client certificate

[7: TLS VERSION]: TLS version

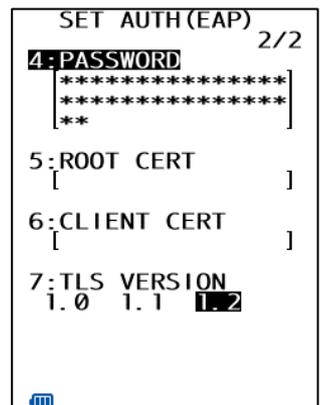


[▲] key / [▼] key

- 3) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: EAP TYPE], and then use the cursor keys ([◀] [▶]) to select PEAP or EAP-TLS.

If PEAP is selected, a root certificate is used.

If EAP-TLS is selected, a root certificate and client certificate are used.



- 4) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: IDENTITY] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

5) Use the numerical keys to enter an ID and press the **ENT** key.

Press the **SF** and the **BS/C** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

6) Use the cursor keys ([▲] [▼]) or numerical key ([3]) to highlight [3: ANONYMOUS ID] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

7) Use the numerical keys to enter an ID and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

8) Use the cursor keys ([▲] [▼]) or numerical key ([4]) to highlight [4: PASSWORD] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

9) Use the numerical keys to enter a password and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

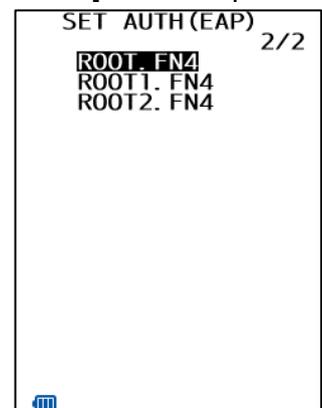
To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

10) Use the cursor keys ([▲] [▼]) or numerical key ([5]) to highlight [5: ROOT CERT] and then press the **ENT** key.

The screen on the right is displayed.

Use the cursor keys ([▲] [▼]) to select a file name.

A "NO FILE EXISTS" message is displayed if no files exist.



11) Use the cursor keys ([▲] [▼]) or numerical key ([6]) to highlight [6: CLIENT CERT] and then press the **ENT** key.

The same screen as that for [5: ROOT CERT] is displayed.

12) Use the cursor keys ([▲] [▼]) to select a file name.

A "NO FILE EXISTS" message is displayed if no files exist.

13) Press and hold the **BS/C** key to return to the SECURITY CONFIG menu.

Wireless Security WPA-1x Mode

EAP authentication and an encryption system can be used with wireless security WPA-1x mode.

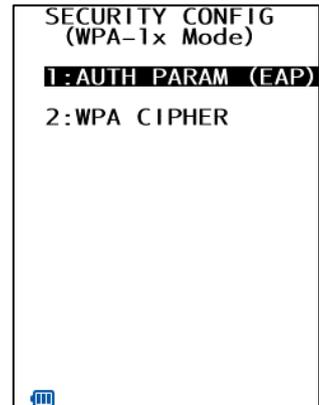
1) Select "2: CONFIGURATION" at the SET SECURITY menu and then press the **ENT** key.

The screen on the right is displayed.

[1: AUTH PARAM (EAP)]: EAP authentication parameter setting.

[2: WPA CIPHER]: Encryption system setting.

Press and hold the **BS/C** key to return to the SET SECURITY menu.



2) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: AUTH PARAM (EAP)] and then press the **ENT** key.

The screen on the right is displayed.

[1: EAP TYPE]: Selects PEAP or EAP-TLS.

[2: IDENTITY]: ID

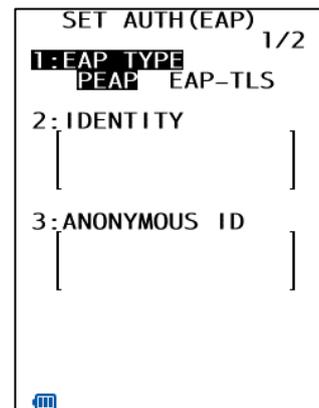
[3: ANONYMOUS ID]: Anonymous ID

[4: PASSWORD]: Password

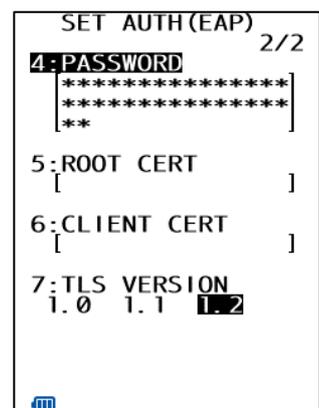
[5: ROOT CERT]: Root certificate

[6: CLIENT CERT]: Client certificate

[7: TLS VERSION]: TLS version



[▲] key / [▼] key



3) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: EAP TYPE], and then use the cursor keys ([◀] [▶]) to select PEAP or EAP-TLS.

If PEAP is selected, a root certificate is used.

If EAP-TLS is selected, a root certificate and client certificate are used.

4) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: IDENTITY] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

5) Use the numerical keys to enter an ID and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

6) Use the cursor keys ([▲] [▼]) or numerical key ([3]) to highlight [3: ANONYMOUS ID] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

7) Use the numerical keys to enter an ID and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

8) Use the cursor keys ([▲] [▼]) or numerical key ([4]) to highlight [4: PASSWORD] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

9) Use the numerical keys to enter a password and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

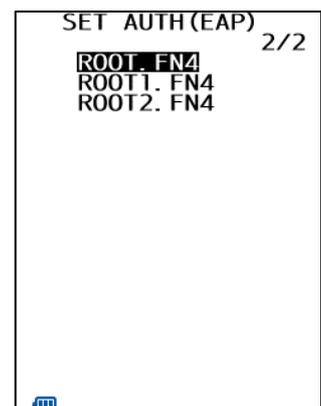
To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

10) Use the cursor keys ([▲] [▼]) or numerical key ([5]) to highlight [5: ROOT CERT] and then press the **ENT** key.

The screen on the right is displayed.

Use the cursor keys ([▲] [▼]) to select a file name.

A "NO FILE EXISTS" message is displayed if no files exist.



11) Use the cursor keys ([▲] [▼]) or numerical key ([6]) to highlight [6: CLIENT CERT] and then press the **ENT** key.

The same screen as that for [5: ROOT CERT] is displayed.

Use the cursor keys ([▲] [▼]) to select a file name.

A "NO FILE EXISTS" message is displayed if no files exist.

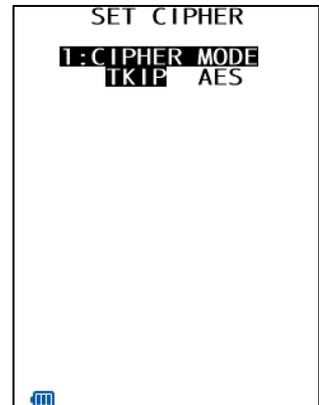
12) Use the cursor keys ([▲] [▼]) or the numeric key ([7]) to highlight [7: TLS VERSION], select the version with the cursor keys ([▲][▼]).

Press and hold the **BS/C** key to return to the SECURITY CONFIG menu.

13) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: WPA CIPHER] and then press the **ENT** key.

The screen on the right is displayed.

[1: CIPHER MODE]: Selects TKIP or AES.



14) Ensure that [1: CIPHER MODE] is highlighted and then select TKIP or AES.

Select TKIP to use TKIP.

Select AES to use AES.

Regardless of which is selected, the connection is made by automatically determining the encryption method set for the access point.

15) Press the **ENT** key or **BS/C** key to return to the SECURITY CONFIG menu.

Wireless Security WPA-PSK Mode

PSK authentication and an encryption system can be used with wireless security WPA-PSK mode.

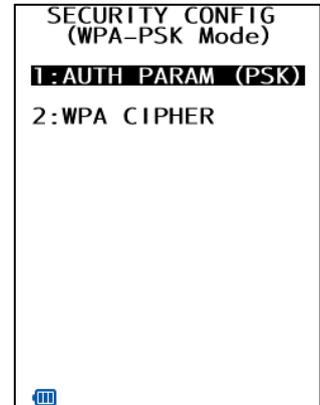
- 1) Select "2: CONFIGURATION" at the SET SECURITY menu and then press the **ENT** key.

The screen on the right is displayed.

[1: AUTH PARAM (PSK)]: PSK authentication parameter setting.

[2: WPA CIPHER]: Encryption system setting.

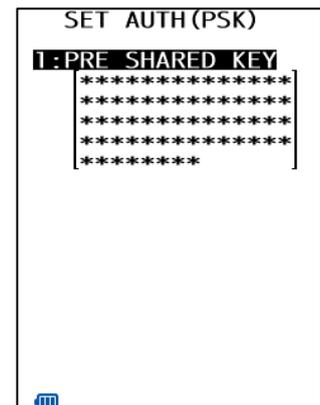
Press and hold the **BS/C** key to return to the SET SECURITY menu.



- 2) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: AUTH PARAM (PSK)] and then press the **ENT** key.

The screen on the right is displayed.

[1: PRE SHARED KEY]: Sets the shared key.



- 3) Ensure that [1: PRE SHARED KEY] is highlighted and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

- 4) Use the numerical keys to enter a shared key and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

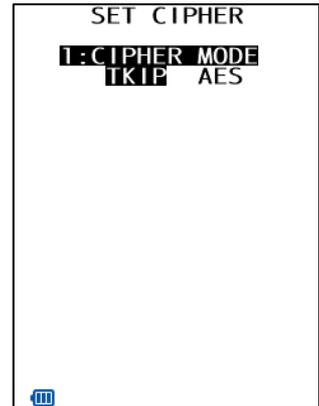
- 5) Press and hold the **BS/C** key to return to the SET RF PARAMETER menu.

6) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: WPA CIPHER] and then press the **ENT** key.

The screen on the right is displayed.

[1: CIPHER MODE]: Selects TKIP or AES.

Regardless of which is selected, the connection is made by automatically determining the encryption method set for the access point.



7) Ensure that [1: CIPHER MODE] is highlighted and then select TKIP or AES.

Select TKIP to use TKIP.

Select AES to use AES.

8) Press the **ENT** key or **BS/C** key to return to the SECURITY CONFIG menu.

Wireless Security WPA2-1x Mode

EAP authentication and an encryption system can be used with wireless security WPA2-1x mode.

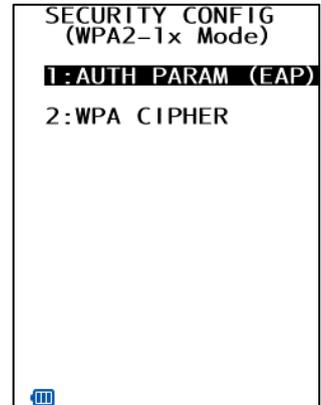
1) Select “2: CONFIGURATION” at the SET SECURITY menu and then press the **ENT** key.

The screen on the right is displayed.

[1: AUTH PARAM (EAP)]: EAP authentication parameter setting.

[2: WPA CIPHER]: Encryption system setting.

Press and hold the **BS/C** key to return to the SET SECURITY menu.



2) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: AUTH PARAM (EAP)] and then press the **ENT** key.

The screen on the right is displayed.

[1: EAP TYPE]: Selects PEAP or EAP-TLS.

[2: IDENTITY]: ID

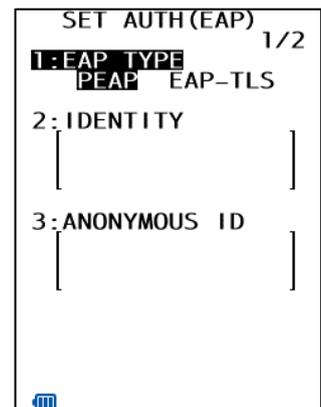
[3: ANONYMOUS ID]: Anonymous ID

[4: PASSWORD]: Password

[5: ROOT CERT]: Root certificate

[6: CLIENT CERT]: Client certificate

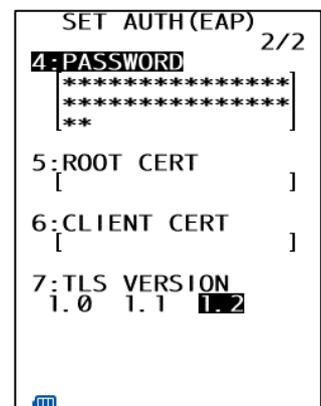
[7: TLS VERSION]: TLS version



3) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: EAP TYPE], and then use the cursor keys ([◀] [▶]) to select PEAP or EAP-TLS.

If PEAP is selected, a root certificate is used.

If EAP-TLS is selected, a root certificate and client certificate are used.



4) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: IDENTITY] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

5) Use the numerical keys to enter an ID and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

6) Use the cursor keys ([▲] [▼]) or numerical key ([3]) to highlight [3: ANONYMOUS ID] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

7) Use the numerical keys to enter an ID and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key, or press the **SF** key and **BS/C** key simultaneously.

8) Use the cursor keys ([▲] [▼]) or numerical key ([4]) to highlight [4: PASSWORD] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

9) Use the numerical keys to enter a password and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

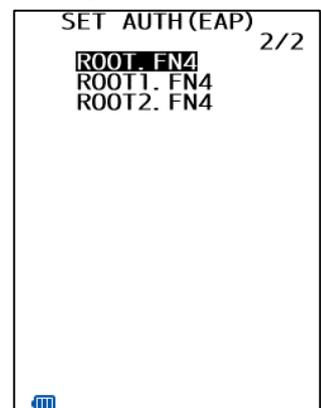
To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key, or press the **SF** key and **BS/C** key simultaneously.

10) Use the cursor keys ([▲] [▼]) or numerical key ([5]) to highlight [5: ROOT CERT] and then press the **ENT** key.

The screen on the right is displayed.

Use the cursor keys ([▲] [▼]) to select a file name.

A "NO FILE EXISTS" message is displayed if no files exist.



11) Use the cursor keys ([▲] [▼]) or numerical key ([6]) to highlight [6: CLIENT CERT] and then press the **ENT** key.

The same screen as that for [5: ROOT CERT] is displayed.

Use the cursor keys ([▲] [▼]) to select a file name.

A "NO FILE EXISTS" message is displayed if no files exist.

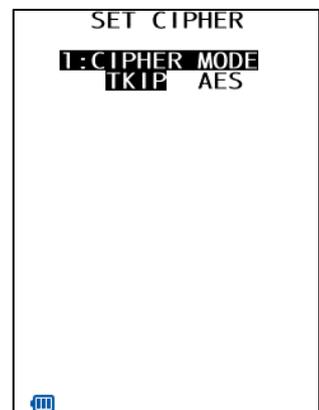
12) Use the cursor keys ([▲] [▼]) or the numeric key ([7]) to highlight [7: TLS VERSION], select the version with the cursor keys ([▲] [▼]).

13) Press and hold the **BS/C** key to return to the SECURITY CONFIG menu.

14) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: WPA CIPHER] and then press the **ENT** key.

The screen on the right is displayed.

[1: CIPHER MODE]: Selects TKIP or AES.



15) Ensure that [1: CIPHER MODE] is highlighted and then select TKIP or AES.

Select TKIP to use TKIP.

Select AES to use AES.

Regardless of which is selected, the connection is made by automatically determining the encryption method set for the access point.

16) Press the **ENT** key or **BS/C** key to return to the SECURITY CONFIG menu.

Wireless Security WPA2-PSK Mode

PSK authentication and an encryption system can be used with wireless security WPA2-PSK mode.

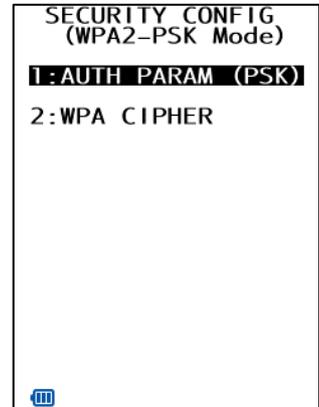
- 1) Select "2: CONFIGURATION" at the SET SECURITY menu and then press the **ENT** key.

The screen on the right is displayed.

[1: AUTH PARAM (PSK)]: PSK authentication parameter setting.

[2: WPA CIPHER]: Encryption system setting.

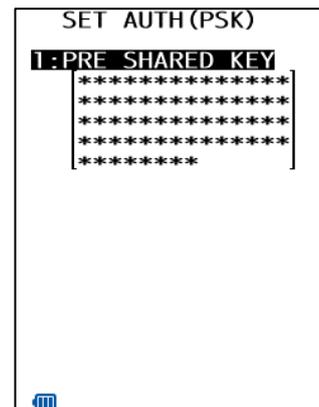
Press and hold the **BS/C** key to return to the SET SECURITY menu.



- 2) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: AUTH PARAM (PSK)] and then press the **ENT** key.

The screen on the right is displayed.

[1: PRE SHARED KEY]: Sets the shared key.



- 3) Ensure that [1: PRE SHARED KEY] is highlighted and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

- 4) Use the numerical keys to enter a shared key and press the **ENT** key.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

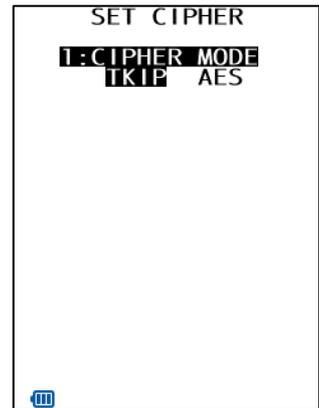
To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

- 5) Press and hold the **BS/C** key to return to the SECURITY CONFIG menu.

6) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: WPA CIPHER] and then press the **ENT** key.

The screen on the right is displayed.

[1: CIPHER MODE]: Selects TKIP or AES.



7) Ensure that [1: CIPHER MODE] is highlighted and then select TKIP or AES.

Select TKIP to use TKIP.

Select AES to use AES.

Regardless of which is selected, the connection is made by automatically determining the encryption method set for the access point.

8) Press the **ENT** key or **BS/C** key to return to the SECURITY CONFIG menu.

◆ Wireless Parameter Initialization

1) Select "3: INITIALIZE" at the SET RF PARAMETER menu and then press the **ENT** key.

The screen on the right is displayed.

To initialize wireless parameters:

Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight

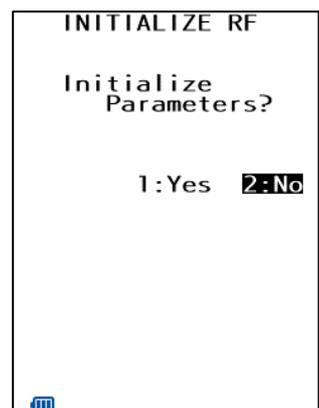
[1: Yes] and then press the **ENT** key.

Wireless parameters are initialized and the screen returns to the SET RF PARAMETER menu.

To cancel:

1) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: No] and then press the **ENT** key.

The screen returns to the SET RF PARAMETER menu.



◆ RF Mode Settings

1) Select "4: RF MODE" in the wireless parameter setting menu and press the [ENT] key.

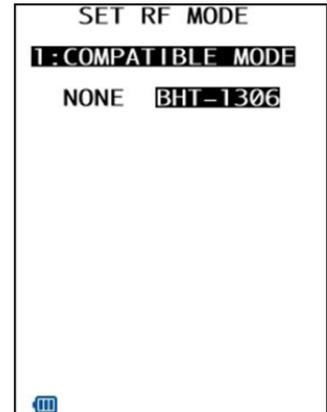
The screen on the right is displayed.

[1:COMPATIBLE MODE]: Sets the display mode for signal strength when connected wirelessly.

NONE : Display in normal mode.

BHT-1306 : Display in BHT-1306 compatible mode.

2) Press the **ENT** key or **BS/C** key to return to the SECURITY CONFIG menu.



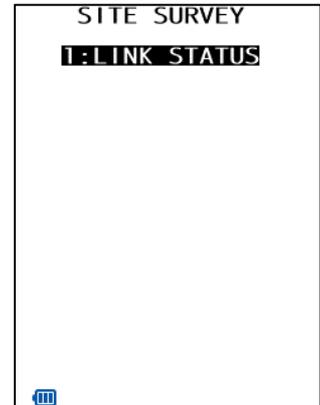
- Point - When set to BHT-1306 compatible mode, the signal strength display method will be the same as the BHT-1306. Either setting will not affect functionality or performance.

2. Site Survey Menu

1) Select "2: SITE SURVEY" at the RF MENU and then press the **ENT** key.

The SITE SURVEY screen on the right is displayed.

Press and hold the **BS/C** key to return to the RF MENU screen.



2) Press the **ENT** key.

The current communication status is displayed in real time.

[ASSOCIATED AP]:

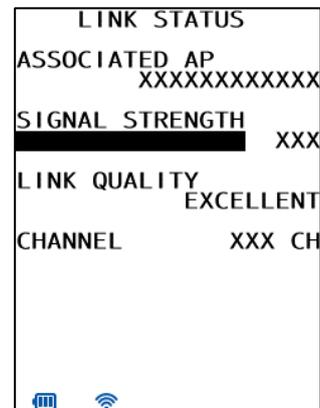
Displays the MAC address of the wireless interface for the associated access point.

[SIGNAL STRENGTH]:

Displays the signal strength of received packets.

[LINK QUALITY]:

Displays the overall communication quality with the access point.



Display	Communication Status
EXCELLENT	<div style="text-align: center;"> </div> Excellent communication link
GOOD	
FAIR	
POOR	Poor communication link
NOT ASSOCIATED	Not associated with an access point

[CHANNEL]:

Displays the current communication channel.

3) Press and hold the **BS/C** key to return to the SITE SURVEY menu.

3. RF Version

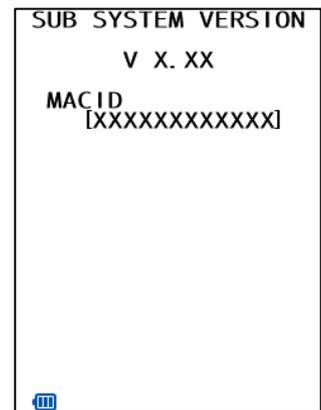
1) Select "3: VERSION" at the RF MENU and then press the **ENT** key.

The screen on the right is displayed after information is acquired.

[V X.XX]: Wireless module firmware version

[MACID]: Wireless module MACID

2) Press and hold the **BS/C** key to return to the RF MENU.



4.5.9.2 Bluetooth Communication Settings (DEVICE MENU)

(supported model: BHT-1336QWB series)

Use the following procedure to set up Bluetooth communication.

1. Select "BLUETOOTH" at the DEVICE MENU and then press the ENT key.

The BLUETOOTH MENU screen on the right is displayed.

[1: INFORMATION]:

Displays Bluetooth interface information.

[2: SET BLUETOOTH]:

Sets up the Bluetooth parameters.

[3: BROWSE DEVICE]:

Displays accessible Bluetooth devices available in the vicinity.

[4: SERIAL PORT]:

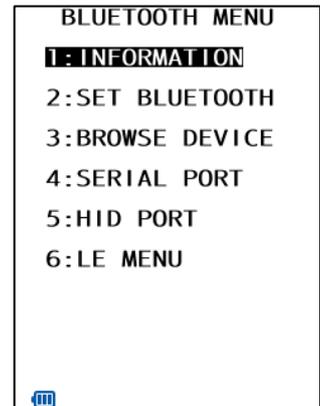
Transfers files via the serial profile.

[5: HID PORT]:

Communicates using HID profile.

[6: LE MENU]:

Displays the Bluetooth® Low Energy menu screen.



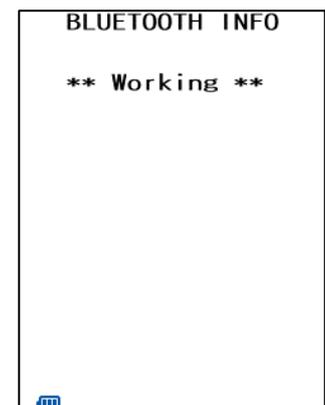
Refer to the following sections for details of the above menus.

2. Press and hold the **BS/C** key to return to the DEVICE MENU.

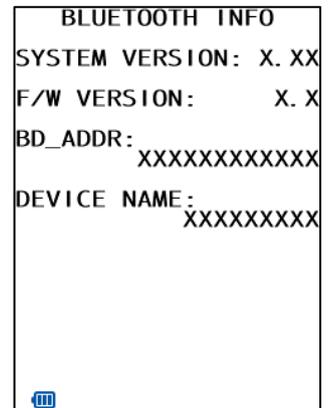
Viewing Bluetooth Information

- 1) Select "1: INFORMATION" at the BLUETOOTH MENU and then press the **ENT** key.

The screen on the right is displayed while the Bluetooth information is being read from the device.



Bluetooth® system version, firmware version, address, and Bluetooth® device name are displayed on the BLUETOOTH INFO screen.



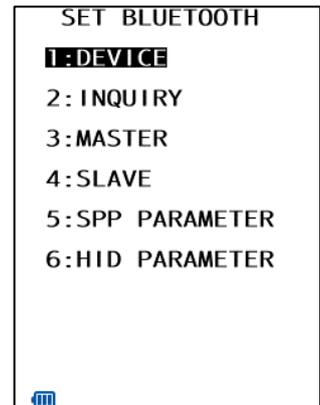
2) Press and hold the **BS/C** key to return to the BLUETOOTH MENU screen.

Setting up the Bluetooth Parameters

- 1) Select “2: SET BLUETOOTH” at the DEVICE MENU and then press the **ENT** key.

The SET BLUETOOTH screen on the right is displayed.

- [1: DEVICE]: Sets up the device.
- [2: INQUIRY]: Sets up the device detection.
- [3: MASTER]: Sets up the master station.
- [4: SLAVE]: Sets up the slave station.
- [5: SPP PARAMETER]: Sets up the protocol options for a transferring files via the serial port profile.
- [6: HID PARAMETER]



Refer to the following sections for each of the above menus.

- 2) Press and hold the **BS/C** key to return to the BLUETOOTH MENU.

◆ Setting up the device name

- 1) Select “1: DEVICE” at the SET BLUETOOTH menu and then press the **ENT** key.

The current setting is displayed.

- [1: DEVICE NAME]: Sets up the Bluetooth® device name.

Press and hold the **BS/C** key to return to the SET BLUETOOTH menu.



- 2) Press the **ENT** key.

Entry mode is activated and the cursor is displayed.

- 3) Use the numeric and period (.) keys to enter the Bluetooth® device name.

The Bluetooth® device name can be up to 16 characters long. The default setting is DENSO-BHT.

To switch the entry mode (between numeric and alphabet entries), press the **SF** key.

Refer to “[5.1 Wireless Communication](#)” for details of the WEP KEY and TRANSMIT KEY.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** and **BS/C** keys simultaneously.

- 4) Press the **ENT** key.

- 5) Press and hold the **BS/C** to return to the SET BLUETOOTH menu.

◆ Setting up the device detection parameters

1) Select “2: INQUIRY” at the SET BLUETOOTH menu and then press the **ENT** key.

The current settings are displayed.

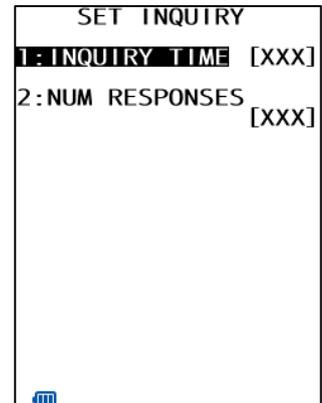
[1: INQUIRY TIME]:

Sets up the duration of device detection in seconds.

[2: NUM RESPONSES]:

Sets up the number of devices to be detected.

Press and hold the **BS/C** key to return to the SET BLUETOOTH menu.



2) Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2]) to select the menu and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

3) Use the numeric keys to enter the desired value.

“INQUIRY TIME”: Valid Range: 0–255, Default: 10 seconds

“NUM RESPONSES”: Valid Range: 0–8, Default: 0

Detects a maximum of 8 devices when “0” is set. Default: 0

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** and **BS/C** keys simultaneously.

4) Press the **ENT** key.

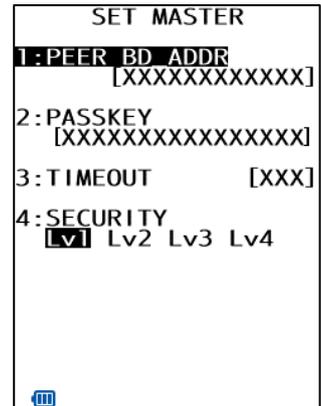
5) Press and hold the **BS/C** key to return to SET BLUETOOTH menu.

◆ Setting up the master station

1) Select “3: MASTER” at the SET BLUETOOTH menu and then press the **ENT** key.

The current settings are displayed.

- [1: PEER BD_ADDR]: Sets up the remote device address of the connection target.
- [2: PASSKEY]: Sets up the Bluetooth® passkey for the master station.
- [3: TIMEOUT]: Sets up the timeout period for connecting to the master station in seconds.
- [4: SECURITY]: Sets up the security mode for the master station.



Press and hold the **BS/C** key to return to the SET BLUETOOTH menu.

2) Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2] [3] [4]) to select the menu and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

To set up the “4: SECURITY”, use the cursor keys ([◀] [▶]) to highlight and set the desired setting.

3) Use the numeric keys to enter the desired value.

“PEER BD ADDR”: 12-digit hexadecimal numbers only

The ENT key is not available until the twelfth digit is entered.

“PASSKEY”: Up to 16 characters

“TIMEOUT”: Valid Range: 1–255, Default: 30 seconds

For the Bluetooth® passkey and the security mode details, refer to “[5.2 Bluetooth® Wireless Communication](#)”.

To switch the entry mode (between numeric and alphabet entries), press the **SF** key.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** and **BS/C** keys simultaneously.

4) Press the **ENT** key.

5) Press and hold the **BS/C** key to return the SET BLUETOOTH menu.

Setting up the serial port profile (SPP) service for the connection target

1) Press numeric key [7] and the **SF** key simultaneously at the SET MASTER menu to display the screen on the right.

[1: SPP SERVICE]: Sets up the serial port service name of the connection destination.

Press and hold the **BS/C** key to return to the SET MASTER menu.



2) Press the **ENT** key.

Entry mode is activated and the cursor is displayed.

3) Use the numeric and period (.) keys to enter the serial port service name of the destination.

Up to 12 characters can be entered. No default setting is defined.

To switch the entry mode (between numeric and alphabet entries), press the **SF** key.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** and **BS/C** keys simultaneously.

4) Press the **ENT** key.

5) Press and hold the **BS/C** key to return the SET MASTER menu.

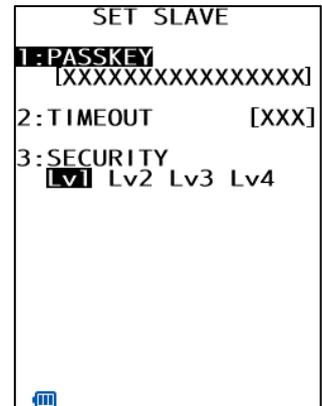
– Point – If the target remote device has two or more serial port services, the link is established with any of them. Specify the name of the serial port service you want to connect. For the service name of the destination remote device, refer to "[Searching for services](#)".

◆ **Setting up the slave station**

1) Select “4: SLAVE” at the SET BLUETOOTH menu and then press the **ENT** key.

The current settings are displayed.

- [1: PASSKEY]: Sets up the Bluetooth® passkey for the slave station.
- [2: TIMEOUT]: Sets up the timeout limit in seconds.
- [3: SECURITY]: Sets up the security mode for the slave station.



Press and hold the **BS/C** key to return to the SET BLUETOOTH menu.

2) Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2] [3]) to select the menu and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

To set up the “3: SECURITY”, use the cursor keys ([◀] [▶]) to highlight and set the desired setting.

3) Use the numeric and period (.) keys to enter the desired value.

- “PASSKEY”: Up to 16 characters
- “TIMEOUT”: Valid Range: 1–255, Default: 255 seconds

For the Bluetooth® passkey and the security mode details, refer to [“5.2 Bluetooth® Wireless Communication”](#).

To switch the entry mode (between numeric and alphabet entries), press the **SF** key. To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** and **BS/C** keys simultaneously.

4) Press the **ENT** key.

5) Press and hold the **BS/C** key to return to the SET BLUETOOTH menu.

◆ Setting up the file transfer protocol options

1) Select “5: SPP PARAMETER” at the SET BLUETOOTH menu and then press the **ENT** key.

The current settings are displayed.

“1: SERIAL No.”:

“ON”: Adds serial numbers to data blocks.

“OFF”: Does not add serial numbers to data blocks.

“2: H. PARITY”:

“ON”: Adds a horizontal parity.

“OFF”: Does not add a horizontal parity.

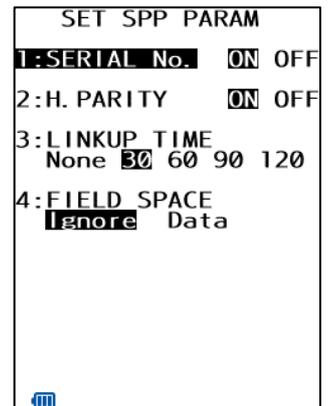
“3: LINKUP TIME”:

Sets up the timeout period (in seconds) for the data link establishment.

“4: FIELD SPACE”:

“Ignore”: Ignores the trailing spaces in data fields.

“Data”: Treats the trailing spaces as data.



2) Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2] [3] [4]) to select the desired menu.

3) Press the cursor keys ([◀] [▶]) to highlight and set the desired setting.

4) Press and hold the **ENT** key or **BS/C** key for the settings value to be valid and then return to the Bluetooth® parameter setting menu.

– Point – The “SERIAL No” and the “H. PARITY” settings are ignored when the BHT-Ir protocol or the Ymodem protocol is selected as the communication protocol.

◆ Setting HID settings

1) Select “6: HID PARAMETER” at the Bluetooth® parameter setting menu and then press the **ENT** key.

The screen on the right is displayed.

“1: TARGET DEVICE.”: Select the device to be connected.

2) Select the device with the cursor keys ([◀] [▶]) and press the **ENT** key.

3) Press and hold the **ENT** key or **BS/C** key for the settings value to be valid and then return to the Bluetooth® parameter setting menu.

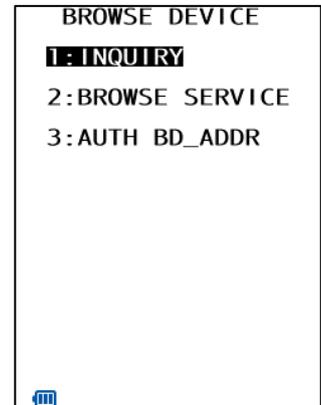


3. Detecting remote devices

- 1) Select "3: BROWSE DEVICE" at the BLUETOOTH MENU and then press the **ENT** key.

The screen on the right is displayed.

- | | |
|----------------------|---|
| [1: INQUIRY]: | Sets up the device detection. |
| [2: BROWSE SERVICE]: | Searches the Bluetooth services. |
| [3: AUTH BD_ADDR]: | Displays a list of authenticated remote device addresses. |



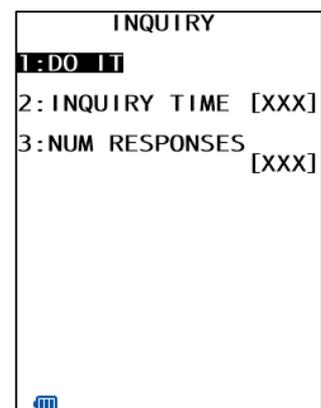
Refer to the following sections for each of the above menus.
Press and hold the **BS/C** key to return to the BLUETOOTH MENU.

◆ Detecting devices

- 1) Select "1: INQUIRY" at the BROWSE DEVICE menu and then press the **ENT** key.

The screen on the right is displayed.

- | | |
|---------------------|--|
| [1: DO IT]: | Starts device detection. |
| [2: INQUIRY TIME]: | Sets up the device inquiry time. |
| [3: NUM RESPONSES]: | Sets up the number of devices to detect. |



Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.

- 2) Use the cursor keys ([▲] [▼]) or numeric key ([2]) to highlight [2: INQUIRY TIME] and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

- 3) Use the numeric keys to enter the desired value.

Set up the device inquiry time to detect devices.

The device inquiry time is used only for the device detection ([1: DO IT] menu).

Valid Range: 0 -255, Default: 10 seconds

Note that the setting specified here will not be saved.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** or press the **SF** and **BS/C** keys simultaneously.

- 4) Press the **ENT** key.

5) Use the cursor keys ([▲] [▼]) or numeric key ([3]) to highlight [3: NUM RESPONSES] and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

6) Use the numeric keys to enter the desired value.

Set up the number of devices to detect.

This number is used only for the device detection ([1: DO IT] menu).

Valid Range: 0 – 8, Default: 0.

Detects a maximum of 8 devices when “0” is set.

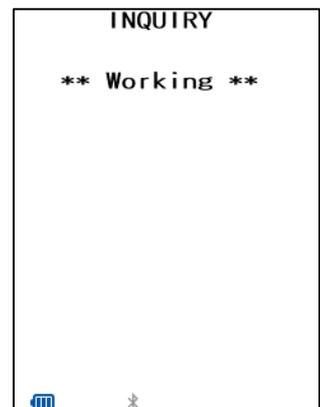
Note that the setting specified here will not be saved.

To delete a single character, press and hold the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** and **BS/C** keys simultaneously.

7) Press the **ENT** key.

8) Use the cursor keys ([▲] [▼]) or numeric key ([1]) to highlight [1: DO IT] and then press the **ENT** key.

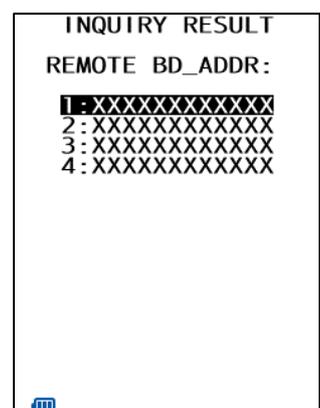
The screen on the right is displayed and the device detection is started.



The device inquiry ends and the screen on the right is displayed when;

- The specified number of devices has been found.
- The specified device inquiry time has elapsed.
- The **BS/C** key has been pressed on the screen while detecting devices.

Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.



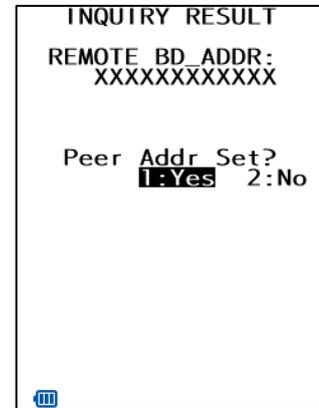
To set the detected device as a destination remote device address when connecting the master station, use the cursor keys ([▲] [▼]) or numeric keys to select the desired address and then press the **ENT** key.

The confirmation screen on the right is displayed.

To set the selected address as a destination remote device address,

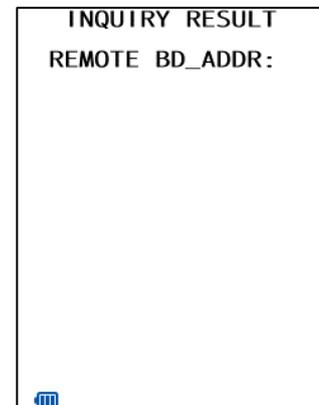
select "1: Yes" and press the **ENT** key. The address is set and the screen returns to the remote device detection menu.

Select "2: No" and press the **ENT** key to return to the remote device detection menu.



If the detected device does not exist, the screen on the right is displayed.

Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.



◆ **Searching for services**

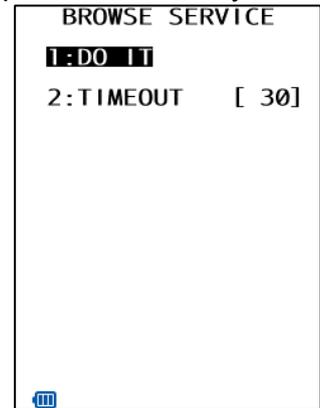
1) Select “2: BROWSE SERVICE” at the BROWSE DEVICE menu and then press the **ENT** key.

The screen on the right is displayed.

[1: DO IT]: Starts service inquiry.

[2: TIMEOUT]: Sets up the services inquiry time.

Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.



2) Use the cursor keys ([▲] [▼]) or numeric key ([2]) to highlight [2: TIMEOUT] and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

3) Use the numeric keys to enter the desired value.

Set up the service inquiry time to search services.

The service inquiry time is used only for the service search ([1: DO IT] menu).

Valid Range: 1–255, Default: 30 seconds

Note that the setting specified here will not be saved.

To delete a single character, press and hold the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** and **BS/C** keys simultaneously.

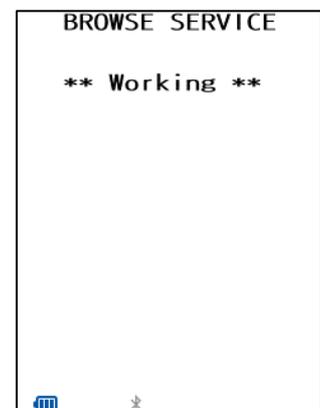
4) Press the **ENT** key.

5) Use the cursor keys ([▲] [▼]) or numeric key ([1]) to highlight [1: DO IT] and then press the **ENT** key.

The screen on the right is displayed.

The specified destination remote device is connected, and then the services provided by the destination remote device are searched.

Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.



When the service inquiry is completed or the service inquiry time has elapsed, the Bluetooth® device address of the destination remote device and the provided service names are displayed as shown on the screen on the right.

Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.

```
BROWSE SERVICE
REMOTE BD_ADDR:
XXXXXXXXXXXXX
+XXXXXXXXXXXXXXXXX
+XXXXXXXXXXXXXXXXX
+XXXXXXXXXXXXXXXXX
```



If the service inquiry fails, the screen on the right is displayed. Check the following and retry the service inquiry.

- The destination remote devices are in the vicinity.
- The destination remote devices are ready for use.
- The Bluetooth® passkey is correctly set.
- The sufficiently long timeout period is set.

Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.

```
BROWSE SERVICE
*****
* CONNECT ERROR *
*****
```

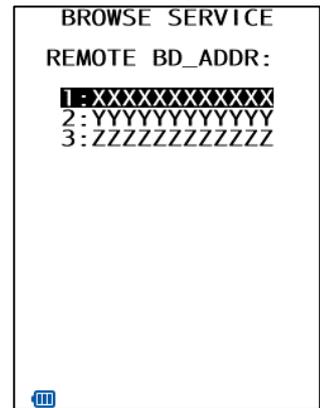


◆ Displaying the authenticated remote device addresses

1) Select “3: AUTH BD_ADDR” at the BROWSE DEVICE menu and then press the **ENT** key.

A list of the authorized remote device addresses is displayed.
A maximum of three authorized remote device addresses is displayed.

```
BROWSE SERVICE
REMOTE BD_ADDR:
1:XXXXXXXXXXXXXX
2:YYYYYYYYYYYYYY
3:ZZZZZZZZZZZZZ
```



Press and hold the **BS/C** key to return to the BROWSE DEVICE menu.

To delete the authorized remote device address, use the cursor keys ([▲] [▼]) or numeric keys to select the desired address and then press the **ENT** key.

The screen on the right is displayed.

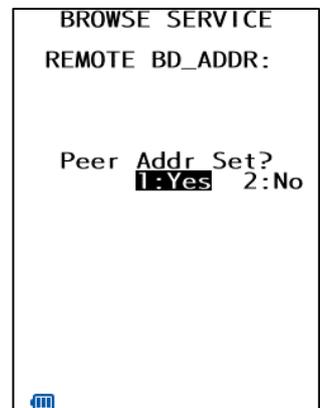
To delete the selected address, select “1: Yes” and then press the **ENT** key.

To cancel deletion, select “2: No” and then press the **ENT** key.

The screen returns to the BROWSE DEVICE menu.

```
BROWSE SERVICE
REMOTE BD_ADDR:

Peer Addr Set?
1:Yes 2:No
```



– Point – Deleting the address may cause connection problems with the link level security to the remote device that has the deleted address. In this case, reconnect to the remote device with the service level security.

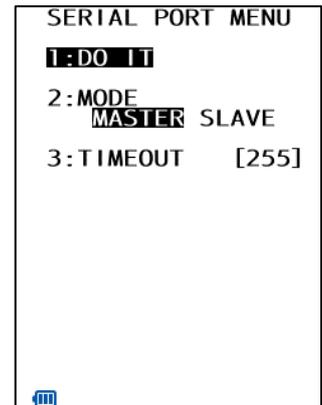
4. File transfer with serial port profile

- 1) Select "4: SERIAL PORT" at the BLUETOOTH MENU and then press the **ENT** key.

The screen on the right is displayed.

- [1: DO IT]: Connects via the serial port profile for transferring files.
[2: MODE]: Sets up the connection mode.
[3: TIMEOUT]: Sets up the connection timeout period.

Press and hold the **BS/C** key to return to the BLUETOOTH MENU.



- 2) Use the cursor keys ([▲] [▼]) or numeric key ([2]) to select the [2: MODE].

- 3) Use the cursor keys ([◀] [▶]) to highlight and set the desired setting.

Set up the connection mode.

The connection mode is used only for transferring files ([1: DO IT] menu).

Note that the setting specified here will not be saved.

- 4) Use the cursor keys ([▲] [▼]) or numeric key ([3]) to highlight [3: TIMEOUT] and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

- 5) Use the numeric keys to enter the desired value.

Set up the timeout period.

The timeout period is used only for transferring files ([1: DO IT] menu).

Valid Range: 1–255, Default: 255 seconds.

Note that the setting specified here will not be saved.

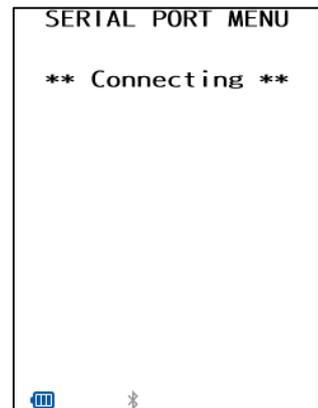
To delete a single character, press and hold the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the SF and **BS/C** keys simultaneously.

- 6) Press the **ENT** key.

7) Use the cursor keys ([▲] [▼]) or numeric key ([1]) to highlight [1: DO IT] and then press the **ENT** key.

A serial port connection is started.

Press and hold the **BS/C** key to return to the SERIAL PORT MENU.



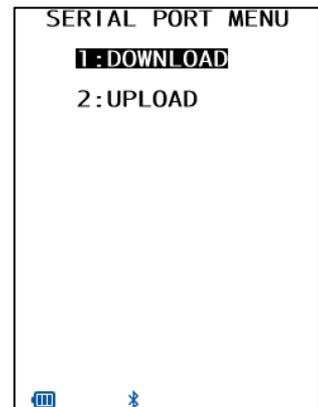
When the connection is established, the screen on the right is displayed.

[1: DOWNLOAD]: Transfers files from the host computer to the BHT. Downloading between the BHTs is also possible.

See "[4.5.3 Downloading Files \(DOWNLOAD Menu\)](#)" for details.

[2: UPLOAD]: Transfers files from the BHT to the host computer. Uploading between the BHTs is also possible.

See "[4.5.4 Uploading Files \(UPLOAD Menu\)](#)" for details.



Use the cursor keys ([▲] [▼]) or numeric keys ([1] [2]) to select the desired menu and then press the **ENT** key.

– Point – The protocols (Ymodem protocol, BHT protocol, or BHT-Ir protocol) used for the file transfer comply with the communication protocol setting specified in "[4.5.5.5 Setting the communication environment](#)". The protocol option complies with the option specified in "[2] BLUETOOTH MENU (RF MENU)" – "File transfer protocol option setting".

If the serial port connection fails, the screen on the right is displayed.

Check the followings and retry the serial port connection.

- The destination remote devices are in the vicinity.
- The destination remote devices are ready for use.
- The destination remote devices support the serial port profile.
- The Bluetooth® passkey is correctly set.
- The sufficiently long timeout period is set.



Press and hold the **BS/C** key to return to the SERIAL PORT menu.

◆ Downloading File

1) Select "1: DOWNLOAD" at the SERIAL PORT menu and then press the **ENT** key.

The screen on the right is displayed.

[1: FILE]:

Select to download the specified files.

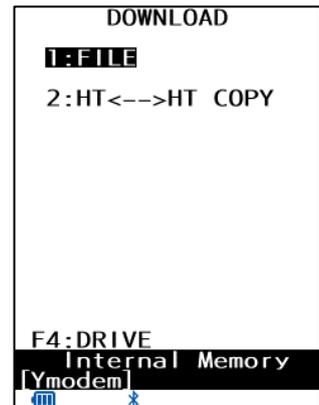
[2: HT<-->HT COPY]:

Select this option when downloading files from another BHT.

[F4: DRIVE]:

Select the drive from which to download the file.

Each press of the **F4** key toggles between Internal Memory (BHT internal memory) and SD Memory (microSD).



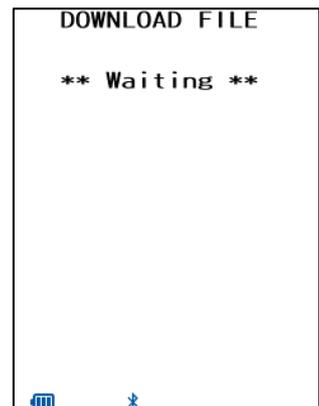
Press and hold the **BS/C** key to return to the DOWNLOAD/UPLOAD MENU.

2) Select "1: FILE" or "2:HT<-->HT COPY" and press **ENT** key.

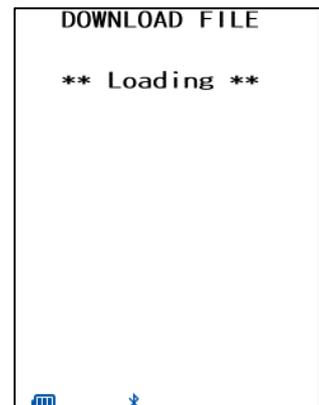
The screen shown at right will appear, waiting for the file to be downloaded.

The screen shown at right is displayed when "1: FILE" is selected.

When "2:HT<-->HT COPY" is selected, (HT<-->HT) is displayed in the center of the second line of the screen.



3) The screen on the right is displayed and file downloading is commenced.



4) The screen on the right is displayed during downloading.

The screen on the right is displayed indicating the file name and the number of received records/the total number of records is displayed (unit: KB).

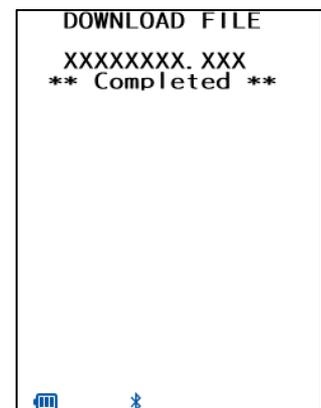
Press the **BS/C** key to abort the download process and return to the DOWNLOAD menu.



5) When downloading is complete, the Buzzer sounds once and the screen on the right is displayed.

When the number of received records equals the total number of records, downloading is complete.

With this screen displayed on the BHT, downloading another new file from the host computer allows the BHT to begin receiving.



When “2:HT<-->HT COPY” is selected, the above operation is repeated until all files are downloaded.

When the error message is displayed during downloading, refer to “[Chapter 7 Error Messages](#)”.

◆ Uploading File

1) Select “2: UPLOAD” at the SERIAL PORT menu and then press the **ENT** key.

The screen on the right is displayed.

[1: ONE FILE]:

Select to download the specified files.

[2: ALL FILES]:

Select to upload all files except font files.

[3: HT<-->HT COPY]:

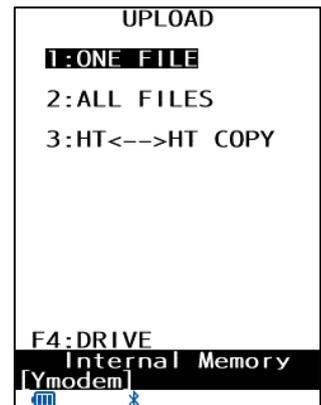
Select this option when downloading files from another BHT.

For more information, referring to Copying Files Between Two BHTs.

[F4: DRIVE]:

Select the drive from which to download the file.

Each press of the **F4** key toggles between Internal Memory (BHT internal memory) and SD Memory (microSD).

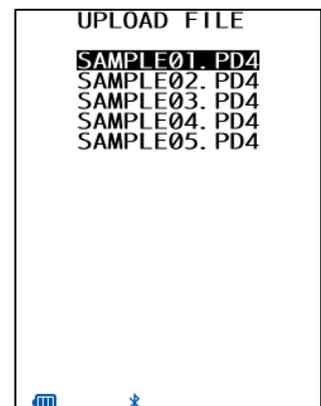


Press and hold the **BS/C** key to return to the DOWNLOAD/UPLOAD menu.

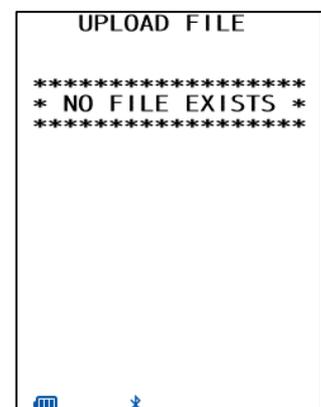
2) Select “1: ONE FILE”, “2: ALL FILES” or “3: HT<-->HT COPY” and press **ENT** key.

When “1: ONE FILE” is selected, the screen shown on the right will be displayed. Select the file to be uploaded and press the **ENT** key and continue to step 3.

When “2: ALL FILE” or “3: HT<-->HT COPY” is selected, continue to step (3).



When there are no files available for upload to the user area, the screen shown on the right will be displayed. Press and hold the **BS/C** key to return to the DOWNLOAD/UPLOAD menu.

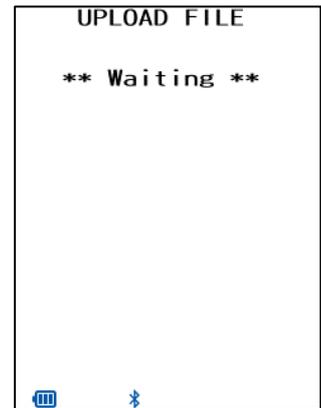


3) The screen on the right indicating that the BHT is waiting for the file to be uploaded is displayed.

The screen on the right is displayed only when “1: FILE” is selected.

If “2: ALL FILES” is selected, “ALL” is displayed in the center of the second row of the screen.

If “3: HT<-->HT COPY” is selected, “HT<-->HT” is displayed in the center of the second row of the screen.



4) The screen on the right is displayed during uploading.



5) The screen on the right is displayed and file uploading is commenced.

The screen on the right is displayed indicating the file name and the number of sent records/the total number of records is displayed (unit: KB).

Press the **BS/C** key to abort the download process and return to the DOWNLOAD/UPLOAD menu.

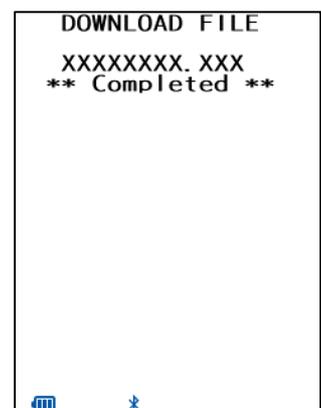


6) When uploading is complete, the Buzzer sounds once and the screen on the right is displayed.

When the number of sent records equals the total number of records, uploading is complete.

Press the **BS/C** key to abort the download process and return to the DOWNLOAD/UPLOAD menu.

When “2: ALL FILES” or “3: HT<-->HT COPY” is selected, the above operation is repeated until all files are uploaded.



When the error message is displayed during downloading, refer to "[Chapter 7 Error Messages](#)".

◆ Copying Files between two BHTs

Copy "all files except font files," "configuration data," and "date/time" stored in the user area of a BHT to another BHT. When copying files between two BHTs, please follow the procedure below.

1) Set "FIELD SPACE" (space at the end of the field) to "Ignore" (ignore) in "Communication Protocol Options" for the two BHTs.

The default is set to "Ignore" (ignore). To change this setting, refer to the file protocol settings.

2) Connect the two BHTs using the serial communication menu (set to MASTER and SLAVE, respectively).

3) For the BHT on the download side, select "1DOWNLOAD" -> "2:HT<->HT COPY" and press the **ENT** key to put the BHT in the download standby mode.

4) For the BHT on the upload side, select "2: UPLOAD" -> "3:HT<-->HT COPY" and press the **ENT** key to wait for uploading.

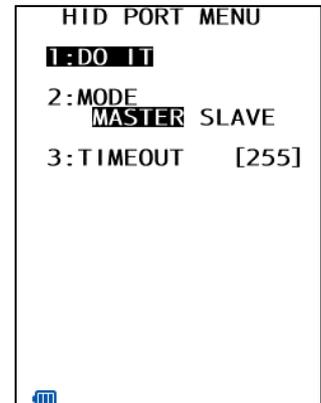
5) When the two BHTs are ready, file copying is executed.

5. HID communication

1) Select "5: HID PORT" at the BLUETOOTH MENU and then press the **ENT** key. The screen on the right is displayed.

- [1: DO IT]: Connects via the serial port profile for transferring files.
- [2: MODE]: Sets up the connection mode.
- [3: TIMEOUT]: Sets up the connection timeout period.

Press and hold the **BS/C** key to return to the BLUETOOTH MENU.



2) Use the cursor keys ([▲] [▼]) or numeric key ([2]) to highlight "2: MODE."

3) Use the cursor keys ([◀] [▶]) to highlight the settings value.

- [1: Set the connection mode to be used temporarily when connecting with [1: DO IT]. Note that the setting specified here will not be saved.

4) Use the cursor keys ([▲] and [▼]) or numeric key ([3]) to highlight [3: TIMEOUT] and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

5) Use the numeric keys to enter the desired value.

- [1: Set the connection timeout period (in seconds) to be used temporarily when connecting with [1: DO IT].

The setting range is 1-255 (seconds). The default is 255 seconds.

Note that the setting specified here will not be saved.

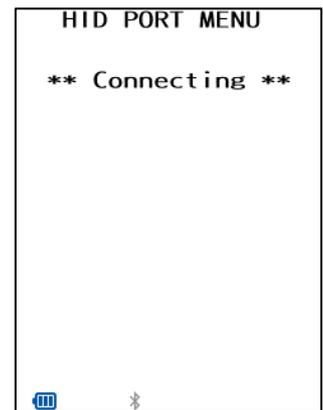
To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** or press the **SF** and **BS/C** keys simultaneously.

6) Press the **ENT** key.

7) Use the cursor keys ([▲] and [▼]) or numeric key ([1]) to highlight [1: DO IT] and then press the **ENT** key.

A HID connection starts.

Press and hold the **BS/C** key to return to the HID communication menu.



When the connection is complete, the screen on the right is displayed.

Press the trigger key on this screen and read a barcode. The read data screen appears and the data will be transferred to the connected device.

Pressing a key displays the key data and transmits the data to the connected device.

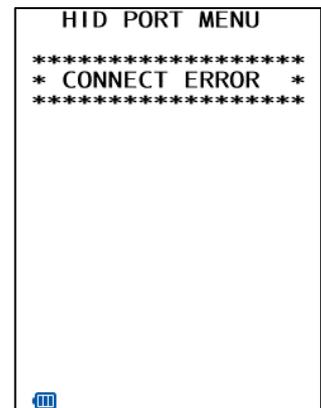


Press and hold the **BS/C** key to return to the HID communication menu.

If the HID connection fails, the screen on the right appears.

Check the following and try again.

- The destination remote devices are in the vicinity.
- The destination remote devices are ready for use.
- The destination remote devices support HID profiles.
- The sufficiently long timeout period is set.



6. Bluetooth® Low Energy menu

1) Select "6: LE MENU" at the BLUETOOTH MENU and then press the **ENT** key.

The Bluetooth® Low Energy menu is displayed.

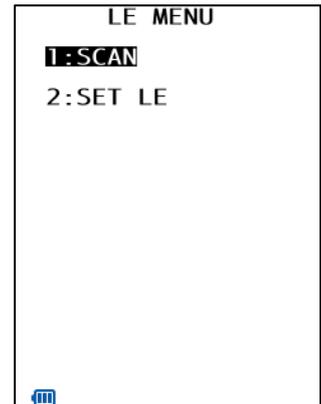
[1: SCAN]:

Moves to the Bluetooth® Low Energy device detection menu.

[2: SET LE]:

Moves to the Bluetooth® Low Energy setting menu.

Refer to the following for details of the above items.



2) Press and hold the **BS/C** key to return to the BLUETOOTH MENU.

◆ **Bluetooth® Low Energy device detection**

1) Select "1: SCAN" at the Bluetooth® Low Energy menu and then press the **ENT** key.

The screen on the right is displayed.

[1:DO IT]:

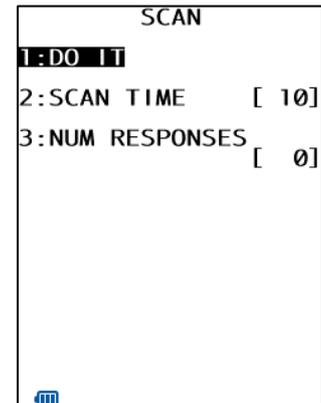
Starts Bluetooth® Low Energy device detection.

[2: SCAN TIME]:

Sets the Bluetooth® Low Energy device inquiry time.

[3:NUM RESPONSES]:

Sets the number of Bluetooth® Low Energy devices to be detected.



Press and hold the **BS/C** key to return to the Bluetooth® Low Energy menu.

2) Use the cursor keys ([▲] and [▼]) or numeric key ([2]) to highlight [2: SCAN TIME] and then press the **ENT** key.

Entry mode is activated and the cursor is displayed.

3) Use the numeric keys to enter the desired value.

[1: Set the device inquiry time (in seconds) to be used temporarily when executing Bluetooth® Low Energy device detection with [1: DO IT].

The setting range is 0-255 (seconds). The default is 10 seconds.

Note that the setting specified here will not be saved.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the BS/C or press the SF and **BS/C** keys simultaneously.

4) Press the **ENT** key.

5) Use the cursor keys ([▲] [▼]) or numeric key ([3]) to highlight [3: NUM RESPONSES] and then press the **ENT** key.

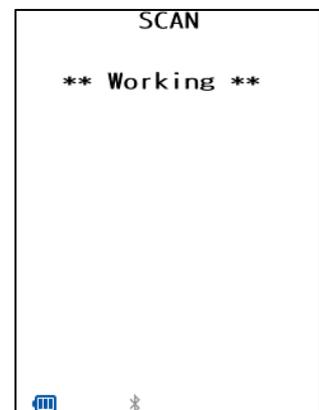
6) Use the numeric keys to enter the desired value.

[1: Set the number of devices to detect to be used temporarily when executing device de-
tection with [1: DO IT].

7) Press the **ENT** key.

8) Use the cursor keys ([▲] and [▼]) or numeric key ([1]) to highlight [1: DO IT] and then press the **ENT** key.

The screen on the right is displayed and Bluetooth® Low Energy device detection starts.



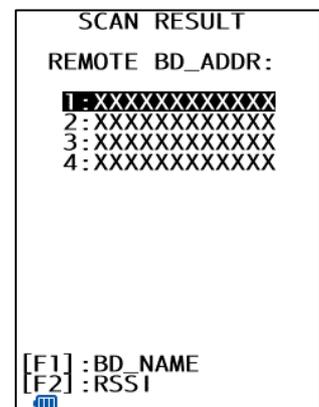
Bluetooth® Low Energy device detection ends and the screen on the right is displayed when;

- The specified number of devices has been found.
- The specified device inquiry time has elapsed.

The **BS/C** key has been pressed on the screen while detecting devices.

Press and hold the **BS/C** key to return to the Bluetooth® Low Energy device detection menu.

To set the detected device as a destination remote device address when connecting the master station, use the cursor keys ([▲] [▼]) to select the desired address and then press the **ENT** key.



The confirmation screen on the right is displayed.

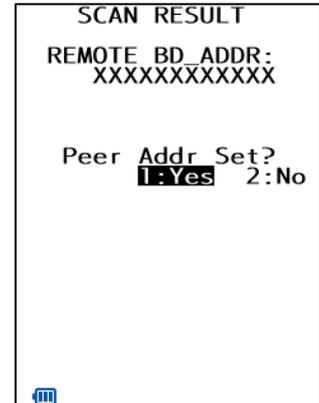
To set the selected address as a destination remote device address, select "1: Yes" and press the **ENT** key. Set the address and return to the Bluetooth® Low Energy menu.

Select "2: No" and press the **ENT** key to return to the Bluetooth® Low Energy menu.

The confirmation screen on the right is displayed.

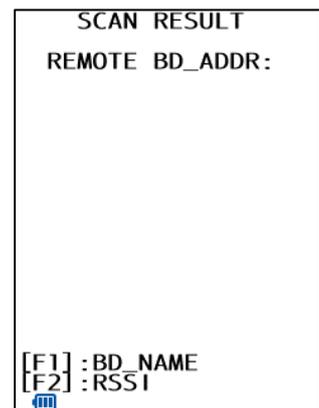
To set the selected address as a destination remote device address, select "1: Yes" and press the **ENT** key. Set the address and return to the Bluetooth® Low Energy menu.

Select "2: No" and press the **ENT** key to return to the Bluetooth® Low Energy menu.



If the detected device does not exist, the screen on the right is displayed.

Press and hold the **BS/C** key to return to the Bluetooth® Low Energy menu.



9) Use the **F1** or **F2** key to switch the Bluetooth® Low Energy device information display.

When device detection completes, the screen on the right is displayed.

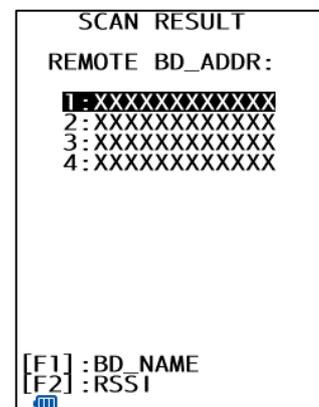
Press the **F1** or **F2** key on the device address display screen, the Bluetooth® Low Energy device information switches.

[F1]:BD_NAME

Switches to the device name.

[F2]: RSSI

Switches to RSSI.



Press the **F1** or **F2** key on the device name display screen, the Bluetooth® Low Energy device information switches.

If the device name cannot be obtained, N/A is displayed.

[F1]: RSSI

Switches to the RSSI display screen.

[F2]: BD ADDR

Switches to the device address display screen.

```

SCAN RESULT
REMOTE BD_ADDR:
1:N/A
2:N/A
3:XXXXXXXXXXXX
4:XXXXXXXXXXXX

[F1] :RSSI
[F2] :BD_ADDR

```

Press the **F1** or **F2** key on the RSSI display screen, the Bluetooth® Low Energy device information switches.

On the RSSI display screen, the RSSI values and the distance to the Bluetooth® Low Energy device (close, near or far) are displayed.

[F1]: BD ADDR

Switches to the device address display screen.

[F2]: BD NAME

Switches to the device name display screen.

```

SCAN RESULT
REMOTE BD_ADDR:
1:-XXdBm [near]
2:-XXdBm [close]
3:-XXdBm [near]
4:-XXdBm [near]

[F1] :BD_ADDR
[F2] :BD_NAME

```

- Point - The distance to the Bluetooth® Low Energy device may not match the actual distance, depending on your environment. Please use it as a guide.

◆ Bluetooth® Low Energy parameter setting

1) Select "2: SET LE" at the Bluetooth® Low Energy menu and then press the **ENT** key.

2) Select "1: SCAN" and press the **ENT** key.

The current setting of each item is displayed as the Bluetooth® Low Energy device detection parameters.

[1: SCAN TIME]:

Sets the Bluetooth® Low Energy device detection time (in seconds).

[2: NUM RESPONSES]:

Sets the number of Bluetooth® Low Energy devices to be detected.

```

SET SCAN
1:SCAN TIME [ 10]
2:NUM RESPONSES [ 0]

```

Press and hold the **BS/C** key to return to the Bluetooth® Low Energy menu.

3) Use the cursor keys ([▲] and [▼]) or numeric keys ([1] [2]) to highlight the item to be set and then press the **ENT** key.

4) Use the numeric keys to enter the desired value.

[1: The setting range of "1: SCAN TIME" is 0-255 seconds. The default is 10 seconds.

[2: The setting range of "2: NUM RESPONSES" is 0-32. When set to 0, 32 devices are detected at maximum.

The default is 0.

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** or press the **SF** and **BS/C** keys simultaneously.

5) Press the **ENT** key.

6) Press and hold the **BS/C** key for the settings value to be valid and then return to the Bluetooth® Low Energy parameter setting menu.

7) Press and hold the **BS/C** key to return to the Bluetooth® Low Energy menu.

4.5.9.3 USB Communication Settings

Use the following procedure to set up USB communication.

Setting up the USB Parameters

1. Select “3: USB” at the DEVICE MENU and then press the **ENT** key.

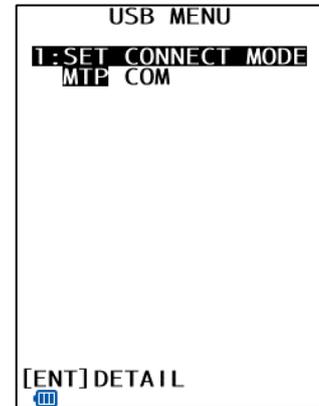
The USB MENU screen on the right is displayed.

2. Use the cursor keys ([▲] [▼]) to select the menu and then press the **ENT** key.

Press and hold the **BS/C** key to return to the DEVICE MENU.

“1: SET CONNECT MODE”:

Sets up the USB connection mode.



The highlighted setting will be the current setting.

Use the cursor keys ([◀] [▶]) to change the setting, and then press the **ENT** key.

“MTP”: Connects in the MTP mode.

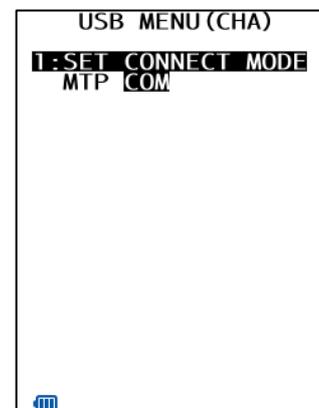
“COM”: Connects in the COM mode.

3. Press and hold the **BS/C** key to return to the DEVICE MENU.

– Point – Refer to the following section for the MTP mode.

Refer to [“4.5.5.5 Setting the communication environment”](#) for the COM mode.

For the Communication Unit (CU) USB Connection mode, hold down the **SF** key at the USB MENU above and press [1] key.



1. Setting up the MTP Parameters

1) Select “MTP” at the USB MENU and then press the **ENT** key.

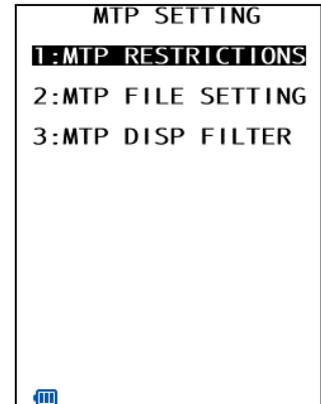
The MTP SETTING screen on the right is displayed.

“1: MTP RESTRICTIONS”: Sets up the MTP RESTRICTIONS screen.

“2: MTP FILE SETTING”: Sets up the MTP FILE SETTING screen.

“3: MTP DISP FILTER”: Sets up the MTP DISP FILTER screen.

Press and hold the **BS/C** key to return to the USB MENU.



Refer to the following section for each of the above menus.

2) Use the cursor keys ([▲] [▼]) or numeric keys ([1][2][3]) to select the menu and then press the **ENT** key.

◆ Setting up the MTP Restrictions Parameters

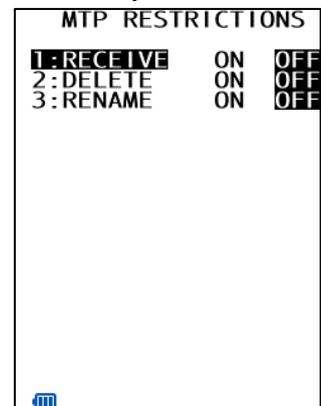
1) Select “1: MTP RESTRICTIONS” at the MTP PARAMETER MENU and then press the **ENT** key.

The MTP RESTRICTIONS screen on the right is displayed.

“1: RECEIVE”: Selects whether or not (ON or OFF) to restrict receiving files.

“2: DELETE”: Selects whether or not (ON or OFF) to restrict deleting files.

“3: RENAME”: Selects whether or not (ON or OFF) to restrict changing file names.



2) Use the cursor keys ([▲] [▼]) or numeric keys ([1][2][3]) to select the menu and then press the **ENT** key.

3) Use the cursor keys ([◀] [▶]) to select the menu and then press the **ENT** key.

4) Press and hold the **ENT** key or **BS/C** key to return to the MTP PARAMETER menu.

– Point – The restricted parameter cannot be used anymore if the MTP restriction is enabled.

2. Setting up the MTP File Setting Parameters

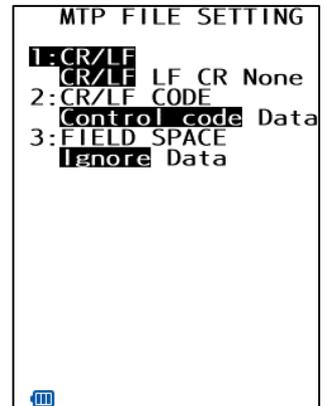
1) Select “2: MTP FILE SETTING” at the MTP PARAMETER MENU and then press the **ENT** key.

The MTP FILE SETTING screen on the right is displayed.

“1: CR/LF”: Selects line-beak codes in the records.

“2: CR/LF MODE”: Selects “Control code” to handle line-break codes as record delimiters or selects “Data” to handle them as data.

“3: FIELD SPACE”: Selects “Ignore” to ignore trailing spaces in the fields or selects “Data” to handle them as data.



2) Use the cursor keys ([▲] [▼]) or numeric keys ([1][2][3]) to select the menu and then press the **ENT** key.

3) Use the cursor keys ([◀] [▶]) to highlight settings.

4) Press and hold the **ENT** key or the **BS/C** key to return to the MTP PARAMETER menu.

– Point – The CR/LF CODE and FIELD SPACE settings are valid only at receiving files provided with field information.

3. Setting up the MTP File Filer Parameters

1) Select “3: MTP DISP FILTER” at the MTP PARAMETER MENU and then press the **ENT** key.

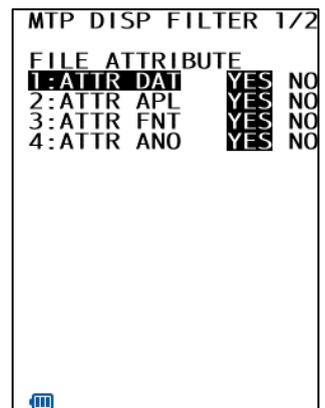
The MTP DISP FILTER 1/2 screen (FILE ATTRIBUTE) on the right is displayed.

“1: ATTR DAT”: Selects whether or not (YES or NO) to put data files on the file list.

“2: ATTR APL”: Selects whether or not (YES or NO) to put application files on the file list.

“3: ATTR FNT”: Selects whether or not (YES or NO) to put font files on the file list.

“4: ATTR ANO”: Selects whether or not (YES or NO) to put other files on the file list.



2) Use the cursor keys ([▲] [▼]) or numeric keys ([1][2][3][4]) to select the menu and then press the **ENT** key.

3) Use the cursor keys ([◀] [▶]) to highlight settings.

4) Press and hold the **ENT** Key or **BS/C** key to return to the MTP PARAMETER menu.

5) In the MTP file filter (file attribute) setting screen, press the [▼] key while "4: ATTR ANO" is highlighted.

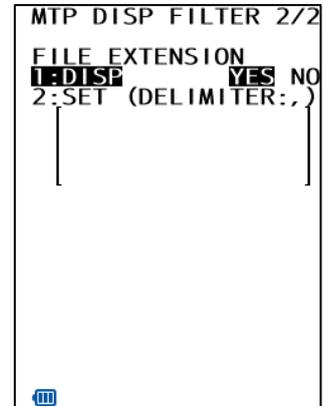
The MTP file filter (file extension) setting screen on the right will be displayed.

"1: DISP":

Selects whether or not (YES or NO) to put the specified file extension on the file list.

"2: SET (DELIMITER;)"

Sets up file extensions of the filter. When using multiple file extensions, separate each of them with a comma (,). Use a period (.) for the file that has no file extension.



6) Display "MTP DISP FILTER 2/2" and use the cursor keys ([▲] [▼]) or numeric key ([1]) to select the item to set.

7) Use the cursor keys ([◀] [▶]) to highlight the setting content.

8) Display "MTP DISP FILTER 2/2" and use the cursor keys ([▲] [▼]) or numeric key ([2]) to select the item to set.

Enter input mode, where the cursor will be displayed, and input the setting values using the numeric keys and [·] key. Press the **SF** key to switch between input modes {numeric input (without guidance display) and alphanumeric input}.

Press the **BS/C** key to delete one character. Additionally, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously to delete all the entered setting values.

9) Press the **ENT** key.

10) Press and hold the **ENT** key or the **BS/C** key to apply the setting values and return to the MTP PARAMETER menu.

– Point – Operation of the specified files is disabled by not displaying them on the Explorer (file list) of the computer connected via MTP.

If a filtered file is received or dropped to the file list, that file is included in the list. Higher priority is given to the setting of file extension over the file attribute.

4.5.10 Deleting Program/Data Files (DELETE FILE Menu)

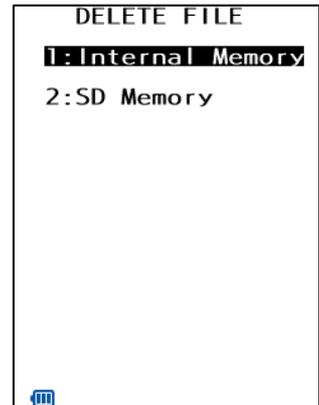
Delete program files or data files stored in the FLASH ROM (1: Internal Memory) or microSD (2:SD Memory).

Use the following procedure to delete files.

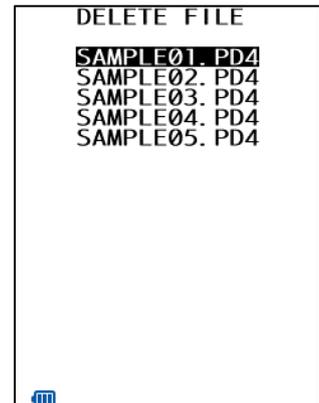
1. Press the 0 key while holding down the **SF** key at the SYSTEM MENU.

The DELETE FILE menu screen on the right is displayed.

Press and hold the **BS/C** key to return to the SYSTEM MENU.

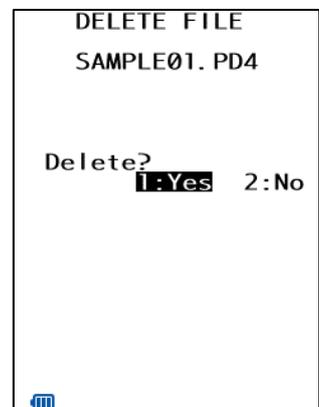


2. Use the cursor keys ([▲] [▼]) to highlight the area to be deleted and then press the **ENT** key.



3. Use the cursor keys ([▲] [▼]) to highlight the program to be deleted.
4. Press the **ENT** key.

The screen on the right is displayed.

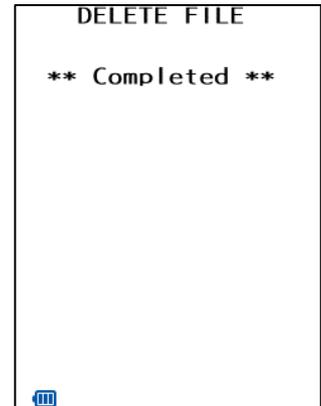


To delete files:

Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: Yes] and then press the **ENT** key.

The selected file is deleted and the screen on the right is displayed.

Press and hold the **BS/C** key to return to the DELETE FILE menu.



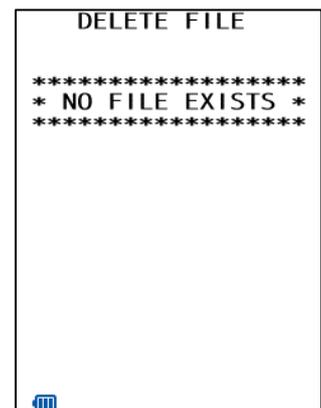
To cancel:

Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: No] and then press the **ENT** key.

The screen returns to the DELETE FILE menu.

The screen on the right is displayed if no files exist.

Press and hold the **BS/C** key to return to the SYSTEM MENU.



4.5.11 Deleting Font Files (DELETE FILE Menu)

Delete font files stored in the FLASH ROM.

If there is insufficient user area, by deleting font files, a user area equal to the size of the deleted font files can be secured.

Not displaying Japanese fonts at the user program:

All font files can be deleted.

Using only 16 dots or 12 dots at the user program:

Font files that are not used can be deleted.

When deleting font files, upload the font files to the host computer and so on to ensure that they are backed up.

Refer to "[4.5.4 Uploading Files \(UPLOAD Menu\)](#)" for details of uploading.

Use the following procedure to delete font files.

1. Press the 2 key while holding down the **SF** key at the SYSTEM MENU.

The DELETE FILE menu screen on the right is displayed.

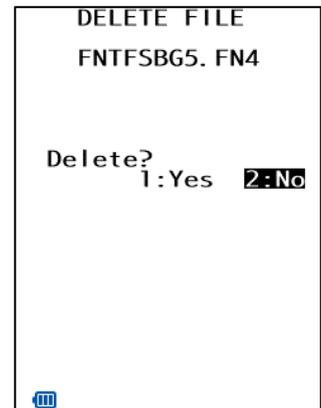
Press and hold the **BS/C** key to return to the SYSTEM MENU.



2. Use the cursor keys ([▲] [▼]) to highlight the font file to be deleted.

3. Press the **ENT** key.

The screen on the right is displayed.

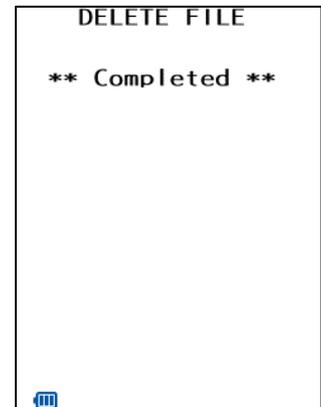


To delete font files:

1. Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: Yes] and then press the **ENT** key.

The selected file is deleted and the screen on the right is displayed.

Press and hold the **BS/C** key to return to the DELETED FILE menu.



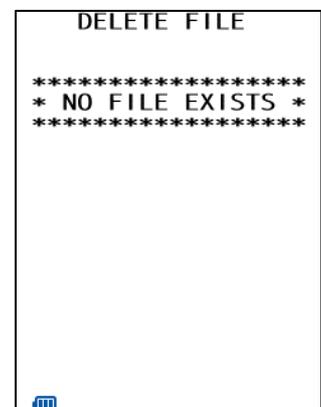
To cancel:

1. Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: No] and then press the **ENT** key.

The screen returns to the DELETED FILE menu.

The screen on the right is displayed if no files exist.

Press and hold the **BS/C** key to return to the SYSTEM MENU.



4.5.12 Downloading / Uploading the BHT System Parameter File (SYSTEM PARAMETER Menu)

The system parameter file (file name: "_BHT.SYS") is a file containing settings such as values, LCD contrast and speaker volume set at "[4.5.5 System Environment Settings \(SET SYSTEM Menu\)](#)".

The same settings can be set at another BHT by copying the system parameter file to that BHT.

- ◆ Copying the System Parameter File

- (1) Upload the system parameter file to the host computer and so on.
- (2) Download the uploaded system parameter file at another BHT.

- ◆ Uploading the System Parameter File

Create a system parameter file based on the current setting values and upload it to the host computer and so on. After uploading, delete the created system parameter file.

- ◆ Downloading the System Parameter File

Receive the system parameter file from the host computer and so on to which it was backed up, and after setting the stored values, delete the received system parameter file. The communication parameters, communication protocol, and interface set at "[4.5.5.5 Setting the communication environment](#)", are used when uploading and downloading. Use the following procedure to download and upload the system parameter file.

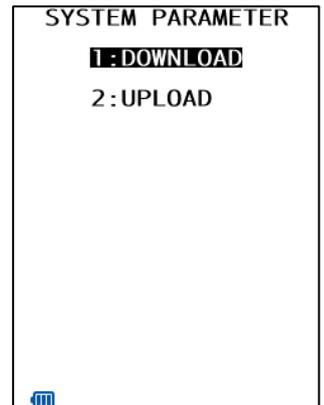
1. Press the 3 key while holding down the **SF** key at the SYSTEM MENU.

The SYSTEM PARAMETER menu screen on the right is displayed.

[1: DOWNLOAD]: Downloads the BHT system parameter file to the BHT user area.

[2: UPLOAD]: Uploads the BHT system parameter file stored in the BHT.

Refer to the following section for details of the above items.

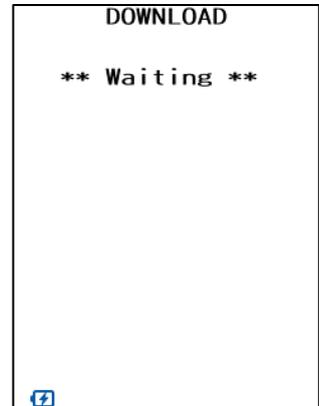


2. Press and hold the **BS/C** key to return to the SYSTEM MENU.

4.5.12.1 Downloading the BHT system parameter file

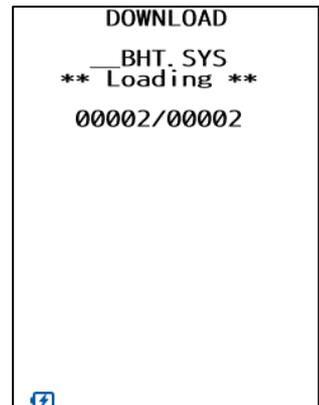
1) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: DOWNLOAD] and then press the **ENT** key.

The screen on the right indicating that the BHT is waiting for the system parameter file to be downloaded is displayed.



While the download is in progress, the screen on the right indicating the file name and the number of received records/the total number of records is displayed.

Press and hold the **BS/C** key to abort the download and return to the SYSTEM PARAMETER menu.



Upon completion of downloading, the screen on the right is displayed and the speaker beeps once.

Press and hold the **BS/C** key to return to the SYSTEM PARAMETER menu.

The speaker sounds three times if an error occurs during downloading, and an error screen is displayed.

Refer to "[7.2 System Mode Errors](#)" and remedy the error.



4.5.12.2 Uploading the BHT system parameter file

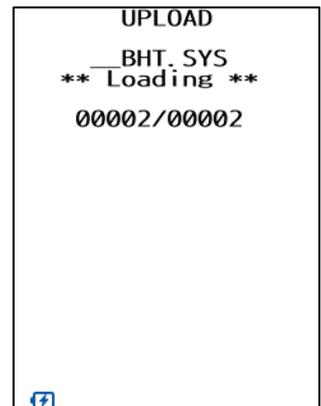
1) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: UPLOAD] and then press the **ENT** key.

The screen on the right indicating that the BHT is waiting for the system parameter file to be uploaded is displayed.



While the upload is in progress, the screen on the right indicating the file name and the number of sent records/the total number of records is displayed.

Press the **BS/C** key to abort the upload and return to the SYSTEM PARAMETER menu.

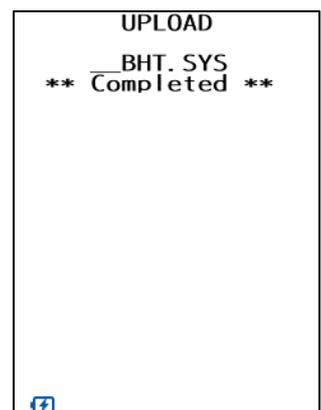


Upon completion of uploading, the screen shown on the right is displayed and the speaker beeps once.

Press and hold the **BS/C** key to return to the SYSTEM PARAMETER menu.

The speaker sounds three times if an error occurs during uploading, and an error screen is displayed.

Refer to "[7.2 System Mode Errors](#)" and remedy the error.



4.5.13 Setting the Remote Wake-up (SET REMOTE WAKEUP Menu)

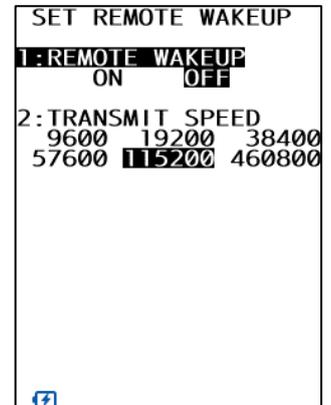
Use the following procedure to perform remote wake-up settings.

1. Press the 4 key while holding down the **SF** key at the SYSTEM MENU.

The SET REMOTE WAKEUP menu on the right is displayed.

[1: REMOTE WAKEUP]: Enables or disables remote wake-up.

[2: TRANSMIT SPEED]: Sets the transmission speed for remote wake-up.



Press and hold the **BS/C** key to return to the SYSTEM MENU.

2. Use the cursor keys ([▲] [▼]) or numerical keys ([1] [2]) to highlight the item to be set.
3. Highlight the settings with the cursor keys ([◀] [▶]) and press the **ENT** key.
4. Press and hold the **BS/C** key to return to the SYSTEM MENU.

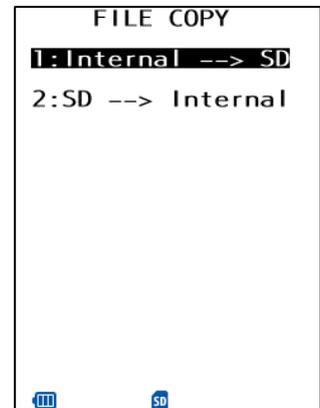
4.5.14 Copying Files (FILE COPY Menu)

Copy the files from the flash ROM (internal memory) to the microSD card (SD) or vice versa according to the following procedure.

1. Press the 5 key while holding down the **SF** key at the SYSTEM MENU.

The memory selection menu screen on the right is displayed.

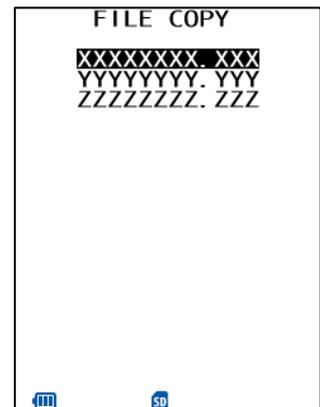
Press and hold the **BS/C** key to return to the SYSTEM MENU.



2. Highlight the item to be copied with the cursor keys ([◀] [▶]) and press the **ENT** key.

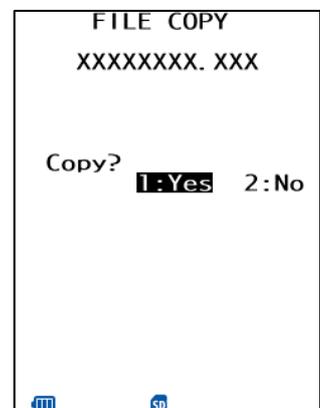
The FILE COPY menu on the right is displayed.

Press and hold the **BS/C** key to return to the memory selection menu.



3. Use the cursor keys ([▲] [▼]) to highlight the program to be copied.
4. Press the **ENT** key.

The FILE COPY screen on the right is displayed.

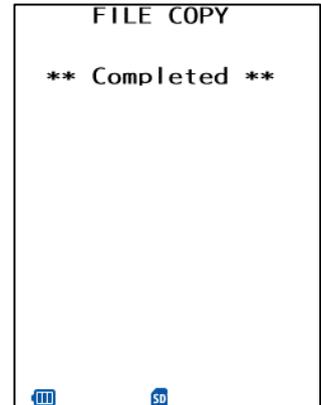


◆ To copy files:

1. Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: Yes] and then press the **ENT** key.

The selected file is copied and the screen on the right is displayed.

Press and hold the **BS/C** key to return to the FILE COPY menu.



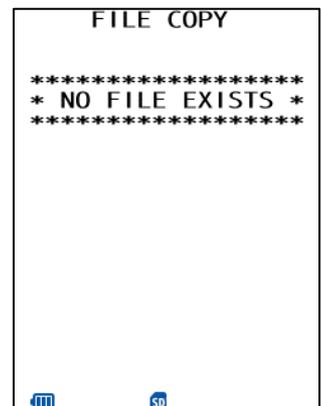
◆ To cancel:

1. Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: No] and then press the **ENT** key.

The screen returns to the FILE COPY menu.

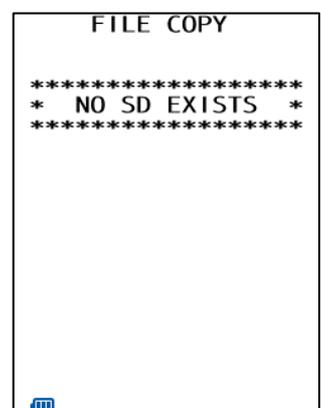
The screen on the right is displayed if no files exist.

Press and hold the **BS/C** key to return to the SYSTEM MENU.



The screen on the right is displayed if no microSD is loaded.

Press and hold the **BS/C** key to return to the SYSTEM MENU.



4.5.15 Downloading / Uploading the System Message File (SYSTEM MESSAGE Menu)

The system message file is a file (file name: "_B13MSG2.FN3") that contains messages displayed by the system such as "Getting ready" or "Charge the battery."

◆ **How to download/upload a system message file**

Upload the system message file to the host PC, etc.

◆ **Uploading the System Message File**

Create a system message file based on the current system message settings and upload it to the host computer and so on. After uploading, delete the created system message file.

◆ **Downloading the system message file**

Receive the system message file from the host computer and so on to which it was backed up, and after setting the stored system messages, delete the received system message file.

The communication parameters, communication protocol, and interface set at "[4.5.5.5 Setting the communication environment](#)" are used when uploading and downloading.

- Point - System messages are normally set when the BHT is shipped from the factory, and therefore operation at this menu is unnecessary.

Use the following procedure to download and upload the system message file.

1. Press the 6 key while holding down the **SF** key at the SYSTEM MENU.

The SYSTEM MESSAGE menu is displayed as shown on the right.

[1: DOWNLOAD]:

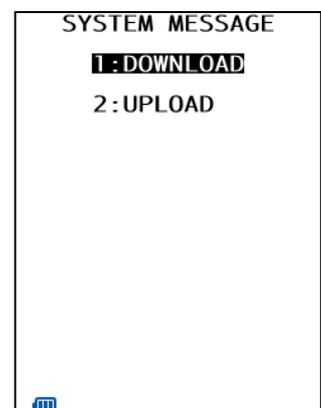
Downloads the system message file.

[2: UPLOAD]:

Uploads the system message file.

Refer to the following section for details of the above items.

Press and hold the **BS/C** key to return to the SYSTEM MENU.



4.5.15.1 Downloading the system message file

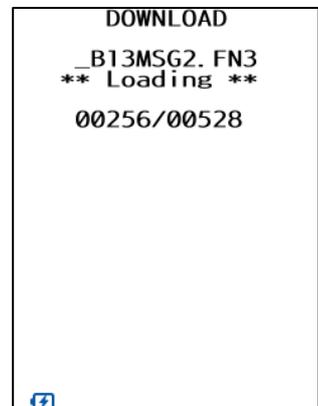
1) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: DOWNLOAD] and then press the **ENT** key.

The screen on the right indicating that the BHT is waiting for the system message file to be downloaded is displayed.



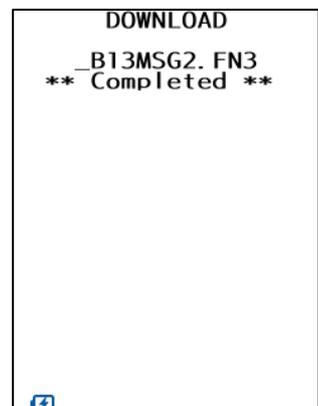
While the download is in progress, the screen on the right indicating the file name and the number of received records/the total number of records is displayed.

Press the **BS/C** key to abort the download and return to the SYSTEM MESSAGE menu.



Upon completion of downloading, the screen on the right is displayed and the speaker beeps once.

Press and hold the **BS/C** key to return to the SYSTEM PARAMETER menu.



The speaker sounds three times if an error occurs during downloading, and an error screen is displayed.

Refer to ["7.2 System Mode Errors"](#) and remedy the error.

- Point - When downloading the system message file, the BHT creates a temporary file named "_B13MSG2.FN3" in the user area. An error will therefore occur if there is insufficient space in the user area to create the temporary file.
 The created temporary file will automatically be deleted after downloading is complete.

4.5.15.2 Uploading the system message file

1) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: UPLOAD] and then press the **ENT** key.

The screen on the right indicating that the BHT is waiting for the system message file to be uploaded is displayed.



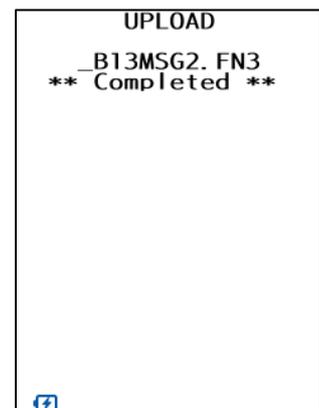
While the upload is in progress, the screen on the right indicating the file name and the number of sent records/the total number of records is displayed.

Press the **BS/C** key to abort the upload and return to the SYSTEM MESSAGE menu.



Upon completion of uploading, the screen on the right is displayed and the speaker beeps once.

Press and hold the **BS/C** key to return to the SYSTEM PARAMETER menu.



The speaker sounds three times if an error occurs during uploading, and an error screen is displayed.

Refer to ["7.2 System Mode Errors"](#) and remedy the error.

- Point - When uploading the system message file, the BHT creates a temporary file named "_B13MSG2.FN3" in the user area. An error will therefore occur if there is insufficient space in the user area to create the temporary file.

The created temporary file will automatically be deleted after uploading is complete.

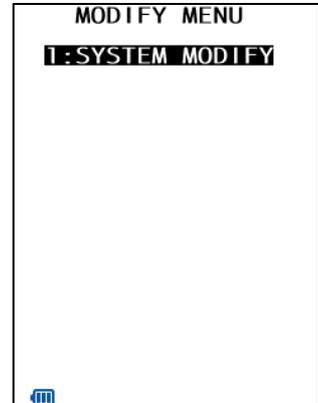
4.5.16 Updating the System (MODIFY MENU)

Use the following procedure to update the system.

1. Press the dot key while holding down the **SF** key at the SYSTEM MENU.
The MODIFY MENU screen on the right is displayed.

[1: SYSTEM MODIFY]: Updates the BHT system.

Refer to the following section for details of the above items.



2. Press and hold the **BS/C** key to return to the SYSTEM MENU.

4.5.16.1 Updating the BHT system

Update the BHT system after downloading the BHT system update file.

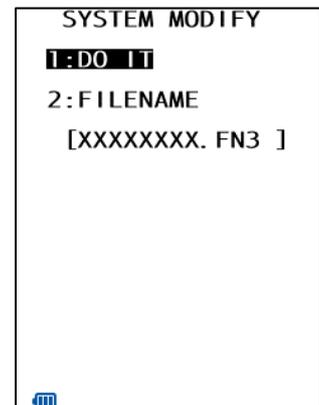
(Refer to "[4.2 Updating the BHT System](#)" for details.)

- 1) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: SYSTEM MODIFY] and then press the **ENT** key.

The screen on the right is displayed.

If the downloaded BHT update file name differs from this file name, specify the correct file name using the procedure on the following page.

- [1: DO IT]: Updates the BHT system.
[2: FILENAME]: Displays the filename to be used for updating the BHT system.

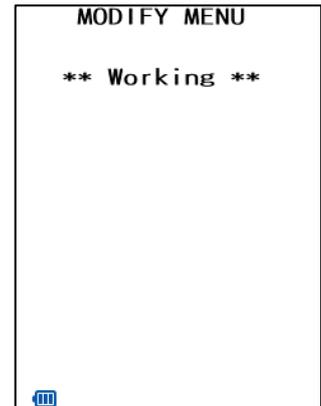


Press and hold the **BS/C** key to return to the SYSTEM PARAMETER menu.

2) Use the cursor keys ([▲] [▼]) or numerical key ([1]) to highlight [1: DO IT] and then press the **ENT** key.

The screen shown on the right is displayed and the BHT system is updated.

Upon completion of the update, the BHT power turns OFF automatically.



◆ When the Displayed File Name Differs from the BHT System Update File

If the name of the file displayed at [2: FILENAME] differs from the name of the BHT system update file to be used for updating the system, enter the correct file name.

1) Use the cursor keys ([▲] [▼]) or numerical key ([2]) to highlight [2: FILENAME] and then press the **ENT** key.

The mode changes to entry mode and the cursor are displayed.

Use the numerical keys and dot key to enter the correct file name.

Press the **SF** key to change the entry mode (numerical entry (no guidance display) and alphabet entry).

To delete a single character, press the **BS/C** key. To delete the entire entry, press and hold the **BS/C** key or press the **SF** key and **BS/C** key simultaneously.

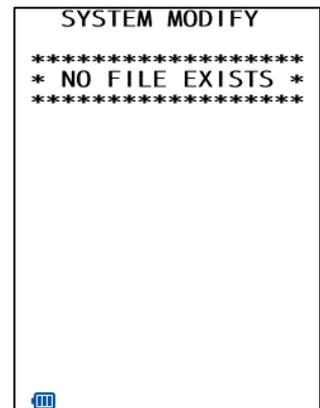
2) Press the **ENT** key to set the entered file name.

◆ If the System Update File does not exist when updating the BHT system

The screen on the right is displayed if the system update file does not exist when updating the BHT system.

Download the BHT system update file and update the BHT system again.

Press and hold the **BS/C** key to return to the MODIFY MENU.



Chapter 5 Communication

5.1 Wireless Communication

The BHT-1336QWB series is equipped with a 2.4 GHz frequency band wireless module.

*Wireless communication is not supported for the BHT-1336Q.

5.1.1 Usage Precautions

- It may be possible to avoid the easy occurrence of communication errors by pointing the right side of the BHT (equipped with built-in antenna) toward the access point. This is because the radio waves of the 2.4 GHz frequency band on which the BHT operates are emitted straight ahead and do not easily pass through the human body and so on.
- Communication may not be possible when used in the vicinity of wireless devices, microwave ovens, industrial heating equipment, or high-frequency medical equipment operating on the same 2.4 GHz frequency band as the BHT.
- Communication may not be possible due to electromagnetic noise when the BHT is used in the vicinity of household appliances such as computers or refrigerators.
- Communication may not be possible in the following locations.
 - In the vicinity of metal objects or in places with high levels of metallic dust
 - Rooms surrounded by metal walls
 - Places subject to strong impact.

– Point –

Requests to System Designers

- Communication may not be possible depending on the environment in which the device is being used. Ensure that problem-free communication is possible prior to use.
- Use a program capable of retransmitting data if communication fails.
- If the BHT is introduced into an environment in which a device using the 2.4 GHz frequency band is operating, or if another device using the 2.4 GHz frequency band is introduced following introduction of the system, run all devices and ensure that communication with the BHT is possible prior to use.
- Check communication once again prior to use if any changes are made to the usage environment (addition of household appliances, movement or addition of shelves, equipment and so on) following introduction of the system.

– Point –

Wireless LAN Interference

In addition to 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 on the same frequency band as this device.

1. Before using this device, ensure that no static wireless stations or specified low-power wireless stations for mobile identification are being used in the vicinity.
 2. In the event of electromagnetic interference from this device to a static wireless station being used for mobile identification, either promptly alter the usage frequency, or halt the electromagnetic discharge.
 3. If other problems arise due to reasons such as electromagnetic interference from this device to a specified low-power wireless station being used for mobile identification, please contact DENSO WAVE through QBdirect.
-

The wireless LAN specifications of this device are as follows.

2.4 DS/OF 4
■■■■

"2.4": Indicates wireless equipment that uses the 2.4 GHz band.

"DS/OF": Indicates that the modulation method is DS-SS or OFDM.

"4": Indicates the expected interference distance.

The expected interference distance for this device is approximately 40 m.

"■■■■": Indicates that the full band is used and that the band for mobile identification devices can be avoided.

IEEE802.11b/g/n

5.1.2 Setting Parameters

Programs written in BHT-BASIC control wireless communication with commands between the BHT and access points which have connected each other by a wireless LAN.

For the setting procedure of RF-related parameters, refer to "[4.5.9.1 WLAN communication settings \(supported model: BHT-1336QWB series\)](#)."

◆ Service Set ID (SSID)

SSID is an ID to be used on the communications network. The BHT is able to communicate with devices having the same SSID.

The SSID of the BHT should be the same as that of the access point you want to use.

◆ POWER SAVE

You may place the wireless module built in the BHT in the energy saving mode.

If this mode is set to "OFF," the service period of the BHT may be shortened.

If it is set to ON, the BHT may take more time to wake-up for link operation or send response messages.

◆ RADIO MODE

Setting the Wireless Method

Select from the following that most closely matches your access point setting:

11b: IEEE802.11b

11b/g: IEEE802.11b / IEEE802.11g

11b/g/n: IEEE802.11b / IEEE802.11g / IEEE802.11n (2.4GHz)

◆ WEP (Wired Equivalent Privacy)

When WEP is ON, messages to be sent/received over the wireless LAN will be encrypted.

The WEP KEY uses 40-bit (10-digit hexadecimal) or 128-bit (26-digit hexadecimal) encryption word.

The BHT is able to definitely communicate with the access points having the same WEP KEY.

◆ WEP KEY

You can set four types of encryption keys (WEP KEY1 through WEP KEY4).

If you enable WEP, choose any one of WEP KEY1 through WEP KEY4 as TRANSMIT KEY.

◆ AUTHENTICATE

This is the authentication method setting employed when using encrypted communication (WEP setting), and a selection can be made from OPEN or SHAREDKEY.

Select OPEN when the WEP setting is OFF. Communication will no longer be possible if OPEN is not selected.

◆ TRANSMIT KEY

You need to use the TRANSMIT KEY in order to choose and activate any one of the WEP KEY1 through WEP KEY4 already defined.

◆ SECURITY MODE

This is the setting for the wireless security function.

A selection can be made from no security (WEP level), 1x Supplicant, WPA-1x, WPA-PSK, WPA2-1x or WPA2-PSK.

◆ EAP TYPE

This is the EAP authentication method setting used for 802.1x authentication.

Select PEAP or EAP-TLS.

This is valid only when the Security mode is 1x Supplicant, WPA-1x or WPA2-1x.

◆ IDENTITY

This is the user ID used for 802.1x authentication.

A format that includes the domain name (<domain name>\<user name>) may be specified for the identity.

An identity, including the domain name, may be specified up to 32 bytes. The domain name may be omitted.

◆ PASSWORD

This is the password used for 802.1x authentication.

This is valid only when the EAP TYPE is PEAP.

◆ ROOT CERTIFICATE

This setting is for the filename of the root certificate used for 802.1x authentication.

◆ CLIENT CERTIFICATE

This setting is for the filename of the client certificate used for EAP-TLS authentication.

◆ **ANONYMOUS IDENTITY**

This is the setting for the ID transmitted by EAP Request (ID) packet when performing PEAP authentication.

◆ **WPA CIPHER**

This is the setting for the encryption method used when specifying WPA.
Select TKIP or AES.

Regardless of which is selected, the connection is made by automatically determining the encryption method set for the access point.

◆ **PRE SHARED KEY**

This is the setting for the key used for WPA-PSK or WPA2-PSK.
Always set when the Security mode is WPA-PSK or WPA2-PSK.

5.2 Bluetooth® Wireless Communication

The BHT-1336QWB series is equipped with Bluetooth®. It can communicate with Bluetooth® enabled devices.

* Bluetooth® communication is not supported for the BHT-1336Q.

5.2.1 Usage Precautions

- It may be possible to avoid the easy occurrence of communication errors by pointing the right side of the BHT (equipped with built-in antenna) toward the access point. This is because the radio waves of the 2.4 GHz waveband on which the BHT operates are emitted straight ahead and do not easily pass through the human body and so on.
- Communication may not be possible when used in the vicinity of wireless devices, microwave ovens, industrial heating equipment or high-frequency medical equipment operating on the same 2.4 GHz waveband as the BHT.
- Communication may not be possible due to electromagnetic noise when the BHT is used in the vicinity of household appliances such as computers or refrigerators.
- Communication may not be possible in the following locations.
 - In the vicinity of large metal objects or in places with high levels of metallic dust
 - Rooms surrounded by metal walls
 - Places subject to strong impact.
- The possible communication distance between the BHT and other devices used is about 5 m. Even if the communication distance is within 5 m, communication may not be possible depending on the other device and the environment.

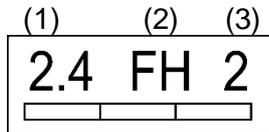
The possible communication distance may vary by individual BHTs. Although communication may be possible on a BHT when the communication distance is longer than 5 m, avoid operation of the BHT on this basis.

– Point –

Requests to System Designers

- Communication may not be possible depending on the environment in which the device is being used. Ensure that problem-free communication is possible prior to use.
 - Use a program capable of retransmitting data if communication fails.
 - If the BHT is introduced into an environment in which a device using 2.4 GHz waveband electromagnetic waves is operating, or if another device using 2.4 GHz waveband electromagnetic waves is introduced following introduction of the system, run all devices and ensure that communication with the BHT is possible prior to use.
 - Check communication once again prior to use if any changes are made to the usage environment (addition of household appliances, movement or addition of shelves, equipment and so on) following introduction of the system.
-

Bluetooth® specifications of this device are as follows.



(4)

(1) "2.4": Indicates that the wireless equipment uses the 2.4 GHz band.

(2) "FH": Indicates that the modulation method is FH-SS.

(3) "2": Indicates the expected interference distance.

The expected interference distance for this device is approximately.

20 m.

(4) "- - -": Indicates that the entire band from 2400 MHz to 2483.5 MHz is used, and that the band for mobile identification devices cannot be avoided.

5.2.2 Setting Parameters

◆ **Bluetooth® Device Address**

Remote devices return these addresses, uniquely assigned to each Bluetooth® device by the Bluetooth® SIG, during device detection.

◆ **Bluetooth® Device Name**

Bluetooth® devices can distinguish themselves using user-friendly names--Robert or Sandra, for example.

◆ **Bluetooth® passkey (Bluetooth® PIN)**

Pairs of Bluetooth® devices use these encryption keys for mutual authentication and for establishing secure links between themselves.

◆ **Security Modes**

This BHT supports the following three security modes.

(1) No security:

There is no security authentication.

(2) Service level security:

There is security authentication.

(3) Link level security:

There is security authentication using point-to-point encryption keys.

(4) Secure simple pairing: Lv4

There is security simple pairing authentication (SSP).

Specifying No security sometimes prevents connecting to remote devices using service or link level security--unless both ends use the same Bluetooth® passkey.

Service or link level security requires that both ends use the same Bluetooth® passkey.

5.3 USB Communication

The BHT can communicate with a host PC using the provided USB communication port[※] and the CU-1321 communication unit.

Even when both the communication unit and the main unit USB connector are connected, the BHT operates according to the set COM.

For details, refer to “[4.5.5.5 Setting the communication environment](#)”.

The BHT can exchange data with the host computer via the USB communication port using a COM or MTP connection.

Files are transmitted to the host computer over a serial communication in the COM connection while they are transmitted without a dedicated device driver in the MTP connection.

※BHT-1336QWB-D is not equipped with a USB connector on the main unit. It can communicate with a host PC using the CU-1321 communication unit.

5.3.1 Communication via COM Connection

Set the USB connection mode of the BHT to the COM. Refer to “[4.5.9.3 USB Communication Settings](#)” for details.

Set the COM communication protocol options of the BHT. Refer to “[4.5.5.5 Setting the communication environment](#)” for details.

Connect the BHT to the host computer with the USB cable.

*Please use the USB cable compliant with the USB 2.0 standard, sold optionally.

The connector of the communication unit is Type-B, and the main USB connector is USB Type-C[®].

The device is detected and the Active USB-COM port driver is installed.

-
- Point —
- Check the COM port number by the device manager. A different COM port number may be assigned to the same port in the connection of the BHT.
 - Communication may not be established depending on the connection destination or the cable.
 - The USB cable shall be connected to the USB port on the host computer.
 - Communication may be interrupted if the BHT is connected using a hub.
 - Do not plug in an out the USB cable repeatedly in a short cycle. The host computer may be locked.
-

5.3.2 Communication via MTP Connection

Set the USB connection mode of the BHT to the MTP. Refer to “[4.5.9.3 USB Communication Settings](#)” for details.

Set the MTP communication protocol options of the BHT. Refer to “[4.5.9.3 USB Communication Settings](#)” for details.

Connect the BHT to the host computer with the USB cable.

The BHT is acknowledged as a portable device (the device name is “Handy Terminal”) and you are allowed to operate files on Windows Explorer.

The MTP can be used while the application is running or in the SYSTEM menu, DOWNLOAD menu and UPLOAD menu. Proceed to the DOWNLOAD menu or UPLOAD menu to start the MTP communication.



— Note — ● If the BHT is acknowledged as an imaging device, start the Windows device manager, delete “Handy Terminal” and then connect or disconnect the USB cable.

— Point — ● Communication may not be established depending on connection destination or the cable.

- Connect the USB cable directly to the USB port on the host computer.
- Communication may be degraded or interrupted if the BHT is connected via a hub.
- Do not plug in and out the USB cable repeatedly in a short cycle. The host computer may be locked.
- If access is restricted by the security software on the host computer, you may not be able to use it.

— Important — **Receiving the BHT-BASIC data files (specifying the field information)**

A data file received in MTP is a file that has no field information and so cannot be used for the BHT-BASIC applications. To receive this file as a data file having field information, convert it in the following procedure.

1. Create a MTP field information file "MTPFLD.INI" carrying the file name and field information on the data file.
2. Save the MTPFLD.INI file in the BHT (downloadable via MTP).
3. Download the data file via MTP. The data file is converted to a data file that has field information according to the description of MTPFLD.INI.

MTPFLD.INI file format

- This is a data file consisting of a single field of 256 characters long.
- Write the file name and field information in the field using the "xxx:yyy"* format.
* "xxx" indicates the file name and "yyy" the field information.

```
MASTER.DAT:10,14,20,4,8,128  
TENPO.TXT:8,8,8  
URIAGE.DAT:64
```

Chapter 6 Maintenance

6.1 Replacing the Battery

6.1.1 Battery Service Life

The battery is a consumable part and should be replaced after being charged approximately 300 times.

The performance of the battery 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 Method

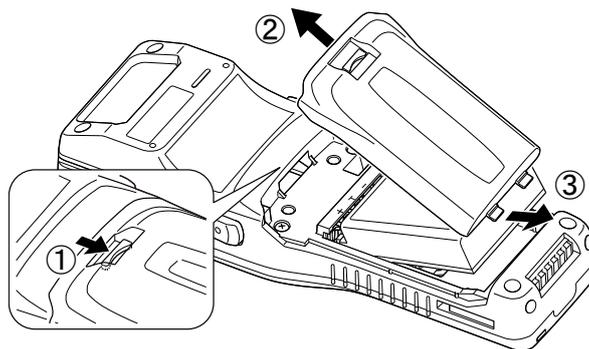
Press the power key (⏻) to turn OFF the BHT power.

The screen on the right displays.

```
shutdown  
in progress.  
  
Do not reove the  
battery.
```

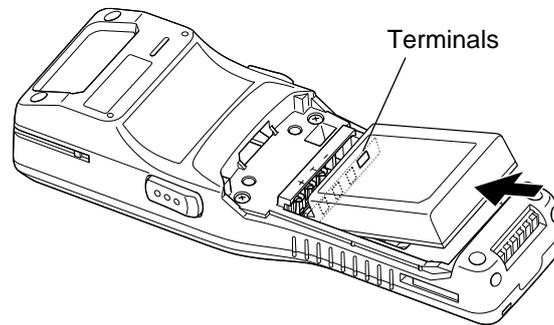
- Point - Do not remove the battery until the power turns OFF and the screen display clears.

1. (1) Push the battery cover lock in the direction of the arrow, (2) remove the battery cover, and (3) remove the battery.



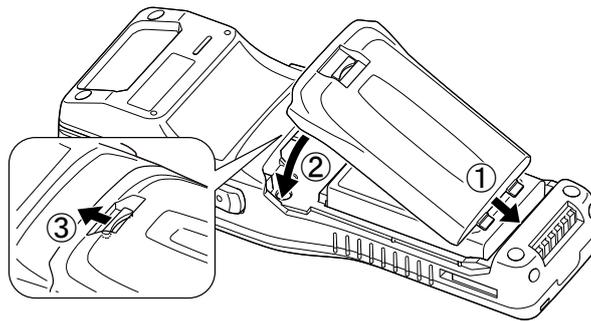
2. Check the battery terminals on the new battery and then insert in the direction shown by the arrow.

(Refer to "[2.2 Loading and Charging the Battery](#)".)



-
- Point – Do not use batteries other than those specified by us (BT-20LB).
Refer to "[Appendix 2 Battery and battery cover combinations](#)".
Use of the wrong combination may cause the battery to be disconnected and data to be lost.
-

3. (1) Insert the battery cover tabs, (2) close the battery cover, and (3) push the battery cover lock in the direction of the arrow to lock it.



◆ Battery Recycling Request

- This product uses a lithium-ion battery that contains scarce, recyclable resources. We kindly ask for your cooperation in recycling to ensure reuse of these resources.



- Used battery must not be disposed of as combustibles.
- Contact your nearest rechargeable battery recycling center or local sales office for information on disposal procedures.
- When disposing of used battery at your nearest recycle center, cover the terminals with vinyl tape to insulate and protect from overheating or fire due to a short-circuit.
- Never disassemble battery.

– Note –

- Replace the battery promptly.
 - Always turn the BHT power OFF before replacing the battery. Replace the depleted battery with a new one within three minutes to avoid data loss. Following replacement, turn ON the BHT power and check operation.
 - The battery can be charged with the communication unit CU-1301/CU-1301A/CU-1311/CU-1311A/CU-1321 (option) while it is installed in the BHT main unit.
 - The battery alone can be charged by CH-201B and CH-1104.
 - If a “Battery voltage has lowered.” or “Replace or recharge the battery.” message displays when impact is applied to the BHT, reboot the BHT and check the battery voltage level. The battery may not actually be depleted.
-

 **WARNING**

Mishandling may result in battery overheating, smoke generation, blowout or combustion. Please read the following items prior to use.

- Never charge the battery in the vicinity of fire or under a scorching sun.
 - Always use a dedicated charger to charge the battery.
-

 **CAUTION**

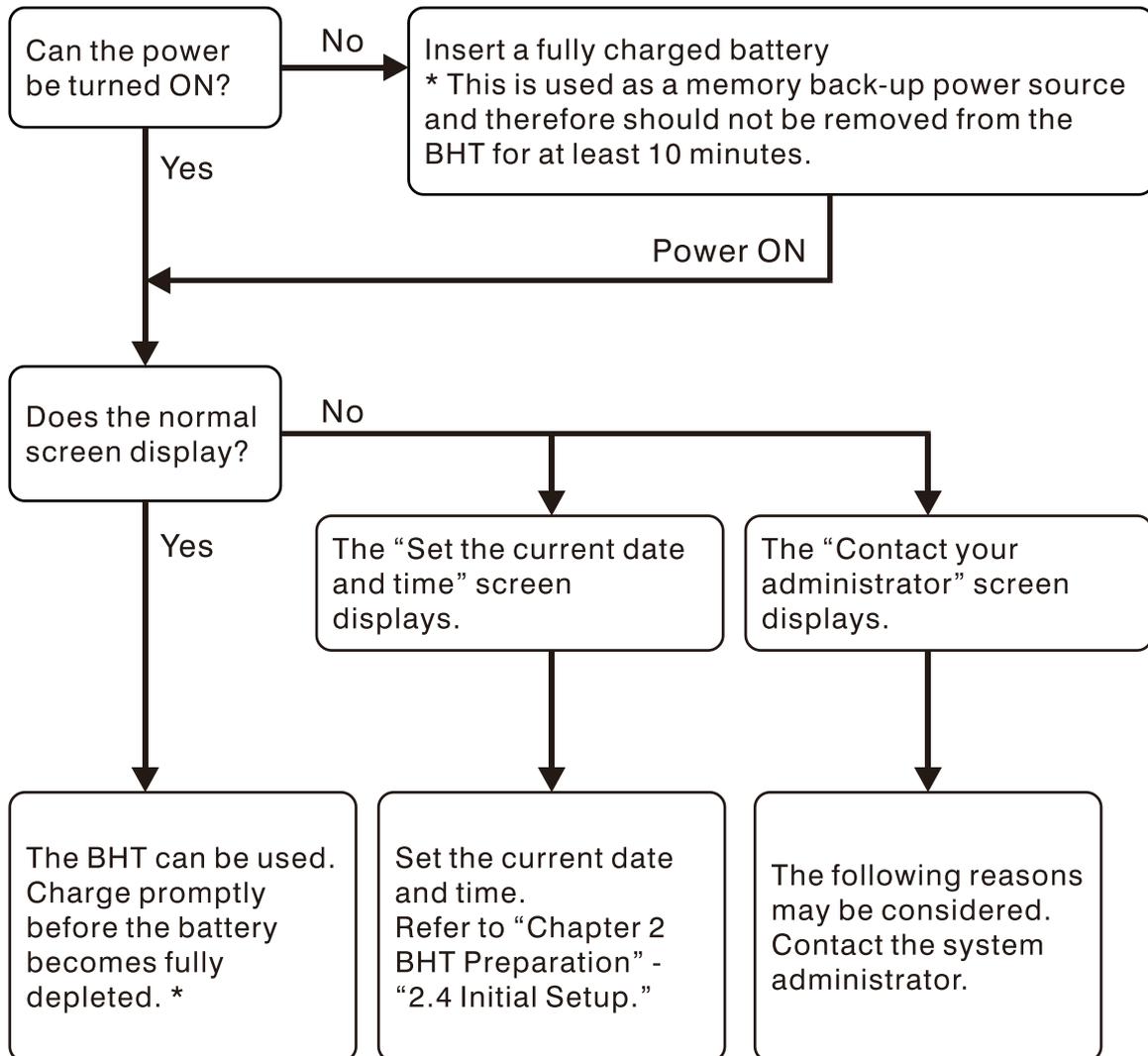
Mishandling may result in battery overheating, smoke generation, blowout or combustion. Please read the following item prior to use.

- Terminate charging if not completed even after the specified time has elapsed.
-

6.2 Using the BHT after Long Periods

Data stored in the BHT may be lost and the calendar clock may stop if the BHT is left unused for long periods of time.

Take appropriate measures in accordance with the procedure below.



– Point – * Files may become corrupt if left for a long period of time without replacing the battery.

6.3 Daily Maintenance

6.3.1 Proper Care of the BHT

Wipe any dirt from the BHT housing, charge terminals, and BHT or battery terminals with a dry, soft cloth.

Ensure to turn OFF the BHT before cleaning.

-
- Note –
- Never use substances such as benzene or alcohol, as this may cause the housing to be marred or paint to peel off.
 - Never rub or strike the LCD screen 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 neutral detergent) and wrung out thoroughly.
-

Any dirt or dust adhering to the red clear plate of the code reading window will adversely affect reading performance.

When using in dusty areas, perform periodic inspections to check whether any dust has accumulated on the clear plate of the code reading window, and if so, clean the plate as described below.

To clean the plate, first blow off any dust with an airbrush, and then gently wipe it off with a soft object such as a cotton swab.

If hard objects such as sand adhere to the plate, remove them by blowing the sand away with an airbrush or by sweeping with a soft bristle brush.

6.3.2 Proper Care of the CU-1300 series / CH-201B/CH-1104

Wipe any dirt from the housing and charge terminals with a dry, soft cloth.

In the interests of safety, unplug the AC adapter from the socket when cleaning the CU-1300 series / CH-201B/CH-1104.

Chapter 7 Error Messages

7.1 System Errors

The error messages that display on the screen and the causes and countermeasures to be taken if an error occurs when the power is turned ON or while running a program are shown below.

Message	BHT Response	Cause	Countermeasure
<pre>***** ** No System! ** *****</pre>	<p>If this error occurs, the warning tone beeps five times and then turns itself off.</p>	<p>A System Program error has occurred.</p>	<p>Contact your system administrator.</p>
<pre>Battery voltage has lowered.</pre>	<p>If low battery is detected, the warning tone beeps three times. After that, it will resume previous regular operation.</p>	<p>The battery output level has dropped below a specified lower limit.</p>	<p>Replace or recharge the battery.</p>
<pre>Charge the battery!</pre> <pre>Replace or recharge the battery cartridge.</pre>	<p>If lower battery is detected, the warning tone beeps five times and then turns itself off. Depending upon the battery level, the warning tone may not sound five times.</p>	<p>The battery output level has lowered so that the BHT no longer operates.</p>	<p>Replace or recharge the battery.</p>

Message	BHT Response	Cause	Countermeasure
<p>Set the current date and time.</p> <p>20/01/01 00:00 _YY/MM/DD hh:mm</p>	<p>The date and time settings screen displays, awaiting entry.</p>	<p>The calendar clock integrated in the BHT has stopped because:</p> <ul style="list-style-type: none"> - the battery had been removed for a long time, - the battery had not been recharged for a long time. 	<p>Set the current date and time. (Refer to "2.4 Initial Setup")</p>
<p>Your terminal was not shut down properly the last time it was used.</p> <p>No resume info. has been retained.</p> <p>Program restarts automatically.</p>	<p>The BHT displays this error message and automatically runs the execution program from the point of start-up.</p>	<p>Operation was terminated without turning OFF the power normally with the resume function set, and therefore resume info has been lost. The application restarts from the beginning.</p>	<p>If this error occurs frequently, contact your system administrator.</p>
<p>Your terminal was not shut down properly the last time it was used.</p> <p>Unsaved data was lost.</p> <p style="text-align: right;">[SF+2]</p>	<p>The message is continuously displayed.</p>	<p>After shutting down abnormally, the BHT has been left without the battery loaded, or with discharged battery loaded, so unsaved data was lost.</p>	<p>Contact your system administrator.</p>
<p>Reload the battery to restart!</p> <p>XXXXXXXXX 01</p>	<p>If this error occurs, the warning tone beeps five times.</p>	<p>During execution of System Program, the System Program has attempted to write onto the write-protected area of the memory. (xxxxxxx: Error address)</p>	<p>Unload and reload the battery, then turn the BHT on. If this error occurs frequently, make a note of the displayed message and codes and contact your system administrator.</p>

Message	BHT Response	Cause	Countermeasure
<pre> Reload the battery to restart! tskid:XXXXXXXX ercd :XXXXXXXX addr :XXXXXXXX 02 </pre>	<p>If this error occurs, the warning tone beeps five times.</p>	<p>During execution of System Program, the System Program has received an invalid command code. (xxxxxxx: Error address)</p>	<p>Unload and reload the battery, then turn the BHT on. If this error occurs frequently, make a note of the displayed message and codes and contact your system administrator.</p>
<pre> No user programs found. Execute? 1:Easy Pack Ad 2:Code scanning demo </pre> 	<p>The message is continuously displayed.</p>	<p>No user programs are found when the BHT is turned on.</p>	<p>Contact your system administrator. You can run the code scanning demo without user programs. Pressing "1: Yes" runs the code scanning demo. Press the trigger switch to start the code scanning demo. Selecting "2: No" turns the power off.</p>
<pre> Contact your administrator. Note the error number. (XXXX) </pre>	<p>If this error occurs, the warning tone beeps five times and then turns itself off.</p>	<p>Any of the hardware error, memory error, execution program error, etc. has occurred. (XXXX: Error code)</p>	<p>Turn the BHT on again. If this error occurs frequently, make a note of the displayed code and contact your system administrator.</p>
<pre> No resume info. has been retained. Program restarts automatically. </pre>	<p>The BHT displays this error message and automatically runs the execution program from the point of start-up.</p>	<p>Operation was terminated without turning OFF the power normally with the resume function set, and therefore resume info has been lost.</p>	<p>If this error occurs frequently, make a note of the displayed code and contact your system administrator.</p>

Message	BHT Response	Cause	Countermeasure
<p>Your setting in System Mode have been lost. Will reset to defaults.</p>	<p>After displaying this error message, the BHT may start a user program other than the preset auto-start execution program or display the message "No execution program loaded."</p>	<p>Your settings made in System Mode contain an error.</p>	<p>Contact your system administrator. (If this error occurs, the System Mode settings revert to the factory defaults.)</p>
<p>Reload the battery to restart!</p> <p>E:XXXXXXXX F:XXXXXXXX 1:XXXXXXXX 2:XXXXXXXX P:XXXXXXXX R:XXXXXXXX</p>	<p>If this error occurs, the warning tone beeps five times.</p>	<p>An error has occurred during execution of System Program.</p>	<p>Unload and reload the battery, then turn the BHT on. If this error occurs frequently, contact your system administrator.</p>
<p>Program restarts automatically. [ENT]</p>	<p>The message is continuously displayed.</p>	<p>An error has occurred during execution of System Program. The application restarts from the beginning.</p>	<p>If this error occurs frequently, contact your system administrator.</p>
<p>Program restarts automatically. Press the [ENT] key.</p> <p>AA addr :AAAAAAAA tskid:AAAAAAAA ercd :AAAAAAAA</p>	<p>The message is continuously displayed.</p>	<p>An error has occurred during execution of System Program due to the application. The application restarts from the beginning.</p>	<p>Check the application.</p>

7.2 System Mode Errors

When error messages display while running System Mode, refer to the following table and take appropriate measures.

Message	BHT Response	Countermeasure
<pre>EXECUTE PROGRAM ***** * NO FILE EXISTS * ***** </pre>	<p>You attempted to execute a user program in the EXECUTE PROGRAM menu, but no user program files had been stored in the memory.</p>	<p>Press and hold the BS/C key to return to the SYSTEM MENU, then download user programs.</p>
<pre>DOWNLOAD FILE Out of memory Retry? 1:Yes 2:No </pre>	<p>The memory is insufficient for storing files to be downloaded.</p>	<p>Press the 2 key to return to the SYSTEM MENU, then delete unnecessary files in the memory or decrease the size of the file to be downloaded.</p>
<pre>DOWNLOAD FILE XXXXXXXX. XXX File mismatch Retry? 1:Yes 2:No </pre>	<p>In the SYSTEM PARAMETER transfer menu, you attempted to download a file other than the BHT system parameter file. Or in the SYSTEM MESSAGE transfer menu, you attempted to download a file other than the system message file.</p>	<p>Check the file you attempted to download and then download the file in the appropriate menu (DOWNLOAD menu, SYSTEM PARAMETER transfer menu, or SYSTEM MESSAGE transfer menu).</p>

Message	BHT Response	Countermeasure
<p>DOWNLOAD FILE</p> <p>Too many files</p> <p>Retry? 1:Yes 2:No</p> 	<p>The current download will exceed the maximum allowable number of files (420 files) in the memory.</p>	<p>Press the 2 key to return to the SYSTEM MENU, then delete unnecessary files in the memory (or decrease the number of files to be downloaded if you attempted to download more than one file in the DOWNLOAD menu.)</p>
<p>DOWNLOAD FILE</p> <p>Communication error</p> <p>Retry? 1:Yes 2:No</p> 	<p>Downloading has failed. Uploading has failed.</p>	<p>To retry downloading/uploading, press the 1 key. To return to the SYSTEM MENU, press the 2 key. Check the interface port, communications parameters, and communications protocol in the SET SYSTEM menu or perform the communications test in the TEST menu.</p>
<p>DOWNLOAD FILE</p> <p>XXXXXXXX. XXX Program file error</p> <p>Retry? 1:Yes 2:No</p> 	<p>You attempted to download an invalid program file.</p>	<p>Check whether the program file you attempted to download is available for the BHT model. If it is not available, download the appropriate program.</p>
<p>UPLOAD FILE</p> <p>File error</p> <p>Upload? 1:Yes 2:No</p> 	<p>The file you attempted to upload is damaged.</p>	<p>To upload the damaged file as is, press the 1 key.</p>

Message	BHT Response	Countermeasure
<p style="text-align: center;">UPLOAD FILE</p> <p style="text-align: center;">Out of memory</p> 	<p>The memory is insufficient for setting up the BHT system parameter file or system message file to be uploaded.</p>	<p>Press the BS/C key to return to the SYSTEM MENU and delete unnecessary files.</p>
<p style="text-align: center;">UPLOAD FILE</p> <p style="text-align: center;">Too many files</p> 	<p>The memory already contains 420 files, so the BHT system parameter file or system message file cannot be set up.</p>	<p>Press the BS/C key to return to the SYSTEM MENU and delete unnecessary files.</p>

Chapter 8 Specifications

8.1 BHT-1336Q series Specifications

8.1.1 Hardware Specifications

	BHT-1336Q series
Power supply, main power	3.7 V DC rechargeable lithium-ion battery
Dimensions (W × L × H) in millimeters	52.5 × 158 × 35
Mass (including battery)	Approx. 200g (BT-20LB)
Ambient operating temperature	Operating -20 °C to 50 °C Charging 0 °C to 40 °C
Ambient operating humidity	20 % to 80% with no dew condensation
Protective class	IP54 (JIS C 0920)
Ambient operating brightness	20 lx to 10000 lx
Code Readers	Depth of field: 100mm, QR Code Model 2 Ver. 5 (37 × 37 cells) Error correcting level: M Cell pitch: 0.5 mm, PCS value > 0.9 white reflection intensity > 85 % 500 lx to 3000 lx Other than the above conditions Refer to " 8.1.2 Code Specifications "
Controller	CPU: 32 bit RISC Flash memory: 64 MB
Keypad	Magic keys: 4 Scan key: 1 Function keys: 4 Numeric keys etc.: 12
Calendar clock	Year, month, day, hour, minute, and second The year is indicated by the last two digits, with leap year auto-correction until 2099.
Indicator LED	Colors: Red, green and blue
Card Slot	FAT32 compliant microSD / SDHC up to 32 GB

Display

	BHT-1336Q series
Type	Transmissive active-matrix TFT Liquid Crystal Display (LCD) with backlight
Formation (W × H) in dots	240 × 320
Chars × Lines with small fonts	Half-width chars 20 × 13 Full-width chars 10 × 13
Chars × Lines with standard fonts	Half-width chars 16 × 10 Full-width chars 8 × 10

Note: Some of the pixels on the LCD may not illuminate or stay permanently illuminated. In addition, there may be inconsistencies in color and brightness. However, none of these aspects represent an LCD defect.

There will also be individual differences in visual quality in screens containing the above defects.

8.1.2 Code Specifications

The following tables show the Code Types Supported by BHT-1336Q series.

The parameters shown are values at the reading reference position of 100 mm.

QR Code (Model 1, Model 2) and Micro QR Code

Code size	Cell pitch
QR Code	
Max. Ver.32 (360° skew)	0.167 mm
Max. Ver.19 (360° skew)	0.25 mm
Micro QR Code	
Max. M4 (360° skew)	0.2 mm
rMQR	
Max. 17 cells x 139 cells (360°skew)	0.167mm

PDF417

Digits/rows	Module dimensions
1 to 15 digits, 4 to 50 rows *1	0.167 mm min.

*1: Excluding start/stop codes and left/right indicators

Micro PDF417

Digits/rows	Module dimensions
1 to 4 digits, 4 to 44 rows *2	0.167 mm min

*2: Excluding left, middle, and right row address patterns

MaxiCode

Module size	Module pitch
30 (29) modules x 33 modules	0.88 mm

Data Matrix

Code size	Cell pitch
Max. 52 cells x 52 cells (360° skew)	0.20 mm
Max. 96 cells x 96 cells (360° skew)	0.25 mm

Barcodes

Supported Barcode Types	Bar Dimensions	Scan Magnification
Universal product codes		
EAN-13	0.26 to 0.50 mm	0.8 to 1.5 times
EAN-8	0.26 to 0.66 mm	0.8 to 2.0 times
UPC-A with add-on (17 digits)	0.26 to 0.36 mm	0.8 to 1.0 times
UPC-E with add-on (12 digits)	0.26 to 0.60 mm	0.8 to 1.4 times
Interleaved 2of5 (ITF)	Min. 0.127 mm	2 to 38 digits*
Codabar (NW-7)	Min. 0.127 mm	3 to 29 digits
Code 39	Min. 0.127 mm	1 to 20 digits
Code 93	Min. 0.127 mm	1 to 20 digits
Code 128 (EAN-128) (GS1-128 (EAN-128))	Min. 0.127 mm	1 to 31 digits
GS1 DataBar Omnidirectional (RSS-14)	Min. 0.15 mm	14 digits
GS1 DataBar Truncated (RSS-14 Truncated)	Min. 0.15 mm	14 digits
GS1 DataBar Expanded (RSS Expanded)	Min. 0.15 mm	4 to 8 segments
GS1 DataBar Limited (RSS Limited)	Min. 0.15 mm	14 digits
GS1 DataBar Stacked (RSS-14 Stacked)	Min. 0.15 mm	14 digits
GS1 DataBar Stacked Omnidirectional (RSS-14 Stacked Omnidirectional)	Min. 0.15 mm	14 digits
GS1 DataBar Expanded Stacked (RSS Expanded Stacked)	Min. 0.15 mm	2 to 8 segments, 2 to 6 rows
EAN.UCC COMPOSITE	Min. 0.167 mm	Within the specification of each code standard: GS1 DataBar (RSS), GS1-128 (EAN-128), UPC-A, UPC-E, EAN-13, EAN-8, PDF417, Micro PDF417

* Even number digits only

Note: These specification values all apply to ambient illuminance of 500 to 3 000 lx.
(Xenon lamp light source)

Multiline codes

Multiline reading can be performed up to a maximum of 3 lines at a time in the specified order on the following codes: Universal product codes, Interleaved 2of5 (ITF), Codabar (NW-7), Code 39, Code93 and Code 128 (EAN-128).

This can only be specified with application programs. Refer to BHT-BASIC Programming Manual (BHT-1336Q Series).

Optical Characteristics

White bar: 45 % reflectivity or higher

Black bar: Reflectivity less than 25

PCS value of 0.45 or more

Reflectance is specified for light sources with a spectral peak of 650 nm and a spectral range of 610 to 700 nm.

8.1.3 Interface Specifications

Wireless Interface (BHT-1336QWB series)

IEEE802.11b/g/n compliant

Frequency band	EU: 2412–2472 MHz US/CA: 2412-2462 MHz
Communication method and Transmission speed	OFDM (72.2/65/57.8/43.3/28.9/21.7/14.4/7.2) Mbps (54/48/36/24/18/12/9/6) Mbps DSSS (11/5.5/2/1) Mbps
Channels	EU: 11b/g/n: 1–13 ch; (14 ch. is not supported) US/CA: 11b/g/n: 1–11 ch; (12–14 ch. is not supported)

Bluetooth® Interface (BHT-1336QWB series)

Compatible specification	Bluetooth® Specification Ver. 5.0+EDR/LE
Output class	Class 1 (Max. 100 mW)
Compliant profile	GAP (Generic Access Profile) SPP (Serial Port Profile) HID (Human Interface Device Profile) DUN (Dial-up Networking Profile) GATT (Generic Attribute Profile)

USB Interface (Only models with USB connector)

Compatible specification	USB 2.0 compliant
Connector	USB Type-C®

Appendix 1 CU-1300 Series Specifications (Option)

1.1 Hardware Specifications

I/F	RS-232C interface	Ethernet interface	USB interface
BHT	 BT-20LB battery included.		
	CU-1301A 	CU-1311A 	CU-1321 
Power supply	 100 V AC; Use the dedicated AC adapter. Powered from the USB interface * (CU-1321 only)		
I/F Cable	RS-232C cable (Optional)	Ethernet (100BASE-T) cable (commercially available product)	USB cable (Type-B compatible with USB 2.0) (option)
Max. power consumption	5 V, 1.5 A	5 V, 1.5 A	5 V, 1.5 A
Dimensions (W × L × H) mm	90 × 110 × 152.8		
Mass	206 g	205 g	201 g
Ambient operating temperature	0 °C to 40 °C		
Ambient operating humidity	20 % to 80 % (with no dew condensation)		

* The CU-1321 can be powered via USB from an AC outlet using a dedicated adapter.

1.2 Charging Requirements (CU-1301A, CU-1311A, and CU-1321)

Charging time: Approx. 3 hours (approx. 7 hours *) by BT-20LB

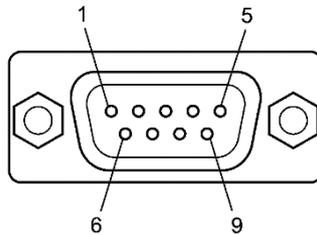
* In the case when CU-1321 is powered from USB line.

The above-mentioned charger current and charging time are reference values at normal temperature.

Applicable batteries are BT-20LB only.

1.3 Interface Specifications

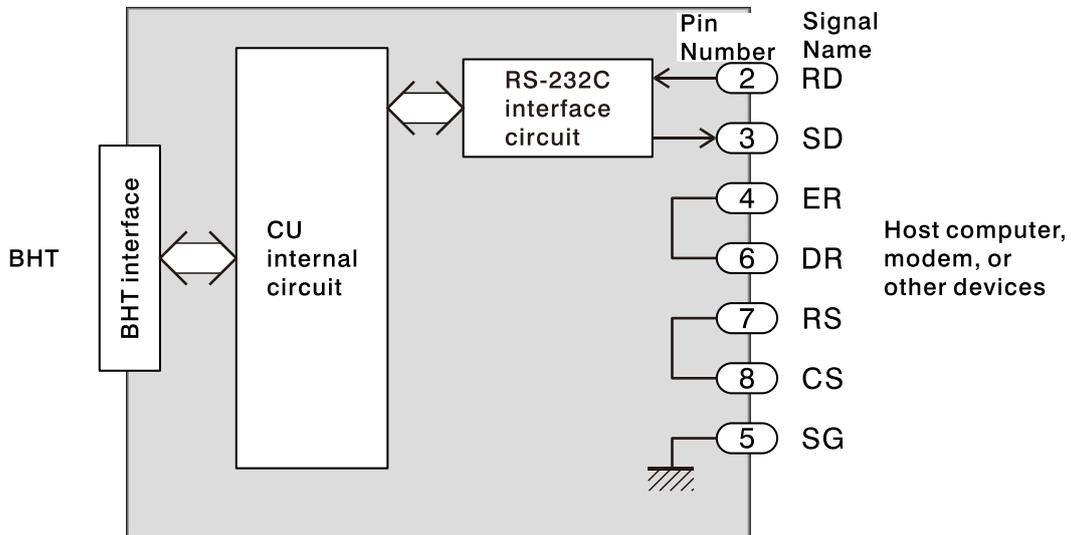
CU-1301A



RS-232C interface port (Dsub-9P) of the CU-1301A

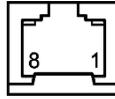
Pin Number	Signal Name	Function	Signal Direction CU-1301A <--> External Device
2	RD	Receive data	<--
3	SD	Send data	-->
4	ER	Data terminal ready	-->
5	SG	Signal ground	---
6	DR	Data set ready	<--
7	RS	Transmission request	-->
8	CS	Transmission ready	<--

The CU-1301A internal wiring is shown below.



CU-1311A

The CU-1311A has an IEEE 802.3 100BASE-T compliant Ethernet interface port.



CU-1311A Ethernet interface port (RJ45 jack)

Pin No.	Signal	Function
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

CU-1321

The CU-1321 has a USB2.0 full-speed compliant Type-B receptacle.

Appendix 2 Battery and battery cover combinations

The BHT-1336QWB support BT-20LB only. There are similar batteries and battery covers, so here are some points to note. This section describes available combinations.

*The adapter B-130D for dry cells and BT-130LA are not supported.

Using a wrong combination of BHT and battery may cause data loss.

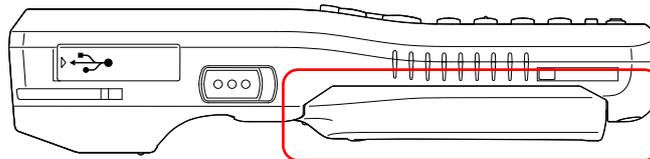
Battery lineup

Battery type	Type	Battery cover set
Standard battery (Included/Option)	BT-20LB	BT-130L-C (Battery cover set for BT-20LB+BT-20LB) *The standard battery set is included in the unit.

*Check the label on the battery surface for the battery type.

Appearance of BHT-1336QWB

<When using BT-20LB: The cover is thick according to the battery size.>



Note 1: The battery cover for BT-20LB can be attached with the BT-130LA installed, but do not use this combination because the battery may come out when the unit falls.

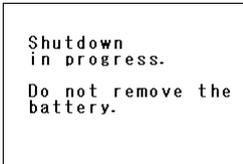
BT-130LA is not supported.

Appendix 3 How to check the rating name plate

This section explains how to check the rating name plate.

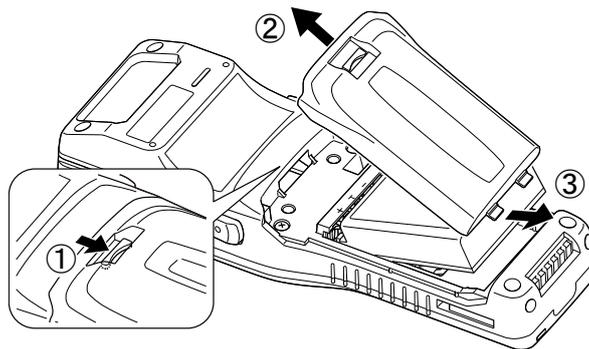
Press the power key (⏻) to turn OFF the BHT power.

The screen on the right displays.

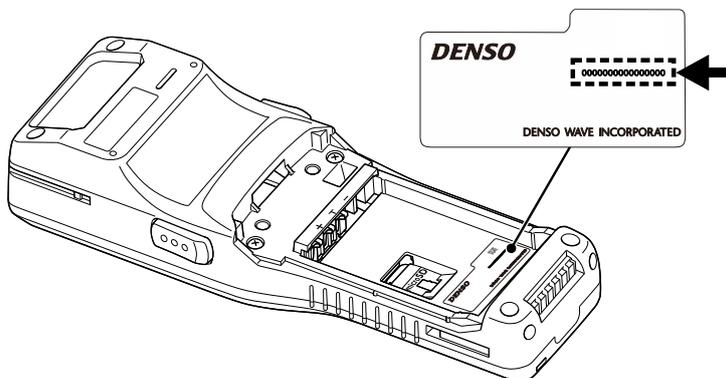


— Point — Do not remove the battery until the power turns OFF and the screen display clears.

- Slide the battery cartridge cover release button (1) in the direction indicated by the arrow, and remove the battery cartridge cover (2), and then remove the battery cartridge (3).



- The Nameplate at the location shown in the figure below. You can check the serial number and authentication information.



Digit	Contents
1-10	Part number
11	Year of manufacture
12-16	Serial number.

Appendix 4 When File Transfer is Not Possible Using the Transfer Utility

This section describes the causes and remedies when file transfer is not possible using the Transfer Utility.

The BHT-1336QWB does not have an IrDA interface. When using a communication unit, the CU-1301A, CU-1311A and CU-1321 can communicate with the host computer. The CU-1301 and CU-1311 can be charged only.

Error No.	Cause Details	Remedy
2	Illegal field information specification option when transmitting data file.	Set a correct value for the field information option.
	The name of the file being downloaded is a long file name.	Long file names are not supported. Change to an 8.3 format file name.
	Illegal characters have been used in the file name.	Change the file name. Refer to QBdirect for details of characters that can be used in file names.
3 6 8	BHT-Ir/BHT protocol was used for transfer for a BHT-BASIC 4.0 format data file.	Use Ymodem protocol or restrict data files to BHT-BASIC 3.6 format.
51 52	Power is not being supplied to the communication unit (CU).	Supply power with an AC adapter or via a USB bus when using a communication unit (CU) with USB connection.
	Defect or abnormality with the cable between the PC and communication unit (CU).	Use a properly functioning RS-232C cross-cable.
	Defect or abnormality with the USB cable between the PC and communication unit (CU).	Use a properly functioning USB cable.
	Unstable signal wire due to such reasons as a USB cable extension.	Connect directly to a PC USB port or self-powered hub. Connection may not be possible depending on the hub model, and if operation is unstable, connect directly to a PC USB port.
	The communication unit (CU) can be removed. (The device remains stopped.)	Disconnect the device and then reconnect.
	The communication unit (CU) is not recognized by the PC. There is a "!" mark at the Device Manager or the device is unknown.	Disconnect the device and then reconnect. If the problem is still not resolved, uninstall the driver and then reinstall.
	The power supply is insufficient.	The USB power supply performance may be insufficient depending on the PC model. Furthermore, if another USB device consuming power exceeding the maximum standard (500mA or more) is connected to the adjacent port, insufficient current may be supplied. Use an AC adapter to supply power directly.

Error No.	Cause Details	Remedy
	Defect or abnormality with the cable between the PC and communication unit (CU).	Use a properly functioning RS-232C cross-cable.
	The BHT communication interface specification is illegal.	Specify IrDA (Optical) if connected to the PC via the communication unit (CU). Refer to QBdirect for details of the setting method.
	The Transfer Utility “Communication port” option specification is illegal.	Specify the communication port to which the BHT is connected for the “Communication port” option.
	The transmission speed at the BHT and PC does not match.	Ensure that the transmission speed at the BHT and PC matches. Please be aware that the default transmission speed differs depending on the BHT used.
	The protocol specified at the BHT and PC does not match.	Ensure that the protocol matches. Please be aware that the default protocol differs depending on the BHT used.
	The PC communication port setting is illegal.	Enable “Use FIFO buffer. (16550 interchangeable UART required.) (U)” setting for the communication port used.
	Hardware malfunction	Please contact your dealer.
53	The protocol specified at the BHT and PC does not match.	Ensure that the protocol matches. Please be aware that the default protocol differs depending on the BHT used.
	The protocol specified at the BHT and PC does not match.	Ensure that the protocol matches. Please be aware that the default protocol differs depending on the BHT used.
55	An attempt was made to download a file whose field width is different from that of the data file that already exists in the BHT.	It is not possible to download a file with the same name but different field width from the file already existing in the BHT. Either delete the existing data file in the BHT or specify the same field format as the existing data file.
55 71	Illegal characters have been used in the file name.	Change the file name. Refer to QBdirect for details of characters applicable to file names.
	The intended COM port number is already used.	Use another COM port number or close the current COM port.
75	The intended COM port number is missing.	Use the COM port number that is available.
91	Illegal field information specification option when transmitting data file.	Set a correct value for the field information option.
	An attempt was made to download a file with field width differing from that of the data file already existing in the BHT.	It is not possible to download a file with the same name but different field width from the file already existing in the BHT. Either delete the existing data file in the BHT or specify the same field format as the existing data file.
91	The size of the file being downloaded exceeds the size of the available space in the BHT user area.	Reduce the file size or delete any unwanted files in the BHT.

Error No.	Cause Details	Remedy
	Illegal characters have been used in the file name.	Change the file name. Refer to QBdirect for details of characters applicable to file names.
Other	BHT-Ir/BHT protocol was used for transfer for a BHT-BASIC 4.0 format program file (*.PD4).	Use Ymodem protocol or convert program files to "*.PD3".
	An attempt was made to download a BHT-BASIC 3.6 format program file (*.PD3).	Use BHT-BASIC 4.0 format program files (*.PD4).

Note 1: "Member Registration" is required to use a [QBdirect](#) service on the DENSO WAVE website (free of charge).

When using this service for the first time, complete "Member Registration" in the following procedure.

- (1) Click the [QBdirect](#) URL below.
- (2) Enter your user ID and password to log in.
- (3) Search what you need by entering the keyword in the Search box at the upper right.

<https://www.denso-wave.com/en/adcd/login/>

Refer to "[Customer Registration and Inquiries](#)".

Appendix 5 Points When Switching from BHT-1306QWB to BHT-1336Q Series

This section describes the points for replacement based on the difference between the BHT-1306QWB of the old model and the BHT-1336Q Series of the new model.

*Please ensure that the system designer and the user thoroughly verify the replacement.

Major specification differences

Type		BHT-1306QWB (Old Model)	BHT-1336Q Series (New Model)
Memory	Flash memory	64 MB (45 MB in user area)	64 MB (37 MB in user area)
Communication section	Optical I/F	Communication method Infrared (IrDA Ver. 1.2 [Low Power] Physical layer compliant)	None
	Wireless LAN	Conforming standard 802.11b/g/n compliant	802.11 b/g/n compliant (BHT-1336QWB series)
	Bluetooth®	Bluetooth® Ver.2.1+EDR	Bluetooth® Ver.5.0+EDR/LE (BHT-1336QWB series)
	Cable I/F	USB Ver.2.0(USB micro B)	USB Ver.2.0(USB Type-C®) (Only models with connector)
Supported battery models		BT-20LB, BT-130LA, B-130D	BT-20LB
Copy function		Use IrDA	Use Bluetooth® (BHT-1336QWB series) Use USB Type-C® - USB Type-C® Cable (BHT-1336Q series)
Corresponding communication Unit	RS-232C	CU-1301	CU-1301A
	Ethernet	CU-1311	CU-1311A
	USB	CU-1321	←

- Application interchangeability

User area: There are differences in the user area as described in the specification. Please check the effect level in advance before change.

Application using IrDA communication: BHT-1336 does not support IrDA communication. Please change the Bluetooth® communication, communicate with communication unit (CU), USB cable, etc.

System setting: The model name needs to be changed if the application uses the model name.

Icon display: The icon display position has been changed from BHT-1306QWB (previous model) to BHT-1336Q series (new model).

Please change the icon display position as necessary. Please change the icon display position from the icon display position setting menu if necessary.

- HT-HT copy and cloning of setting information

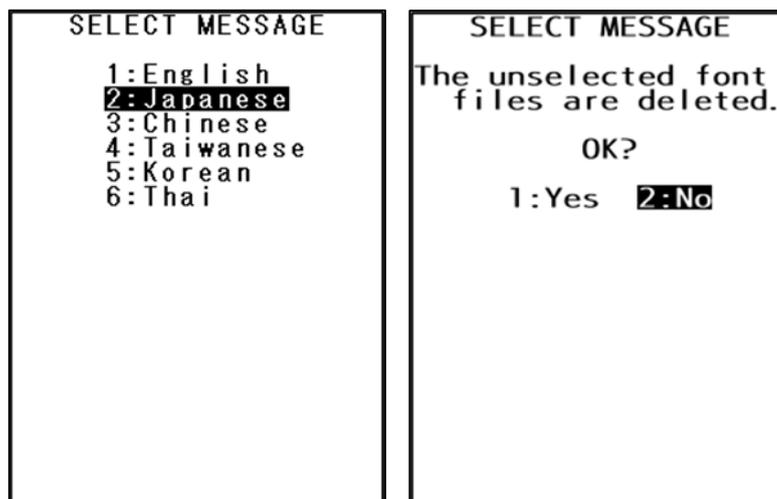
It is not possible to copy or clone the setting information from BHT-1306QWB (old model) to BHT-1336Q Series (new model) or from BHT-1336Q Series (new model) to BHT-1306QWB (old model) due to some hardware incompatibilities. The system menu where various settings can be made is the

same except for functional differences. Please compare various settings and adjust the settings of the old model to those of the new model.

- If your application's execution speed is slow:

The font size of the BHT-1336Q series has a larger file size compared to the BHT-1306, and if unused font files are installed, the execution speed of the application will slow down. In the factory default state of BHT-1336Q Series, font files for various languages are stored, and normally, unused font files are automatically deleted. However, depending on the operation performed during the first startup of the BHT-1336Q Series, these font files may not be deleted. As a result, the specified BHT-1336Q Series may have a larger file size, which could potentially affect the application's execution speed.

- First time, press the power key [PW] to start up
By specifying the fonts according to the on-screen instructions, unused font files will be automatically deleted.

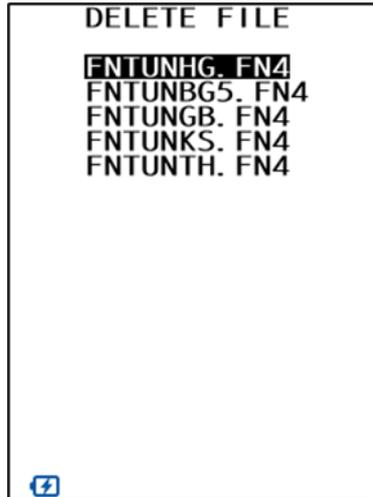


- In case the system menu ([SF] + [1] + [PW]) is used to start up and perform application installation and startup settings
Unused fonts will not be automatically deleted.
Please delete them individually from the "Delete Font Files" option in the system menu.

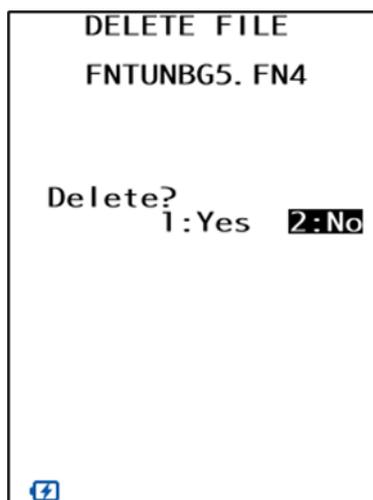
The list of font files is as follows.

Font File Name	Remarks
FNTUNHG.FN4	Japanese Font
FNTUNTH.FN4	Thai Font
FNTUNBG5.FN4	Taiwanese (Traditional Chinese) Font
FNTUNGB.FN4	Chinese (Simplified Chinese) Font
FNTUNKS.FN4	Korean Font

➤ Procedure for Deleting Font Files



1. In the system menu, press the [SF] key + [2] key to display the font file selection menu. Use the cursor keys (↑/↓) to highlight the font file (↑/↓) to highlight the font file you want to delete.



2. Press the [ENT] key to display the screen mentioned above.



3. Use the cursor keys ([▲][▼]) or the number key ([1]) to highlight [1: Yes], and then press the [ENT] key. The selected file will be deleted, and the screen mentioned above will be displayed.

- ◆ In case you accidentally delete a font file:
Each font file can be downloaded after serial registration of the BHT product.

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2D Code Handy Terminal
BHT-1336Q series

User's Manual

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