



Wireless Two-dimensional Handy Terminal

GTx-221-G

User's Manual



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- The file system "Fugue" developed by Kyoto Software Research, Inc. is installed in the Handy Terminal.



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For Safe and Correct Use

Thank you for purchasing our product.

Before using the Handy Terminal, read this user's manual thoroughly for proper use and maintenance of the product. Check the product's specifications, functions, and details, and when using the product, carefully read instructions marked on the product as well as this manual so that you can properly use the Handy Terminal to avoid any accident. Note that it is also important to perform periodical inspection and maintenance on the product. The following symbols classify and explain the levels of injury and damage that could be caused if using the Handy Terminal improperly by disregarding the safety instructions indicated by the symbols. The symbols are classified by danger level.

Danger

Indicates an imminently hazardous situation. Improper handling by disregarding this symbol could result in death or serious injury.

Warning

Indicates a potentially hazardous situation. Improper handling by disregarding this symbol could result in death or serious injury.

Caution

Indicates a potentially hazardous situation. Improper handling by disregarding this symbol may result in injury or physical damage only.

The following symbols classify and explain the safety instructions you must observe:



This symbol indicates Prohibited Action. The specific details of prohibited action are indicated in a figure with this symbol.



This symbol indicates Mandatory Action. The specific details of mandatory action are indicated in a figure with this symbol.



This symbol indicates Alert. The specific details of alert are indicated in a figure with this symbol.

To prevent injury to the user and others as well as property damage, observe the precautions described in the subsequent sections.

Required Precautions



To use the Handy Terminal, strictly observe the safety instructions (danger, warning, and alert) recommended by the manufacturers of the PC and peripherals you are using.

Common to GTX-221-G Main Unit and Battery Pack (BP-004)

Danger

Be sure to use the specified peripherals.

- Battery pack (BP-004)
- Single charger (QC-006)
- Multi charger (QC-007)
- USB communication unit (IU-004)
- USB communication / charging unit (IU-004C)

Do not put the product into a microwave oven or high-pressure container.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

Do not direct a laser beam toward someone's eyes.

If laser light gets in the eyes, there is a risk of damage to eyesight
(See "Laser Safety Standard" (P. [10](#))).

Do not charge the battery pack with its plus and minus ends reversed.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

Do not use, leave, or charge the product in a location where the product becomes hot (near fire or a space heater, or under a hot sun) or where a flammable gas may be generated.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

Do not put the product into fire or heat the product.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

Do not short-circuit or solder a terminal such as the battery pack terminal and the main unit's terminal for battery pack or charging.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

Do not get the product wet or immerse it in water or sea water.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

⚠ Warning

! While charging the battery pack, if charging does not become complete even after the specified charging time, stop charging.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

! When you detect heat, smoke, or abnormal smell, turn the power off and remove the battery pack.

If you continue to use the product as-is, there is a risk of overheating or fire. And the battery pack may leak or explode.

! Prevent any part of the body (fingers, hand, etc.) from touching a terminal such as the battery pack terminal and the main unit's terminal for battery pack or charging.

Otherwise, there is a risk of electrical shock, injury, or the device may become faulty.

! Use the specified battery charger to charge the battery pack.

Otherwise, the battery pack could overheat, explode, or catch fire.

! Avoid any strong shock or impact by dropping or throwing the product.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire, or the device may become faulty.

! Do not disassemble or modify the product.

Otherwise, there is a risk of such an accident as injury, electrical shock, and fire, or the device may become faulty. Ask the retail shop where you purchased the product for inspection and adjustment.

Should any problem occur due to modification, we will not take any responsibility.

! Keep the product away from any chemicals.

Do not use or store the product in a location where chemicals may come in contact or near chemicals. Otherwise, there is a risk of such an accident as electrical shock and fire, or the device may become faulty.

Caution

Do not use or store the product in a location where the product becomes hot or in a humid or dusty place.



Avoid using or storing the product in a location where the product becomes hot such as near fire or in direct sunlight. Otherwise, an accident such as fire may occur; the product's chassis may be deformed; or the device may become faulty. In addition, avoid using or storing the product in a humid or dusty place. Otherwise, an accident such as electrical shock and fire may occur, or the device may become faulty.

Do not put the product in an unstable place.



Otherwise, the product could drop or fall down and cause injury or the device may become faulty.

Keep the product out of reach of small children.



Otherwise, there is a risk of injury.

The Handy Terminal is intended to be used for general purposes such as office use and industrial use. It is not assumed to be used for purposes requiring high-level safety as follows:



- Control and management of land, sea, and air transportation and traffic; control and management of nuclear facilities; and control and management of life-support systems.

It should be noted that Welcat Inc. will not take any responsibility for damage caused by use for the purposes mentioned above that involve serious danger to life, the human body, and the environment.

GTX-221-G Main Unit

 **Warning**

Be sure to prevent the hand strap from being caught while carrying the product.

Be very careful with the hand strap. If the hand strap gets caught, injury or an accident may occur.



Do not use the Handy Terminal near electronic equipment requiring high-accuracy control or handling feeble signals.



Otherwise, the product could affect electronic equipment (medical electronic equipment, fire alarms, automatic doors, and other automatically-controlled equipment) and cause its malfunction.

Do not put a foreign object into the main unit.



If a foreign object or liquid gets into the main unit, stop using the main unit and contact the retail shop where you purchased it. If you continue to use the main unit as-is, there is a risk of such an accident as electrical shock and fire, or the device may become faulty.

 **Caution**

Keep the product as far away as possible from equipment generating noise such as a PC, fluorescent lamp, and microwave oven.

Otherwise, communication could not be performed correctly due to noise.



Be sure to hold the product in your hand when using.



If operating the product placed on the floor, on the desk, or in the charger cradle, there is a risk of malfunction or the device may become faulty.

Avoid any strong shock or impact.

Do not drop, throw, or hit the product. Otherwise, there is a risk of the device may become faulty.



Do not immerse the product in water or splash water over the product.



The Handy Terminal is not protected against immersion in water or water splash. Water could get inside the product and cause such an accident as electrical shock and fire, or the device may become faulty.

Do not use or store the product in a location where strong magnetic fields could be generated such as near a magnet, buzzer, speakers, CRT, and RFID antenna.

Otherwise, the product could malfunction or fail.



US/Canada Regulations

This device complies with Part 15 of FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of this device.

Le présent appareil est conforme aux la partie 15 des règles de la FCC et CNR d' Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure Compliance

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure of low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. [Wireless 2D-code Handy Terminal (GTX-221-G)] has been tested and found to comply with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65 and RSS-102 of the IC radio frequency (RF) Exposure rules.

Les connaissances scientifiques dont nous disposons n' ont mis en évidence aucun problème de santé associé à l' usage des appareils sans fil à faible puissance. Nous ne sommes cependant pas en mesure de prouver que ces appareils sans fil à faible puissance sont entièrement sans danger. Les appareils sans fil à faible puissance émettent une énergie radioélectrique (RF) très faible dans le spectre des micro-ondes lorsqu' ils sont utilisés. Alors qu' une dose élevée de RF peut avoir des effets sur la santé (en chauffant les tissus), l' exposition à de faibles RF qui ne produisent pas de chaleur n' a pas de mauvais effets connus sur la santé. De nombreuses études ont été menées sur les expositions aux RF faibles et n' ont découvert aucun effet biologique. Certaines études ont suggéré qu' il pouvait y avoir certains effets biologiques, mais ces résultats n' ont pas été confirmés par des recherches supplémentaires. [Wireless 2D-code Handy Terminal (GTX-221-G)] a été testé et jugé conforme aux limites d' exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles les radioélectriques (RF) de la FCC lignes directrices d' exposition dans le Supplément C à OET65 et d' exposition aux fréquences radioélectriques (RF) CNR-102 de l' IC.

Battery Pack (BP-004)

 **Danger**

Should the battery pack leak and fluid from the battery pack come in contact with your skin or clothing, immediately wash it off with clean water. In addition, should fluid from the battery pack get in your eyes, do not rub them. Immediately flush your eyes with clean water and consult a doctor.

Otherwise, there is a risk of blindness or other injury.



Do not put the battery pack into fire or heat the product.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire.



Do not get the battery pack wet or immerse it in water or sea water.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire.



Don't put a nail on, hit with a hammer, or stomp on the battery pack.

Otherwise, there is a risk of battery leakage, overheating, explosion, or fire.

 **Warning**

Do not use the battery pack if it leaks, or gets deformed or discolored.

If you continue to use the battery pack as-is, it could overheat, explode, catch fire, or leak. And keep the battery pack away from fire. Otherwise, leaked electrolyte could catch fire.

Laser Safety Standard

The Handy Terminal complies with the JIS C 6802 laser product safety standard.

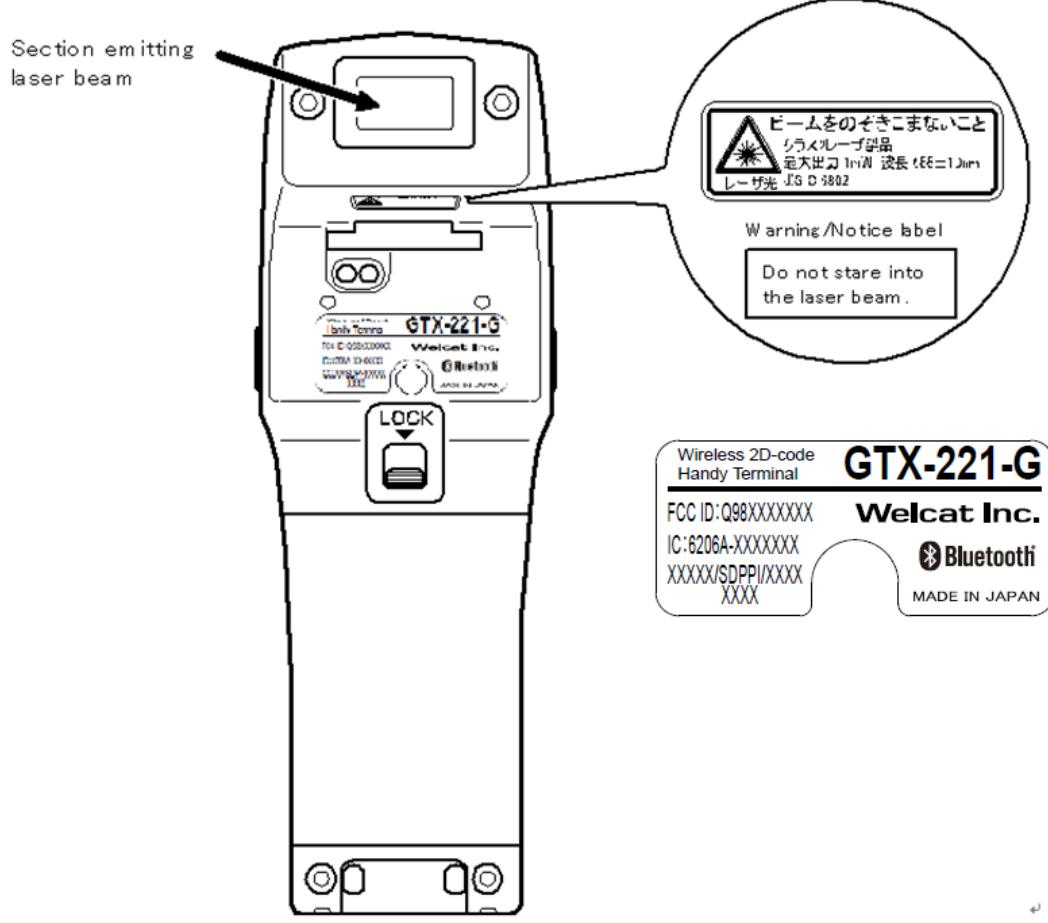
Laser class: Class 2

Maximum output: 1mW

Wavelength: 655±10nm

Your aversion response such as eye blinking can protect your eyes against lasers in Class 2. However, do not stare at a laser beam or get a laser beam in your eyes.

Laser-Related Warning Label



Caution

Be sure to observe instructions in the user's manual and don't disassemble the product. Otherwise, there is a risk of exposure to dangerous laser emitting.

LCD Screen

Depending on the product, red, blue, or green bright dots may remain on the screen or small dark dots may appear. In addition, when used in a low-temperature environment, the screen display looks a little slow to react. All these are irregularities due to the characteristics of the LCD and are not defects.

Precautions on Radio Waves

Be sure to observe the following precautions on using the Handy Terminal:

- Do not use the Handy Terminal when a person with cardiac pacemaker is around or near medical equipment. Otherwise, magnetic interference with medical equipment could occur and cause danger to life.
- Do not use the Handy Terminal near a microwave oven. Otherwise, a microwave oven could generate magnetic interference with radio communication of the Handy Terminal.

The following equipment and systems operate in the frequency band used by the Handy Terminal: industrial, scientific, and medical equipment including microwave ovens, private-radio stations (licensed radio stations) for mobile-unit identification used in factory production lines; specified low-power radio stations (radio stations not requiring licenses); and amateur radio stations (radio stations requiring licenses).

- Before using the Handy Terminal, confirm that none of the following stations operates: private-radio stations for mobile-unit identification; specified low-power radio stations; and amateur radio stations.
- Should the Handy Terminal cause harmful radio interference with a private radio station for mobile-unit identification, immediately change the frequency used, or stop emitting radio waves. Then, take measures to avoid interference such as installing partitions.

2.4DS/OF4

written on the product label means the following:

2.4	Frequency band used	2.4GHz band
DS/OF	Modulation method	DS-SS, OFDM
4	Assumed interfering distance	40m or less
---	Possibility of frequency change	Indicates that the whole bandwidth is used and that it is possible to avoid the bandwidth of mobile-unit identification equipment.

2.4FH1

written on the product label means the following:

2.4	Frequency band used	2.4GHz band
FH	Modulation method	FH-SS
1	Assumed interfering distance	10m or less
---	Possibility of frequency change	Indicates that the whole bandwidth is used and that it is not possible to avoid the bandwidth of mobile-unit identification equipment.

Notes on microSD Cards

Use microSD cards proved operable (See "1-2-3 Handling the microSD Card" (P.[38](#))).

For details on how to handle microSD cards, see the instruction manual provided with your microSD card.

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Summary of This Manual

■Composition of This Manual

This manual is made up of the following:

<u>System Architecture</u>	Explains an overview of the system configuration of the Handy Terminal. Read this part for a better understanding of the product.
<u>Chapter 1 Hardware</u>	Explains how to use each part of the Handy Terminal and how to use the hardware such as attaching the battery pack, charging, and reading barcodes.
<u>Chapter 2 Software</u>	Explains the software.
<u>Chapter 3 Communication</u> <u>Environment Settings</u>	Explains an environment for creating application software and how to create, install, and execute application software.
<u>Chapter 4 System Menu</u>	Explains how to operate basic functions and explains the system menu.
<u>Chapter 5 Specification</u>	Product specifications list.
<u>Chapter 6 FAQs and Answers</u>	Explains FAQs and trouble, and explains items required to check for troubleshooting.
<u>Consumables</u>	Explains consumables.
<u>Appendices</u>	Describes the settings before shipment and sample barcode.

■Notes on Symbols, Terms, and Manual Conventions

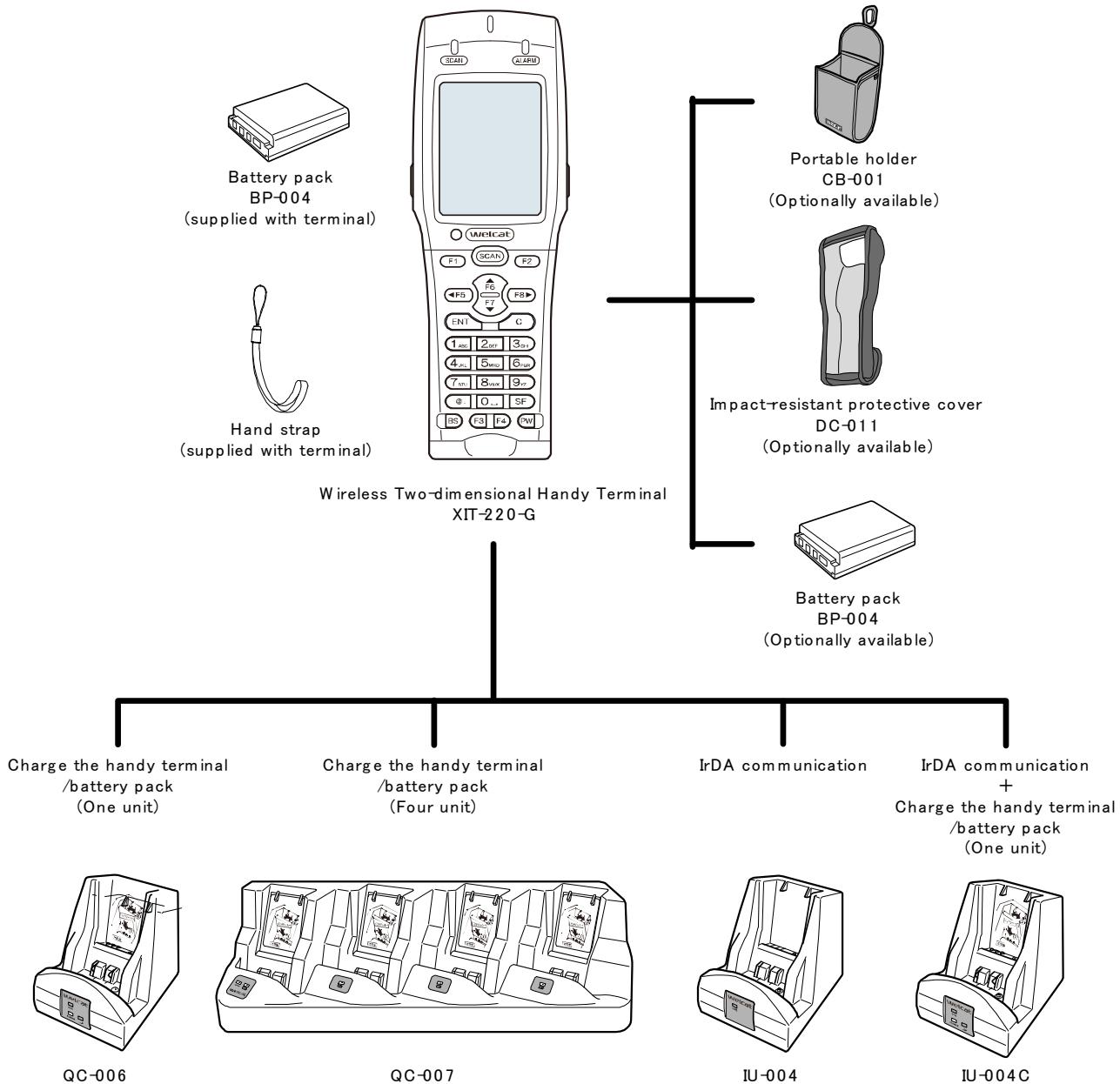
In this manual, the following symbols, terms, and conventions are used:

Caution	Describes items to be observed by the user and precautions when operating the product. Carefully read the description indicated by this symbol and be sure to observe the instructions.
Hint	Describes useful information and tips.
	Introduces pages describing related information or other manuals.
Product/main unit	Means the GTX-221-G main unit.
【 】 key	Names of keys on the control panel are described using 【 】. Example: the 【PW】 key
[]	UIs displayed on screen are described using []. Example: [System Menu]
STEP	Explains how to operate the system menu.
	Some operation on the system menu is restricted when the battery pack level is lower than the specified value (which depends on the operation) at the time of execution. This symbol is used to explain how to perform operation in such cases.
	For some operation on the system menu, the settings can be collectively made from your PC using the DHCP client function. This symbol is used for how to operate the DHCP client function in such cases.

System Architecture

■Product Configuration

The basic product configuration for the Handy Terminal is given below. Please ensure that the necessary accessories are available.



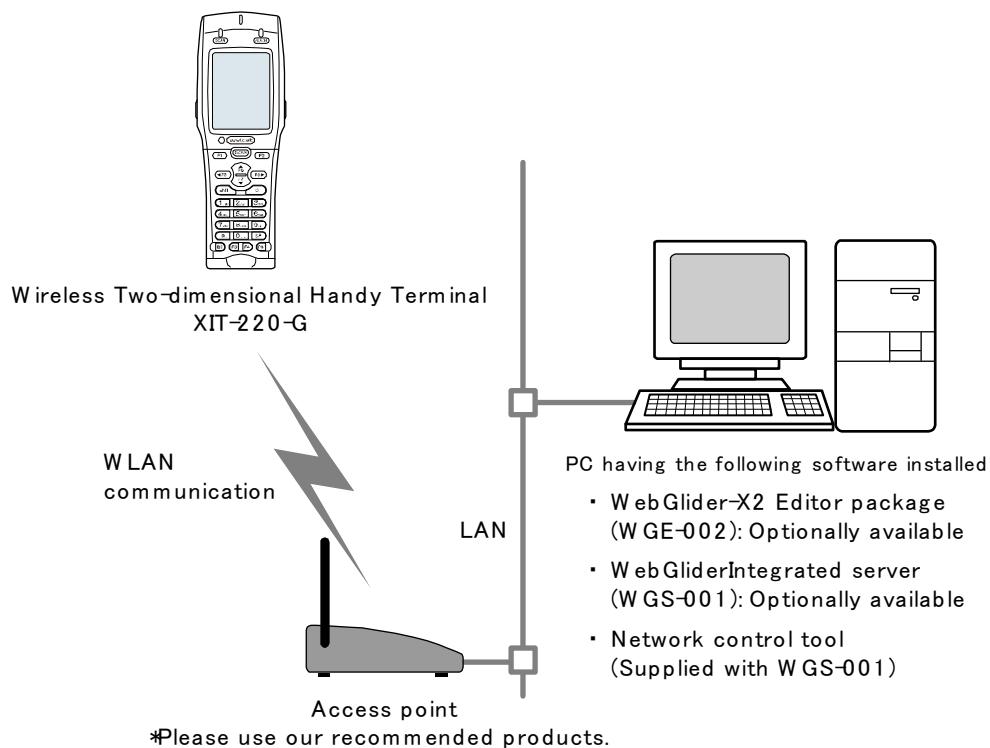
■ WLAN Communication System Configuration

You can perform communication with a PC after configuring WLAN communication and TCP/IP with the access point connected to the Ethernet LAN.

This makes it possible to download an application software created on the PC, transmit/receive data, or configure the Handy Terminal from the PC.

This communication requires an access point, an Ethernet cable and a HUB.

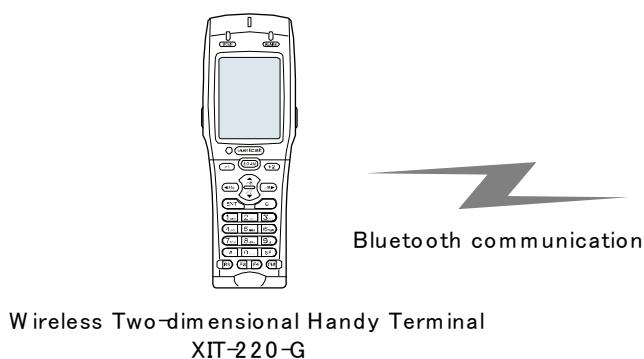
For WLAN communication settings related details, see "3-2 Building WLAN Communication Environment" (P. 68) "4-4 WLAN: WLAN Communication Settings" (P. 114). "4-5 Network: Network Connection Settings" (P. 130) as well as the access point manual.



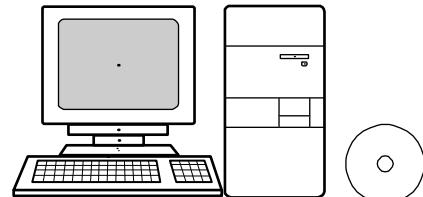
- When sending files to a PC from the Handy Terminal
"4-7 File: Executing, Uploading, and Deleting Files" (P. 152)
- When receiving files from a PC to the Handy Terminal
"4-6 Receive: Receiving Files" (P. 146)

■Bluetooth Communication System Configuration

You can transfer files between the PC and the Handy Terminal by connecting a Bluetooth communication adapter to a USB port of the PC. This communication mode requires an optional transfer utility, the BluePorter-V Bluetooth pack (WLF-003-BT2). There are also usage methods such as printing after sending the data to a portable printer that has Bluetooth connectivity.



Wireless Two-dimensional Handy Terminal
XIT-220-G



Transfer utility BluePorter-V
(Bluetooth communication adaptor
is included in the utility.)
WLF-003-BT2 (Optionally available)



Bluetooth compatible devices such
as the portable printer and PDA
(As for the portable printer, please
use our recommended products)

Bluetooth communication requires the following settings:

Item	Description	Reference page
Terminal ID	Sets the ID for identification. Set when sending/receiving files using BluePorter-V.	"4-8 Terminal ID: Configure the ID for Terminal Identification" (P. 163)
Bluetooth Registration	You can perform settings such as security, and registration of the connection destination required by Bluetooth communication.	"4-9-3 Bluetooth: Registering and Setting the Bluetooth Device" (P. 169)

■ Infrared Communication (IrDA) System Configuration

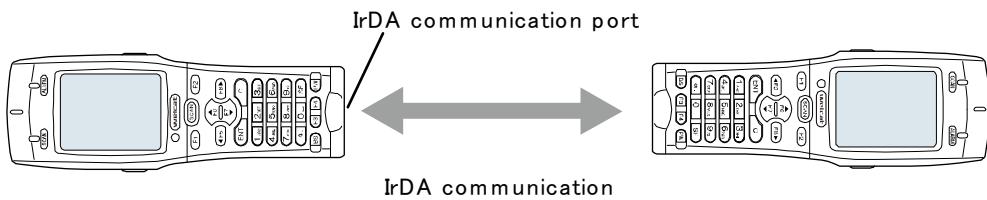
You can use infra-red (IrDA) communication between Handy Terminals, or with a PC via a USB communication unit.

● Communication between Handy Terminals

You can perform file transfer between Handy Terminals. Communication is performed with the infrared communication ports of two Handy Terminals aligned with each other.

Ensure that the distance between the infrared communication ports is not more than 15cm.

For details, see “●To use infrared (IrDA) communication” (P. [158](#)).



In infrared communication, communication trouble may occur the influence of ambient light.

Caution

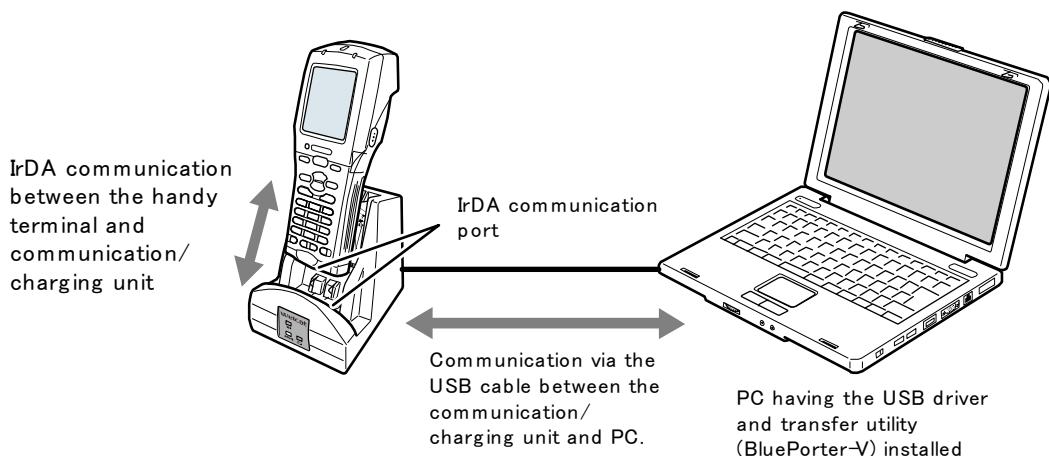
Be sure to prevent the light from entering the infrared communication port during communication.

● Communication by USB Communication Unit

Files can be sent/received to/from a PC via a USB communication unit (IU-004) or USB communication/charging unit (IU-004C).

This communication mode requires an optional IU-004 or IU-004C, and also the transfer utility BluePorter-V.

For details, see “3-4 Building Infra-red Communication (IrDA) Environment” (P. [81](#)).



Chapter **1**

Hardware

1-1 About the Handy Terminal

1-1-1 Confirm the Supplied Items

The following items are supplied with the Handy Terminal. Check whether all these items are present.

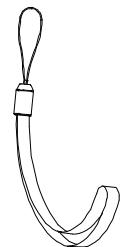
If any item is missing or found to be defective, please contact your dealer.



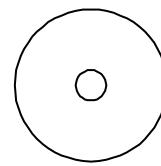
Wireless Two-dimensional Handy Terminal
XIT-220-G



Battery pack
BP-004



Hand strap



User's Manual
CD-ROM



One user manual CD (this manual) is supplied with each order (one CD is included with each order regardless of the number of units ordered).

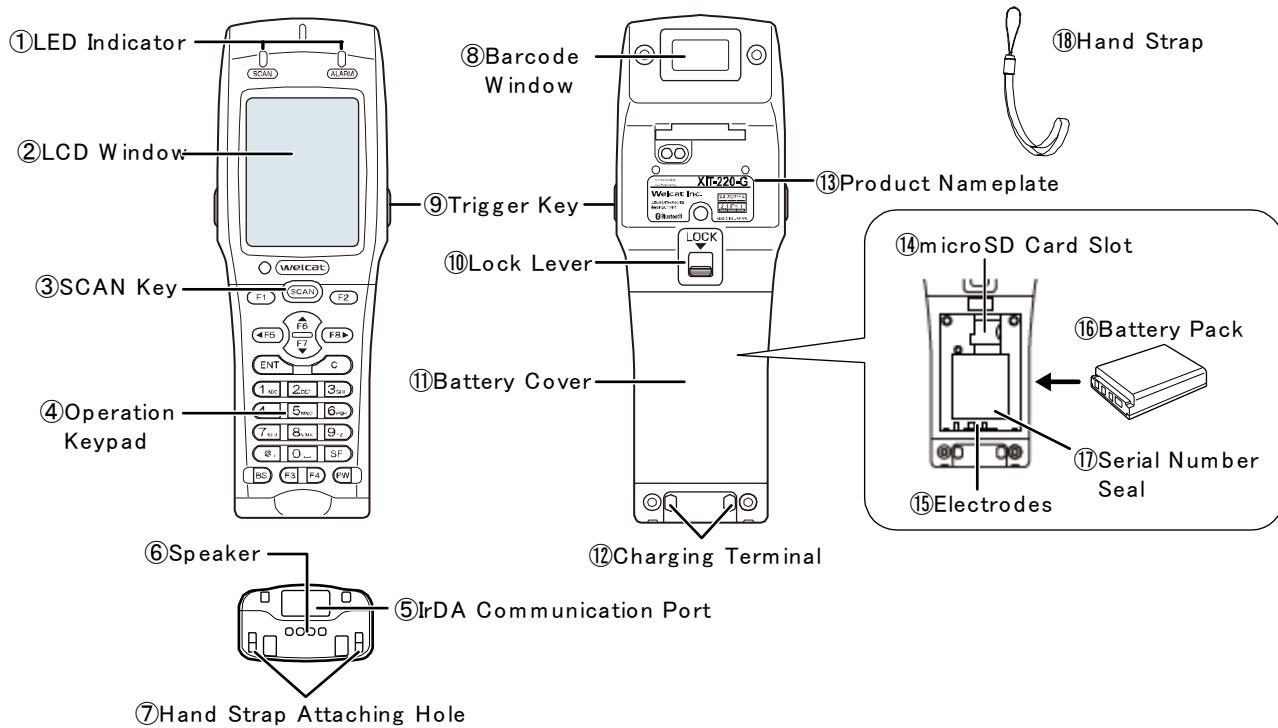
1-1-2 Optional Items

The Handy Terminal has the following related accessories. Prepare them when necessary.

Product Name	Model No.	Description
Battery Pack	BP-004	Rechargeable lithium-ion battery.
Single Charger	QC-006	This charger is for charging a Handy Terminal and a battery pack. It can charge one Handy Terminal and one battery pack.
Multi Charger	QC-007	This charger is for charging multiple Handy Terminals and battery packs. It can charge up to four Handy Terminals and four battery packs.
USB Communication Unit	IU-004	This communication unit has no charging function; it is used to connect the Handy Terminal to a PC. Communication between the Handy Terminal and IU-004 is performed via infra-red rays, and communication between IU-004 and a PC is performed via USB.
USB Communication/Charging Unit.	IU-004C	This communication unit connects the Handy Terminal to a PC, and also has a charging function. Its charging function allows charging of both one Handy Terminal and one battery pack. Communication between the Handy Terminal and IU-004C is performed via infra-red rays, and communication between IU-004C and a PC is performed via USB.
Impact-resistant Protective Cover	DC-011	This cover protects the Handy Terminal from scratches, dust, and impact.
Portable Holder	CB-001	This holder accommodates the Handy Terminal and attaches it to the waist.
Transfer Utility BluePorter-V	WLF-003	This transfer utility allows you to send/receive files to/from a PC. The USB communication unit enables sending/receiving files. It is required when using IU-004/004C.
Transfer Utility BluePorter-V Bluetooth Pack	WLF-003-BT2	This transfer utility allows you to send/receive files to/from a PC. Using a Bluetooth USB adapter or a USB communication unit enables sending/receiving of files. It is required when using IU-004/004C or Bluetooth USB adapter. A USB adapter is attached.
WebGlider -X2 Editor Package	WGE-002	This is required when performing data communication with a PC or building a system using WebGlider-X2 Browser.

Product Name	Model No.	Description
WebGlider Integration Server	WGS-001	<p>This is required when building a system by which HTTP communication is performed with GTX-221-G.</p> <p>To perform communication with the WebGlider integration server, you will need to install WebGlider-X2 Browser into the Handy Terminal.</p> <p>The WebGlider integration server CD-ROM contains network management tools. The network management tools are required for performing file transfer or DHCP settings.</p>

1-1-3 Name and Function of Each Unit

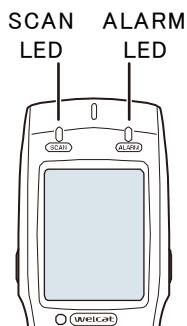


No.	Name	Description
①	LED Indicator	Two different LED displays (SCAN and ALARM) display the information (see next section, "■LED indicator").
②	LCD Window	Displays characters and images.
③	SCAN Key	Pressed when reading barcodes. It is also used when forcibly launching the system menu (see "1-3-3 Useful Features during Operation" (P. 55)).
④	Operation Keypad	For names of the respective keys, see "■Names of Operation Keys" (P. 32). For operations of the respective keys, see "4-1-1 Operation Keys" (P. 92).
⑤	IrDA Port	The infra-red (IrDA) system enables you to communicate with other handy terminals or USB communication units.
⑥	Speaker	Makes the sound of a buzzer or other devices.
⑦	Hand Strap Attaching Hole	Used for attaching the hand strap.
⑧	Barcode Window	A window for reading barcodes. *Do not look into the window as it is irradiated with laser light.
⑨	Trigger Key	Pressed when reading barcodes.

No.	Name	Description
⑩	Lock Lever	Locks/releases the battery cover. Moving the lever in the direction of the arrow locks the cover.
⑪	Battery Cover	This is the cover of the battery pack compartment. A function has been included for detecting whether the battery cover has been closed properly. The Handy Terminal cannot be started if the cover is not closed properly.
⑫	Charging Terminal	Charging terminals for both single chargers and multi chargers.
⑬	Product Name Plate	Provides product name, manufacturer's name, laser warning, etc.
⑭	microSD Card Slot	Used for inserting a microSD card. Lift the cover and insert the card.
⑮	Electrodes	Electrodes to draw power from the battery pack.
⑯	Battery Pack	The supplied lithium ion secondary battery.
⑰	Serial Number Seal	Displays the serial number. Please provide this serial number in case of any product-related inquiry.
⑱	Hand Strap	Used after being attached to ⑦ Hand Strap Attaching Hole.

■LED indicator

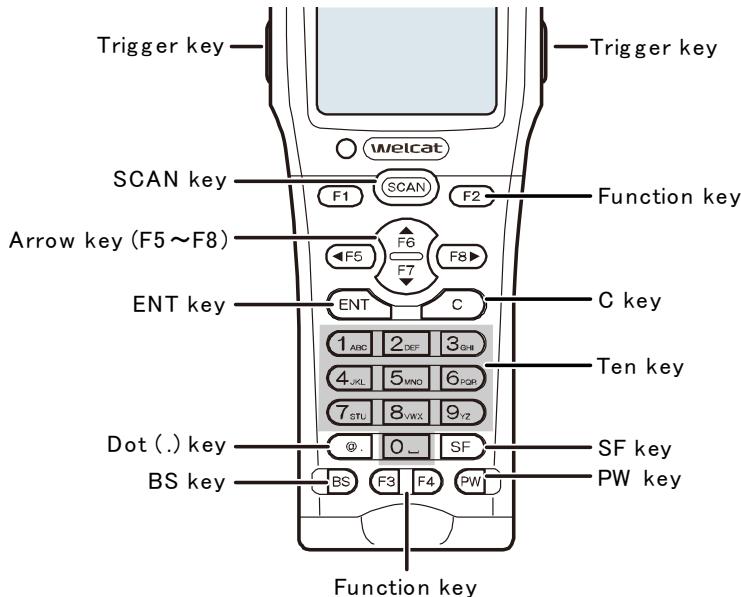
The respective LED indicators indicate the following operation statuses.



SCAN LED	<p>Can control LED ON / Blink / LED OFF at any timing from an application software.</p> <p>Indicates charging in progress and charging completed while placed in a charger slot.</p> <p>【While Charging】</p> <p>Green: Charging completed</p> <p>Red: Charging in progress</p> <p>LED OFF: Charging error</p>
ALARM LED	<p>Indicates the communication status while WLAN is being used.</p> <p>Orange LED ON: Out of range while WLAN is enabled</p> <p>Orange Blinking: Authentication in progress while WLAN is enabled</p> <p>LED OFF: Within range while WLAN is enabled</p> <p>Can control LED ON / Blink / LED OFF at any timing from an application software while WLAN is disabled</p>

■Names of Operation Keys

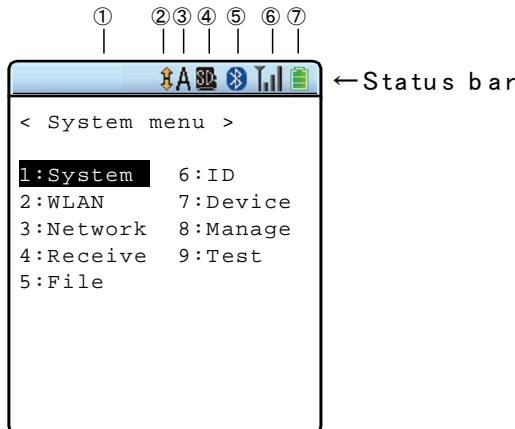
The names of the operation keys are as follows:



For operations of the keys during system menu operation, see "4-1-1 Operation Keys" (P. 92).

■LCD Screen Status Bar

The status bar indicating the status of the Handy Terminal is located at the top of the LCD screen.



The status bar displays the following information:

No.	Name	Icon	Description
①	Text Display Area	—	Used to display text, depending on the application software.
②	Scroll		Displayed when vertically scrollable depending on the application software.
③	Type of the Entered Text		Indicates the type of text entered from the numeric keypad. "A" is displayed when an alphabetic character is entered, and "1" is displayed when a numeric character is entered.
④	SD Card		Displayed when a microSD card is inserted.
⑤	Communication Status		Displayed while Bluetooth connection exists with another device and transmission/reception is possible. Displayed in red while there is no Bluetooth connection with another device.
			Displayed while Bluetooth is enabled, but no connection exists with another device.
			Displayed while transmission/reception using infrared communication (IrDA) is possible.
⑥	WLAN Status		Indicates the radio field intensity during WLAN communication. The number of bars decreases as the radio field intensity becomes weaker.
⑦	Battery Pack		Indicates the current charge level in the battery pack. The number of bars decreases as the charge level in the battery pack decreases (see "1-2-5 Remaining Charge Level Display and Alarm for the Battery Pack" (P. 48)).

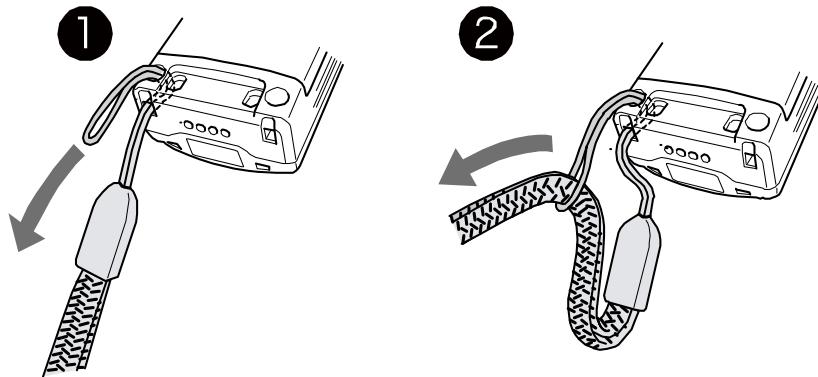
1-2 How to Use the Handy Terminal

1-2-1 Attaching the Hand Strap

The hand strap attaching hole is located at the bottom of the back side.

①Push the thin loop at the top of the hand strap through the attaching hole.

②Pass the hand strap through the loop that has been inserted through the attaching hole.



- Please do not swing the Handy Terminal while holding the hand strap. The thin loop may wear down and break.
- Be fully aware that in cases such as the Handy Terminal is caught by a movable device while the hand strap is around your wrist, your hand may be yanked, leading to injury.
- When charging the Handy Terminal using the multi charger (QC-007), bring the hand strap to the front right of the Handy Terminal so that it will not get caught in the charging terminals.

Caution

1-2-2 Handling the Battery Pack

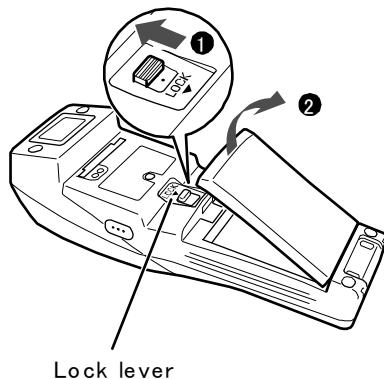
■Attaching the Battery Pack

Caution

- Do not use any battery pack other than that specified.
- Be sure to charge the battery pack before using it for the first time.

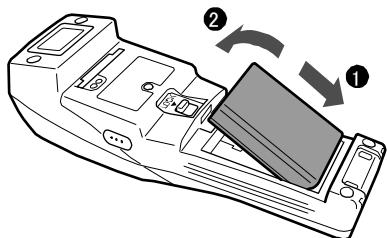
①To release the lock, move the lock lever in the arrow direction (towards the Barcode window).

②Pull the battery cover toward you from the lock lever side.

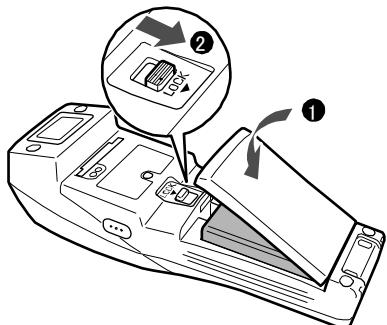


③Holding the battery pack with the label side facing upward, move it forwards so that its terminals make contact with the electrodes of the Handy Terminal.

④ After verifying that the battery pack terminals and the Handy Terminal electrodes have made proper contact, press down the opposite side of the battery pack.



⑤ Insert the claws of the battery cover into the Handy Terminal till the lock lever clicks, with its other side closely in contact with the Handy Terminal. Press till the lock lever is properly located at its lower extreme position.



- Verify that the lock lever has completely moved down in the arrow direction (towards the battery pack), leaving no gap. If this locking is not done properly, the battery pack may detach or fall off and get damaged.
- If the battery cover has not been closed correctly, the Handy Terminal cannot be started.
- A gasket has been fitted into the battery cover in order to prevent water ingress. When attaching the cover, verify that the gasket has not become detached and that there is no adhering waste material. In case any adhering waste material is found, wipe it off with a dry and clean cloth.
- Do not touch or pull the electrodes. This may cause contamination and/or deformation of the electrodes, leading to poor contact. If the electrodes are dirty, wipe them using a clean and dry cloth (see "1-4 Maintenance Method" (P. [57](#))).

Caution

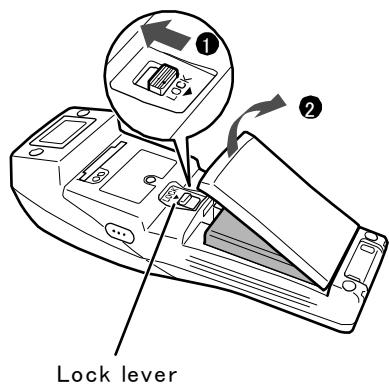
■Detaching the Battery Pack

You can detach the battery pack from the Handy Terminal.

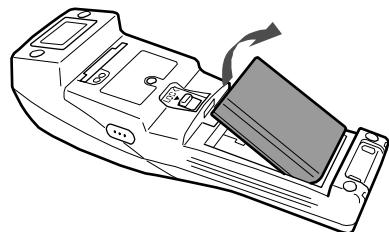
- Before detaching it, verify that the power has been completely turned off.
- If you open the battery cover during operation, a warning message will be displayed. Before replacing the battery pack, save the data, terminate the application software, and then turn off the power.
- If you detach the battery pack while file write (data communication, file reception, backup) is in progress, the file may get corrupted. Take measures such as deleting the file or recovering the data after transferring the data to a PC or other locations.

①To release the lock, move the lock lever in the arrow direction (towards the Barcode window).

②Pull the battery cover toward you from the lock lever side.



③Lift the back end of the battery pack (Barcode window side) and take it out.



1-2-3 Handling the microSD Card

You can attach a microSD card to the Handy Terminal and save the data using it as the R drive.

- Use a tested microSD card.
- Before attaching or detaching the card, verify that the power has been completely turned off.
- If you open the battery cover, a warning message will be displayed. Before opening the battery cover, save the data, terminate the application software, and then turn off the power.

Caution

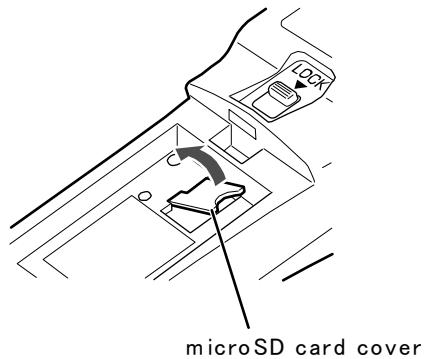
■ Tested microSD Card

For tested microSD cards, contact your dealer.

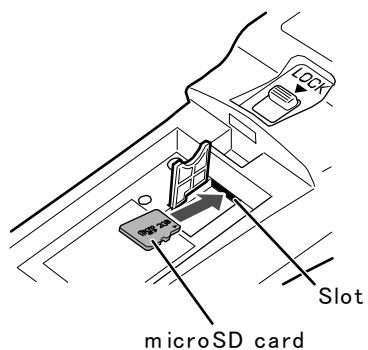
■Installing the microSD Card

①Detach the battery pack (see "■Detaching the Battery Pack" (P. [37](#))).

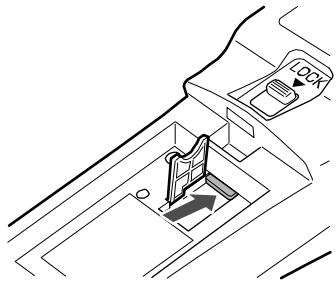
②Lift the microSD card cover.



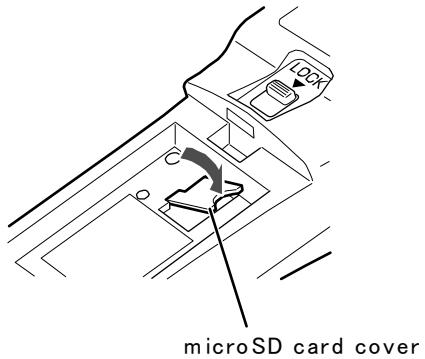
③Insert the microSD card into the slot. At this time, hold the card with its electrode side facing downward and its arrow mark (▲) pointing toward the slot.



④Push the microSD card into the slot till it "clicks".



⑤Return the cover of the microSD card to its original position.

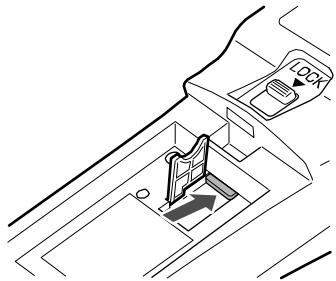


⑥Attach the battery pack, and return the battery cover to its original position (see "■ Attaching the Battery Pack" (P. [35](#))).

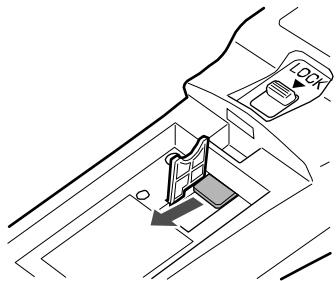
■Detaching the microSD Card

①Detach the battery pack (see “■Detaching the Battery Pack” (the previous page)).

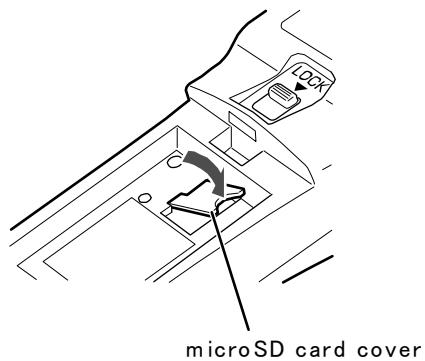
②Lift the microSD card cover, and push the microSD card into its slot till it “clicks”.



③The lock is released, and the microSD card comes out partly. Then, pull out the card using your fingers.



④Return the cover of the microSD card to its original position.



⑤Attach the battery pack and return the battery cover to its original position (see “■Attaching the Battery Pack” (P. [35](#))).

1-2-4 Charging the Battery Pack

The Handy Terminal is charged using a dedicated charger (available separately). There are two charging methods: Handy Terminal charging and battery pack charging.

- Handy Terminal charging: Charging the Handy Terminal with the battery pack attached.
- Battery pack charging: Charging the battery pack separately.

The charger has the following types:

- Charging one unit: Single charger (QC-006) or USB communication/charging unit (IU-004C)
- Charging multiple units (up to four units): Multi charger (QC-007)

• Operating the Handy Terminal keys during charging may lead to poor contact with charging terminals. Do not perform key operations during charging. Otherwise, charging or file transfer may be interrupted.

• Perform charging in an environment of 0°C – 40°C. Charging error will occur and charging will be terminated if the temperature is outside this range.

Even after a charging error appears, charging will resume if the temperature enters the acceptable range. However, as this may lead to trouble, be sure not to use it outside 0°C – 40°C.

• Charging error may occur if the terminals of the Handy Terminal or the battery pack do not make proper contact. If charging is not completed within the specified time or if the voltage of the battery pack becomes abnormal.

In such cases, stop charging immediately. If charging error persists even after you have cleaned the charging electrodes of the Handy Terminal and the terminals of the battery pack, please contact your dealer.

• If the Handy Terminal does not start even after being charged, or if low battery occurs within an extremely short time, the following reasons are considered:

Deterioration of the Battery Pack

The battery pack deteriorates with repeated charging, and the chargeable capacity becomes low. Replace it with a new battery pack if its operating time becomes short and is not suitable for operation.

Poor Contact of the Charging Terminal Electrodes

If the electrodes of the charging terminals of the battery pack or the Handy Terminal have become dirty, charging may not be performed normally due to poor contact. In such a case wipe the electrodes using a clean cloth.

Caution

●Charging Status

The charging status of the Handy Terminal is displayed by the SCAN LED on the Handy Terminal. The battery pack charging status is displayed by the CHG LED on the charger.

Charging Status	SCAN LED	CHG LED
Charging	Red LED ON	Red LED ON
Charging Completed	Green LED ON	Green LED ON
Charging Error	LED OFF	LED OFF

●Handy Terminal Charging Time

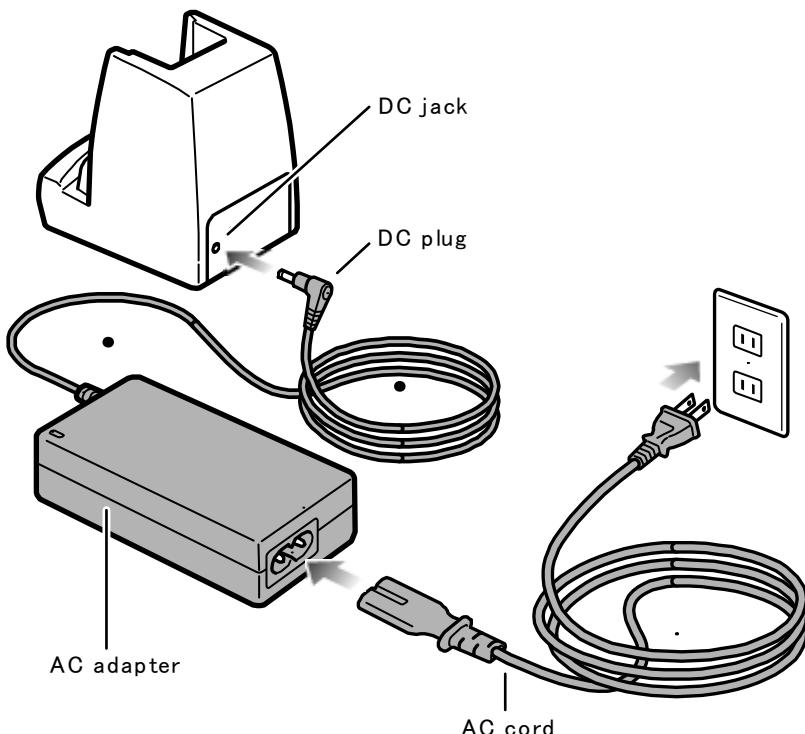
Approximately 2.5 hours

■Charging One Unit

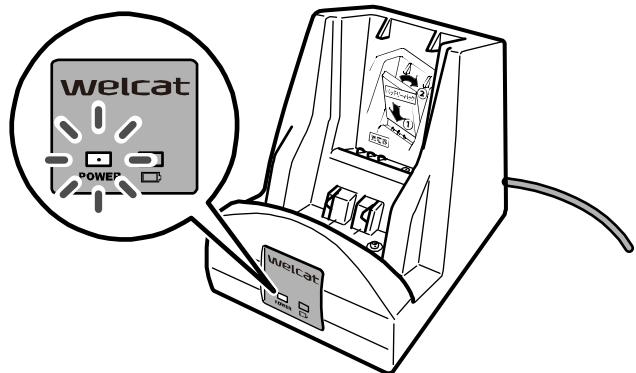
Perform charging by the following procedure:

①Insert the DC plug of the AC adapter into the DC jack located on the back of the charger.

Connect the AC cord to the AC adapter, and then connect the plug of the AC cord to the mains outlet.



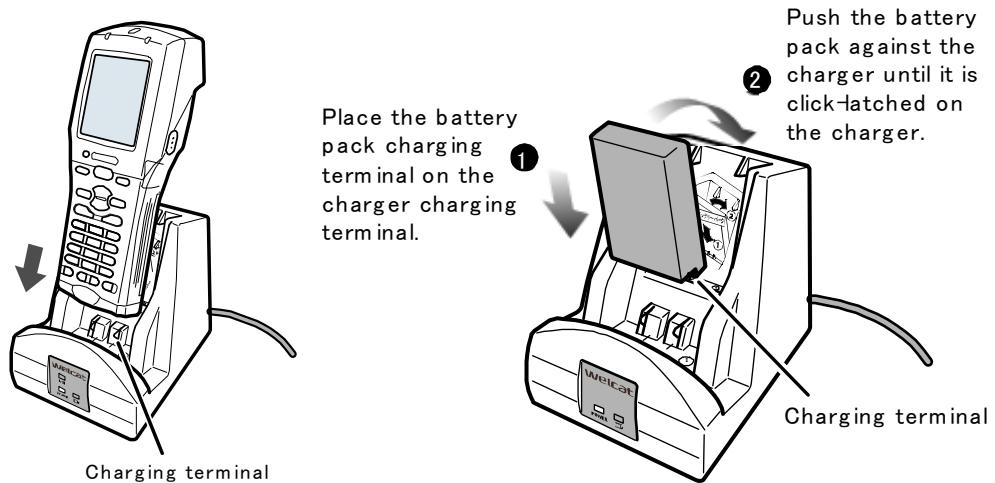
Verify that the POWER LED on the front of the charger is turned on in red.



② Mount the Handy Terminal or the battery pack on the charger.

Hint

When the Handy Terminal and the battery pack are both mounted at the same time, charging the Handy Terminal takes precedence. Once charging of the Handy Terminal is completed, charging of the battery pack is started.



The above figures show examples for the single charger (QC-006).

Insert the battery pack with its terminal side downward and with the side displaying the product model No. (BP-004) and other information facing you. Bring the terminals of the battery pack in contact with the charging terminals of the charger, and press till they click so that the claws are hooked.

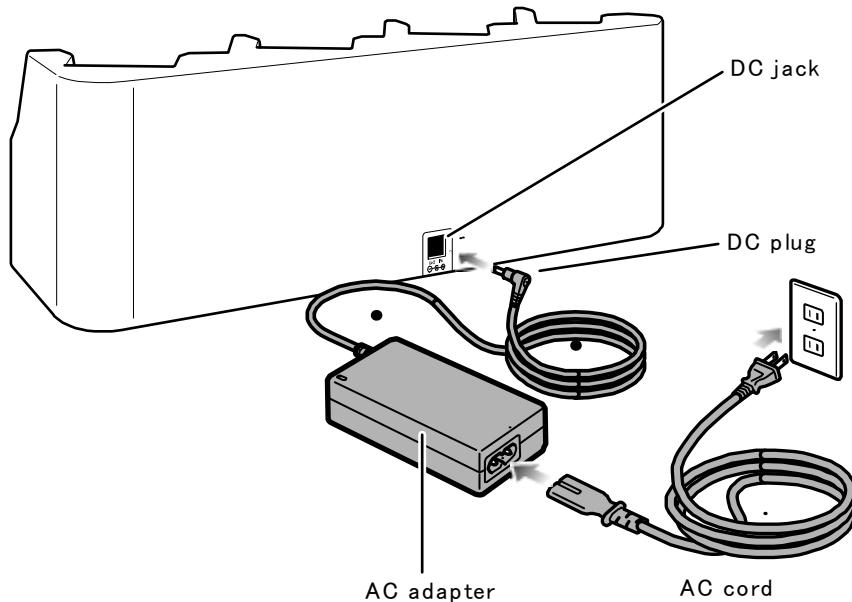
To charge the Handy Terminal and the battery pack at the same time, attach the battery pack first.

■Charging Multiple Units

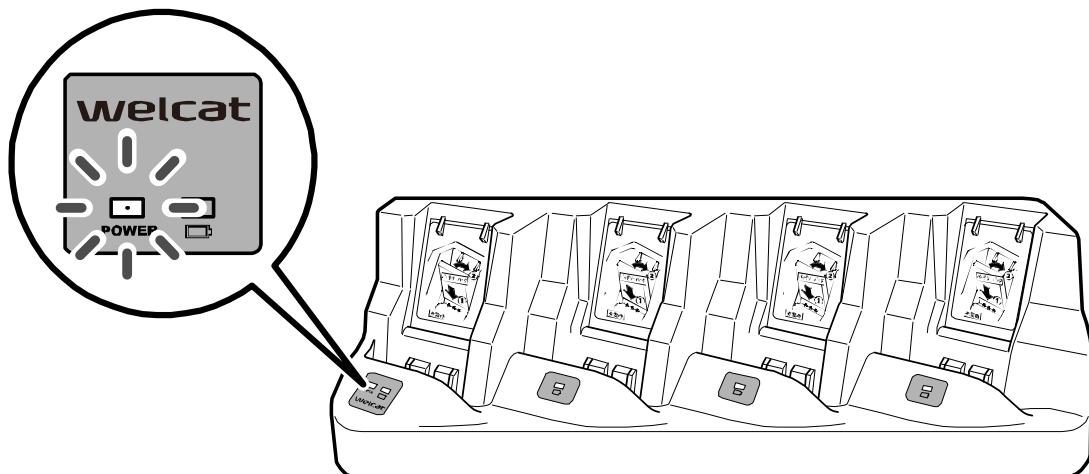
You can charge multiple units using the multi charger (QC-007).

①Insert the DC plug of the AC adapter into the DC jack that located on the back of the charger.

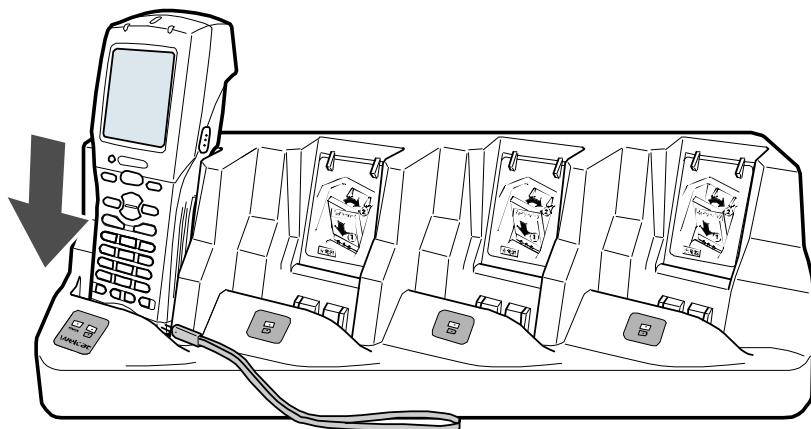
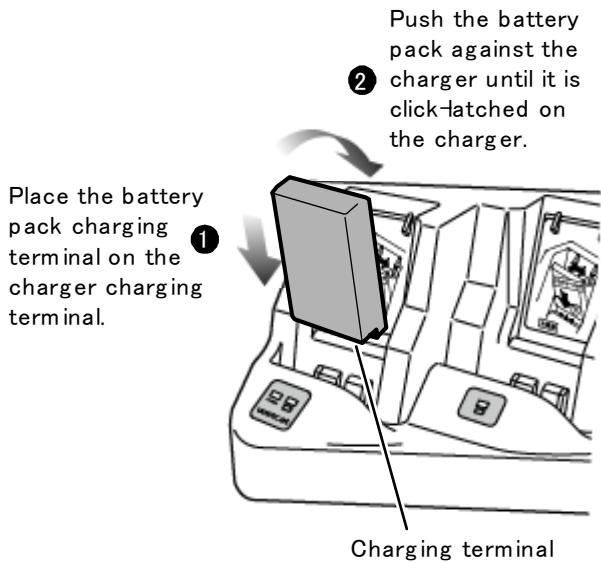
Connect the AC cord to the AC adapter, and then connect the plug of the AC cord to the mains outlet.



Verify that the POWER LED on the front of the charger is turned on in red.



② Mount the Handy Terminal or the battery pack on the charger.



Insert the battery pack with its terminal side downward and with the side displaying the product model No. (BP-004) and other information facing you. Bring the terminals of the battery pack in contact with the charging terminals of the charger, and press till they click so that the claws are hooked.

To charge the Handy Terminal and the battery pack at the same time, attach the battery pack first.

Caution

When charging the Handy Terminal using the multi charger (QC-007), bring the hand strap to the front right of the Handy Terminal so that it will not get caught in the charging terminal unit.

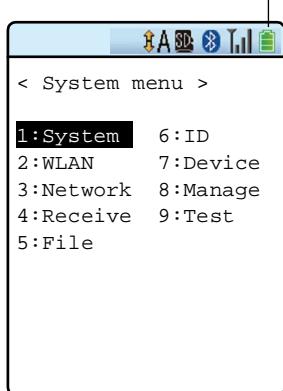
1-2-5 Remaining Charge Level Display and Alarm for the Battery Pack

■ Remaining Charge Level Display for the Battery Pack

If the battery pack's remaining charge level becomes low, the operations are disabled. And then, the power is turned off.

The battery pack's remaining charge level is displayed in the status bar at the top of the LCD screen.

Remaining battery pack power icon



The battery's remaining charge level is sufficient.



The battery's remaining charge level is getting low.



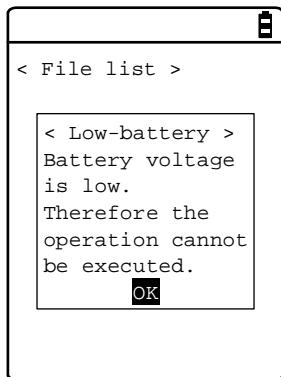
The battery's remaining charge level is insufficient. Please charge it.



The battery has no charge left. Charge your battery pack immediately or replace it with a charged battery pack.

●Limitations when the remaining battery pack power becomes insufficient

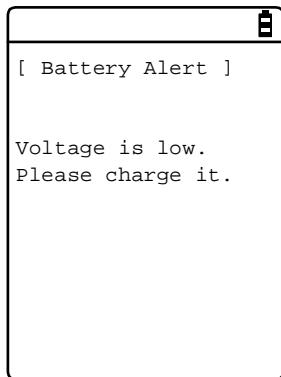
Some operations of the system menu are disabled and the following screen is displayed, when the remaining battery pack power icon shows one bar or no bars (varies depending on the operations).



This manual displays the disabled operations using .

●Low Battery Display

After the remaining battery pack power icon displays empty (no bars), if the voltage falls even lower, the following screen is displayed, and the power is forcibly turned off after approximately five seconds.



■Charging the Backup Battery

The Handy Terminal has a built-in backup battery for backing up the system information. Charge the backup battery using the following procedure:

① Prepare a fully charged battery pack.

② As soon as the battery pack is attached to the Handy Terminal, the backup battery starts to be charged.

If the backup battery has been completely depleted, charging requires at least 24 hours. During this time, do not detach the battery pack.

1-2-6 Memory Backup

The Handy Terminal has two drives as file save areas: the F drive (non-volatile) and the S drive (volatile). As the application data downloaded from the PC is saved in the F drive, the data will not disappear even if the battery pack has been depleted (see "2-1-1 About Data"—"■ Drive Configuration" (P.[59](#))).

Backup is performed using the battery pack and the backup battery.

■Memory Backup

●Memory Backup by Battery Pack

Backup Period	<p>The data storage period while the fully charged battery pack is attached is as follows:</p> <ul style="list-style-type: none">• The data and the resume information in the S drive: Approximately 10 days
Usage Notes	<p>If the battery pack has been detached during operation, or the memory backup function on the system menu has been disabled, the data and resume information in the S drive will disappear. To save the information temporarily, be sure to enable the memory backup function, press the 【PW】 key, turn off the power, and then detach the battery pack. For the resume function, see "■Resume Function: Retaining the State during Power OFF" (P.107).</p> <p>The backup period will become extremely short after about six months if you repeat operations such as detaching the battery pack when you do not use the Handy Terminal (making full use of memory backup by the backup battery) on a daily basis. In such a case, you will need to replace the backup battery by purchasing a new battery. Therefore, it is recommended to always keep the battery pack attached except when replacing it.</p>

●Memory Backup by Backup Battery

Purpose	To retain the built-in clock data in the Handy Terminal. Or to save the S drive data only for a certain period, such as in case of battery pack replacement. If the resume function has been enabled, the resume information will be saved.
Backup Period	The data storage period while the battery pack is detached after normal end*1 is as follows: • The resume information and data in the S drive (if the resume function is enabled): Approximately 10 days • Built-in clock data: Approximately 6 months The data storage period when end occurs due to mothball setting*2 is as follows: • Built-in Clock Data: Approximately 1 year (regardless of whether the battery pack is attached or not) The above mentioned are actual values but are not guaranteed.
Usage Notes	For long-term storage of the Handy Terminal, see "1-2-7 Long-term Storage" (P. 52). Data that has been lost due to depletion of the backup battery cannot be recovered. Save any data other than temporarily required data in the F drive.

*1 Normal End: End method by which the battery pack is detached after the **【PW】** Key is pressed

*2 End by Mothball Setting: End method by which mothball is selected from the system menu

■Charging the Backup Battery

The Handy Terminal has a built-in backup battery for backing up the memory and the built-in clock. Charge the backup battery using the following procedure:

① Prepare a fully charged battery.

② As soon as the battery pack is attached to the Handy Terminal, the backup battery starts to be charged.

If the backup battery has been completely depleted, charging requires at least 24 hours. During this time, do not detach the battery pack.

1-2-7 Long-term Storage

■Long-term Storage of the Handy Terminal

It is recommended that you enable the mothball setting if the Handy Terminal is not going to be used for a long term (six months or longer).

Enabling the mothball setting shuts down the power immediately.

The data and the resume information in the S drive will disappear after the mothball setting is enabled, but the built-in clock data continues to be retained. This, therefore, can reduce the consumption of the backup battery.

For how to enable the mothball setting, see "4-10-5 Mothball: Settings When Not Using the Product For Long" (P. [196](#)).

■Long-term Storage of the Battery Pack

If the battery pack is not to be used for a long term, it is recommended that you enable the above-mentioned mothball setting for the Handy Terminal, detach the battery pack, and store it in a cool place with it approximately 50% charged. Storage with full charge or in a high-temperature environment shortens the service life of the battery pack.

1-3 Basic Usage Method

1-3-1 Power ON/OFF

Caution

Power ON is not available unless the battery cover is completely closed.

If you open the battery cover during operation, a warning message is displayed.

To turn on the power, press the **【PW】** key for at least 1 second.

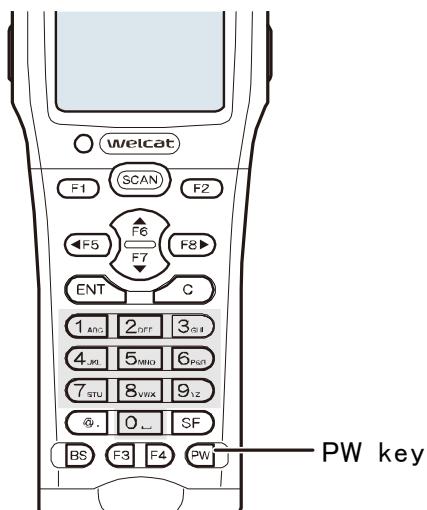
* When you first turn on the power after attaching the battery pack, you need to press the **【PW】** key for at least two seconds.

When auto execution of application software has been set, the selected application software  is started (see "4-3-1 Auto Execute: Automatic Execution of the Application Software  (P. [103](#))).

To turn off the power, press the **【PW】** key.

Hint

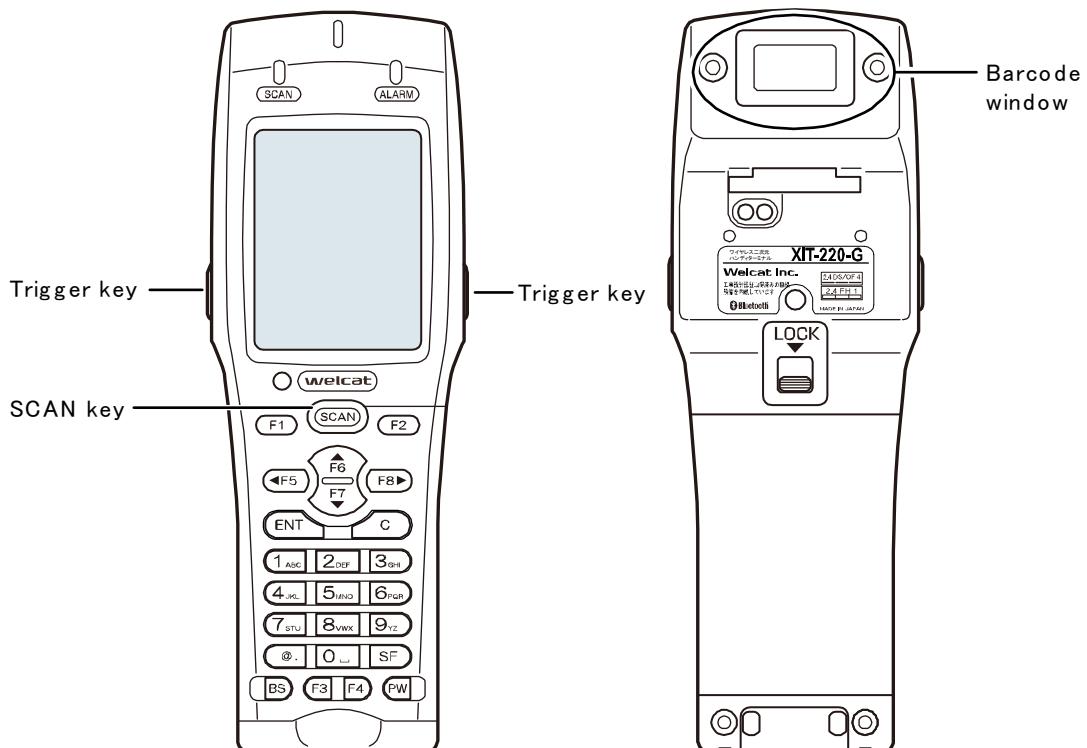
- To launch the system menu, press the **【PW】** Key for at least one second while holding down the **【SCAN】** Key.
- When auto execution of application software has been set, the selected application software  is started (see "4-3-1 Auto Execute: Automatic Execution of the Application Software  (P. [103](#))).



1-3-2 How to Read a Barcode

■Read Method

When reading a barcode, make the Barcode window on the back side to face the barcode, and then press the 【SCAN】 Key or the trigger keys located on the left and right.

**Caution**

Laser light is irradiated from the Barcode window. Do not look into the Barcode window or look at the laser light.

1-3-3 Useful Features during Operation

■Forcible Startup on the System Menu

In the power OFF state, when the Handy Terminal is started by pressing the **【PW】** Key while holding down the **【SCAN】** key, the system menu is forcibly launched even when "Auto execute" is set on the application software.

■Auto-dimming Setting

The Handy Terminal has a built-in ambient light sensor which senses the surroundings and automatically controls the dimming of the LCD backlight and the lighting of the key backlights. On the system menu, select **[7:Device] — [4:Display] — [2:SetAlsSensor]** and make the setting.

However, when the backlight is set to remain bright for a certain time after key entry, it will go dim after being lighted up for the set time.

■Buzzer Volume Adjustment

You can adjust the buzzer volume, the key click sound, etc.

On the system menu, select **[7:Device] — [5:Tone/Vibrator]** and make the setting.



For its detailed setting method, see "4-9-5 Tone/Vibrator: Setting the Volume, LED, and the Vibrator" (P. [178](#)).

■Resume Function (Retention of the State during Power OFF)

If the resume function is enabled, the state when the power was turned OFF is saved, allowing you to resume your work thereafter upon the next startup.

You can select the operations on power resumption when selecting [1:System] — [3:Power Management] — [2:Resume].



For its detailed setting method, see "4-3-3 Power Management: Various Settings Related to Power" (P. [107](#)).

- If the battery pack is removed during operation, upon the next startup the initial screen will be launched regardless of whether the resume function is enabled or disabled.



- If the backup battery is depleted, the initial screen will be started from the start regardless of the enable/disable state of the resume function. For charging the backup battery, see "1-2-6 Memory Backup" (P. [51](#))

■Auto Wakeup (Power ON after Preset Time)

If the auto wakeup function is enabled, the Handy Terminal can be started automatically according to a preset schedule.

In the settings of the auto wakeup function, select [1:System] — [3:Power Management] — [2:Auto wake up].



For its detailed setting method, see "4-3-3 Power Management: Various Settings Related to Power" — "Auto Wakeup: Startup at a Predetermined Time" (P. [109](#))

■Auto Power OFF (Automatic Power OFF)

If no operation is performed for a certain time, the power will automatically be turned OFF.

You can set the time after which the power is turned OFF when selecting <1:System> > <3:Power Management> > <3:Auto power off> on the system menu.



For its detailed setting method, see "■Auto Power OFF: Automatic Power OFF" (P. [111](#)).

1-4 Maintenance Method

- Barcode Window

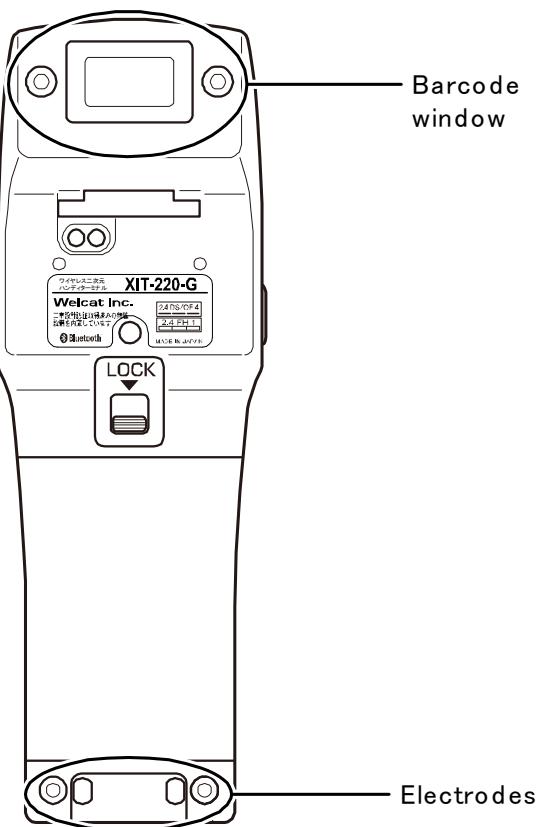
If the filter of the Barcode window becomes dirty, the barcode may not be read correctly.

- Electrodes

If certain symptoms start to appear, such as the operating time of the battery pack becoming short, startup becoming difficult, or the power turning off suddenly, the reasons may include deterioration of the battery pack and poor contact due to dirty electrodes. If dirty electrodes are the reason, you can improve the performance by cleaning the electrodes of the battery pack and the Handy Terminal.

● Cleaning Method

Wipe the dirt off the Barcode window's filter and/or electrodes using a clean, dry, and soft cloth, swab, etc. Be sure not to rub with dirty cloth, fingers, or hard objects. Be aware that wiping strongly may cause damage. Particularly, because the electrodes on the Handy Terminal side may get deformed, please wipe them gently.



Chapter **2**

Software

2-1 About Software

The software of the Handy Terminal is of the following two types:

System Programs	The programs that control the basic operations of the Handy Terminal. They are equivalent to the PC OS (basic software) and are preinstalled on the Handy Terminal. "System Menu", which is used for performing basic settings for basic operation parameters and for various verifications, is part of the system programs.
Application Software	The programs used for business processes. These programs are mainly used for reading barcodes, transferring data to a PC, etc. You need to create them using the development environment of "2-3 Create an Application Software" (P63).

2-1-1 About Data

■Drive Configuration

As areas for storing data, the Handy Terminal has the F drive / the C drive inside itself, and the R drive in the microSD card.

Drive	Data Retention	Purpose	Maximum Number of Files Saved
F Drive	Non-volatile memory Even after the backup battery is used up, the drive data is still retained.	This drive is used as an area to store all the files including application software, database master files, and data files.	128 files
S Drive	Volatile memory During operation, if the battery or the battery pack is suddenly detached or if the backup battery is depleted, the drive data will disappear.	This drive is used as an area to store temporary files while the application software is running.	128 files
R Drive	microSD Card Even after the backup battery is depleted, the drive data is still re-	This drive is used as an external extension area for storing files in the microSD card.	Varies depending on the card.

	tained.	
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- To receive files, the files first are received using the S drive and then moved to the F drive and stored therein. Verify that both the S drive and the F drive have adequate areas for receiving and storing the files.
- When receiving files, if some files in the S drive have the same names as the files being received, they will be erased.

■About File Name

File names that can be used in the Handy Terminal have the following limitations:

Limitation	Details
File Name Length	Within 31 bytes including the file extension
Characters that can be used	<p>Any combinations of the following characters can be used:</p> <ul style="list-style-type: none"> • Alphabets (A–Z) • Numerals (0–9) • Some symbols (!#%& ' ()@^_{}^`.) • Half-width space • SHIFT JIS full-width characters
Other limitations	Space and “.” (period) cannot be used at the beginning of a file name.

■About File Extension

The Handy Terminal identifies the file types using the following file extensions:

File Extension	Purpose
OUT	Application Software
JPG	Image files that can be displayed on the Handy Terminal.
PNG	
BMP	
JPEG	
WAV	Audio files that can be played on the Handy Terminal.
SFL	

■Files Created by the System or the Application Software

The system programs and some application softwares create temporary files and files for saving settings. If these files cannot be created, due to reasons such as there are too many files or there is no free space in the drive, the programs may not run properly.

The system program creates a registry file in the F drive in order to save the setting values of the system menu. Four files are created, but they are not displayed on the system menu as they are hidden files.



For registries, see "2-2 Registry" (P. [62](#)).

2-2 Registry

The various parameters set on the system menu are called "Registry".

As the register file is a hidden file, it cannot be displayed on the system menu. In addition, as it is saved in the F drive, it will not disappear even when the battery is depleted.

The registry is divided into the following five categories.

Registry	General setting values. Most items set on the system menu belong to the user registry.
Security Registry	Setting values related to security, such as WEP key and SSID.
Unique Registry	Setting values specific to the terminal, such as IP address and terminal ID, which are generally not duplicated with those on other terminals.
System Registry	Setting values used uniquely by the Handy Terminal. These cannot be set or referenced from the system menu.
Device Registry	These items are to refer to parameters that vary in real time during terminal operation, such as battery pack remaining charge level and the radio wave intensity level. Setting values that belong to the device registry can be referenced only from the application software; it is not possible to perform settings from the system menu.

The four types of registries excluding the device registry are saved in files that are independent of each other. Therefore, there are always four files in the F drive. As the registries are saved in the F drive as files, they will not disappear even when the backup battery is depleted.

As the device registry varies according to the operation status of the Handy Terminal, it cannot be saved to a file.

Using the clone function ("4-10-3 Clone: Creating a Copy" (P. [187](#)) makes it possible to copy the registry to another terminal and create a copy on the terminal with the same settings as in the original terminal.

Using the initialization menu ("4-10-2 Format: Formatting Registry/Drive" (P. [185](#)) makes it possible to erase the registry contents and return the settings to factory default.

2-3 Create an Application Software

To use the Handy Terminal, you need to create an application software using the peripheral software and transfer the application software to the Handy Terminal.

The following peripheral softwares should be prepared. They can be purchased when necessary.

■Peripheral Softwares

The following optional softwares are required for data communication with a PC and for building a system.

Name	Model No.	Remarks
WebGlider-X2 Editor Package <Formal Name> WebGlider-X2 Editor Package WebGlider-X2 Editor WebGlider-X2 Browser WebGlider-X2 Emulator	WGE-002	The WebGlider-X2 Editor package is a web based application software development tool. The editor integrated in the package allows you to create application software (HTML) that runs on the Handy Terminal, and the application software (VBS file) that runs on the server side. The package also integrates a Web browser which is required to run the HTML file on the Handy Terminal. For details, see the online help of WebGlider-X2 Editor.
WebGlider Integration Server	WGS-001	A simple Web server for performing communication with WebGlider-X2 Browser. For details, see the online help of the WebGlider-X2 integration server.
Transfer Utility BluePorter-V	WLF-003	This transfer utility can send/receive files to/from a PC. Uses the supplied Bluetooth communication adapter to send/receive files between a PC and the Handy Terminal.

■Operating Environment

To create an application software, you need a PC with any of the following operating systems installed:

- Windows XP SP3 or later
- Windows Vista SP2 or later
- Windows 7
- Windows Server 2003 R2 or later
- Windows Server 2008 R2 or later

The PC hardware is required to meet the specifications recommended by the respective Windows operating systems.

However, more resources are needed depending on the specifications of the database and the server side applications to be used.



For details on creating the application software, view the WebGlider-X2 Editor online help.

Chapter

3

Communication

Environment Settings

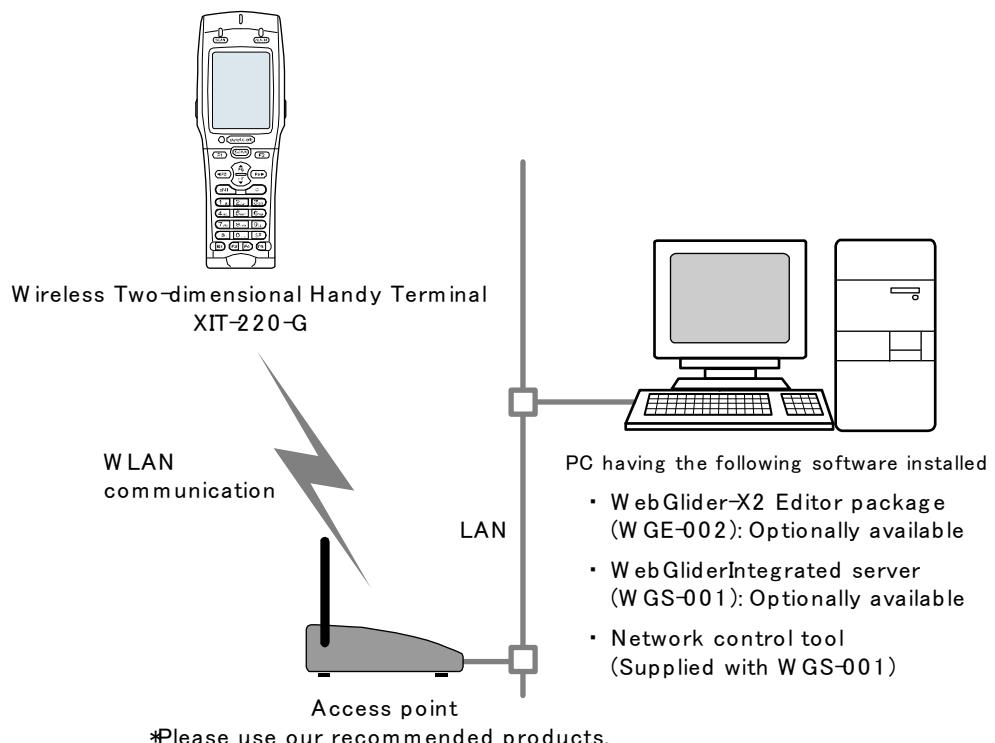
3-1 Communication Type

The Handy Terminal allows you to send the entered data to a PC and to receive data from a PC. Also, to execute any developed application software on the Handy Terminal, you will need to transfer the software to the Handy Terminal.

The following three methods are available for connecting a PC. Prepare the communication environment when necessary.

■ WLAN Communication → “3-2 Building WLAN Communication Environment” (P. 68)

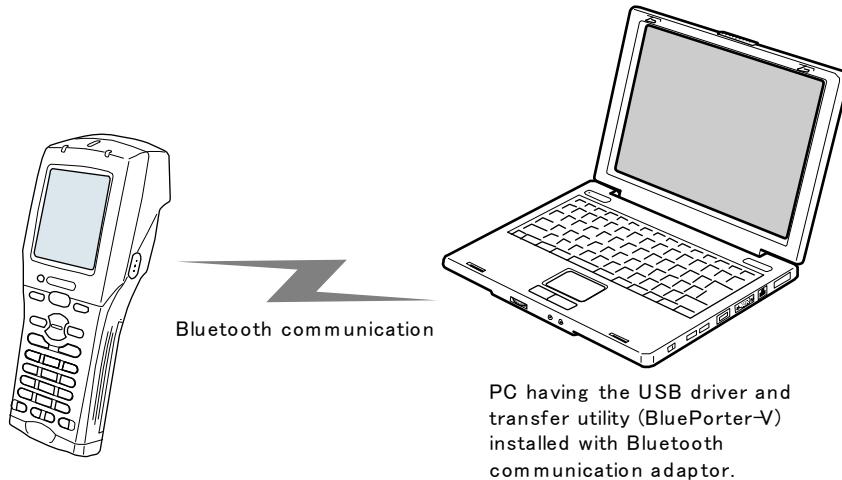
You can use WLAN (wireless LAN) to perform communication with a PC via a wireless access point.



■Bluetooth Communication → “3-3 Building Bluetooth Communication Environment” (P. [77](#))

You can send/receive files between a PC and the Handy Terminal via a Bluetooth USB adapter connected to the PC.

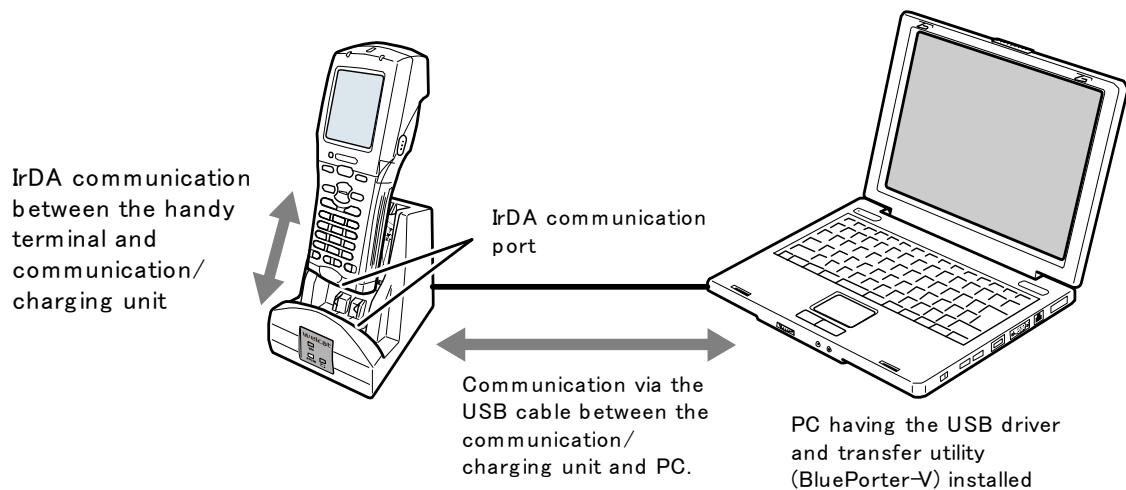
This communication requires an optional transfer utility, BluePorter-V. The Bluetooth USB adapter is supplied with the BluePorter-V Bluetooth pack (WLF-003-BT2).



■Infrared Communication (IrDA) → “3-4 Building Infra-red Communication (IrDA) Environment” (P. [81](#))

You can send/receive files to/from a PC via a USB communication unit (IU-004) or USB communication/charging unit.

This communication mode requires an optional IU-004 or IU-004C, and also the transfer utility BluePorter-V.



3-2 Building WLAN Communication Environment

To send/receive data or to download the created application software, you will need to build an environment where WLAN communication can be executed between a PC and the Handy Terminal.

3-2-1 Preparation on the PC Side

You will need to connect a PC to the system where WLAN communication is available.

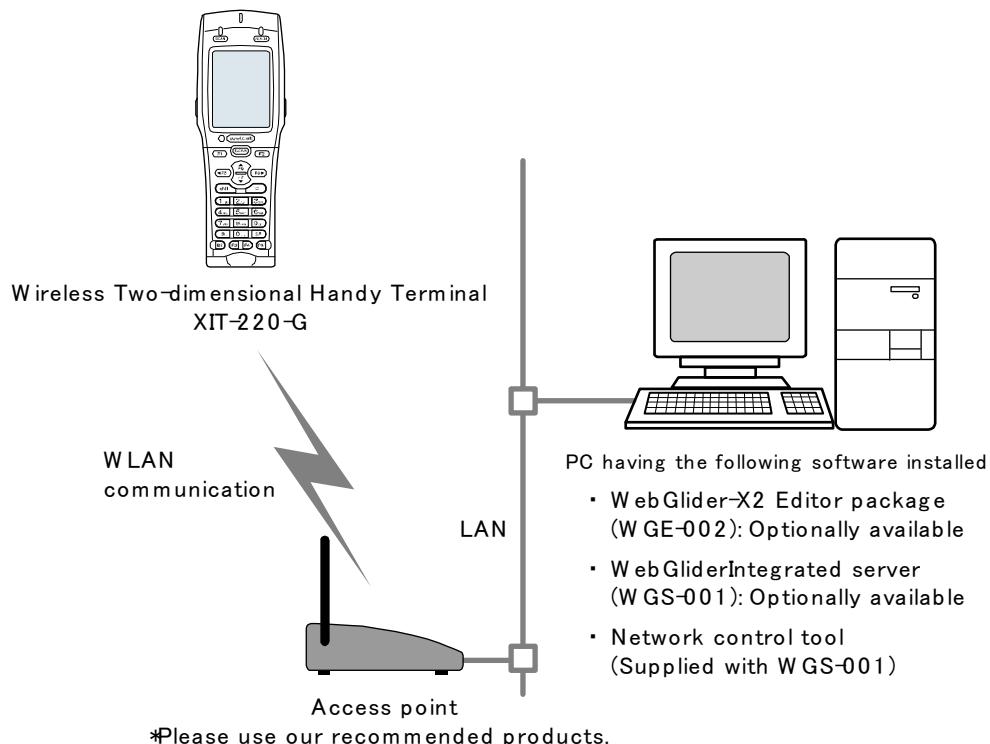
Please prepare by yourself an access point, a LAN environment, a HUB, etc.

*Please use an access point recommended by Welcat.

Install the following peripheral softwares and bring them to an operating state.

For how to install and configure the software, see the WebGlider integration server help and the network administration tool manual.

- Network Administration Tool (Integrated in WGS-001)
- WebGlider Integration Server



You need to connect the access point to the Ethernet LAN and configure it so that communication with a PC is possible.

Be sure to execute the security settings. To enable security settings, you need to restart the access point (restart may not be needed depending on the access point).

3-2-2 Preparation on the Product Side

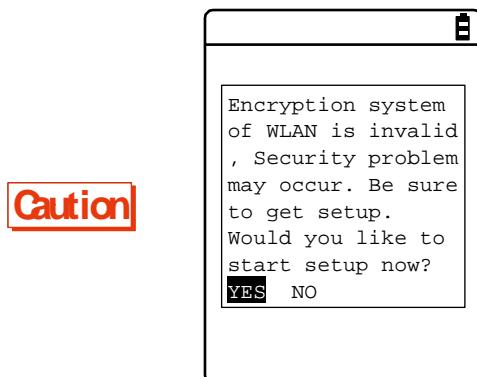
To set WLAN communication for the Handy Terminal, there are the following three methods:

- Setting Wizard
- Set the respective items from the system menu
- Perform settings from a PC using the DHCP function of the network administration tool

The following information is required for WLAN configuration.

Configuration Information	Content	Remarks
SSID	SSID (or ESSID) of the access point that is the communication partner.	Configuration required
Security	Security configuration of the access point that is the communication partner.	Configuration required
TCP/IP	Address at which TCP/IP communication is possible with a PC on the Ethernet LAN.	Configuration required
FTP	Configured when you need to perform file transfer via WLAN communication. Supports the FTP server of the network administration tool supplied with the "WebGlider Integration Server".	
DNS	Configured when you need to resolve names using DNS. Whether DNS needs to be used depends on the application software.	
DHCP	Configured when you need to solve the DHCP client function. Supports the DHCP server of the network administration tool supplied with the "WebGlider Integration Server".	
Terminal ID	(When using the terminal ID of the Handy Terminal)	

If the encryption of WLAN communication has been disabled, a dialog will be displayed to prompt you to enable it upon startup.



Select [Yes] or [No].

To move to "2:WLAN", select [Yes]. Selecting [No] displays the system menu.

■ WLAN Communication Settings by Setting Wizard



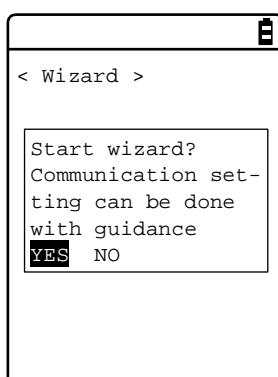
Prior to launching the setting wizard, verify that the Ethernet LAN side to which an access point has been connected is ready for use.

At the first startup after purchasing the Handy Terminal, a setting wizard is executed for performing the minimum required settings for WLAN communication with a PC.

If it was not set the first time, launch the setting wizard by selecting [8:Manage] — [6:Wizard].

① The setting wizard start screen is displayed.

Select [Yes] to execute the wizard.



② Proceed with the setting according to the screen instructions.

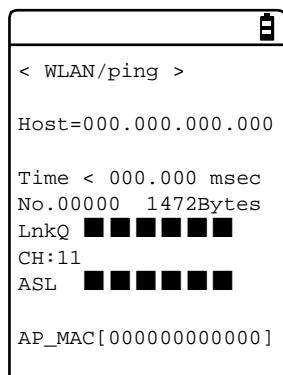
Be sure to perform the security configuration.

If the Handy Terminal is launched without performing the security configuration, the <WLAN Communication Security Not Configured> prompt screen will be displayed.

For configuration items, see the next section, "Setting Wizard Flow".

③ Upon completion of configuration, perform Ping test for the access point the first time.

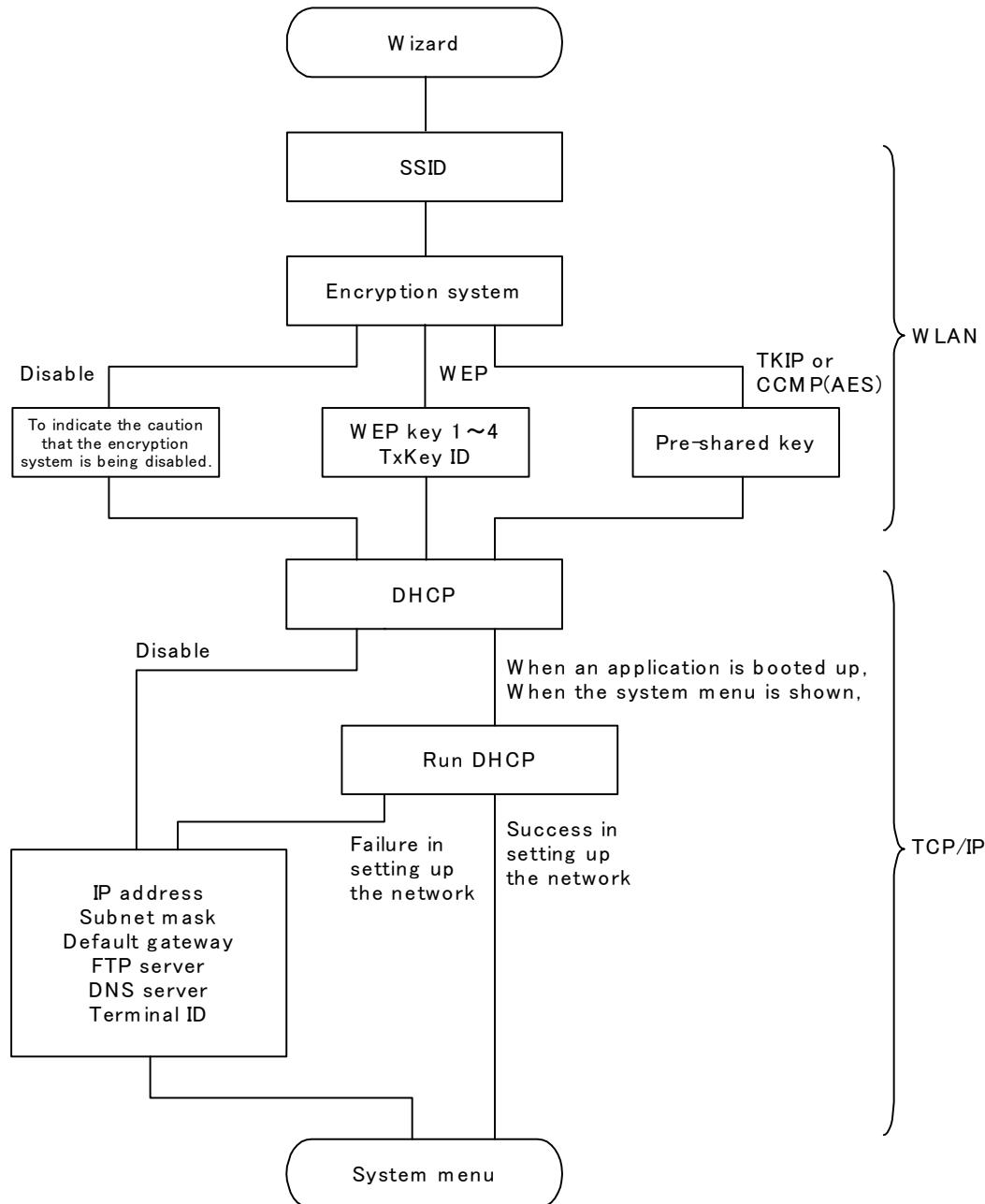
Select [9:Test] — [1:WLAN] — [1:Configuration] on the system menu, and execute [2:WLAN/ping] after entering the IP address of the access point.



④ In the same way, perform Ping test for the IP address of the PC.

●Setting Wizard Flow

You need to set the items according to the flow shown in the following figure in the setting wizard. The setting items vary according to your selections during the process.



Hint

- Returns to the system menu without executing DHCP if the wizard was executed from the system menu.
- WLAN communication's authentication method cannot be set in the wizard. Perform the setting manually due to the complexity, especially in EAP certification where reception of files including certificates is required.

For manual setting, see "4-4 WLAN: WLAN Communication Settings" (P. [114](#)).

■WLAN Communication Settings by the System Menu

You can set the required items individually from the system menu.

Perform the setting using the following procedure:

- ①Launch the system menu.
- ②Set the required items with reference to the following table.
- ③Perform Ping test and verify the communication state.

Item	System Menu	Reference page
SSID Configuration	[2:WLAN] — [1:SSID]	"3-4-1 SSID: SSID Configuration" (P. 114)
Security Configuration	[2:WLAN] — [4:Security]	"3-4-4 Security: WLAN Communication Security Configuration" (P. 116)
TCP/IP Configuration	[3:Network] — [1:TCP/IP]	"3-5-1 TCP IP: TCP/IP Configuration" (P. 131)
DHCP Configuration	[3:Network] — [2:DHCP]	"3-5-2 DHCP: DHCP Configuration" (P. 133)
FTP Configuration	<3:Network> <3:FTP>	"3-5-3 FTP: FTP Configuration" (P. 136)
DNS Configuration	[3:Network] — [4:DNS]	"3-5-4 DNS: DNS Configuration" (P. 140)
Terminal ID Configuration	<6:Terminal ID>	"4-8 Terminal ID: Configure the ID for Terminal Identification" (P. 162)

■WLAN Communication Settings by DHCP

You can configure the required items collectively on the PC side using the DHCP client function. When using the DHCP client function, you need "Network Administration Tool", which is separately supplied with "WebGlider Integration Server".

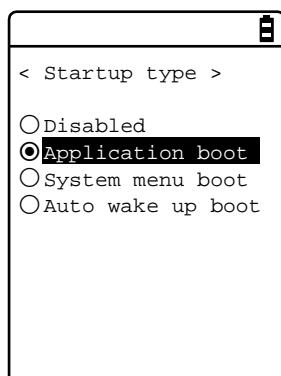
Caution

Configuring "SSID Configuration" and "Security Configuration" items using the DHCP client function may generate security vulnerability. Avoid using it to the extent possible.

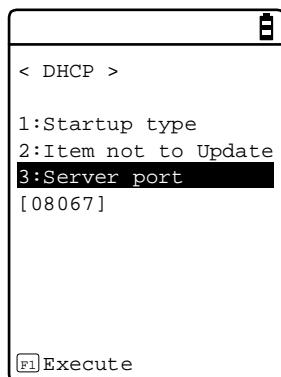
To enable the DHCP function, perform the following configurations on the system menu:

① [3:Network] — [2:DHCP] — [Startup type]

② Select [Application boot].



③ Configure the port number of the DHCP server.



See "4-5-2 DHCP: DHCP Settings" (P. [133](#)) and "WebGlider Integration Server WGS-001 Manual".

Hint

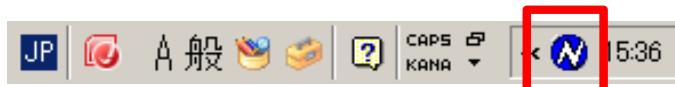
This manual has a  mark for items that can be configured by DHCP.

3-2-3 Downloading the Application Software by WLAN Communication

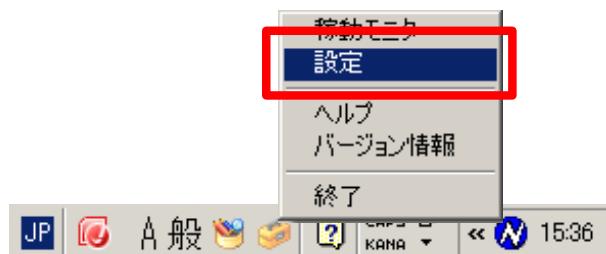
After the WLAN communication environment is ready, you can download the files according to the following procedure:

①Launch the network administration tool on the PC.

After the network administration tool is launched, its icon is displayed in the task tray of the PC.

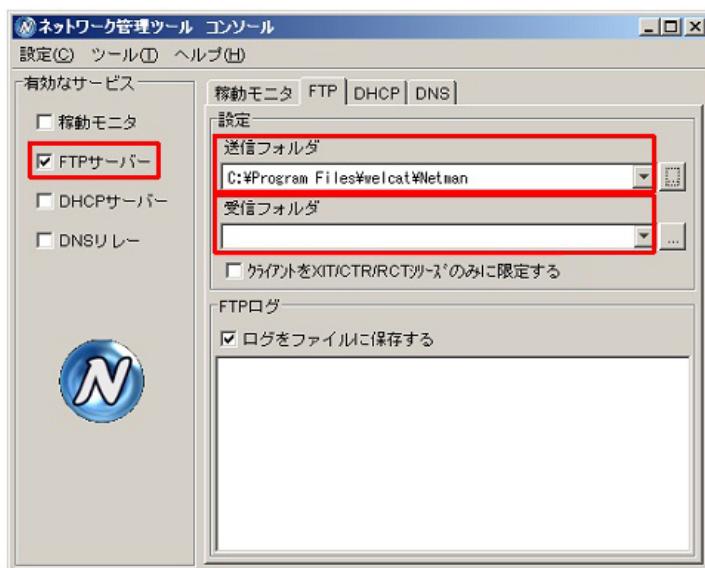


②Right-click the icon of the network administration tool, and then click [Set] (設定) from the displayed menu.

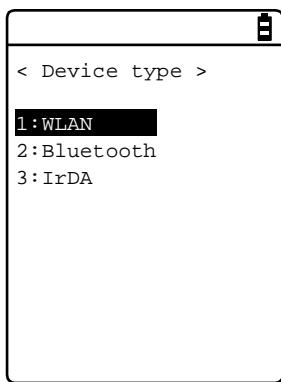


③On the network administration tool configuration screen, click the [FTP] tab, and then perform the following configuration:

- Select the [FTP server] (FTP サーバー) checkbox.
- [Transmit folder] (送信フォルダ) and [Receive folder] (受信フォルダ) specify the folders on the FTP server where the application software file is located.



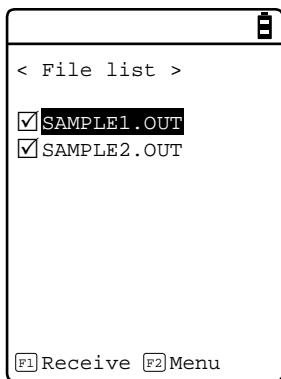
④Select [4:Receive]—[1:WLAN] on the system menu.



⑤The list of downloadable files is displayed.

Select the files to be downloaded by checking their names.

Press the **[F1]** key to start the download. When the confirmation prompt is displayed, select **[Yes]** and then press the **[ENT]** key. Downloading a large file may take long time.



3-3 Building Bluetooth Communication Environment

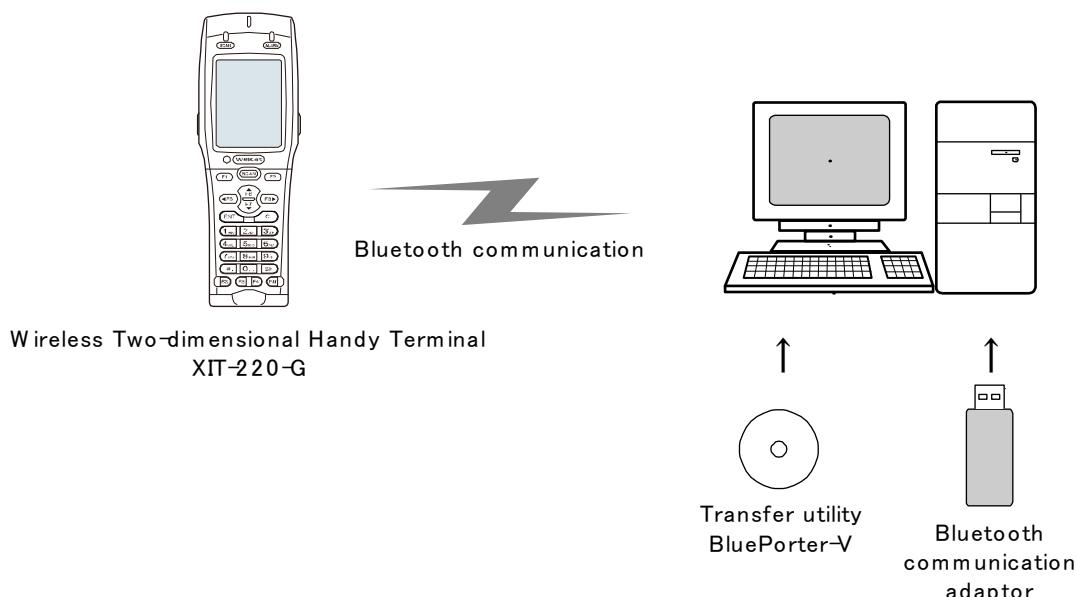
To send/receive data or to download the created application software, you need to build an environment where Bluetooth communication can be executed between a PC and the Handy Terminal.

3-3-1 Preparation on the PC Side

Install the following peripheral softwares and bring them to an operating state.

For how to install and configure the softwares, see the BluePorter-V operation guide.

- Transfer Utility BluePorter-V
- Bluetooth Communication Adapter Driver Software



■COM Port Verification

You will need to verify the COM port to which the Bluetooth communication adapter has been connected.

For how to verify the COM port, see the BluePorter-V operation guide.

3-3-2 Preparation on the Product Side

To perform Bluetooth communication with the Handy Terminal, you will need to search for the Handy Terminal from the PC side and register it in advance using device registration.

For device registration method, see "4-9-3 Bluetooth: Registering and Setting the Bluetooth Device" ([P. 169](#)).

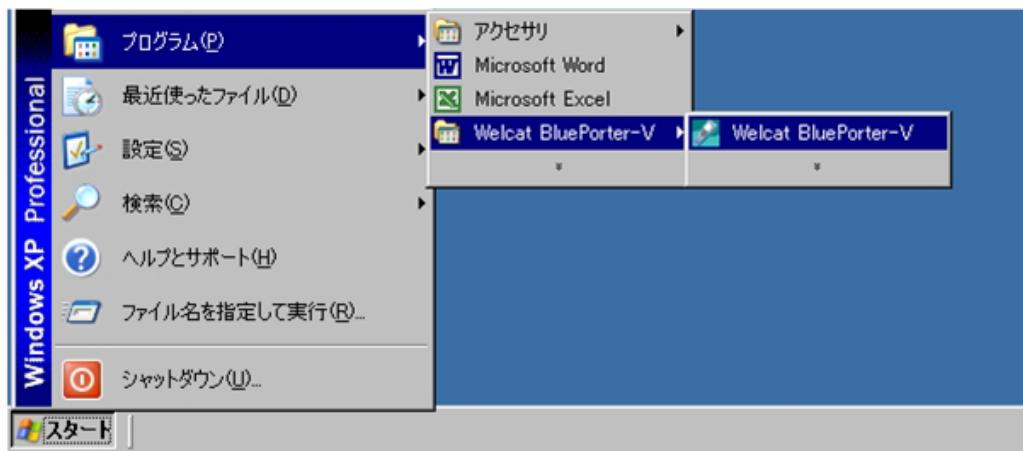
For how to verify the BD address of the Bluetooth communication adapter, see the BluePorter-V operation guide.

3-3-3 Downloading the Application Software by Bluetooth Communication

After the Bluetooth communication environment is ready, you can download your files according to the following procedure:

①To launch the transfer utility BluePorter-V on your PC,

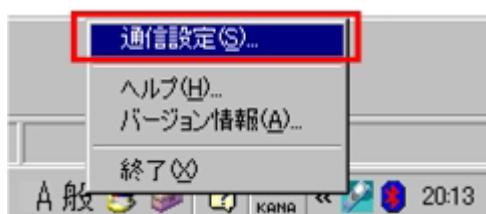
Click [Start] (スタート) – [Program] (プログラム) – [Welcat BluePorter-V] – [Welcat BluePorter-V] .



②Right-click the icon of the transfer utility BluePorter-V displayed in the task tray.



③Click [Communication setting] (通信設定) from the displayed menu.

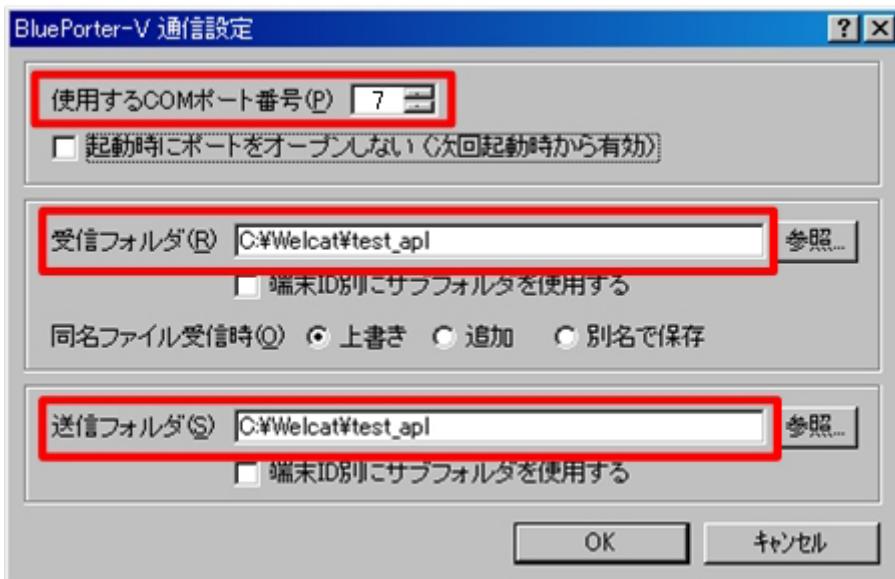


④Set [COM Port No. to Use] (使用する COM ポート番号) to the desired COM port number.

[Receive folder] (受信フォルダ) and [Transmit folder] (送信フォルダ) specify the folders

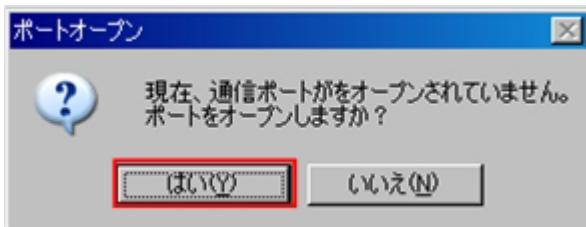
where the application software file is located.

The following figure shows an example where the application software is located in the "C:\Welcat\test_apl" folder.

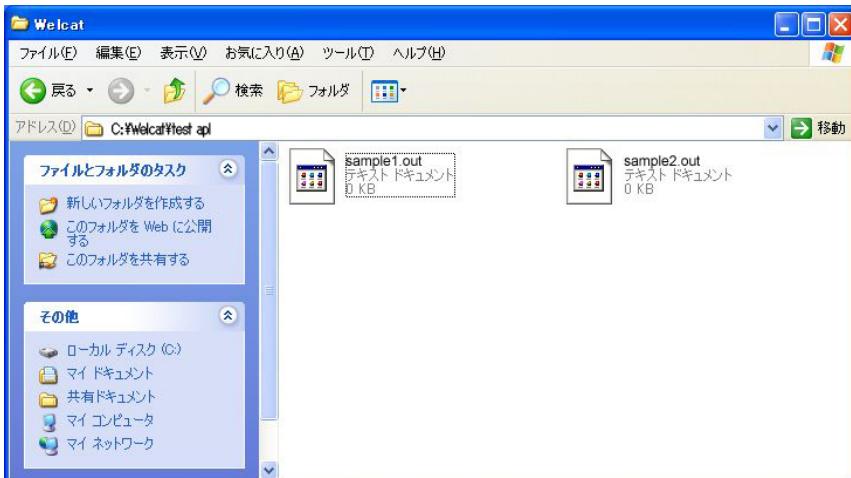


⑤Press the [OK] button to close the window.

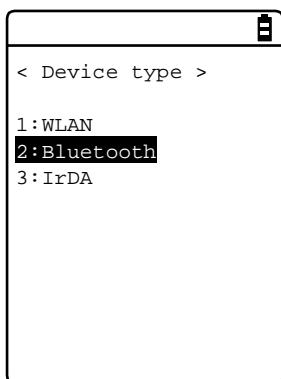
After the following screen appears, click [Yes] (はい) .



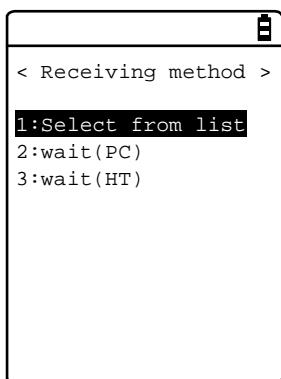
⑥Copy the execution file of the application software to the folder set as the transmission folder of BluePorter-V ("C:\Welcat\test_apl" in the above example).



⑦Select [4:Receive] — [2:Bluetooth] on the system menu.



⑧Select [1:Select from list].

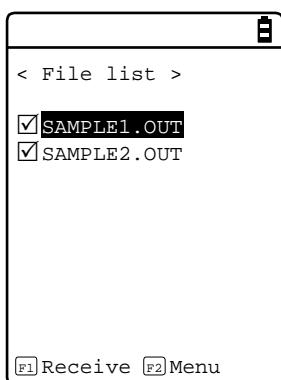


⑨The Handy Terminal automatically logs in BluePorter-V, displaying the list of downloadable files.

Select the files to be downloaded by checking their names.

Pressing the **[F1]** Key displays the confirmation message box. Move your mouse over **[Yes]** and then press the **[ENT]** key to start download. It will take from several seconds to several minutes to complete.

However, downloading a large file may take long time.



3-4 Building Infra-red Communication (IrDA) Environment

To transfer files via infrared communication, the following optional equipment and softwares are required.

- USB Communication Unit (IU-004) or USB Communication/Charging Unit (IU-004C)
- USB Driver Software (Included in the Product Manual CD-ROM)
- Transfer Utility Software (BluePorter-V)

Hint

The explanations in this manual are examples for Windows XP, Vista, and 7. The screen may vary in other versions.

Caution

The error that the COM port cannot be enabled may occur when the WL7-USB dedicated software "WL7-KEY" is used by customers who use Welcat cordless Handy Terminal set, WL7-USB. If WL7-KEY is Ver 1.02 or lower, as the COM port has been occupied, it cannot be enabled.

In such a case, please contact your dealer.

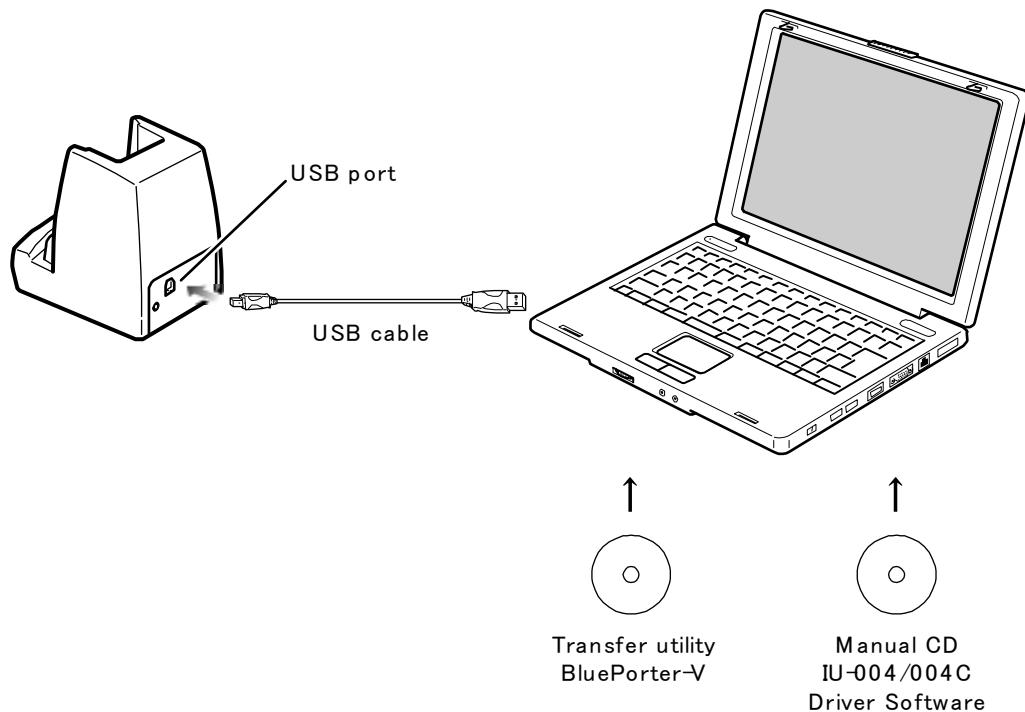
3-4-1 Preparation on the PC Side

You can connect the USB communication unit and the host computer by using a USB cable.

Install the following peripheral softwares and bring them to an operating state.

- Transfer Utility Software (BluePorter-V)
- IU-004/IU-004C's Driver Software

For installation and the setting procedures, see the user manuals of the respective products.



3-4-2 Downloading the Application Software by Infrared Communication (IrDA)

After the infrared communication environment is ready, you can download your files according to the following procedure.

■Equipment Preparation

Prepare the following equipment and software.

- The Product
- Transfer Utility (BluePorter-V)
- USB Communication Unit (IU-004/IU-004C)

■Preparation before Use

- ① Install the transfer utility BluePorter-V in your PC.
- ② Install the USB driver of the USB communication unit in the host computer.
 - * For how to install the USB driver, see "3-4 Building Infra-red Communication (IrDA) Environment" (P. [81](#)).

●When Launching the Setting Wizard

At the first startup after purchasing the Handy Terminal, a setting wizard is executed for performing the minimum required settings for Bluetooth communication with a PC.

This wizard is not required in infrared communication mode.

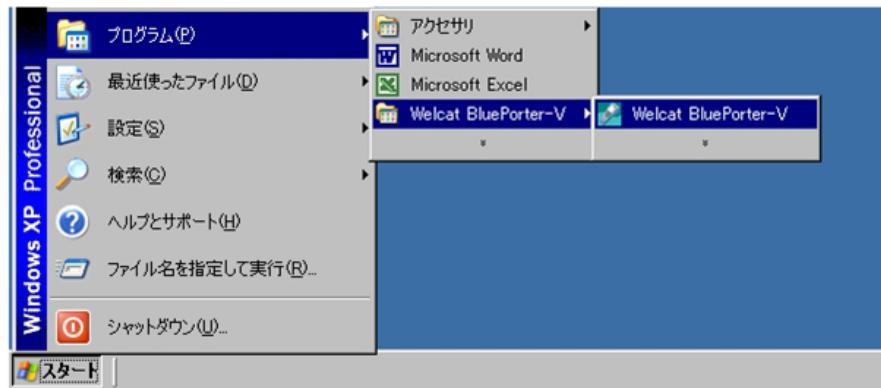
Selecting [No] on the wizard screen launches the system menu.

To perform Bluetooth communication, start the wizard with reference of "4-10-6 Wizard: Starting the Screen Facilitating Configuration of Communication Settings" (P. [197](#)) and make the settings.

■Transfer Utility BluePorter-V Startup

To launch the transfer utility BluePorter-V,

Click [Start] (スタート) – [Program] (プログラム) – [Welcat BluePorter-V] .



After it is launched, its icon is displayed in the task tray.

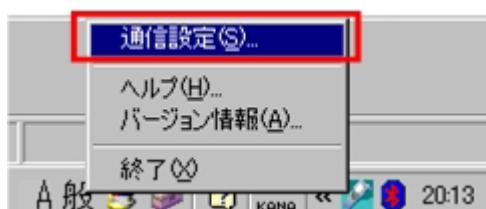
Right-click the displayed "BluePorter-V" icon, and then click [Communication setting] on the displayed menu.



■Communication Settings

You can set the transmission folder, the reception folder and the COM port to use.

①Right-click the icon displayed in the task tray, and then click the [Communication setting] (通信設定) on the displayed menu.

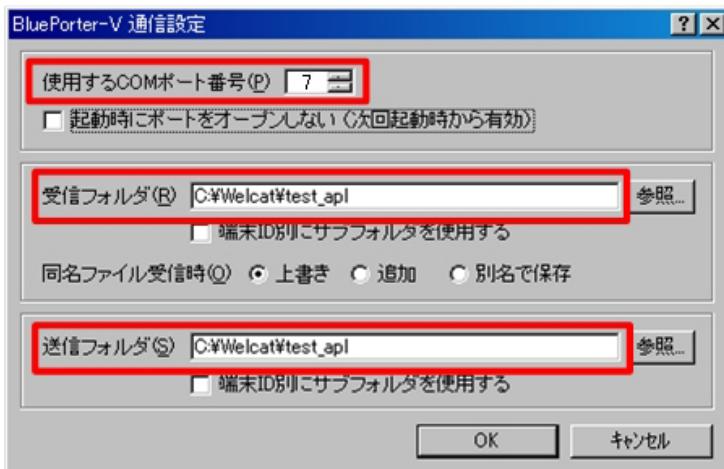


②Set [COM Port No. to Use] (使用する COM ポート番号) to the COM port number using the device manager .

For how to verify the COM port number, see the user manual of IU-004/IU-004C.

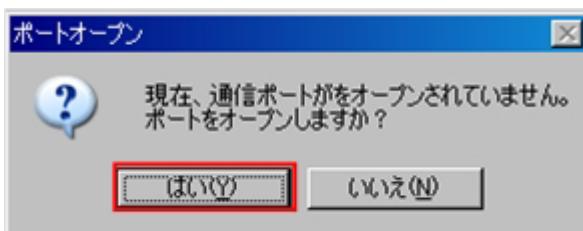
[Receive folder] (受信フォルダ) and [Transmit folder] (送信フォルダ) specify the folders where the application software file is located.

The following figure shows an example where the application software is located in the "C:\Welcat\test_apl" folder.



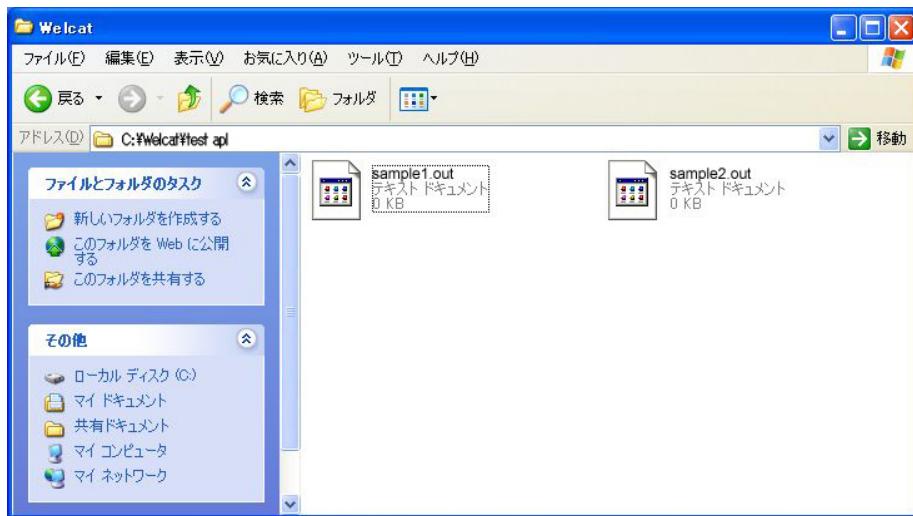
③Press the [Yes] button to close the window.

When the following screen appears, click [Yes] (はい) .



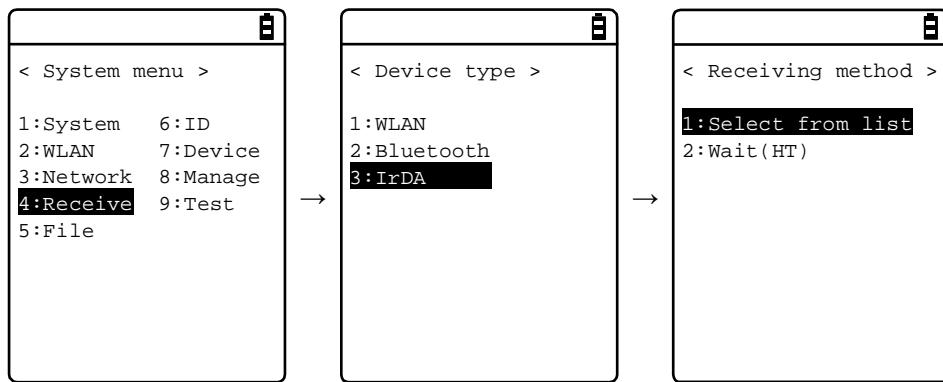
■File Download

①Copy the execution file of the application software to the folder set as the transmission folder of BluePorter-V ("C:\Welcat\test_apl" in the above example).



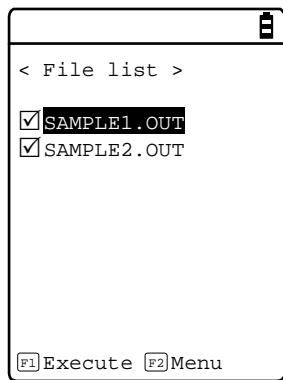
②Next, launch the system menu.

On the system menu, select [2:Receive] – [3:IrDA] – [1:Select from list].



③The Handy Terminal automatically logs in BluePorter-V, displaying the list of downloadable files.

Select the files to be downloaded by checking their names.



④ Set the Handy Terminal to the USB communication unit.

Pressing the **[F1]** key displays the [Would you like to receive it?] screen. Select **[Yes]** and then press the **[ENT]** Key to start download. It will take from several seconds to several minutes to complete.

However, downloading a large file may take long time.

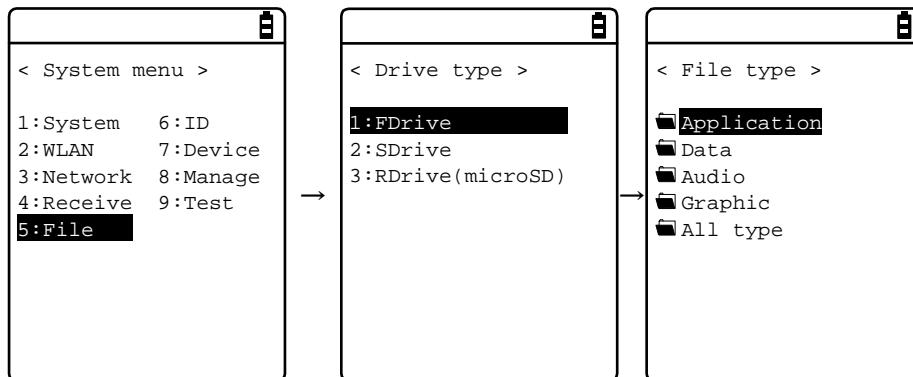
3-5 Executing the Application Software

Once the downloaded application software (file extension=OUT) is received into the Handy Terminal, its installation is complete and it is ready for execution.

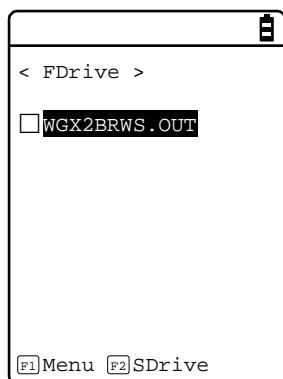
■Selecting from the File List to Execute

If multiple application softwares have been installed, you can select the files from the file list and execute them.

①Select [5:File] – <Select drive> – [1:Application] on the system menu.

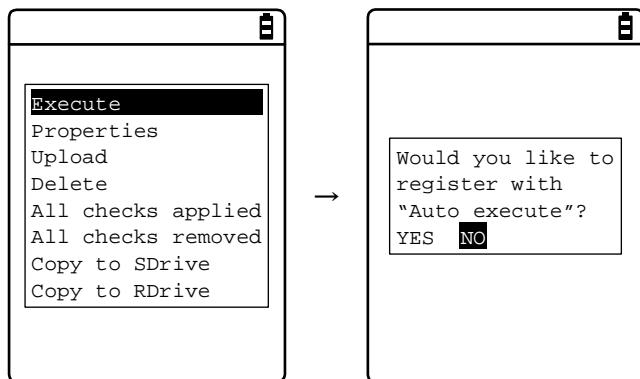


②Select the application software and then press the [F1] key



③From the popup menu, select [Execute], and then press the **【ENT】** key.

The <Execute> screen is displayed and the confirmation query on registration to the automatic execution program is displayed. To perform automatic execution select [Yes] , otherwise select [No] , and then press the **【ENT】** key.



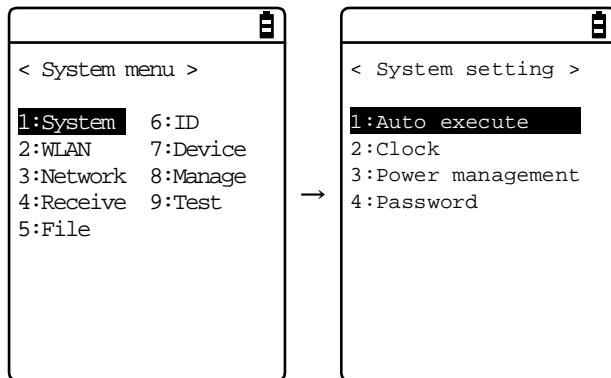
The application software is launched.

For how to use the respective application softwares, see the operation instruction manual and other manuals prepared by the application software developer or the system administrator. The application software is basically terminated by pressing the **【PW】** key. However, this may not apply to all application softwares.

■Automatic Execution upon Startup

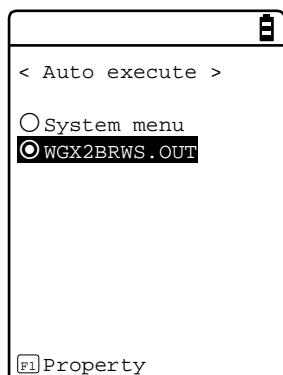
You can automatically execute the application software without launching the system menu during startup of the Handy Terminal.

①Select [1:System] — [1:Auto execute] in the system menu.



②Select the file name to execute from the list of installed application softwares, and then press the **【ENT】** Key to return to the <System setting> screen. This completes registration of the automatic execution file.

When the power is turned on the next time, the registered application software is launched. The system menu is launched if it has been set for automatic execution.



Chapter

4

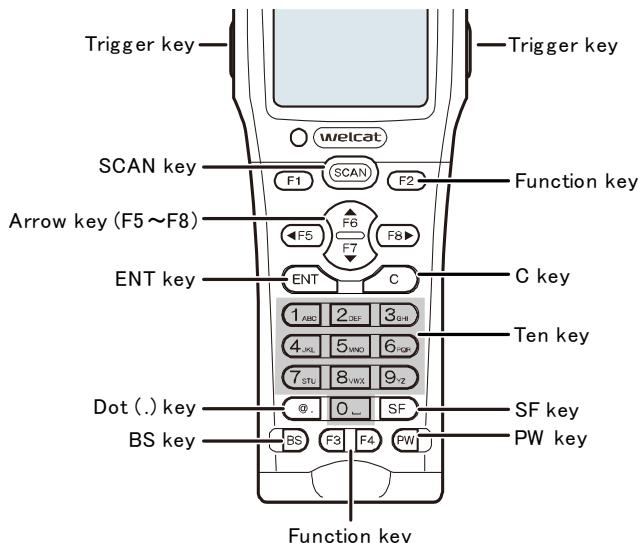
System Menu

4-1 Using the System Menu

As a part of the functions available in the system programs, the system menu provides various functions, such as environment settings, platform for the application software. You can use the Handy Terminal more efficiently if you perform your settings according to your operating environment.

4-1-1 Operation Keys

This section describes the function of each key.



Key	Function
【SCAN】 key	Used for reading a barcode.
【ENT】 key	Confirms the selected operation.
【C】 key	Returns to the immediately previous status, or deletes the character entered.
【BS】 key	Deletes one character from the characters entered.
【SF】 key	Switches the character input mode.
【F1】 – 【F8】 keys	Execute the respective functions (special features).
Arrow keys	Perform cursor operations. If 【◀F5】 【▲F6】 【▼F7】 【▶F8】 are specified, F5–F8 are assigned to the respective arrow keys. They are used in libraries, etc.
Trigger keys	Used for reading a barcode. The 【F9】 and 【F10】 keys are respectively assigned to the two trigger keys.
【PW】 key	Used to turn the power on/off.

Hint

In this manual, the names of keys are shown enclosed within **【】**.

(Ex.) **【1】** key, **【F2】** key, **【ENT】** key

■List of Key Assignments

Key	Numeric Input Mode	Alphabetic Input Mode
1_{ABC}	1	A B C
2_{DEF}	2	D E F
3_{GHI}	3	G H I
4_{JKL}	4	J K L
5_{MNO}	5	M N O
6_{PQR}	6	P Q R
7_{STU}	7	S T U
8_{VWX}	8	V W X
9_{YZ}	9	Y Z
0_{Space}	0	Space
@ .	. (dot)	* \$ - + / % : # @ &

4-1-2 Launching the System Menu

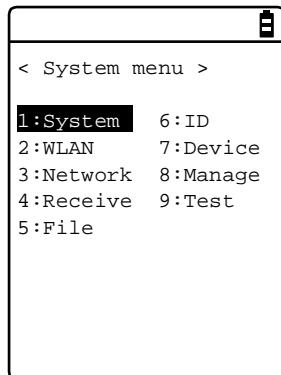
By default settings, the system menu is launched when you power on the Handy Terminal.

If the application software has been selected in the automatic execution program (P. [103](#)), launch the system menu using the following operations:

- ① In the power OFF state, press the **【PW】** key for about one second while holding down the **【SCAN】** key.

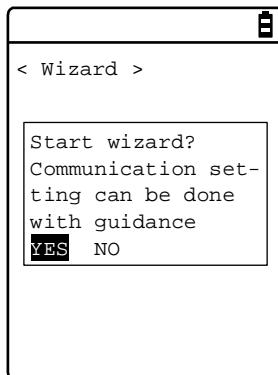
The system menu is launched when the power is turned on.

- ② After the opening screen is displayed, the system menu appears.



4-1-3 When Launching the System Menu for the First Time

When you start the Handy Terminal for the first time after purchasing it, the setting wizard is executed to allow you to perform the minimum required settings for WLAN communication between the server and the Handy Terminal.



- Select **[Yes]** to execute the wizard where you perform WLAN communication settings.
- Selecting **[No]** launches the system menu.

Select [No] to skip the setting wizard, or execute the setting wizard till you complete all the settings to avoid launching the setting wizard at the next startup.

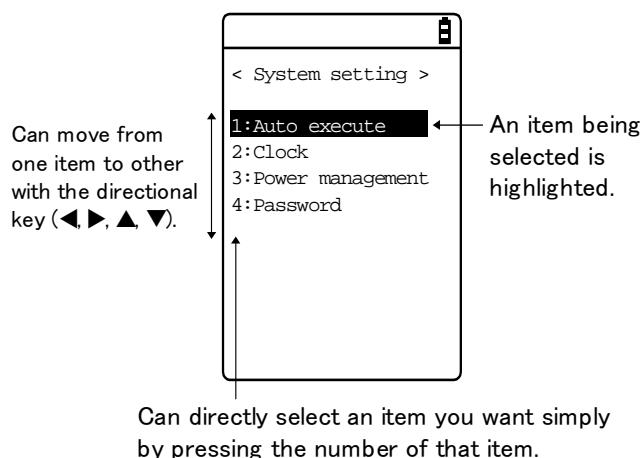


For how to use the setting wizard, see "■WLAN Communication Settings by Setting Wizard" (P. [70](#)).

4-1-4 Using the System Menu

This section describes the basic operations of the system menu.

■Selecting Setting Items



●Select an Item

The selected item is **highlighted**.

Press the key from **【0】** – **【9】** that corresponds to the respective item, or use the arrow keys (**【▲】**, **【▼】**) to move the highlighted display.

●Confirm the Item Selection

Press the **【ENT】** key to confirm the item selection.

The operations after the confirmation vary depending on the items.

- Execute the selected function
- Select one of the two options: [Yes] or [No] (button)
- Display its submenu

●Cancel Your Selection

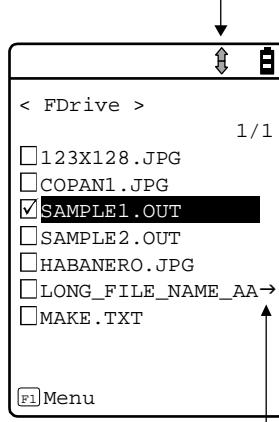
Press the **【C】** key to return to the immediately previous operation.

●About Screen Display

If the menu items cannot be accommodated in one screen, the scroll icon will be displayed in the status bar at the top of the screen. Also, if the full item name cannot be accommodated in one row, the name will be cut short at the end and followed by "→".

Scroll icon

Either the Up, Down or Up/Down icon is shown that is available respectively in an individual window.



An arrow, "→" at the end of an item name indicates that there are some remaining parts of the name not shown in the window.

■Entering Data Using Keys.

You can enter characters using the numeric keypad and the **【SF】** key.

Numerals, alphabets (upper case / lower case) and symbols can be entered.

●Switch the Character Input Mode

Press the **【SF】** key to switch the input mode.*¹

Numeric Input Mode: You can enter numerals and the decimal point in this mode.

The "1" icon is displayed in the status bar.

Alphabetic Input Mode: Alphabets (upper case / lower case), numerals and symbols can be entered.

The "A" icon is displayed in the status bar.

●Enter Numerals

Press the **【SF】** key to switch to the numeric input mode (cursor: (underline)).

Keys that can be used: **【0】 – 【9】** keys

●Enter Alphabets

Press the **【SF】** key to switch to the alphabetic input mode (cursor: ■ (rectangle)).

Keys that can be used: **【2】 – 【9】** keys

- When entering alphabets that are assigned to the same key, press the **【▶】** key to move the cursor, and then enter the next alphabet.
- Press the **【▲】 / 【▼】** key to toggle between upper case and lower case for the alphabet at the cursor position. *²

●Enter Symbols

Press the **【SF】** key to switch to the alphabetic input mode (cursor: ■ (rectangle)).

Key that can be used: **【0】** key

- When entering symbols that are assigned to the same key, press the **【▶】** key to move the cursor, and then enter the next symbol.
- If you press the **【▶】** key when the cursor is located at the end of the entered data string, a space will be inserted to the right of the cursor. *²

●Confirm the Data Entered

Press the **【ENT】** key.

●Delete Characters *³

- Press the **【BS】** key to delete the character at the location of the cursor.
- Press the **【C】** key to delete all the entered characters.

●Cancel the Entry

- For items where you cannot delete the characters *³, press the **【C】** key to immediately stop your entry.
- For items where you can delete the characters, press the **【C】** key after deleting all the characters entered.

●Other

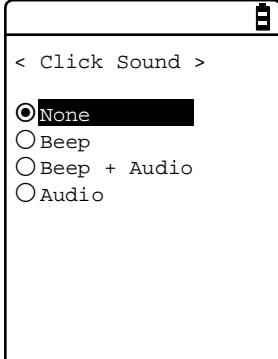
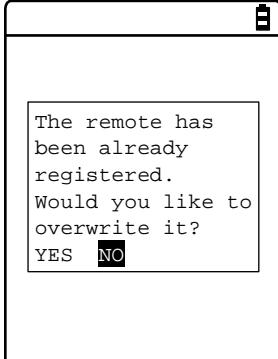
When the number of characters exceeds the entry limit, the cursor will return to the starting point.

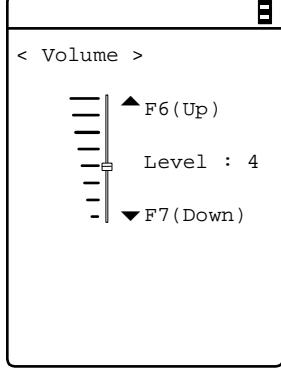
*1 For items that have restrictions on the types of characters that can be entered (e.g., only numerals for terminal ID), the input mode cannot be switched.

*2 The number of characters you can enter may vary depending on the items.

*3 You cannot delete characters on items that have a fixed entry format (e.g., local BD address). This manual uses the following delete-disabled icon for items with a fixed entry format.

■Other Operations

Returning to the Immediately Previous Status	【C】 key
Checkbox	<p>Select the item, and press the 【ENT】 key to toggle between Selected and Cleared.</p> <p>A check mark is attached to the selected box.</p> <p>Checkboxes are used for selecting multiple items at a time.</p> 
Radio Button	<p>Select the item, and press the 【ENT】 key to change the item selected.</p> <p>The item with a filled circle indicates that it is currently enabled.</p> <p>The radio button is used when only one item is to be selected from multiple items.</p> 
Message Box	<p>When two buttons, such as [Yes] and [No] , are displayed, press either the 【1】 or the 【2】 key, or use the arrow keys (【▲】 , 【▼】 , 【◀】 , or 【▶】) to select your desired button (highlighted), and then press the 【ENT】 key to confirm.</p> <p>Press the 【C】 key to select the button on the right.</p> 

<p>Calling the Submenu</p> 	<p>While [F1] or [F2] is displayed at the bottom of the screen, press the corresponding key to display its submenu or to execute its function (special feature).</p>
<p>Slider</p> 	<p>Use the 【▲】 【▼】 keys to move the slider for performing the setting.</p>
<p>Indicator Change during Operation</p>	<p>You can change the indicator (buzzer/vibrator/LED) that works during operation according your individual settings. For its change method, see "4-9-5 Tone/Vibrator: Setting the Volume, LED, and the Vibrator" (P. 178).</p> <p>By changing this setting, you can create your individual indicator in a simple way.</p> <p>In addition, there are operations that are not applicable for some indicators.</p>

■Entering Data Using a Barcode

You can enter various settings and characters, etc., by using a barcode.

Press the **【SCAN】** key or the trigger keys to allow the laser to irradiate and scan the barcode.

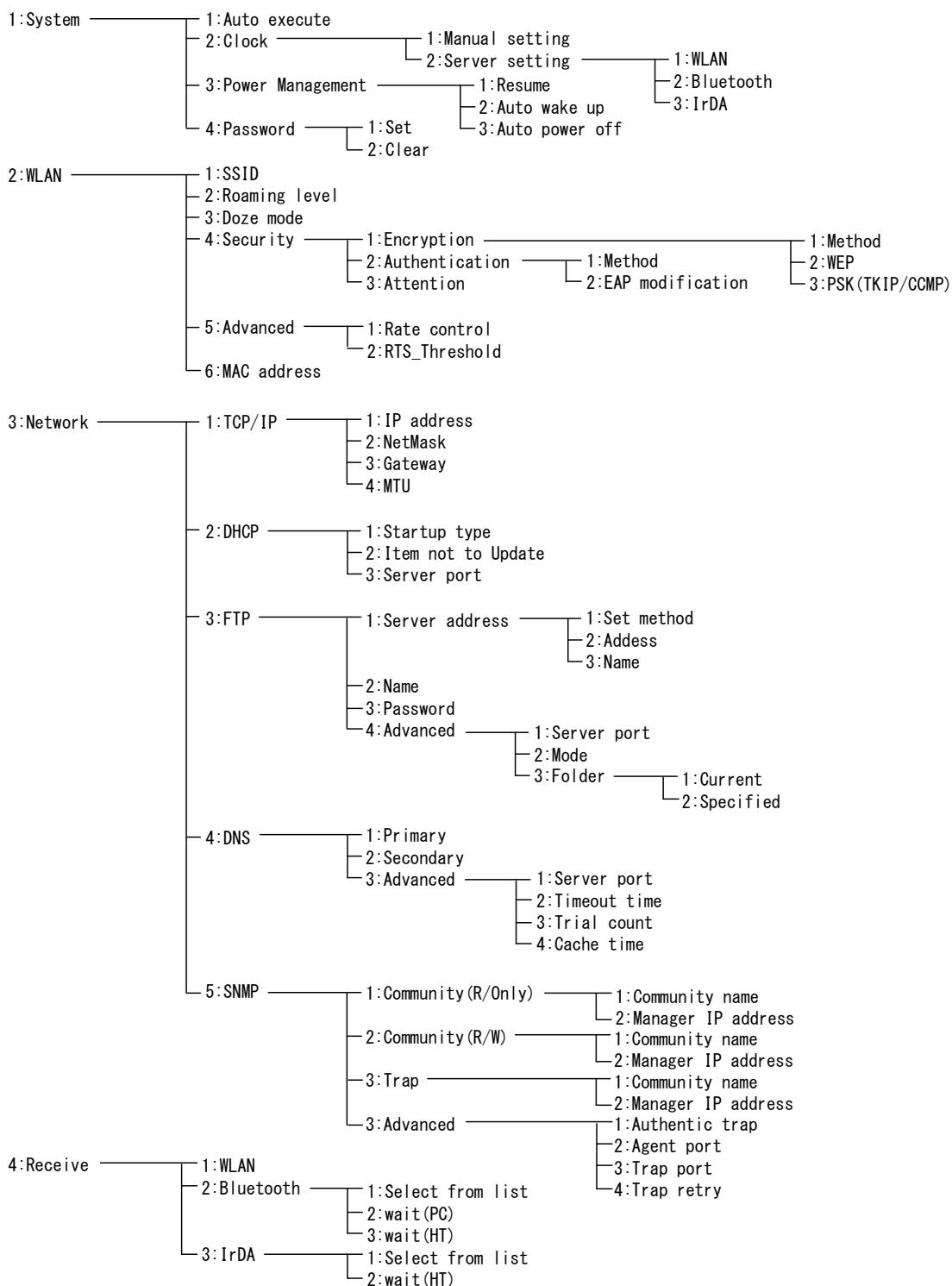
Regarding data entry, the readable barcodes are as follows:

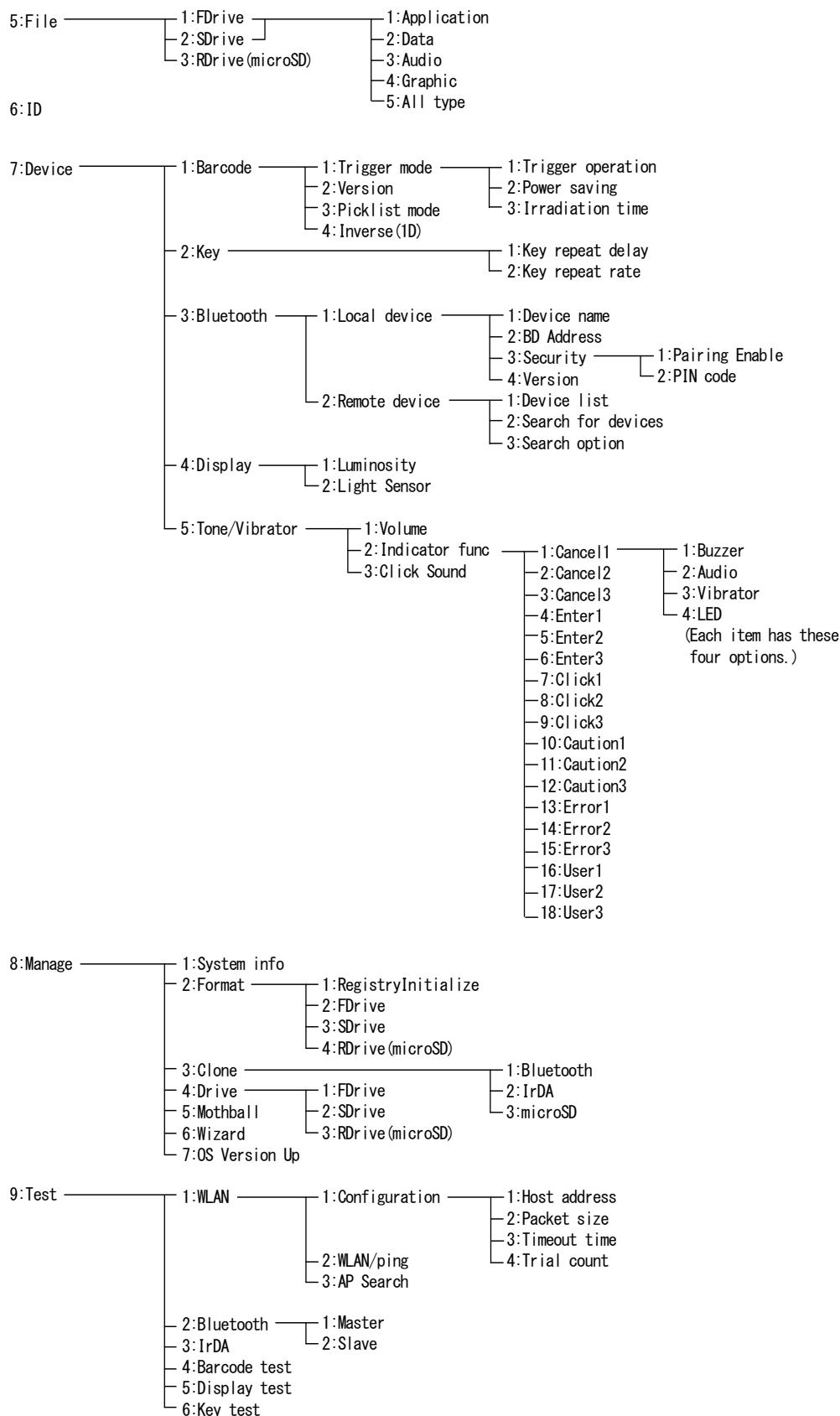
JAN-13/8, EAN-13/8, UPC-A/E, NW-7, Code39, Code93, Code128, EAN-128 (GS1-128), ITF, Industrial 2 of 5, GS1 DataBar (RSS)

The laser irradiation time is set in the trigger mode.

4-2 System Menu Structure

The system menu is in a hierarchical structure, classified by function.





For the factory setting of the system menu, see "Appendix-1 Factory Default List" (P. 232) .

4-3 System: Settings to Simplify Your Operations

You can set various functions that make your operations of the Handy Terminal more comfortable.

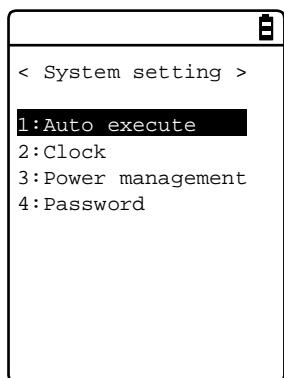
You can automatically register the settings for the respective systems (except the password setting) by using the DHCP function.



"4-5-2 DHCP: DHCP Settings" (P. [133](#))

STEP

[System Menu] → [1:System]



Select the item to be set.

- Auto execute: Automatic execution of the application software (P. [103](#))
- Clock: Clock Verification (P. [104](#))
- Power Management (P. [107](#))
- Password: Setting/Clearing Password (P. [107](#))

4-3-1 Auto Execute: Automatic Execution of the Application

Software



DHCP

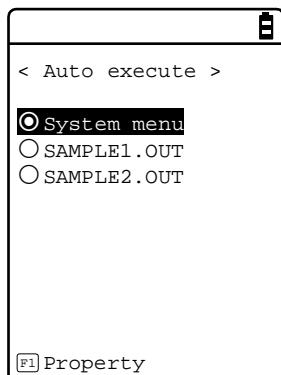
You need to register the application software that you want launched automatically upon power ON.

The system menu is launched by the factory settings.

STEP

[System Menu] → [1:System] → [1:Auto execute]

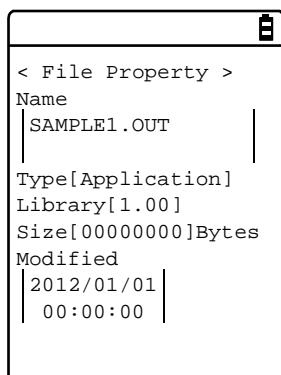
Select the application software you want launched automatically upon power ON.



After the list of currently installed programs is displayed, select your desired application software.

Press the [ENT] key to return to the <System setting> screen. This completes registration of the automatic execution file.

When the power is turned on the next time, the registered application software will be launched.



Press the [F1] key to display the information related to the selected application software.

Press the [C] key to return to the <Auto execute> screen.

4-3-2 Clock: Time Settings



You can verify the current time and perform time settings.

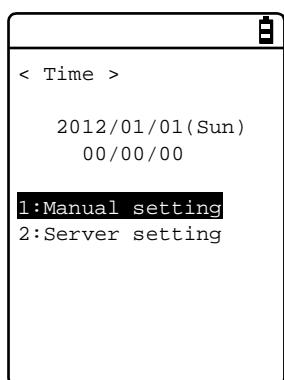
In addition to making the settings manually, you can also receive the PC time data using WLAN communication.

■ Current Time

STEP

[System Menu] → [1:System] → [2:Clock]

Select whether to set the time manually or via the server.



The current time is displayed.

Select the item to be set.

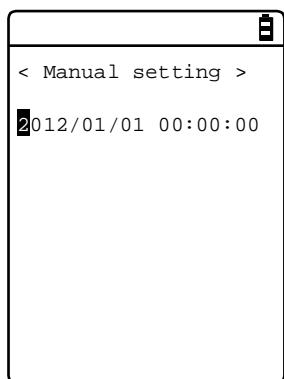
- Manual setting: Sets the time manually
- Server setting: Receives the time automatically from the server

■ Manual setting: Sets the Time Manually

STEP

[System Menu] → [1:System] → [2:Clock] → [1:Manual setting]

Set the time.



Use the arrow keys to move the cursor over the year, the month or the day to be set, and then enter the time.

Press the [ENT] key to confirm the time and return to the <Current time> screen.

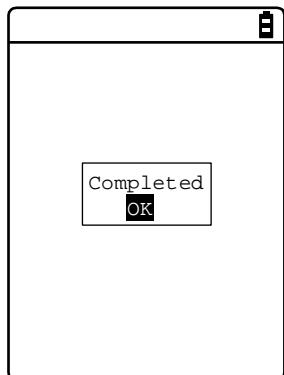
Press the [C] key to cancel the setting and return to the <Current time> screen.

■Server setting: Receives the time automatically from the server

Receives the time data from the DHCP server, a network administration tool (see "7-2 DHCP Server Mode" of "Network Administration Tool User Manual").

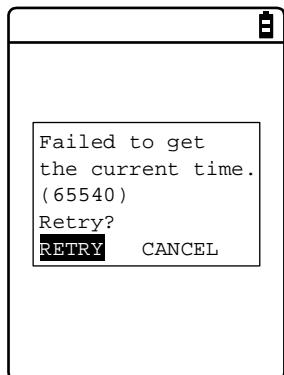
STEP

[System Menu] → [1:System] → [2:Clock] → [2:Server setting] → [1:WLAN] / [2:Bluetooth] / [3:IrDA]



Receive the time data automatically.

Press the [ENT] key to return to the <Current time> screen.



When reception fails, the screen on the left will be displayed.

- **Retry:** Receives the time data from the server again.
- **Cancel:** Cancels the setting and return to the <Current time> screen.

If the failure persists, contact your system administrator.

Hint

To set the current time, get the time data from the server by using the DHCP function.

When using the DHCP function to set the current time, confirm the following in advance:

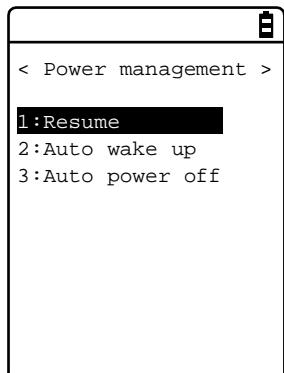
- The WLAN communication (such as SSID and security) between the Handy Terminal and the access point has been configured correctly.
- The access point and the PC have been powered up.
- The access point and the PC have been configured and connected correctly.
- The access point is operating normally.
- The DHCP server of the network administration tool has been started.

4-3-3 Power Management: Various Settings Related to Power

You can perform various settings related to Power ON/OFF, such as auto power off.

STEP

[System Menu] → [1:System] → [3:Power Management]



Select the item to be set.

·Resume: Retention of the state during power off

·Auto wake up: Started at the predefined time

·Auto power off: Automatically power off

■Resume Function: Retaining the State during Power OFF

If the resume function is enabled, the state when the power was turned off is saved, allowing you to resume your work thereafter upon the next startup.

The operations after pressing the **[PW]** key to turn on the power are as follows, depending on whether the resume function is enabled:

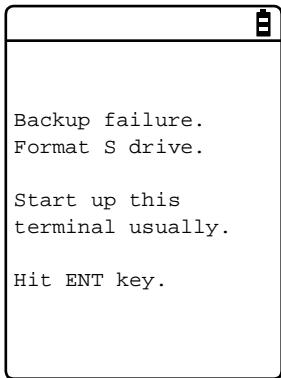
- Resume function enabled: Resumes from the process executed immediately before power off.
- Resume function disabled: Always executed from the beginning process.

Hint

To cancel the resume function and launch the system menu, press the **[PW]** key while holding down the **SCAN** key.

STEP

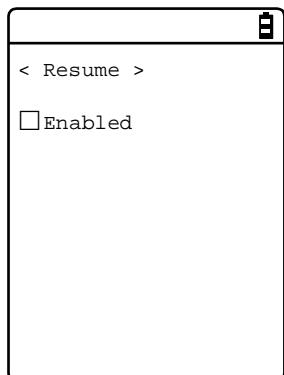
- If the battery pack is detached during operation, resume will fail. The process will then be executed from the beginning, regardless of whether the resume function is enabled or disabled. The following screen will be displayed upon the next power on.

Caution

- When the backup battery is depleted, the above screen will be displayed, and the process will be executed from the very beginning. For charging the backup battery, see "1-2-5 Remaining Charge Level Display and Alarm for the Battery Pack"—"■Charging the Backup Battery" (P. 49).
- The resume is disabled on the system menu even when the resume setting is enabled. The resume is enabled only while the application software is operating.

[System Menu] → [1:System] → [3:Power Management] → [1:Resume]

Enable the resume function.



Press the [ENT] key to select [Enabled] .



You can also enable the resume function from the DHCP server, a network administration tool (see "7-2 DHCP Server Mode" of "Network Administration Tool User Manual").

■Auto wakeup: Started at the Predefined Time

The auto wake up function can automatically start the Handy Terminal according to a predefined schedule.

Caution

The auto wake up function can be enabled only if the power is turned off using the **【PW】** Key. The Handy Terminal cannot be started by Auto wake up immediately after battery replacement or after forcible termination due to low battery.

●Schedule Confirmation

STEP

[System Menu] → [1:System] → [3:Power Management] → [2:Auto wake up]

The currently set start schedule is displayed.

Select the item to be set.



Select from the following items:

- Set: Sets the schedule
- Clear: Clears the schedule

- Set: Sets the Schedule

STEP

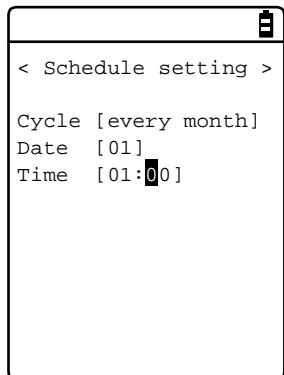
[System Menu] → [1:System] → [3:Power Management] → [2:Auto wake up]
→ [1:Set]

Set the auto wakeup schedule.



Select the occurrence interval of the schedule.

Select Daily (time specification), Weekly (weekday and time specification), Monthly (date and time specification). Date is set using "01"–"31", and time is set using the 24-hour format. The menu returns to schedule confirmation upon completion of the setting.



Enter the hours and minutes (00 : 00–23 : 59) in the 24-hour format.

This completes the settings.

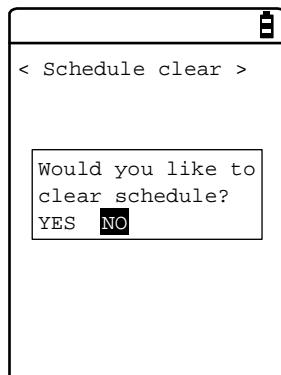
Press the [ENT] Key to return to the <Current schedule> screen and complete the setting.

- Clear: Clear the Schedule

STEP

[System Menu] → [1:System] → [3:Power Management] → [2:Auto wake up]
→ [2:Clear]

Clear the auto wakeup schedule that has been set.



Select [Yes] in the confirmation dialog.

The set schedule is deleted.

Select [No] to cancel the clearing.



You can also enable the auto wakeup function from the DHCP server, a network administration tool (see "7-2 DHCP Server Mode" of "Network Administration Tool User Manual").

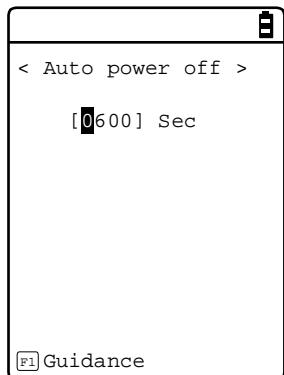
■Auto Power OFF: Automatic Power OFF

The auto power off function performs power off automatically after a time period of no operation.

STEP

[System Menu] → [1:System] → [3:Power Management] → [3:Auto power off]

Set the time duration after which power off is to be performed automatically.



The allowed time range is 0060 – 3600 seconds.

In addition, power off can be disabled by setting it to 0000 second.

Press the [ENT] key to complete the setting.

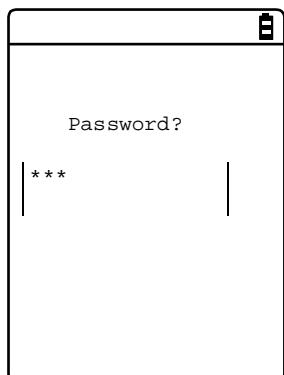
Press the [F1] key to display the guidelines related to the setting values.



You can also enable the auto power off function from the DHCP server, a network administration tool (see "7-2 DHCP Server Mode" of "Network Administration Tool User Manual").

4-3-4 Password: Setting / Clearing Password

You can set a password to prevent the system menu from being inadvertently started. If a password has been set, no person other than the administrator can confirm and/or modify the settings without entering the password.



If a password has been set, password check will be performed during system menu launch. The system menu will not be launched unless the correct password is entered.

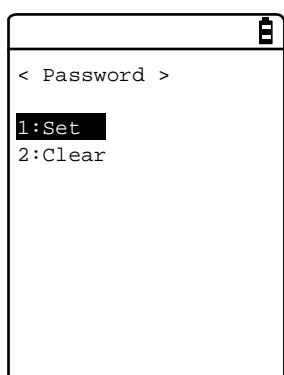
Caution

Write down your password and keep it somewhere safe in order not to forget it. Please contact your dealer if you are unable to recall the password.

STEP

[System Menu] → [1:System] → [4:Password]

You can set or clear the password.



Select from the following items:

- Set
- Clear

■Set: Setting the Password**STEP**

[System Menu] → [1:System] → [4:Password] → [1:Set]

① Enter a new password.



The password is case sensitive and consists of 4–30 alphanumeric characters.

Enter a new password, and then press the **【ENT】** key.

② Enter the password once again for confirmation.

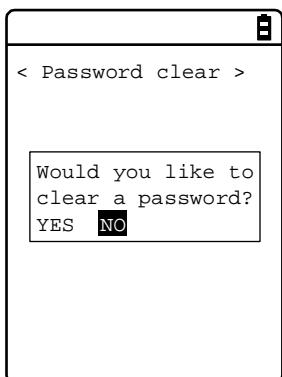


Press the **【ENT】** key after entering the password.

■Clear: Clearing the Password**STEP**

[System Menu] → [1:System] → [4:Password] → [2:Clear]

Clear the password.



Select **[Yes]** to clear the password; the set password will be erased.

Select **[No]** to cancel the clearing.

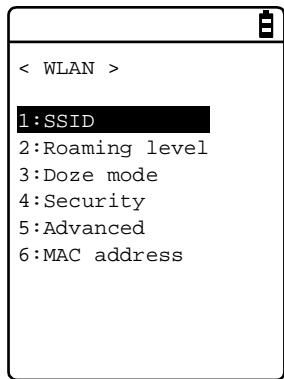
4-4 WLAN: WLAN Communication Settings

You can perform settings related to WLAN.

STEP

[System Menu] → [2:WLAN]

You can select the setting item for WLAN communication.



Select the item to be set.

- SSID: Setting SSID (P. [114](#))
- Roaming level: Setting the Roaming Level (P. [115](#))
- Doze mode: Setting the Timeout Time (P. [115](#))
- Security: WLAN Communication Security Settings (P. [116](#))
- Advanced: Advanced Settings Related to WLAN Communication (P. [127](#))
- MAC address: Displaying the MAC Address (P. [129](#))

4-4-1 SSID: Setting SSID

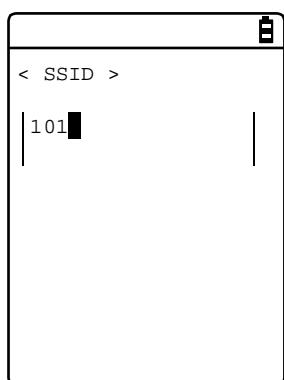
You can set SSID for identifying the access point of WLAN communication.



Although SSID can be set automatically by using the DHCP function, security issues may occur. Avoid configuration by DHCP.

STEP

[System Menu] → [2:WLAN] → [1:SSID]



Enter SSID.

SSID is specified with up to 32 alphanumeric characters. It is case sensitive.

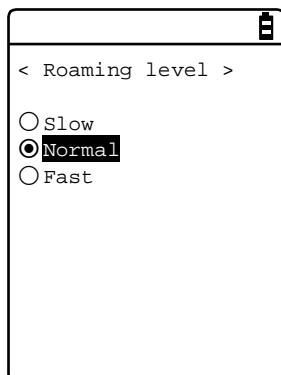
4-4-2 Roaming level: Setting the Roaming Level



The roaming function automatically switches to an access point with a stronger signal when the Handy Terminal is moved around. The value for deciding the switching is called roaming level. Roaming is performed only among access points having the same SSID.

STEP

[System Menu] → [2:WLAN] → [2:Roaming level]



Select the speed for deciding the switch.

Slow The switch is slow
 Normal ↓
 Fast The switch is fast

4-4-3 Doze mode: Setting the Timeout Time

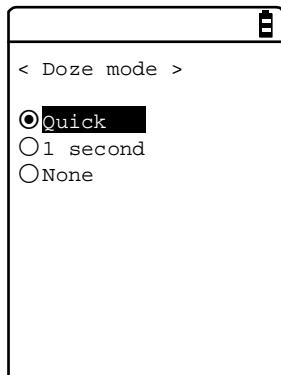


This time is the duration after which WLAN is switched to the doze mode upon completion of transmission. The shorter this time, the lower the consumption of the battery pack. However, the WLAN response will be degraded accordingly.

It can be configured automatically if the DHCP function is enabled.

STEP

[System Menu] → [2:WLAN] → [3:Doze mode]



Select the time duration after which timeout occurs.

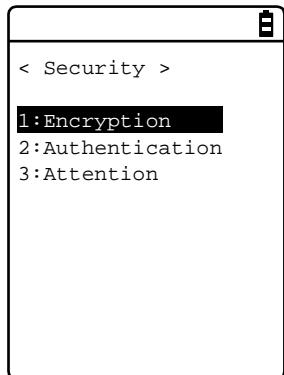
4-4-4 Security: WLAN Communication Security Settings



You can perform settings related to WLAN communication security.

STEP

[System Menu] → [2:WLAN] → [4:Security]



Select the item to be set.

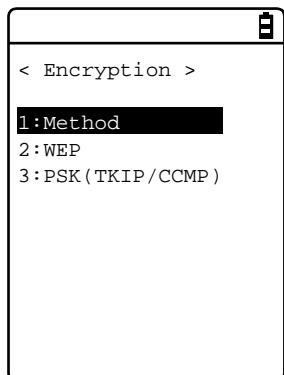
- Encryption: Sets the encryption method and the key
- Authentication: Selects the authentication method
- Attention: Notification when security is not configured

■Encryption

You can select the encryption method and set the key used for encryption.

STEP

[System Menu] → [2:WLAN] → [4:Security] → [1:Encryption]



Select the item to be set.

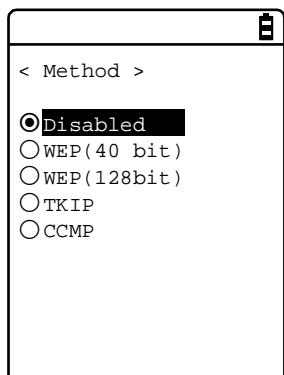
- Method: Selects the encryption method
- WEP: Sets the WEP key
- PSK(TKIP/CCMP): Sets the encryption key

●Method

You can select the encryption method.

STEP

[System Menu] → [2:WLAN] → [4:Security] → [1:Encryption] → [1:Method]

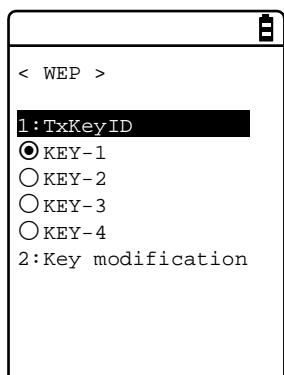


Select the encryption method.

- Disabled
- WEP (40-bit)
- WEP (128-bit)
- TKIP
- CCMP (AES)

●WEP**STEP**

[System Menu] → [2:WLAN] → [4:Security] → [1:Encryption] → [2:WEP]



Select the item.

- TxKeyID

From the KEY1–KEY4 set at the next [Key modification], select the ID used for communication. This item is enabled while the WEP setting is other than "Disabled".

Communication cannot be performed unless the WEP key value of TxKey_ID set here matches with the WEP key value of the access point and the WEP key value of TransmitKEY set at the access point matches with the WEP key value on the Handy Terminal side.

Caution

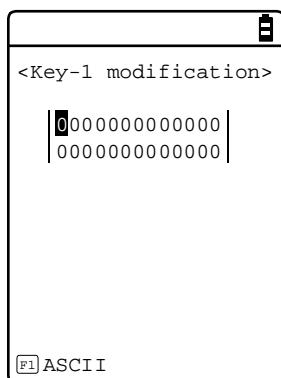
For example, if TxKey_ID of the Handy Terminal is "2", the WEP key2 value of the Handy Terminal and the WEP key2 value of the access point must be consistent. Also, if TransmitKEY of the access point is "3", the WEP key3 value of the access point and the WEP key3 value of the Handy Terminal must match each other.

- Key modification

You can set the value of the respective WEP keys (1, 2, 3, 4).

The value can contain HEX characters ("0"–"9", "A"–"F") and ASCII characters. Press the **[F1]** Key to switch the input. You can also make the setting through barcode reading by using the trigger keys.

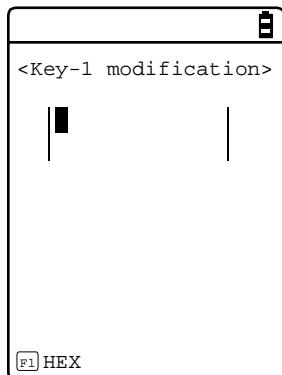
HEX Characters (Default)



The length is fixed at 10 characters when 40-bit is selected, and at 26 characters when 128-bit is selected. The actual entry is always 26 characters, and when 40-bit is selected, only the first 10 of these 26 characters are accepted.

Press the **[F1]** key to move to the ASCII character entry screen.

ASCII Characters



The length is fixed at 5 characters when 40-bit is selected, and at 13 characters when 128-bit is selected. The actual entry is always 13 characters, and when 40-bit is selected, only the first 5 of the 13 characters are accepted. In addition, blank is recognized as space (0x20).

Caution

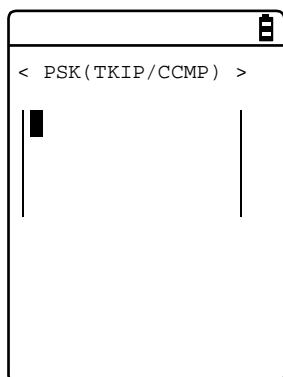
The settings for the respective WEP keys can be overwritten but not edited.

From the security perspective, it is always displayed as "00000..." when moving to the KEY modification screen.

● PSK (TKIP/CCMP)

STEP

[System Menu] → [2:WLAN] → [4:Security] → [1:Encryption]
→ [3:PSK (TKIP/CCMP)]



When PSK (TKIP/CCMP) is selected in the encryption method, enter the encryption key (key). Perform the same setting as for the access point.

You can enter 8–63 characters when setting using ASCII characters. You can enter 64 characters when setting using HEX numbers.

To use PSK (TKIP/CCMP), set the authentication method (P. 121) to "Open".

About Security Function

The Handy Terminal is equipped with WPA and WPA2 as WLAN communication security functions.

■About WPA (WPA-PSK) and WPA2 (WPA2-PSK)

- PSK

PSK is short for Pre-Shared Key. You need to set the same encryption key for both the access point and the Handy Terminal before performing WLAN communication between them. This key must be managed such that it cannot be leaked to any third party. In this context, the key set in WEP is also a PSK.

- WPA-PSK and WPA2-PSK

As equipment cost and technology, such as RADIUS server and electronic certificates required for IEEE802.1X (EAP) authentication, are required, the PSK method is prepared as a simple authentication method for WPA and WPA2.

This also performs simple authentication by setting the same PSK in advance both in the access point and in the Handy Terminal, and performs communication by the set encryption method (TKIP/CCMP(AES)). Instead of directly using the PSK as the encryption key, this method periodically generates a temporal key for any connection between each access point and each terminal. Due to this process, compared with "No Encryption" or "WEP Method", a delay of several seconds occurs during WLAN communication with the access point.

■Encryption Method

The Handy Terminal has the following encryption methods:

- WEP

As the IEEE802.11b/g used during WLAN communication of the Handy Terminal is a general wireless standard, it may be easily intercepted by third parties. Using WEP (Wired Equivalent Privacy), the encryption standard, for WLAN communication data between the access point and the Handy Terminal allows you to avoid the risk of being intercepted. The Handy Terminal supports two types of WEP keys (common keys): "40-bit (or 64-bit)" and "128-bit".

- TKIP

TKIP, part of the encryption standard for IEEE802.11i WLAN communication, is short for "Temporal Key Integrity Protocol", the encryption protocol used for a temporal key. This function compensates for WEP vulnerability while using the encryption algorithm RC4 used in WEP. Instead of encrypting the temporal key using RC4 without change, it realizes encryption with a different key for each packet by performing key mixing process in two steps.

- AES

AES is an encryption method adopted by the U.S. government, and uses a standard encryption algorithm called Rijndael. AES satisfies the two conditions of safety and speed. However, as this algorithm is totally different from WEP or TKIP, new hardware process will be required.

- CCMP

CCMP (Counter mode with CBC-MAC Protocol) is a tamper detection protocol used by AES. The CBC-MAC (Cipher-Block Message Authentication Code) method is used to detect tampering. This CCMP method is required by WPA2 (IEEE802.11i).

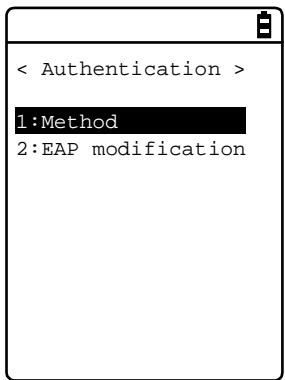
■Authentication

Select the authentication method.

STEP

[System Menu] → [2:WLAN] → [4:Security] → [2:Authentication]

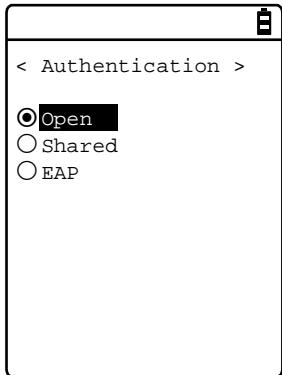
Select the item to be set.



●Method

STEP

[System Menu] → [2:WLAN] → [4:Security] → [2:Authentication] — [1:Method]



• Open

Set "Open Authentication" method.

When the authentication request frame is received from the Handy Terminal, the access point returns with an authentication response frame and enables the data communication.

While WEP is enabled, if the two WEP keys do not match, communication will not be performed even when authentication has taken place.

• Shared

Set "Shared Key Authentication" method.

When authentication request is received from the Handy Terminal, the access point sends unencrypted text (challenge text) for identity confirmation. The Handy Terminal then encrypts the challenge text and returns the encrypted text to the access point. The access point decrypts the encrypted text using its WEP key. If the access point confirms that the decrypted text matches the original challenge text, then it authenticates the Handy Terminal.

• EAP

Sets the "EAP" (IEEE802.1X) authentication method. When this authentication method is used, you will also need to configure a number of settings including certificate, private key and user information, which will be discussed later. There are also limitations on environment that can be used (such as certificate authority and authentication (RADIUS) server). Therefore, if you want to use the "EAP" authentication method, please contact your dealer.

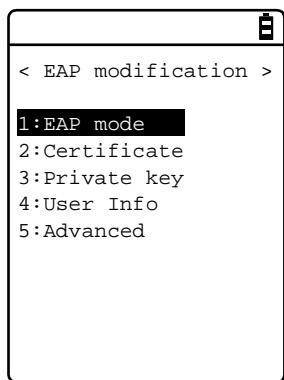
●EAP modification

STEP

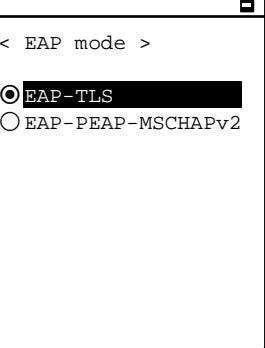
[System Menu] → [2:WLAN] → [4:Security] → [2:Authentication] – [1:EAP modification]

Perform the various configurations required when using EAP (IEEE802.1X) authentication.

After these settings are configured, perform “■ WLAN/ping test” (P.202) and verify that communication using EAP authentication is possible.



Select the item to be set.



• EAP-TLS

This authentication method requires a server certificate for server authentication, and a client certificate for client certification.

The required settings are as follows:

- CA root certificate
- Client certificate
- Private key
- User name
- EAP-PEAP-MSCHAPv2

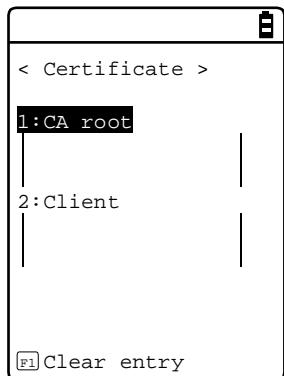
This authentication method requires a server certificate for server authentication, and a user name and a password for client authentication.

The required settings are as follows:

- CA root certificate
- User name
- Password

②Select [Certificate] .

You need to set the certificate files. The certificate files are received via WLAN (P. [146](#)) or Bluetooth (P. [146](#)). They can also be received via IrDA or clone.



- CA root (file)

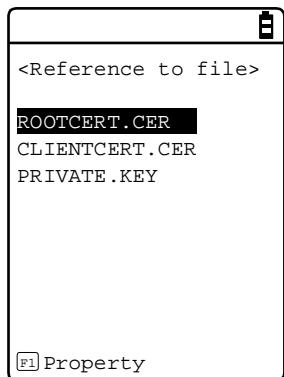
This is the CA root certificate of the publisher of the server certificate required for server authentication. It does not support certificate hierarchization (chain).

Press the [F1] key to clear the setting value.

- Client certificate (file)

This is a client certificate required for client authentication.

Press the [F1] key to clear the setting value.

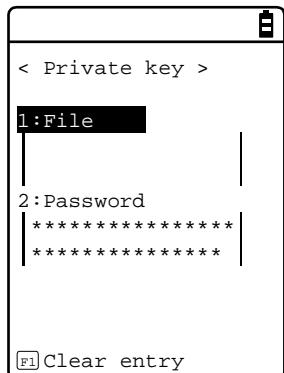


Select from the received files.

(Pressing the [F1] Key allows you to view the file information)

③Select [Private key] .

The private key (file) is received via WLAN (P. [146](#)) or Bluetooth (P. [146](#)).



• File

This is the private key that is paired with the client public key contained in the client certificate.

This private key is important for security. Manage the private key file by encrypting it so that it will not be leaked to third parties.

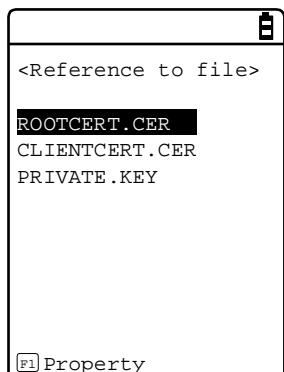
Press the [F1] key to clear the setting value.

• Password

Enter a password that is case sensitive and consists of up to 31 alphanumeric characters.

As a security measure, the password characters entered will be displayed as asterisks (*).

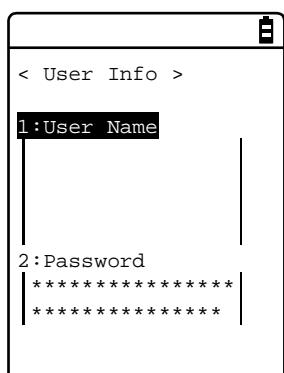
Press the [F1] key to clear the setting value.



Select from the received files.

(Press the [F1] Key to view the file information)

④Select [User Info] .



• User Name

The user name used for authentication.

Enter a user name that is case sensitive and consists of up to 62 alphanumeric characters.

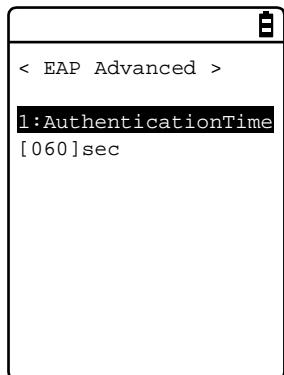
• Password

The password used for authentication.

Enter a password that is case sensitive and consists of up to 31 alphanumeric characters. As a security measure, the password characters entered will be displayed as asterisks (*).

⑤Select [Advanced] .

*This setting usually does not change.



• Authentication timeout during startup

During WLAN startup, authentication will not be terminated till after lapse of the number of seconds set here.

Allowed setting value: 15–120 seconds

■Attention

If the Handy Terminal is launched without performing the WLAN security configuration, the <WLAN Communication Security Not Configured> prompt screen will be displayed. This display can be shown/hidden.

If this setting is disabled, even if the WLAN communication security is not configured, the notification screen will not be displayed during startup.

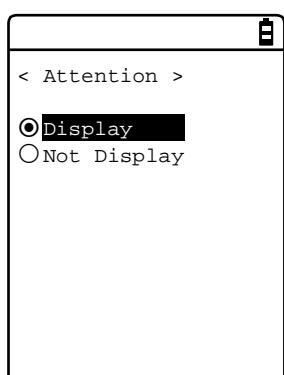
STEP



From the security perspective, disabling this setting is not recommended.

Be sure to configure security when performing WLAN communication.

[System Menu] → [2:WLAN] → [4:Security] → [3:Attention]



Select Display/Don't Display.

4-4-5 Advanced: Advanced Settings Related to WLAN Communication



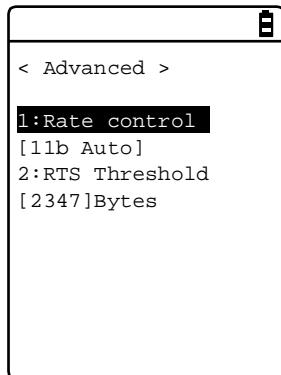
DHCP

You can perform advanced settings related to WLAN.

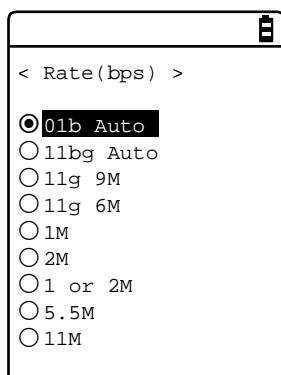
STEP

[System Menu] → [2:WLAN] → [5:Advanced]

①Select [Rate control].



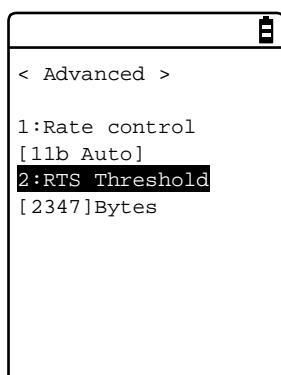
②Select the transmission rate from the list.



You can select the transmission rate from the list.

For transmission rate, see the next section.

③Select [RTS_Threshold].



You can set the RTS Threshold value.

●Transmission Rate

Setting a high-speed communication rate will narrow the area where the Handy Terminal can perform transmission.

The rate setting on the Handy Terminal side decides whether 14ch can be used, and the rate setting on the access point side affects the connectivity. See the following table.

Rate Setting	Description	14ch *1	Connectivity Related to the Rate Setting on the Access Point Side.*2		
			11b/g Both	11b Only	11g Only
11b Auto (Default)	Switches to the appropriate transmission rate according to the distance between the Handy Terminal and the access point. Its possible values are given by IEEE802.11b (11, 5.5, 2, 1 Mbps).	○	○	○	×
11bg Auto	Switches to the appropriate transmission rate according to the distance between the Handy Terminal and the access point.	×	△	○	◎
11g 9M	The transmission rate is fixed at 9 Mbps.	×	△	×	◎
11g 6M	The transmission rate is fixed at 6 Mbps.	×	△	×	◎
1M	The transmission rate is fixed at 1 Mbps.	○	○	○	×
2M	The transmission rate is fixed at 2 Mbps.	○	○	○	×
1 or 2M	The transmission rate is automatically changed to 1 Mbps or 2 Mbps only.	○	○	○	×
5.5M	The transmission rate is fixed at 5.5 Mbps.	○	○	○	×
11M	The transmission rate is fixed at 11 Mbps.	○	○	○	×

*1 14ch Enabled/Disabled?

○: Enabled.

×: Disabled.

*2 Connectivity Related to the Rate Setting on the Access Point Side.*2

◎: Connectable. The 11g rate will take precedence, and high transmission rate is possible.

○: Connectable. Communication is performed at the 11b rate.

△: Connectable. The throughput is reduced somewhat due to negotiation of 11b/g.

×: Non-connectable.

●RTS Threshold

Judges whether the RTS packet can be sent prior to data packet transmission. The RTS packet is sent, and RTS-CTS control is performed if the data packet size is bigger than the setting value. If one access point is connected to multiple terminals, or if the terminals are so remotely distributed that the terminals cannot detect each other even if they can detect the access point, the RTS-CTS control is enabled. The RTS-CTS control is enabled in the above case, but the throughput will be reduced in other cases. Normally, retain the factory setting (2347 bytes).

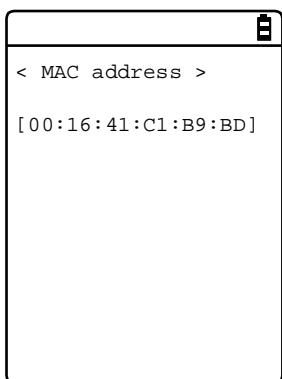
Setting range: 0–2347 bytes

4-4-6 MAC address: Displaying the MAC Address

You can display the MAC address (hardware specific address). The MAC address cannot be changed.

STEP

[System Menu] → [2:WLAN] → [6:MAC address]



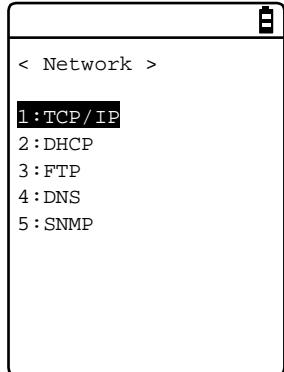
The MAC address of the Handy Terminal is displayed.

4-5 Network: Network Connection Settings

You need to perform the settings required for network connection.

STEP

[System Menu] → [3:Network]



Select the item to be set.

- TCP/IP: Settings related to TCP/IP communication (P. [131](#))
- DHCP: Settings of DHCP client function (P. [133](#))
- FTP: Settings for using the FTP (P. [136](#)).
- DNS: Setting for the DNS server address (P. [140](#))
- SNMP: Various settings for SNMP (P. [142](#))

4-5-1 TCP/IP: TCP/IP Settings



DHCP

You can perform settings related to TCP/IP communication, starting with IP address.

STEP

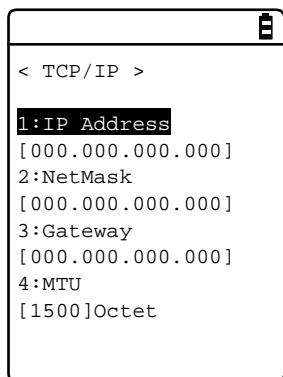
- While the IP address is [000.000.000.000], WLAN communication cannot be performed.

Caution

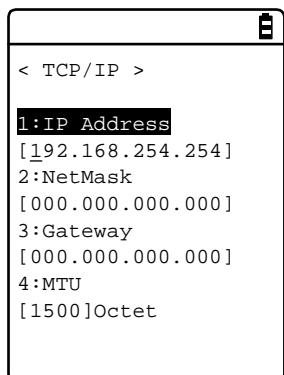
- Unless "Application boot" is selected in DHCP settings' "■Startup type (P. [134](#))", all the items excluding MTU are read-only and cannot be changed.

[System Menu] → [3:Network] → [1:TCP/IP]

① The current settings are displayed.



② Configure the respective items.



Select the item name to make it ready for input.

- IP Address

Sets the IP address assigned by the network administrator. Sets the unique IP addresses of all the GTX-221-Gs connected to the same network.

- NetMask

Sets the subnet mask assigned by the network administrator. The subnet mask needs to be set according to the IP address for locating the affiliation of the network.

- Gateway

Sets the address of the default gateway. This setting is required when connecting different networks via a router.

- MTU

The maximum length of an IP packet. It is usually 1500 octets (bytes) for the Ethernet. When using across a router, this value needs to be changed according to the communication media. For details, contact your network administrator.

(Input example) IP address

Enter a value in the range 000–255 for each field separated by a period (e.g., 192.168.254.254).

Enter the values for “NetMask” and “Gateway” using the same procedure.

For settings related to the respective items, contact your network administrator.

4-5-2 DHCP: DHCP Settings



You can configure the DHCP client function that can automatically configure TCP/IP and other various settings.

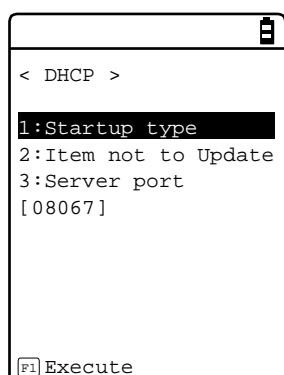
Hint

This manual attaches the following mark for system menu items that can be configured automatically from the PC by DHCP.

**STEP**

[System Menu] → [3:Network] → [2:DHCP]

Select the item to be set.



- Startup: Setting of disable/enable DHCP
- Item not to update: Setting of items for which update by DHCP is disabled.
- Server port: Setting of the port number for the DHCP server

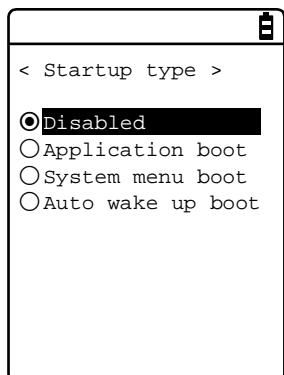
■Startup type

You can set to disable/enable DHCP upon startup.

STEP

[System Menu] → [3:Network] → [2:DHCP] → [1:Startup type]

Set the startup type.



- **Disabled**

DHCP will not be executed upon startup.

- **Application boot**

DHCP will be executed before the application software is executed.

When the application software has been selected by [System Menu] → [1:System] → [1:Auto execute] , the DHCP function will be executed after the application software has been executed, after startup of the Handy Terminal.

In addition, when the application software is started by [5:File] on the system menu, DHCP will not be executed.

- **System menu boot**

DHCP will be executed when the system menu is launched.

- **Auto wake up boot**

DHCP will be executed when auto wakeup is started.

■ Item not to update

You can perform settings during execution of the DHCP function so that the specified terminal-specific information will not be changed.

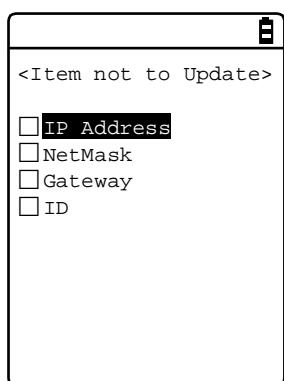
STEP



If IP address is selected (IP address is disabled for update), the IP address set for the Handy Terminal will not be changed. Use this setting after verifying that there are no hosts with the same address in the network.

[System Menu] → [3:Network] → [2:DHCP] → [2:Item not to Update]

You can select the items whose update you want to disable.



Checkmark the items whose update you want to disable.

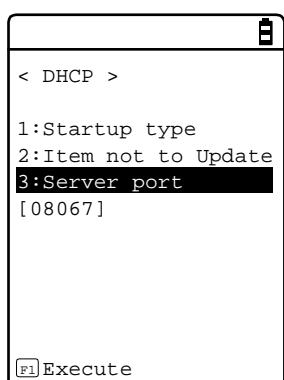
- IP Address
- NetMask
- Gateway
- Terminal ID

■ Server port

You will need to set the DHCP server port number (factory setting: 08067).

STEP

[System Menu] → [3:Network] → [2:DHCP] → [3:Server port]



Enter the port number of the DHCP server.

This value will be changed when only configuring the IP address using the existing DHCP server without automatically configuring the settings specific to the Handy Terminal.

The DHCP server port number is 08067 by default. This is to avoid conflict with other DHCP servers that are being operated in the same network (well-known port number is 67).

4-5-3 FTP: FTP Settings



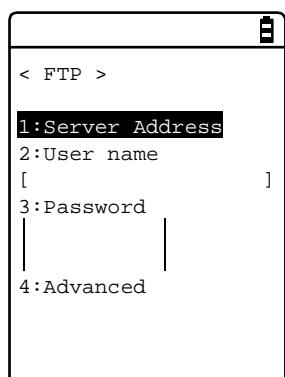
You need to perform FTP settings when you use the FTP client function.

They can also be configured automatically if the DHCP function is enabled.

STEP

[System Menu] → [3:Network] → [3:FTP]

Select the item to be set.



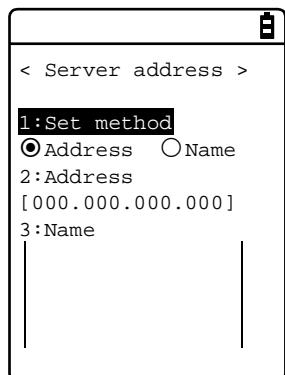
- Server address: Sets the host name of the FTP server
- User name: Sets the login user name for the FTP server
- Password: Sets the login password for the FTP server
- Advanced: Performs advanced FTP settings

■Server address

You can set the host name of the FTP server.

STEP

[System Menu] → [3:Network] → [3:FTP] → [1:Server address]



IP address or host name specified by "1: Set method" is set as the FTP server.

- When IP address is selected
Enter the IP address of the FTP server under "2:Address".
- When host name is selected
Enter the host name of the FTP server under "3:Name".
Spaces cannot be included in the host name.



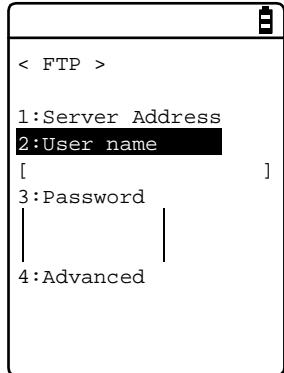
Perform DNS settings (P. 140) if you want to use "Host name".

■User name

You can set the login user name for the FTP server

STEP

[System Menu] → [3:Network] → [3:FTP] → [2:Name]



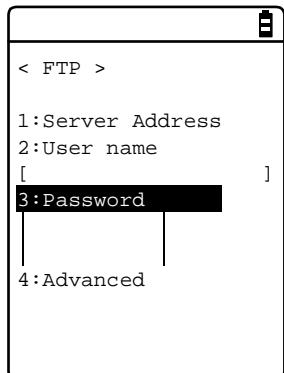
Enter a user name that is case sensitive and consists of up to 18 alphanumeric characters.

■Password

You can set the login password for the FTP server

STEP

[System Menu] → [3:Network] → [3:FTP] → [3:Password]



Enter a password that is case sensitive and consists of up to 20 alphanumeric characters.

Spaces cannot be included in the password.

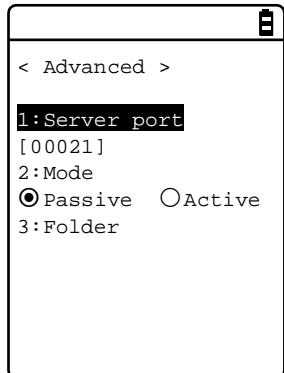
As a security measure, the password entered will be displayed after being converted to an asterisk (*).

■Advanced

You can perform advanced FTP settings.

STEP

[System Menu] → [3:Network] → [3:FTP] → [4:Advanced]



Select the item to be set.

- **Server port:** Specifies the control port number of the FTP server
- **Mode:** Specifies the mode
- **Folder:** Specifies the folder

●Server port

Specifies the control port number of the FTP server. It is set to 21 (00021), a well-known FTP number, in factory settings.

●Mode

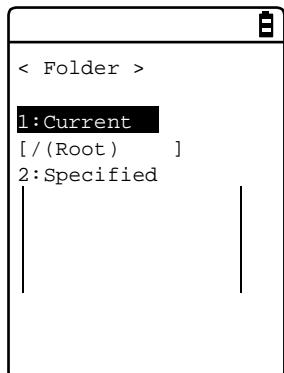
It is set to Passive mode by default. Set it to Active mode if the FTP server does not support Passive mode.

Hint

The firewall has a setting that denies connection from the outside to the inside. While this setting is enabled, FTP communication is not available in Active mode. Using Passive mode allows you to perform communication with an FTP server located on the other side of the firewall.

●Folder

You can specify the transmission/reception folders of the FTP server.



- Current

Select [Current] to display the submenu.

Select the current folder from the following items:

/ (Root)

The root folder of the FTP server. The user name folder may be specified as the root folder, depending on the FTP server.

/ (User name)

Sets the user name folder in the root folder of the FTP server as the current folder. If the user name has not been set, executing the FTP function (file transmission/reception) will lead to an error screen.

/ (Specified)

Sets the relative path from the root folder set as "Specified" (see the next item) as the current folder.

- Specified

Select [Specified] , and enter the folder name.

The text set here will be added to the FTP method of "CWD". As the text set here is directly used for FTP communication, the file path must be correctly entered.

(Ex.) "dir1/dir2/dir3"

Spaces cannot be included in the specified folder.

4-5-4 DNS: DNS Server Settings



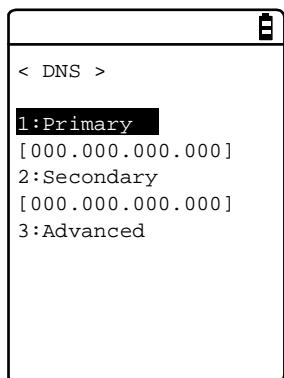
DHCP

You can set the address of the DNS server.

STEP

[System Menu] → [3:Network] → [4:DNS]

Select the item to be set.



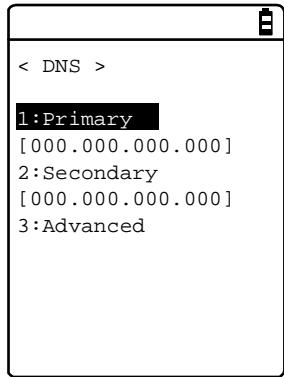
- Primary: Sets the IP address of the primary DNS server
- Secondary: Sets the IP address of the secondary DNS server
- Advanced: Performs advanced settings for DNS

■Primary

This is used to set the IP address of the primary DNS server.

STEP

[System Menu] → [3:Network] → [4:DNS] → [1:Primary]



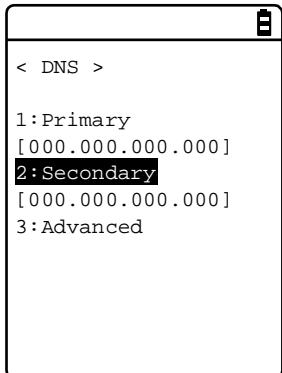
Enter the IP address of the primary DNS server.

■Secondary

This is used to set the IP address of the secondary DNS server.

STEP

[System Menu] → [3:Network] → [4:DNS] → [2:Secondary]



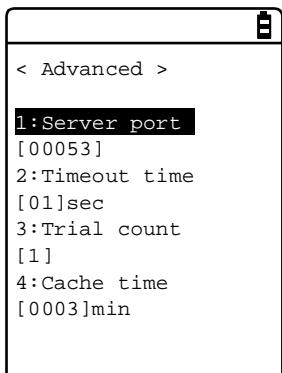
Enter the IP address of the secondary DNS server.

■Advanced

You can perform advanced settings for DNS

STEP

[System Menu] → [3:Network] → [4:DNS] → [3:Advanced]



Select and set the item.

- Server port

Specifies the control port number of the DNS server. The well-known port number is 53.

- Timeout time

Sets the response packet latency within 1 – 99 seconds.

- Trial count

Sets the number of retries. If it is set to 0, only one packet will be sent, and no retry will be performed.

- Cache time

Its setting range is 0 – 9999 minutes. If it is set to 0, the cache function will be disabled. The maximum number of entries at the cache table is 8. If the maximum value is exceeded, the old entry is erased and a new entry is created.

4-5-5 SNMP: SNMP Setting



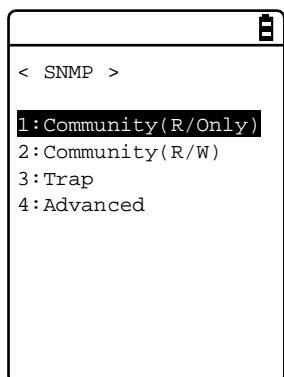
You can perform various settings for SNMP.

The settings can also be made automatically if the DHCP function is enabled.

STEP

[System Menu] → [3:Network] → [5:SNMP]

Select the item to be set.



- Community (R/Only): Sets the read-only community
- Community (R/W): Sets the read-write community
- Trap: Sets the Trap community
- Advanced: Performs advanced settings for SNMP

Community (R/Only)

You can set the read-only community name.

STEP

[System Menu] → [3:Network] → [5:SNMP] → [1:Community (R/Only)]



Select and set the item.

- Community name

The community name is specified using up to 16 alphanumeric characters.

The actions allowed by this community name are "Read-Only". GET and GET-NEXT requests are supported by this community name. When SET request is performed by this community, an authentication trap will be sent.

- Manager IP address

Sets the IP address of the SNMP manager that is enabled using the community name set at [Community name].

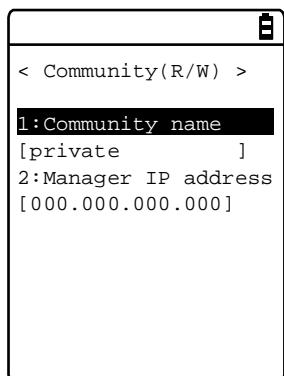
When the IP address is set to "000.000.000.000", this community name is enabled for all the SNMP managers.

■Community (R/W)

You can set the read-write community name.

STEP

[System Menu] → [3:Network] → [5:SNMP] → [2:Community (R/W)]



Select and set the item.

- Community name

The community name is specified using up to 16 alphanumeric characters.

The actions allowed by this community name are "Read-Write". GET, GET-NEXT, and SET requests are supported by this community name.

- Manager IP address

Sets the IP address of the SNMP manager that is enabled using the community name set at [Community name].

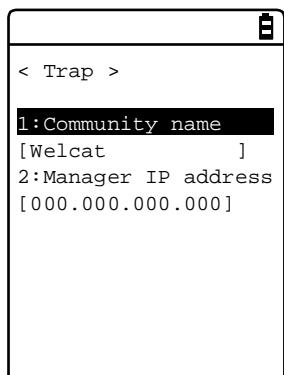
When the IP address is set to "000.000.000.000", this community name is enabled for all the SNMP managers.

■Trap

You can set the Trap community name.

STEP

[System Menu] → [3:Network] → [5:SNMP] → [3:Trap]



Select and set the item.

- Community name

You can set the Trap community name. The community name is specified using up to 16 alphanumeric characters.

- Manager IP address

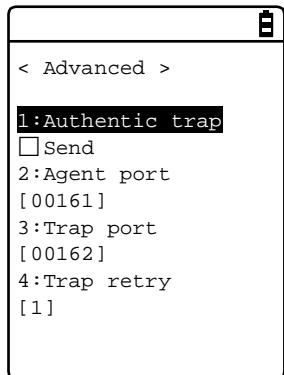
Sets the IP address of the SNMP manager, which is the transmission destination of Trap. When the IP address is set to "000.000.000.000", no trap will be sent.

■Advanced

You can perform advanced settings for SNMP.

STEP

[System Menu] → [3:Network] → [5:SNMP] → [4:Advanced]



Select and set the item.

- Authentic trap

Sets whether to "Send" Authentic trap when access is found to be from other than the community name and the manager IP address set on "1: Community (R/Only)" or "2: Community (R/W)".

This trap is sent to the SNMP manager set on "2: Manager IP address".

- Agent port

Sets the SNMP manager and the communication port number.

It is set to 161 (00161), a well-known SNMP number, in the factory settings.

- Trap port

The trap port number for sending the trap. The well-known port number is 162.

- Trap retry

Specifies the number of times for resending the Trap.

●About SNMP

- The Handy Terminal can perform management using "Network Administration Tool" included in "WebGlider Integration Server" (WGS-001).
- SNMP-PDU (Protocol Data Unit) is compliant with SNMPv1.
- The Handy Terminal manages the objects of the following MIB groups:

[1. 3. 6. 1. 2. 1. 1]	MIB2-System
[1. 3. 6. 1. 2. 1. 2]	MIB2-Interfaces
[1. 3. 6. 1. 2. 1. 4]	MIB2-IP
[1. 3. 6. 1. 2. 1. 5]	MIB2-ICMP
[1. 3. 6. 1. 2. 1. 6]	MIB2-TCP
[1. 3. 6. 1. 2. 1. 7]	MIB2-UDP
[1. 3. 6. 1. 2. 1. 11]	MIB2-SNMP
[1. 3. 6. 1. 4. 1. 12392]	Welcat Enterprise MIB

Welcat Enterprise MIB is described in ASN.1 format.

Welcat Enterprise MIB is included in "WebGlider Integration Server" (for more information, contact our sales office).

- Supported Traps

Trap	Description
Cold Start	Sent during communication start after MIB is initialized. MIB is initialized upon power on. However, initialization will not be performed when recovered from resume.
Warm Start	When sent during a communication start other than Cold Start.* ¹
Link up	Sent when the Handy Terminal has been synchronized with the access point. However, Link up is not sent when synchronization with the access point is first realized (ColdStart and Warm Start were sent). It is also sent on reaching synchronization when the Handy Terminal enters from outside to inside the range of communication, or when synchronization with a new access point is reached by roaming (same timing with signal SIGRFU_INSYNC).
Link down	Sent upon termination of communication. However, it is not sent when outside the range.
Authentication	When an attempt is made to access the Handy Terminal, this trap is sent to the IP address set on "Trap-Manager IP address" (P. 143) However, it is sent only when "Send" is checkmarked at "Trap-Authentic trap" (P. 144) on the system menu.

*¹ Even if the MIB-related settings (such as IP address, subnet mask, default gateway) are changed, MIB will not be initialized. Therefore, instead of Cold Start, Warm Start will be sent.

To initialize MIB, restart the Handy Terminal.

4-6 Receive: Receiving Files

4-6-1 Receive: Receiving Files by WLAN/Bluetooth/Infrared Communication (IrDA)

Upon reception, confirm the following items (all received files are saved in the F drive):

● When Using WLAN Communication

- The communication settings (such as IP address, SSID, and security settings) between the Handy Terminal and the access point have been configured correctly.
- The access point and the PC have been powered up.
- The access point and the PC have been correctly set and connected.
- The access point is operating normally.
- The FTP server of "Network Administration Tool" included in "WebGlider Integration Server" (WGS-001) has been started on the PC side.
- The FTP settings (such as host name, user name) of the Handy Terminal have been configured correctly.

● When Using Bluetooth Communication

- The PC has been powered up
- The Bluetooth communication adapter has been inserted correctly into the PC.
- BluePorter-V (WLF-003: Optional) has been started
- BluetoothManager is ON, and the BluetoothManager icon displayed in the task tray of the PC has become white.



- As the default device of the Handy Terminal, the PC on the sending side has been registered (see "4-9-3 Bluetooth: Registering and Setting the Bluetooth Device" (P. [169](#)))

●When Using Infrared Communication (IrDA)

Upon reception, confirm the following items:

■When the Sending Side Is a PC

- The PC has been powered up
- The "BluePorter-V" (WLF-003: Optional) has been started on the PC.
- The Handy Terminal has been set to the USB communication unit, and infrared communication has been enabled (see "3-4 Building Infra-red Communication (IrDA) Environment" (P. [81](#)))

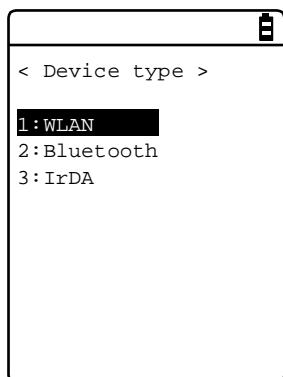
■When the sending side is XIT-2xx series

- Can be sent using "wait (HT)"
- Communicate with reference to communication between Handy Terminals in "3-4 Building Infra-red Communication (IrDA) Environment" (P. [81](#))

STEP

[System Menu] → [4:Receive]

Select the communication means for reception.



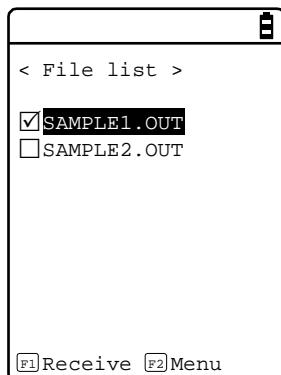
Select the reception method.

- WLAN
- Bluetooth
- IrDA

■Receiving Files (WLAN)**STEP**

[System Menu] → [4:Receive] → [1:WLAN]

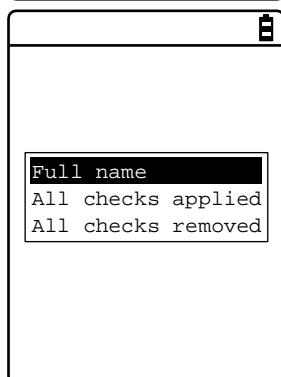
① Get the file list, and select the files to be received.



Select the files to be received by checkmarking their names.

Press the [F1] key to display the reception confirmation dialog. In such as case, if there is no checkmarked file, the selected file will be received.

Select [Yes] / [No] .



Press the [F2] key to display the submenu for operating the file list.

Change the settings as needed.

- Full name

Displays the full name of each selected file.

- All checks applied

Selects all the checkboxes in the file list.

- All checks removed

Clears all the checkboxes in the file list.

② Reception starts.



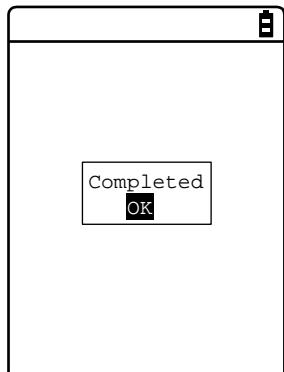
The reception status is displayed on the screen.



If there are files with the same names as the files to be received, an overwriting confirmation dialog will be displayed.

Select [Yes] / [No] .

③ Reception takes place.



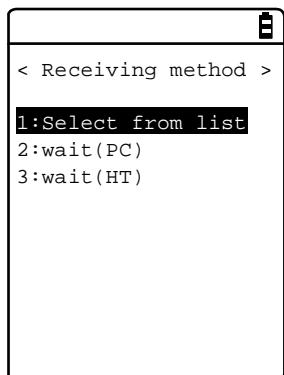
Upon completion of reception, [(Number of Reception Successes/Number of Checks)] will be displayed in the message box. Press the [ENT] key.

■Receiving Files (Bluetooth/IrDA)

STEP

[System Menu] → [4:Receive] → [2:Bluetooth] / [3:IrDA]

① Select the reception method.

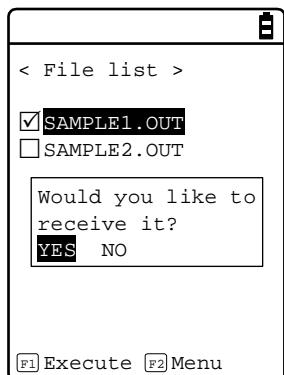


Select "Select from list" to get the file list from the sending side. The receiving side can select the files to be received from the list. →Procedure②

Select "2:Wait (PC)"/"3:Wait (HT)" to enter the reception wait state immediately. If the sending side is a PC, select "2:Wait (PC)"; if it is XIT-2xx, select "3: Wait (HT)" Files to be received depend on the sending side. →Procedure③

* "Wait (PC)" is a function that can be used by BluePorter in Bluetooth communication. It cannot be used by BluePorter-V.

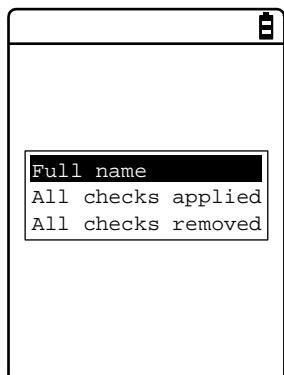
② Select the files to be received.



Select the files to be received by checkmarking their names, and then press the [F1] Key.

The reception confirmation dialog is displayed. If there is no checkmarked file, the selected file will be received.

Select [Yes] / [No] .

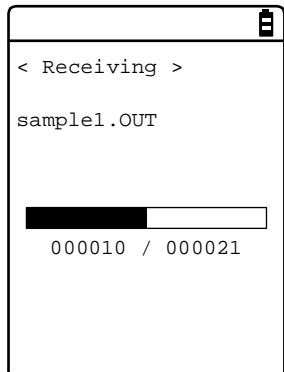


Press the [F2] key to display the submenu for operating the file list.

Change the settings as needed.

- Full name
Displays the full name of each selected file.
- All checks applied
Selects all the checkboxes in the file list.
- All checks removed
Clears all the checkboxes in the file list.

③ Reception starts.



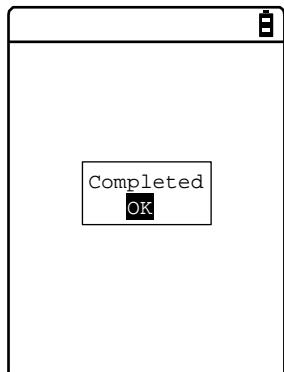
The reception status is displayed on the screen.



If there are files with the same names as the files to be received, an overwriting confirmation dialog will be displayed.

Select [Yes] / [No] .

④ Reception takes place.



Upon completion of reception, [(Number of Reception Successes/Number of Checks)] will be displayed in the message box. Press the [ENT] key.

4-7 File: Executing, Uploading, and Deleting Files

Use this category to look for the target file and perform such operations as executing, uploading, and deleting it.

Select the file to operate from a list classified by file type in each drive. File types are determined by their extensions (three letters that follow a period (.) after each filename) and classified as follows:

File type	Extension
Application program	OUT
Graphic data	BMP, JPG, JPEG, PNG
Audio data	WAV, SFL
Data	Other than above

You can perform the operations shown below; there are operations associated with specific file types and operations you can perform on all files.

Operation	Description
Execute ^{※1}	Start up an application program. You can perform this operation only when the file type is "Application".
View ^{※2}	Display graphic data.
Play ^{※3}	Play an audio file. You can perform this operation only when the file type is "Audio".
Properties	Display information about a file.
Upload	Upload files.
Delete	Delete files.
All checks applied	Mark all the checkboxes in the file list.
All checks removed	Unmark all the checkboxes in the file list.
Copy to FDrive	Copy files to the F drive.
Copy to SDrive	Copy files to the S drive.
Copy to RDrive (microSD)	Copy files to the R drive (microSD).

^{※1} You can not operate files in the S drive.

※2 Supported graphic data is as follows:

Format	BMP, JPG, JPEG, PNG
Size	Maximum 480×640 pixels (Display area: 240×296 pixels)

※3 Supported audio data is as follows:

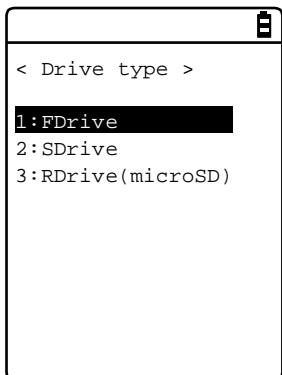
Extension	WAV
Format	Windows standard WAVE format
Audio sampling rate	8000/11025/16000/22050/44100/48000 [Hz]
Channel	Monophonic
Audio sample size	16bit
Audio method	PCM

Extension	SFL
Format	Audio file list (text format)
Maximum number of files listed	32
Explanation	<p>By using a SFL file, you can continuously play multiple audio files.</p> <p>List filenames in a file list by separating each with a line feed. A maximum of 32 filenames can be listed.</p> <p>Listed audio files should be stored in the product in advance.</p> <p>Each file whose name is listed in a file list is played only once.</p> <p>If an error occurs during playback, the subsequent audio files will not be played.</p> <p>You cannot list names of other SFL files in a SFL file.</p>
Description example	<p>ALARM_MELODY.WAV (line feed)</p> <p>LOCATION_3F_2.WAV (line feed)</p> <p>SHIP_ERROR.WAV</p>

STEP

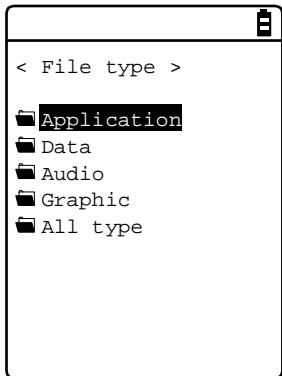
[System Menu] → [5: File]

① Select the drive.



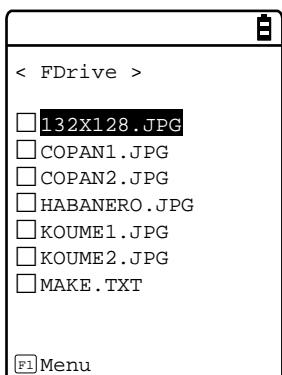
Select the drive to operate.

② Select the file type (for a drive other than the RDrive).



Select the type of file to operate. When "All type" is selected, regardless of file type, all the files stored in the drive will be included.

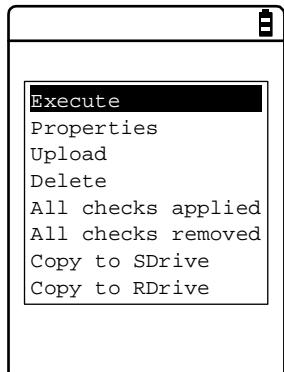
③ Mark the file to operate.



Select the file and press the [ENT] key to mark and unmark the checkbox for that file.

There are two types of operation: operation to target the marked file and operation to target the selected file.

④ Operate the file.



(Screen displayed
when the FDrive is
selected)

Press the **[F1]** key to display the file operation submenu.

Note: Depending on the file to select, the following submenu items change:

- Execute: Execute an application program.
- Play: Play audio data.
- View: Display graphic data.
- Properties: Display detailed information of a file.
- Upload: Upload files to a PC or another terminal.
- Delete: Delete files.
- All checks applied: Select all files.
- All checks removed: Deselect all files.
- Copy to SDrive: Copy files to the S drive.
- Copy to RDrive(microSD): Copy files to the R Drive.

Caution

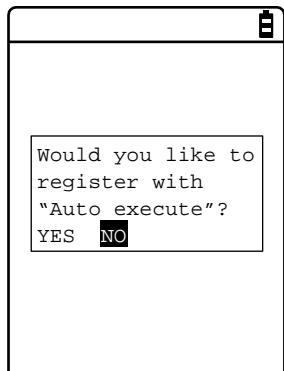
Depending on the selected drive, copy destination drives to be displayed are different. Note that the selected drive cannot be set as a copy destination.

■Execute: Execute an Application Program

STEP

[System Menu] → [5:File] → [Application] → Select the drive → [F1 Menu] → [Execute]

Execute the selected file.



The file being selected (highlighted) will be executed (regardless of whether its checkbox is marked).

Press the [ENT] key to execute the file.

If the application program to execute is not registered in Auto execute, a registration confirmation dialog box appears.

To terminate the application program executed, perform the operation specified for each application program. After termination, whether to display the system menu again or to turn the main unit's power OFF depends on the application program.

If the battery pack runs out of power during operation, the main unit's power is turned off after displaying an alarm.

If you want to forcibly terminate the application program, hold down the [PW] key for 10 seconds while the application program is running.

■Play: Play Audio Data

STEP

[System Menu] → [5: File] → [Audio] → Select the drive → [F1 Menu] → [Play]

Play the audio data.



The audio file being selected will be played (regardless of whether its checkbox is marked).

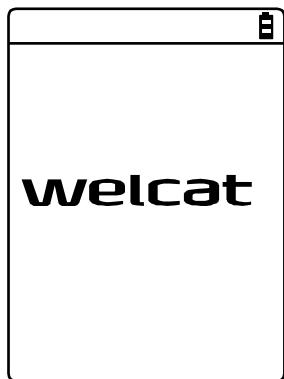
Press the [C] key to stop playing the file.

■View: Display Graphic Data

STEP

[System Menu] → [5:File] → Select the drive → [Graphic] → [F1 Menu] → [View]

Display and check the graphic data.



The image in the file being selected (highlighted) will be displayed (regardless of whether its checkbox is marked).

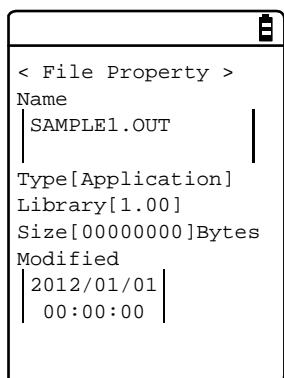
Press any key to return to the "File Operation Menu".

■Properties: Display Detailed Information of a File

STEP

[System Menu] → [5:File] → Select the drive → Select the file type → [F1 Menu] → [Properties]

Check detailed information of the file.



The following information will be displayed:

- Name
- Type
- Size
- Modified

Information about the file being selected (highlighted) will be displayed (regardless of whether its checkbox is marked).

Press any key to return to the <File> screen.

■Upload: Upload Files to a PC or Another Terminal

Check the following before upload:

●To use WLAN communication

- The communication settings of the Handy Terminal and the access point are correctly configured (IP address, SSID, security settings, etc).
- The power is turned ON for the access point and the PC.
- The access point and the PC are correctly configured and connected.
- The access point operates correctly.
- FTP server software is running on the PC.
- The FTP settings (host name, user name, etc) of the Handy Terminal are correctly configured.

●To use Bluetooth communication

- The PC's power is turned ON.
- A Bluetooth communication adapter is correctly inserted in the PC.
- BluePorter-V is running.
- BluetoothManager is turned ON and its icon is displayed in the taskbar on the PC.
- BluetoothManager's icon is turned white.



- The PC on the uploading side is registered as the default device for the Handy Terminal.

●To use infrared (IrDA) communication

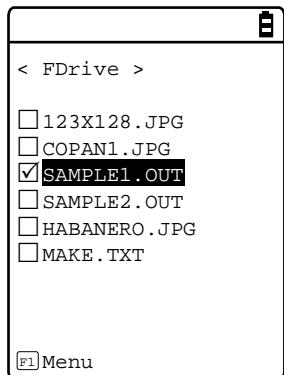
- When the uploading side is the PC
 - Turn the PC's power ON.
 - Start up "BluePorter-V" (WLF-003: optional) on the PC.
 - Place the Handy Terminal in the USB communication unit and prepare infrared communication.
- When the uploading side is a XIT-2xx series product
 - Uploading becomes ready when "wait (HT)" is selected.

(For details on how to configure BluePorter-V, see "3-2 Configuring BluePorter-V" in "File Transfer Utility BluePorter-V Operation Guide".)

STEP

[System Menu] → [5:File] → Select the drive → Select the file type → [F1 Menu] → [Upload]

① The marked file(s) will be uploaded.

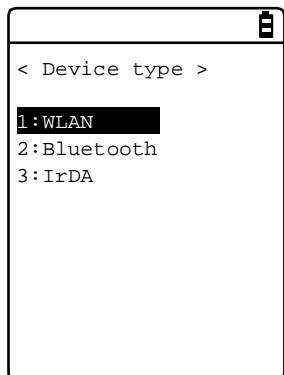


Select and mark the file(s) to upload.

If there is no marked file, the file being selected will be uploaded.

Press the [F1] key, select [Upload], and press the [ENT] key.

② Select the upload method.



Select the upload method.

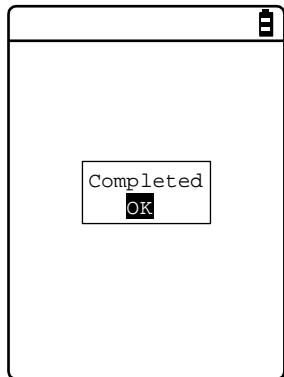
- WLAN
- Bluetooth
- IrDA

③ Uploading will start.



The upload status is displayed on the screen.

④ Finish the uploading process.



When the uploading process becomes complete, "(# of successfully uploaded files/# of marked files)" will be displayed in the message box.

Press the **【ENT】** key.

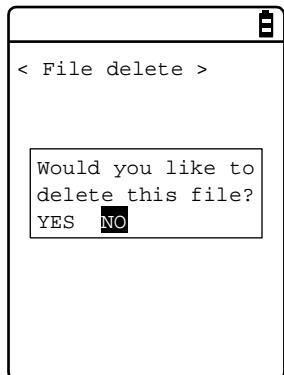
■Delete: Delete Files

STEP

[System Menu] → [5:File] → Select the drive → Select the file type → [F1 Menu] → [Delete]

Delete the marked file(s).

If there is no marked file, the file being selected (highlighted) will be deleted.



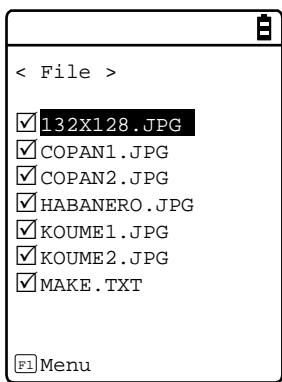
A confirmation dialog box appears.

Select [Yes] or [No].

■All Checks Applied: Select All Files**STEP**

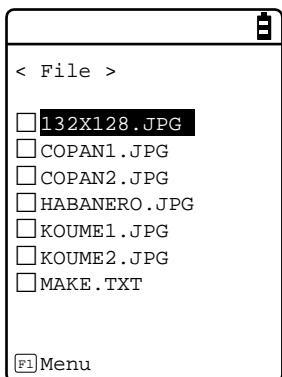
[System Menu] → [5:File] → Select the drive → Select the file type → [F1 Menu] → [All checks applied]

All the checkboxes will be marked.

**■All Checks Removed: Deselect All Files****STEP**

[System Menu] → [5:File] → Select the drive → Select the file type → [F1 Menu] → [All checks removed]

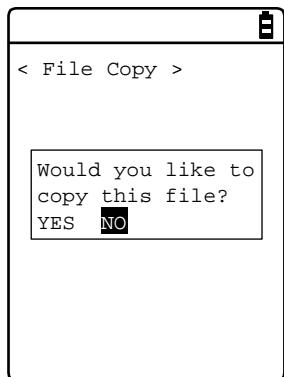
All the checkboxes will be unmarked.



■Copy to the Specified Drive**STEP**

[System Menu] → [5:File] → Select the drive → Select the file type → [F1 Menu] → Select the copy destination drive

Copy files to the specified drive.



A confirmation dialog box appears.

Select [Yes] or [No].

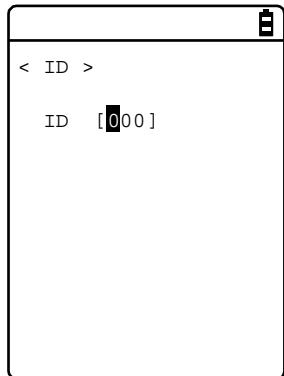
4-8 ID: Setting the Terminal Identification ID

Use this category to set an ID number for terminal identification to each product. Set a number unique to each product.

STEP

[System Menu] → [6: ID]

Set an ID unique to your terminal.



You can enter an ID number in the range 000–999.

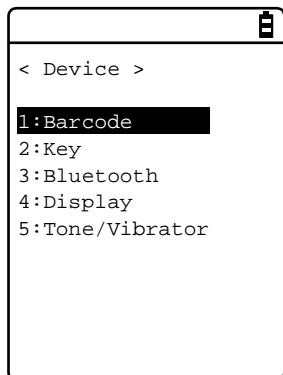
4-9 Device: Setting Hardware Functions

Use this category to set hardware devices such as a barcode Handy Terminal and keys. Setting items in the device category are classified by device type.

STEP

[System Menu] → [7: Device]

Select the hardware device to configure.



Select the item to set.

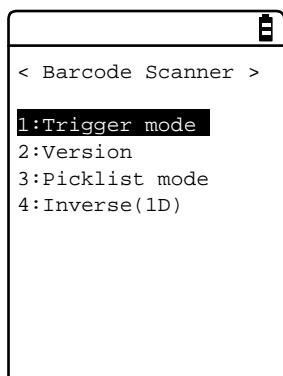
- Barcode: Configure the barcode Handy Terminal (P. [164](#)).
- Key: Set the key operation (P. [168](#)).
- Bluetooth: Register and Set the Bluetooth device (P. [169](#)).
- Display: Set the backlight luminosity (P. [177](#)).
- Tone/Vibrator: Set the tone, LED, and vibrator (P. [178](#)).

4-9-1 Barcode: Configuring the Barcode Scanner

STEP

[System Menu] → [7: Device] → [1: Barcode]

Select the barcode Handy Terminal function to set.



Make a selection from the following items:

- Trigger mode: Set the image Handy Terminal operating conditions.
- Version: Display the version of decoding.
- Picklist mode: Set the Picklist mode (targeted scan function).
- Inverse(1D): Set the scanning of black-and-white-inverted barcode.

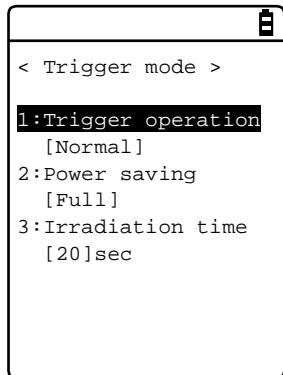
■Trigger Mode

Use this item to set the irradiation time.

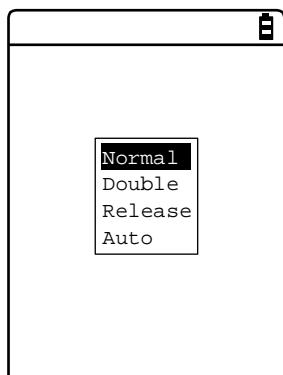
This setting is enabled only in application programs using "Trigger mode" for barcode scanning.

STEP

[System Menu] → [7: Device] → [1: Barcode] → [1: Trigger mode]



①Select [Trigger operation].



Set the trigger key operation and the irradiation pattern. You can scan barcodes while laser light is being irradiated (lighted).

- Normal

Press the Trigger key to irradiate laser light.

- Double

Press the Trigger key to make laser light start blinking. Press the key again to irradiate laser light.

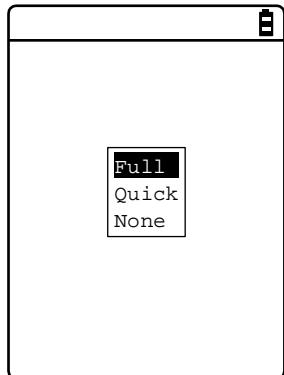
- Release

Press the Trigger key to make laser light start blinking, and release the key to irradiate laser light.

- Auto

Automatically irradiate laser light regardless of trigger operation.

②Select [Power saving] .



Make a setting to suppress power consumption during scan.

- Full

Automatically turn the laser light off after finishing a barcode scan and stop supplying power to the Handy Terminal section, too. The power consumption can be reduced, but it takes time to start the next scan.

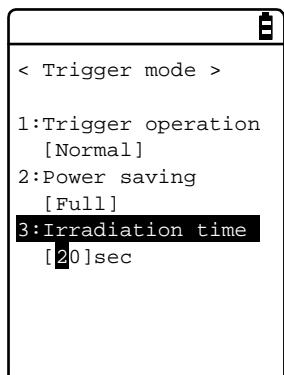
- Quick

Automatically turn the laser light off after finishing a barcode scan but continue supplying power to the Handy Terminal section. The power consumption is a little greater than when Full is selected, but you can smoothly proceed to the next scan.

- None

Do not use the Power saving mode.

③Select the [Irradiation time] .



Set a time period until the laser light is automatically turned OFF.

You can set a value in the range 00–60 seconds.

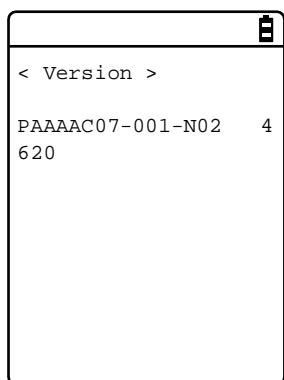
When 00sec. is set, the laser light will not be turned OFF and continue to be irradiated.

■Version

Display the version of decoding.

STEP

[System Menu] → [7: Device] → [1: Barcode] → [2: Version]

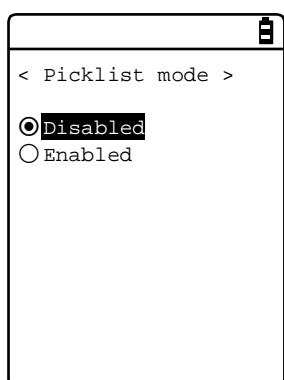


■Picklist Mode

Set the Picklist mode (targeted scan function).

STEP

[System Menu] → [7: Device] → [1: Barcode] → [3: Picklist mode]



Select between "Enabled" and "Disabled".

- Enabled

Scan symbols in the scan area according to their priorities. The center of the aimer is the easiest area to scan symbols.

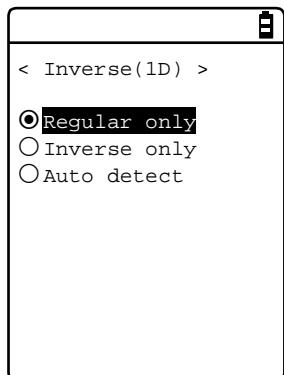
- Enabled

Scan only barcodes in the center of a cross aiming pattern.

■ Inverted barcode

STEP

[System Menu] → [7: Device] → [1: Barcode] → [4: Inverse(1D)]



Set the scanning of inverted barcodes.

- Regular only

Scan barcodes where the bar is black and the space is white.

- Inverse only

Scan inverted barcodes where the normal black bar is white and the normal white space is black.

- Auto detect

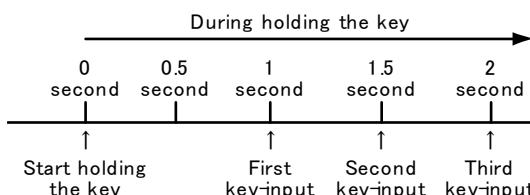
Scan both regular and inverted barcodes.

4-9-2 Key: Setting the Key Repeat

By holding one of the arrow keys (【◀】【▲】【▼】【▶】), you can repeat inputting that key while doing so.

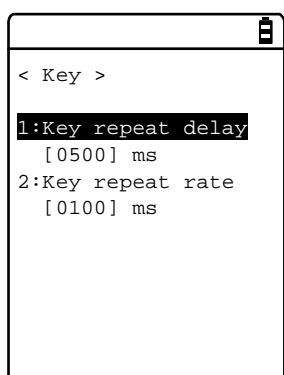
This section describes how to set the time between when a arrow key starts to be held down and when the first key-input repetition is performed (Key repeat delay) and how to set the interval of subsequent key-input repetitions (Key repeat rate).

Example: When the key repeat delay is set to 1 second. and the key repeat rate is set to 500 milliseconds.



STEP

[System Menu] → [7: Device] → [2: Key]



The effective range is 0100–1000 milliseconds.

When 0000 milliseconds is set, it is prohibited to repeat key input.

4-9-3 Bluetooth: Registering and Setting the Bluetooth Device

STEP

[System Menu] → [7: Device] → [3: Bluetooth]

Select the setting target device.



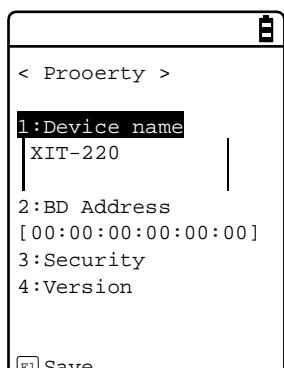
- Local device: Set the Handy Terminal.
- Remote device: Set a device to connect to the Handy Terminal.

■ Local Device

Display the BD address of the Handy Terminal.

STEP

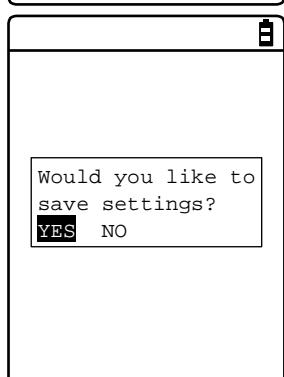
[System Menu] → [7: Device] → [3: Bluetooth] → [1: Local device]



Set the following:

- Device name
- Security

"BD Address" is fixed; you cannot change its details.



The details set for each item will not be saved automatically. To save the setting details, press the [F1] key or the [C] key on this screen and select [Yes] on a confirmation dialog box.

Hint

Only when Local device is currently set, a search from a remote device is allowed. Otherwise, no search will be allowed.

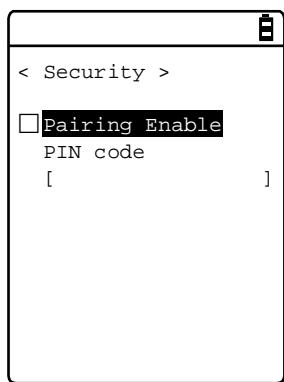
①Select [Device name].



Enter the name of the Bluetooth device.

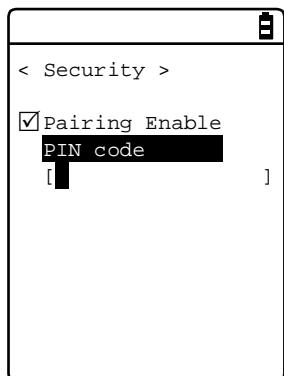
The device name should be a value up to 30 alphanumeric and symbol characters and case-sensitive.

②Select [Security].



Make settings related to authentication for connection.

When this checkbox is marked, perform authentication when a connection request is made to the local device from a remote device. Only authenticated remote devices are permitted to connect to the local device.



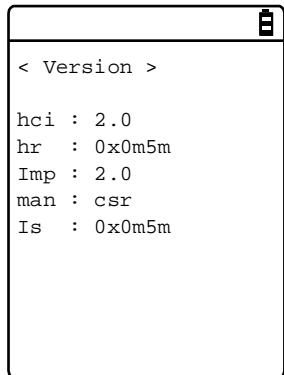
Set the PIN code.

The PIN (Personal Identification Number) code is a password used for authentication.

You can enter a value up to 16 characters using uppercase and lowercase alphabet, numeric, and symbol characters.

The entered PIN code is displayed hidden beneath the asterisks (*).

③Select [Version].



Check the version of the built-in Bluetooth device's firmware.

■Remote Device

Make settings related to devices (remote devices) to connect to the Handy Terminal.

STEP

[System Menu] → [7: Device] → [3: Bluetooth] → [2: Remote device]



- Device list: Register remote device information.
- Search for devices: Search for remote devices around the Handy Terminal.
- Search option: Set the number of devices to search for through Search for devices.

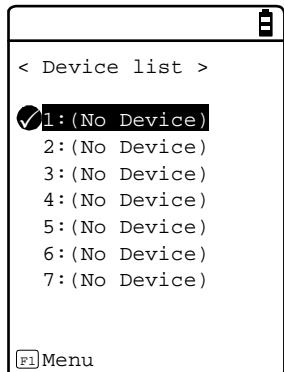
●Device list

For information about remote devices to connect to, you can register a maximum of seven entries. When such information has been registered in advance, you do not have to set device information for each connection.

STEP

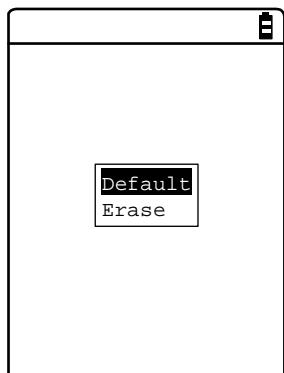
[System Menu] → [7: Device] → [3: Bluetooth] → [2: Remote device]
→ [1: Device list]

① Select an item number to make registration.



Select an item number and set device information to it in sequence. When device information has already been registered, a device name is displayed to the right of an item number. If nothing is registered, "(No Device)" is displayed to the right of an item number. (Note that device information is recognized as already registered when the entered device name is equal to or longer than one character and the entered BD address is any value other than "00:00:00:00:00:00").

A device with a checkmark displayed to the left of its item number is the default device. In the System Menu, to use Bluetooth communication, connect to the default device.



Press the [F1] key to display the submenu.

Set the following as needed:

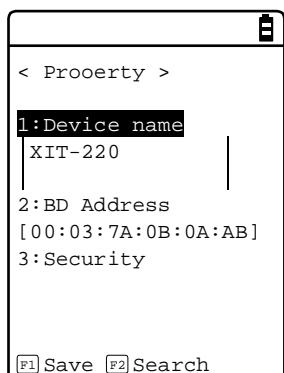
- Default

Set the registered device being selected, as the default device.

- Erase

Erase the registered device information.

② Select the item to set.



Set the following items, press the [F1] key, and select [Yes] to save the settings.

- Device name

- BD Address

- Security

③ Select [Device name].



Enter the name of the Bluetooth device.

Set this item, press the **[F1]** key, and select **[Yes]** to save the settings.

The device name should be a value up to 30 alphanumeric and symbol characters and case-sensitive.

④ Select [BD Address].



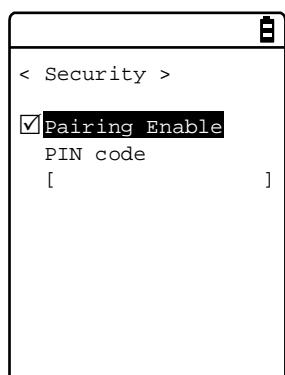
Enter the BD address.

Set this item, press the **[F1]** key, and select **[Yes]** to save the settings.

The BD address is an hardware address unique to a device.

It is a fixed 12 hexadecimal-digit number (0-9, A-F).

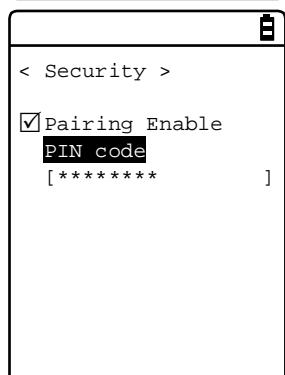
⑤ Select [Security].



Set the authentication for connection.

When this checkbox is marked, perform authentication when a connection request is made to the local device from a remote device.

Only authenticated remote devices are permitted to connect to the local device.



Set the PIN code.

The PIN(Personal Identification Number) code is a password used for authentication.

You can enter a value up to 16 characters using uppercase and lowercase alphabet, numeric, and symbol characters.

For security, the entered PIN code is displayed after being converted into asterisks (*).

●Search for devices

Search for remote devices around the Handy Terminal. You can set detected remote devices as registered devices.

Hint

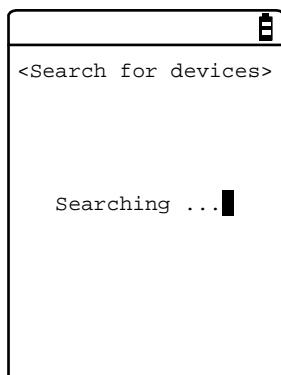
If you want to include other terminals as targets of Search for devices, you need to keep target devices as "Local device currently set".

"Local device currently set" indicates the status of the <Property> screen in the local device settings.

STEP

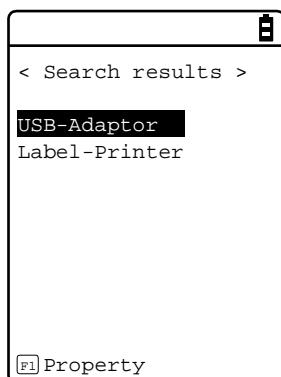
[System Menu] → [7: Device] → [3: Bluetooth] → [2: Remote device]
→ [2: Search for devices]

①A search starts.



Press the **[C]** key to cancel the search.

②Search results are displayed in list form.



The names of detected remote devices are displayed in list form.

Hint

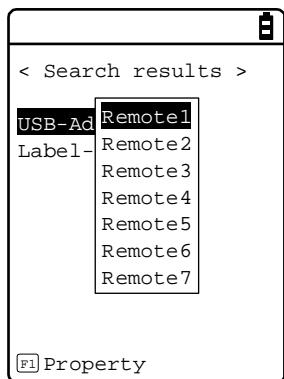
Device names in alphanumeric and symbol characters can be detected. Do not use kana or kanji characters for device names.



Press the **[F1]** key to display the device name and BD address of the remote device being selected.

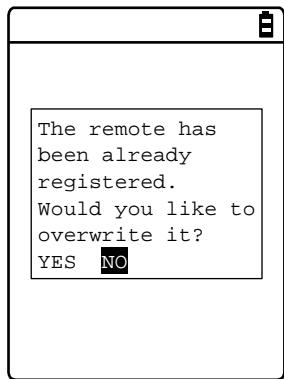
Press the **[C]** key to return to the <Search results> screen.

③ Register the detected remote device.



Select the remote device to register and press the **[ENT]** key to display the submenu.

Select the remote number to register the remote device to, and the device will be registered.



If you select the already registered remote device number, a confirmation dialog box for overwriting appears.

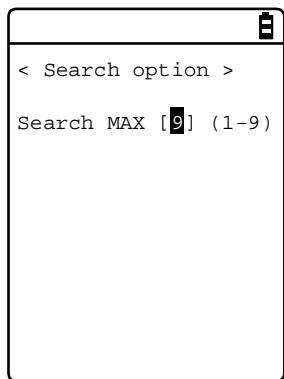
Select [Yes] or [No].

●Search option

Set the maximum number of remote devices to be detected through Search for devices.

STEP

[System Menu] → [7: Device] → [3: Bluetooth] → [2: Remote device]
→ [3: Search option]



Specify the number of devices to search for.

You can set a value in the range 1-9 for the number of devices.

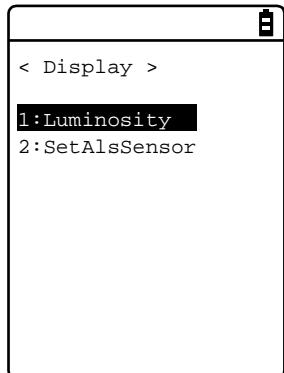
The greater the number of devices to search for, the longer the search duration becomes.

4-9-4 Setting the Display/Backlight Luminosity

Set luminosity:

STEP

[System Menu] → [7: Device] → [4: Display]



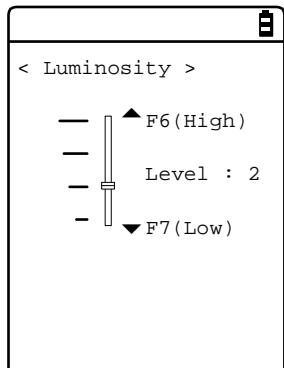
Make a selection from the following items:

- Luminosity: Adjust the backlight luminosity.
- SetAlsSensor: Set automatic backlight dimming.

■Luminosity

STEP

[System Menu] → [7: Device] → [4: Display] → [1: Luminosity]



【▲】key is used to move the slider up and the 【▼】key is used to move the slider down to adjust luminosity..

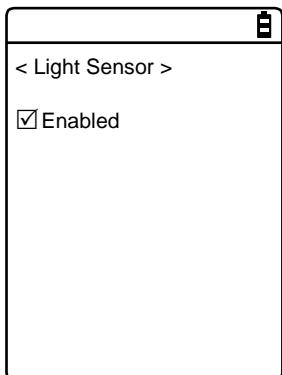
You can set luminosity in four steps; move the slider and luminosity changes in real-time.

Level	Luminosity
High	Bright
↓	↔
Low	Dark

■Light Sensor

STEP

[System Menu] → [7: Device] → [4: Display] → [2: Light Sensor]



Enable Ambient Light Sensor.

When Ambient Light Sensor is enabled, the luminosity setting will be disabled.

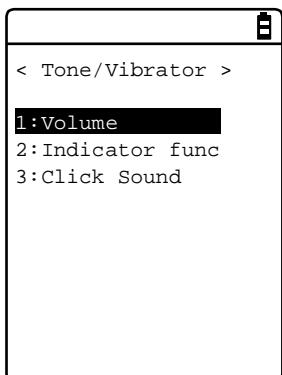
4-9-5 Tone/Vibrator: Setting the Volume, LED, and the Vibrator

Use this category to set the volume, LED, and vibrator.

STEP

[System Menu] → [7: Device] → [5: Tone/Vibrator]

Select the device to set.



Make a selection from the following items:

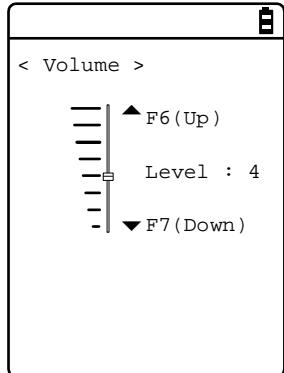
- Volume
- Indicator func
- Click Sound

■ Volume

STEP

[System Menu] → [7: Device] → [5: Tone/Vibrator] → [Volume]

Adjust the volume of the buzzer sound.



You can adjust the volume in eight steps from level 1 to 8.

【▲】 key moves the slider up and the 【▼】 key moves the slider down.

As the slider moves up and down, the volume changes in real-time; you can check the current level on the spot.

The relationship between the level and the volume is as follows:

Level	Volume
8	Bigger
↓	↔
1	Smaller

When 1 is set, the buzzer sound is silenced.

■ Indicator Func

Indicator func is a generic term indicating a combination of three devices alerting the operator (buzzer/vibrator/LED).

Using Indicator func, the current situation can better appeal to the senses of the operator. Set which indicator should be used in what situation to suit each application.

Three patterns are available for each of the following six scenes: five typical scenes of operation such as pressing (clicking) a key and entering data, and one arbitrary scene that can be set by the customer (user).

Note that the indicators for pattern 3 of each scene apply to the system menu.

For example,

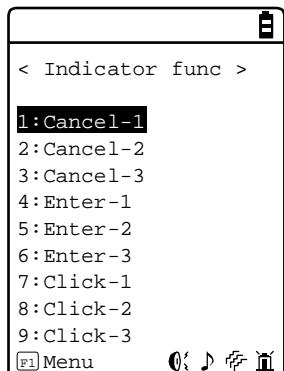
- When data is entered, generate one short high tone and light the green LED ON
- When an error occurs, generates three low tones while operating the vibrator and blink the red LED

As shown in this example, various settings can be made to suit the customer's use environment.

STEP

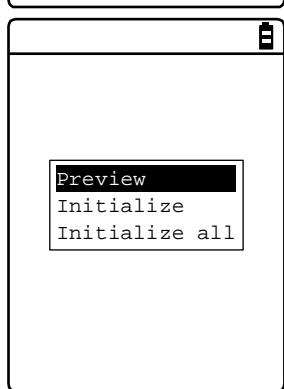
[System Menu] → [7: Device] → [5: Tone/Vibrator] → [2: Indicator func]

① Select the indicator to set.



Icons indicating the current indicator settings are displayed in the bottom right of the screen.

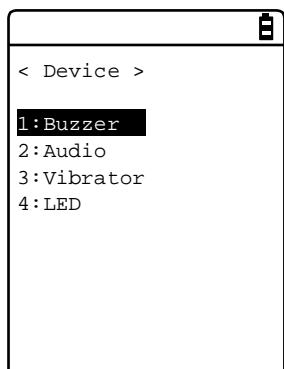
- ⌚: Buzzer enabled.
- ♪: Audio enabled.
- ♫: Vibrator enabled.
- ▬: LED enabled.



Press the [F1] key to display the submenu.

- Preview
You can actually feel the current indicator settings.
- Initialize
Discard the settings for the selected pattern and restore the initial settings.
- Initialize all
Discard the settings for all the patterns for all the scenes and restore the initial settings.

② Select the device to set.



After selecting the item to set on the screen in step ①, and press the [ENT] key to display the device name.

Select the device to set and press the [ENT] key.

Set the operating conditions for each device by referring to the next section.

●Device operating conditions setting

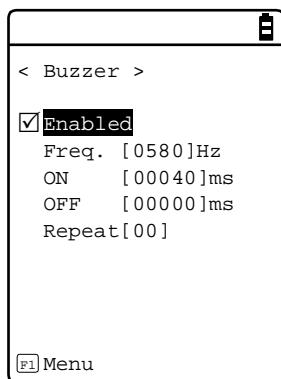
There are operating conditions common to all devices and operating conditions specific to each device.

STEP

[System Menu] → [7: Device] → [5: Tone/Vibrator] → [2: Indicator func]

→ Select the device.

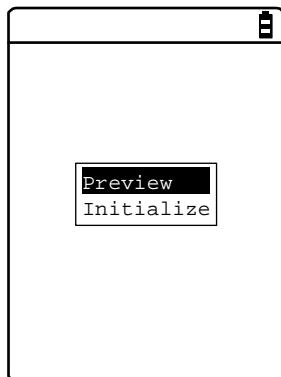
Operation common to all devices



Turn ON/OFF the relevant device operation using the check box for it.

Mark the check box to enable the relevant device operation, and unmark it to disable it regardless of other settings.

This setting is displayed as an icon.



Press the [F1] key to display the submenu.

Set as needed.

- Preview

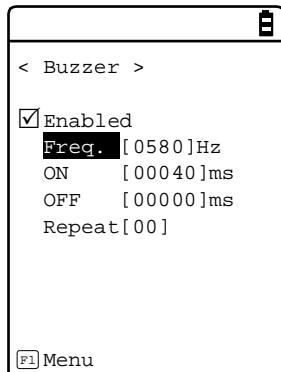
You can actually feel the current indicator settings.

- Initialize

Discard the settings for the pattern currently set and restore the initial settings.

Note that when [F1] is displayed in the bottom left of the screen, the operation procedure is the same for all device operation conditions.

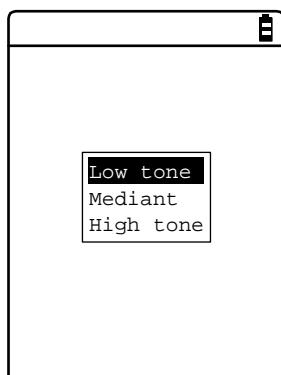
Set the buzzer frequency ([1: Buzzer]).



Move the cursor over [Freq.] and press the [ENT] key.

The cursor moves to the frequency value.

The setting range is 245–9000Hz. You can set the frequency in units of 1Hz within this frequency range. Due to the characteristics of the speaker, we recommend using the buzzer at a frequency in the range 500–3000Hz.

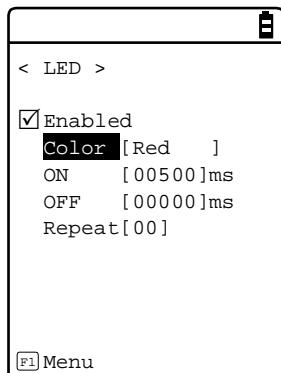


While entering the frequency, the content in the function key guidance in the lower left of the screen changes.

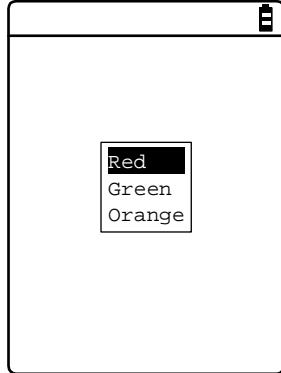
Press the [F1] key to display the frequency sample submenu.

You can smoothly set the frequency by fine-adjusting the value based on the sample.

Set the LED color ([4:LED]).



Move the cursor over [Color] and press the [ENT] key.



Select a color from the submenu.

■Click Sound

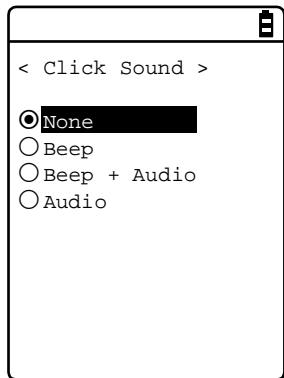
Set whether to generate a click sound when a key is pressed.

A click sound plays immediately when a key is pressed. For that reason, the sound of an application program or of an indicator can be interrupted by a click sound. Depending on the timing, the sound may become unclear due to such an interruption.

STEP

[System Menu] → [7: Device] → [5: Tone/Vibrator] → [3: Click Sound]

Select a pattern for the sound to play when a key is pressed.



- None (Default)
Do not generate a click sound.
- Beep
For every key, generate a short beep sound when a key is pressed.
- Beep + Audio
Read a number when a numeric key is pressed. Generate a beep sound when any other key is pressed.
- Audio
Read a number only when a numeric key is pressed. Do not generate any sound when any other key is pressed.

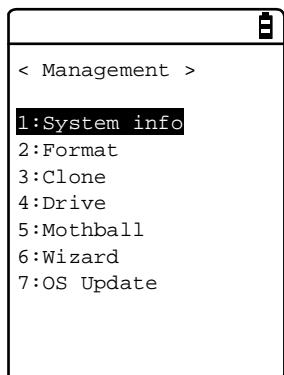
4-10 Management: Setting Basic Information and Management

Use this category to check basic information of, improve the performance of, and perform maintenance of the Handy Terminal.

STEP

[System Menu] → [8: Manage]

Select the item to manage.



Select the item to set.

- System info : Check the OS version (P. [184](#)).
- Format: Format the registry/drive (P. [185](#)).
- Clone: Create a copy (P. [187](#)).
- Drive: Display the drive information (P. [195](#)).
- Mothball: Settings when not using the product for long (P. [196](#)).
- Wizard: Start up the screen facilitating configuration of communication settings (P. [197](#)).
- OS Update: Update the OS of the Handy Terminal (P. [198](#).)

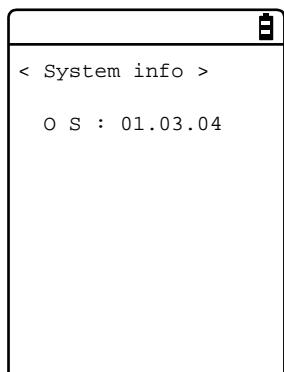
4-10-1 System info: Checking the OS Version

Display the version information of the installed OS.

STEP

[System Menu] → [8: Manage] → [1: System info]

Check the OS version.



4-10-2 Format: Registry/Drive Formatting

Format the registry or drives.

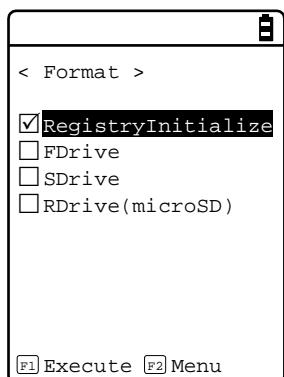
Caution

When formatting is performed, the factory default settings will be restored and all the files will be deleted. When formatting, with the above in mind, be very careful.

STEP

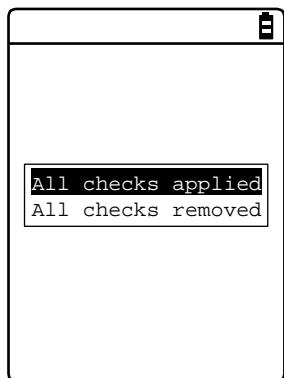
[System Menu] → [8: Manage] → [2: Format]

① Select the item to format.



Mark the checkbox for the item to format.

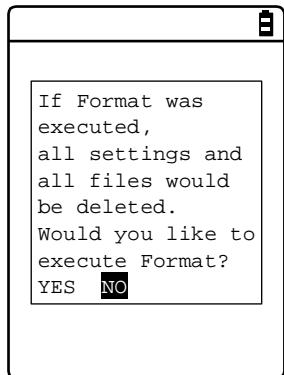
If none of the checkboxes is marked, you cannot perform formatting.



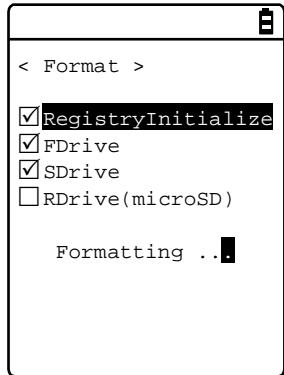
Press the [F2] key to display the submenu.

- All checks applied
Mark all the checkboxes.
- All checks removed
Unmark all the checkboxes.

② Start formatting.

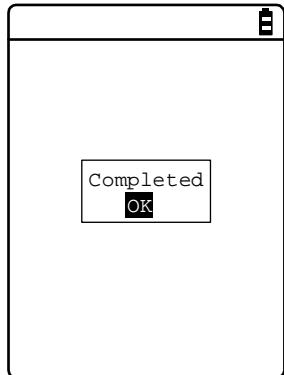


Press the **[F1]** key, and an execution confirmation dialog box appears. Select [Yes] or [No].



The items with their checkboxes marked will be formatted in sequence.

③ Finish formatting.



Press the **[ENT]** key to finish formatting.

If the registry is initialized, the power will be turned OFF.

4-10-3 Clone: Creating a Copy

Copy the parameters set on the system menu and files saved in the F drive to another XIT-2xx to create a terminal with the same settings and files.



Files saved in the S drive will not be copied.

■How to Execute Clone

Clone can be executed using either Bluetooth communication or infrared communication (IrDA).

①Pre-setting

<Bluetooth communication>

Register a copy terminal as a remote device of the device to be used as a master terminal.

Refer to "■Remote Device" (P. [171](#)).

<Infrared communication (IrDA)>

No pre-setting required.

②Using the master terminal, select the items to clone (copy).

③Initialize the copy terminal.

④Confirm that the copy terminal becomes ready, and then execute Clone on the master terminal.

⑤Confirm that completion of Clone is displayed on the master terminal.

⑥Close the confirmation dialog box on the copy terminal and turn the power OFF to finish the operation.



For Bluetooth communication and infrared communication (IrDA), refer to "Chapter 3 Communication Environment Settings (P. [66](#)).

When executing Clone, thoroughly understand the following and be very careful.

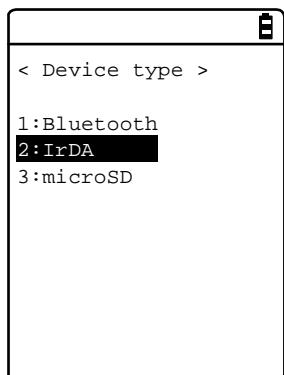
Caution

- When the radio condition is bad during Bluetooth communication, or when the surrounding environment is bad such as light disturbance during infrared communication not, even if copying cannot be performed correctly, "Completed" may be displayed on the master side.
- The content inside a copy terminal is initialized before reception from the master terminal. For that reason, if Clone fails, the factory default settings may be restored or all the files may be deleted.
- Since a copy terminal is initialized first, it may take time to become ready to perform Clone on it.

■Bluetooth/IrDA**STEP**

[System Menu] → [8: Manage] → [3: Clone]

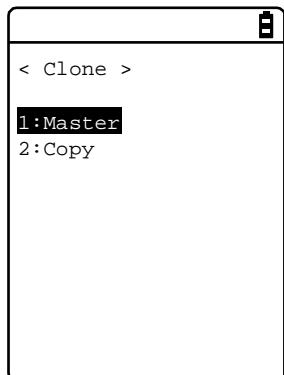
① Select the communication method.



Select between Bluetooth or IrDA (infrared).

- Bluetooth
- IrDA

② Set whether the Handy Terminal is a master terminal or copy terminal.



- Master: When the product is a copy source XIT-2xx.
- Copy: When the product is a copy destination XIT-2xx.

●Master: The Handy Terminal is a copy source.

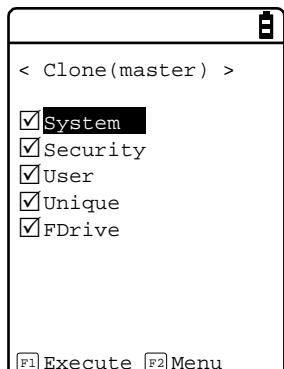
Select the settings and files to copy and execute Clone.

STEP

[System Menu] → [8: Device] → [3: Clone] → [1: Bluetooth/2: IrDA]

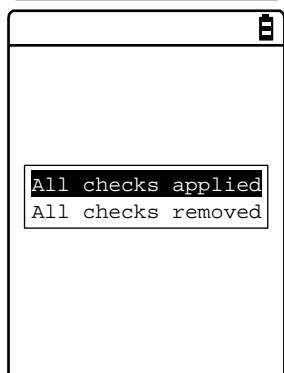
→[1: Master]

① Select the items to clone.



Select the items to copy.

Confirm that the copy terminal has been completely initialized and is waiting for connection, press the [F1] key to start executing Clone.

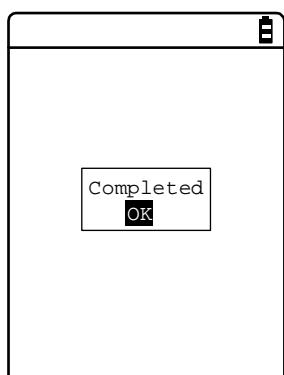


Press the [F2] key to display the submenu.

Set an item as needed.

- All checks applied
Mark all the checkboxes.
- All checks removed
Unmark all the checkboxes.

② Finish the Clone operation.



Press the [ENT] key to finish the Clone operation.

● Explanations about items to copy

• System

A parameter managed by the Handy Terminal's system software (OS) independently.

You do not have to select this item because this parameter is not used in user applications.

• Security

A password to start the system menu and security settings for Bluetooth or WLAN.

Select this item if you want to use the same security settings also for the copy terminal.

• User

Parameters set by all the system menu items other than Security and Unique.

If you select this item, most of the parameters set on the system menu will be copied.

• Unique

Terminal ID, Bluetooth local device name, and the local security settings.

Basically, these are parameters unique to each terminal. Select this item if you want to make a copy including such parameters.

• FDrive

Copy files stored in the F drive.

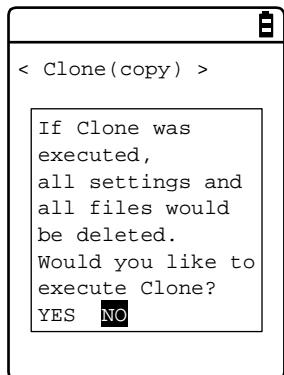
Select this item if you want to copy application programs or the master file.

- Copy: The Handy Terminal is a copy destination.

STEP

[System Menu] → [8: Manage] → [3: Clone] → [1: Bluetooth/2: IrDA]
→ [2: Copy]

- ① Initialize the Handy Terminal.

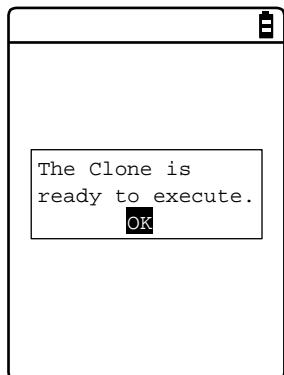


Execute before executing Clone on the master terminal (pressing the [F1] key.)

An execution confirmation dialog box appears.

Select [Yes] or [No].

- ② You are notified that the Clone is ready to execute.



Press the [ENT] key to wait for connection.

At this point, execute Clone on the master terminal (press the [F1] key).

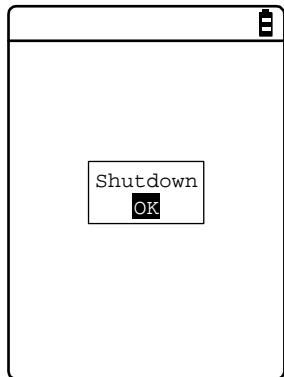
- ③ Check the screen on the master terminal.



Completion of Clone cannot be confirmed on the copy terminal. Be sure to confirm on the screen on the master terminal that the transfer operation has been completed. If you find on the master terminal that the transfer operation has not been completed, execute Clone again.

Press the [ENT] key.

④ Finish the Clone operation.



Press the **【ENT】** key.

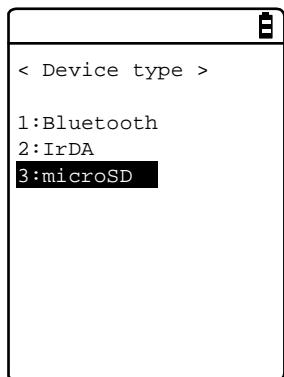
The power is turned OFF.

■microSD

STEP

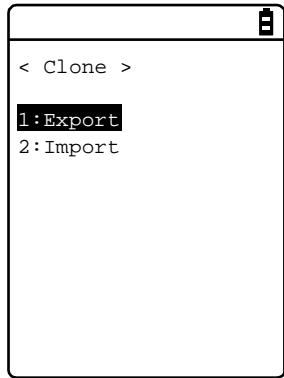
[System Menu]→[8: Manage]→[3: Clone]

① Select the method.



Select microSD.

② Specify whether the Handy Terminal is on the export side or on the import side.



- Export: When the product is a copy source XIT-2xx.
- Import: When the product is a copy destination XIT-2xx.

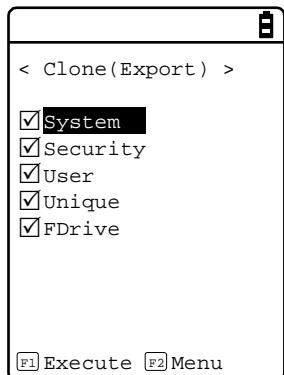
●Export: The Handy Terminal is a copy source.

Select the settings and files to copy and execute Clone.

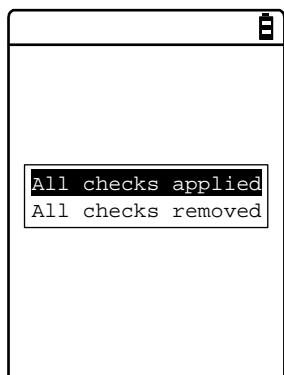
STEP

[System Menu] → [8: Manage] → [3: Clone] → [3: microSD] → [1: Export]

① Select the items to clone.



Select the items to copy.

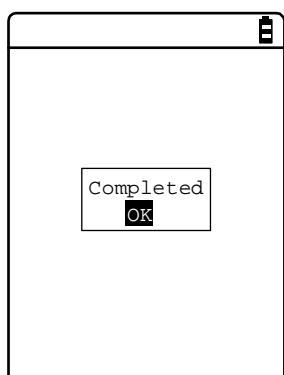


Press the [F2] key to display the submenu.

Set an item as needed.

- All checks applied
Mark all the checkboxes.
- All checks removed
Unmark all the checkboxes.

② Finish the Clone operation.



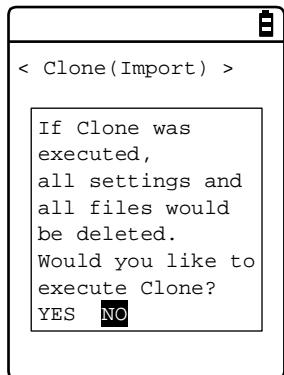
Press the [ENT] key to finish the Clone operation.

- Import: The Handy Terminal is a copy destination.

STEP

[System Menu] → [8: Manage] → [3: Clone] → [3: microSD] → [2: Import]

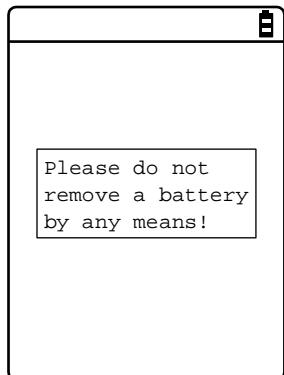
- ① Confirm execution.



An execution confirmation dialog box appears.

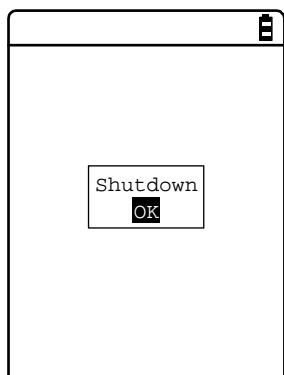
Select [Yes] or [No].

- ② Clone will be executed.



Do not turn the power OFF during execution.

- ③ Finish the Clone operation.



Press the [ENT] key.

The power is turned OFF.

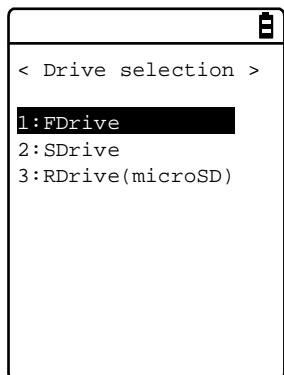
4-10-4 Drive: Displaying Drive Information

Use this item to check information about drives and perform their maintenance.

STEP

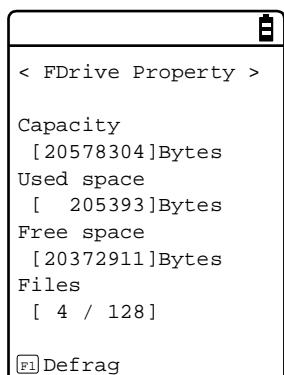
[System Menu] → [8: Manage] → [4: Drive]

① Select the drive.



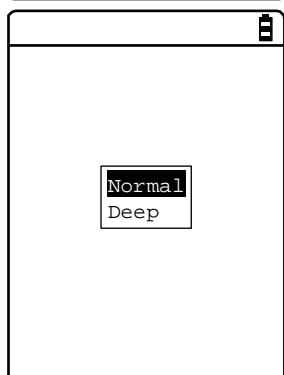
Select the drive and press the [ENT] key.

② The drive property is displayed.



The following information will be displayed:

- Capacity
- Used space
- Free space
- Files



For the F drive, press the [F1] key to optimize it by defragmentation.

Press the [F1] key, and a dialog box appears.

- Normal

Physically eliminate unneeded regions created while files are written to or deleted.

- Deep

In addition to defragmentation in Normal mode, reorganize the secured free regions so that they become contiguous.

It may take several seconds to several minutes to complete defragmentation in Deep mode depending on the drive's condition. Normally, we recommend executing defragmentation in Normal mode.

Caution

Never remove the battery pack during defragmentation. If the battery or the battery pack is removed during defragmentation, files or system programs may be destroyed.

Hint

If files are repeatedly written to or deleted on the F drive, the free space is gradually fragmented, and eventually, it may become impossible to store large files or it may take long to start up.

To prevent the F drive from fragmentation, be careful about the following:

- Write data collectively as contiguous data as much as possible.
- When finishing operation, delete the data temporarily stored on the F drive.
- For data that needs to be temporarily stored, try to write it to the S drive.

4-10-5 Mothball: Settings When Not Using the Product For Long

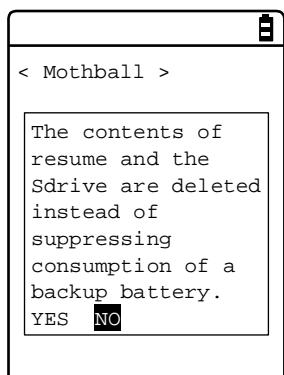
When not using the Handy Terminal for a long period of time, configure settings to suppress battery consumption.

Execute Resume and erase the S drive.

STEP

[System Menu] → [8: Manage] → [5: Mothball]

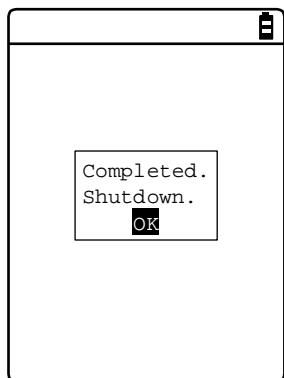
① Resume is executed and the S drive is erased.



An execution confirmation dialog box appears.

Select [Yes] or [No].

② Finish Mothball preparation.



Press the **【ENT】** key.

The power is turned OFF.

Hint

When the power is turned ON after Mothball, the message "The SDrive has been initialized." appears, but it is not a defect (refer to "1-2-7 Long-term Storage" (P. [52](#))).

4-10-6 Wizard: Starting the Screen Facilitating Configuration of Communication Settings

Use this item to start again the setting wizard executed when the Handy Terminal was started for the first time. You can configure the settings minimally required for communication between the Handy Terminal and a PC.

STEP

[\[System Menu\]](#) → [\[8: Manage\]](#) → [\[6: Wizard\]](#)

Configure settings using Wizard.



Select **[Yes]** or **[No]**.

Select **[Yes]** to execute the wizard to set WLAN communication. Select **[No]** to return to the previous screen.

For details, refer to "■WLAN Communication Settings by Setting Wizard" (P. [70](#)).

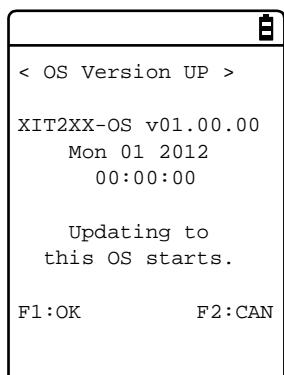
4-10-7 OS Update: Updating the OS of TheHandy Terminal

Update the OS of the Handy Terminal.

STEP

[System Menu] → [8: Manage] → [7: OS Update]

① Start updating the OS.



Press the [F1] key to start updating the OS.

Press the [F2] key to stop updating the OS.

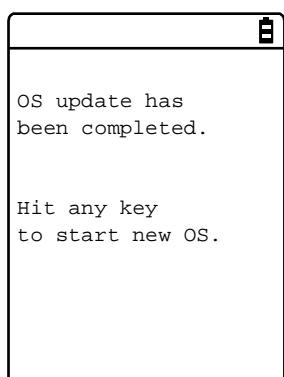
② The Handy Terminal restarts and the OS update process starts.



Never remove the battery back during OS update.

And, do not press any key.

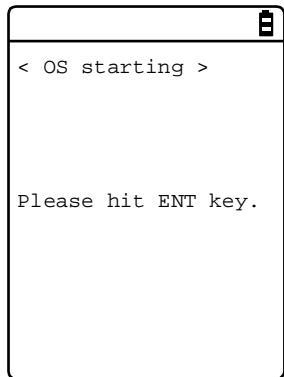
③ Restart the product.



After the OS update has been completed, press any key.

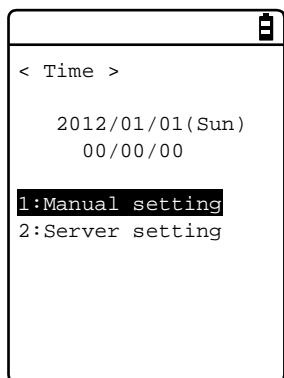
This turns the power OFF.

④ Turn the power ON (OS starting).



Press the **【ENT】** key.

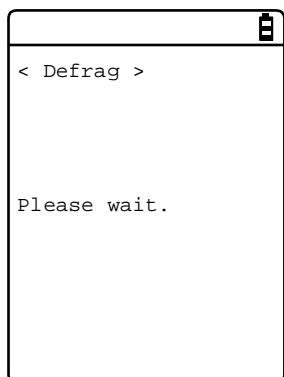
⑤ Set the time.



Set the time and press **【C】** key.

For how to set the time, refer to "4-3-2 Clock: Set the Time" (P. [104](#)).

⑥ Defragmentation will be executed.



Defragmentation will be executed and then the power will be turned OFF.

Then, the OS update procedure will become complete.

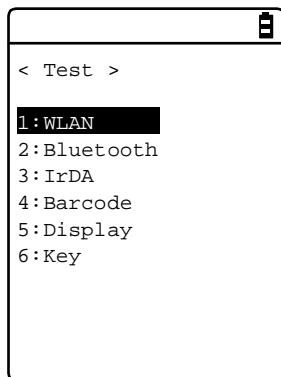
4-11 Test: Testing Hardware Devices

Use this category to operate hardware devices for testing their conditions.

STEP

[System Menu] → [9: Test]

Select the device to test.



Make a selection from the following items:

- WLAN: Test WLAN communication (P. [200](#)).
- Bluetooth: Test Bluetooth communication (P. [204](#)).
- IrDA: Test infrared (IrDA) communication (P. [205](#)).
- Barcode: Test barcode scanning (P. [206](#)).
- Display: Test LCD screen display (P. [207](#)).
- Key: Test key operations and indicators (P. [208](#)).

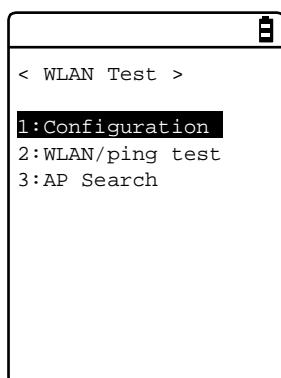
4-11-1 WLAN: Testing WLAN Communication

Perform WLAN communication-related and IP network communication tests.

STEP

[System Menu] → [9: Test] → [1: WLAN]

Select the item to set.



Make a selection from the following items:

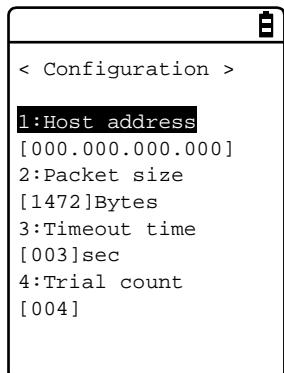
- Configuration: Configure the ping command execution conditions.
- WLAN/ping test: Test WLAN communication using the ping command.
- AP Search: Search for access points in the neighborhood.

■Configuration

Configure the ping command execution conditions. WLAN communication will be tested while sending the ping command.

STEP

[System Menu] → [9: Test] → [1: WLAN] → [1:Configuration]



Configure the WLAN test conditions.

- Host address

Specify the IP address of the target device whose communication condition you want to check.

- Packet size (Default=1472 bytes)

Select the size (bytes) of a data packet to send.

Settable values: 32, 64, 128, 256, 512, 1024, and 1472

- Timeout time (Default=3 seconds)

Set the timeout time in seconds.

Settable values: 1 to 255 seconds

- Trial count (Default=four times)

Set the number of times to send the ping command.

Settable values: 1 to 255 times

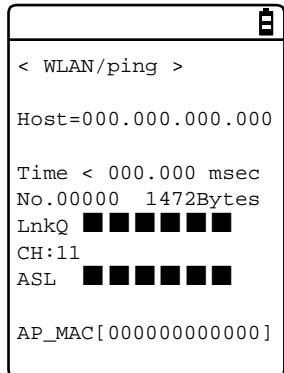
When 0 is specified, continue to send the ping command until the **[C]** key is pressed.

■WLAN/ping test

Execute the ping command to test WLAN communication. Continue to send the ping command to the host IP address set in Configuration. The following details will be displayed: the ping command result, the MAC address of the synchronized access point, communication quality (LnkQ), the strength of received radio signals (ASL), and the channel used.

STEP

[System Menu] → [9: Test] → [1: WLAN] → [2: WLAN/ping test]



The following information will be displayed:

<1st line> The title of this test

<2nd line> The host IP address to send the ping command to

<4th line> Displays the result.

When successful

Displays the time expended to obtain the result. (Unit: msec)

Timeout

Displays "ping Timeout".

When stopped by pressing the [C] key.

Displays "Stopped".

<5th line> Transmission packet number (incremented by 1) and transmitted bytes

<6th line> Displays the LnkQ indicator.

LnkQ indicates the communication quality between the product and the access point.

<7th line> Displays the currently synchronized channel.

<8th line> Displays the ASL indicator.

ASL indicates the strength of radio signals received from the access point.

<10th line> Displays the MAC address of the access point connected via WLAN communication.

Hint

- To obtain stable communication performance, we recommend that the level of the LnkQ indicator should be 4 or higher.
- For PSK (TKIP/CCMP), an error message appears when authentication fails.
- The LnkQ indicator in the 6th line and the ASL indicator in the 8th line do not show radio signal strengths accurately. Consider them as approximate radio conditions.

■AP Search

Search for access points that match the SSID set in the Handy Terminal.

By setting the SSID of the Handy Terminal as "ANY", you can search for all the access points in the neighborhood.

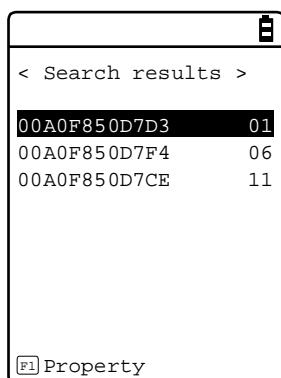
Hint

Note that the above is effective only when access points are configured to respond to "ANY". From the viewpoint of security, response to "ANY" is disabled in some access points.

The details to be displayed as search results are the MAC addresses, channels, and SSIDs of the matched access points.

STEP

[System Menu] → [9: Test] → [1: WLAN] → [3: AP Search]

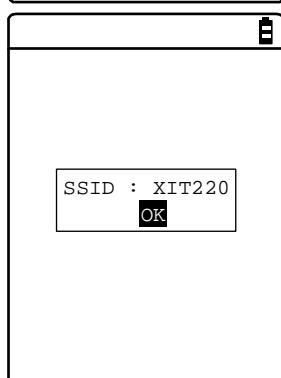


Search results will be displayed after several seconds or several tens of seconds.

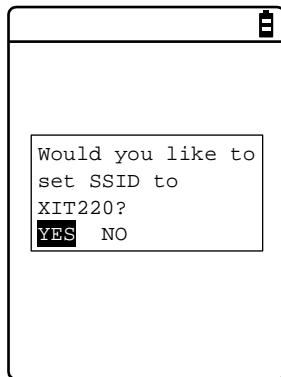
<1st line> The title of test results

<3rd line and after> The MAC addresses and channel numbers of detected access points

<10th line> Key guidance to display SSID.



Press the [F1] key to display the SSID set to the currently selected access point.



When the access point is selected, a confirmation dialog box appears, so that you can set the SSID that is set to the access point into the Handy Terminal.

4-11-2 Bluetooth: Testing Bluetooth Communication

Perform one-to-one communication with another terminal via Bluetooth..

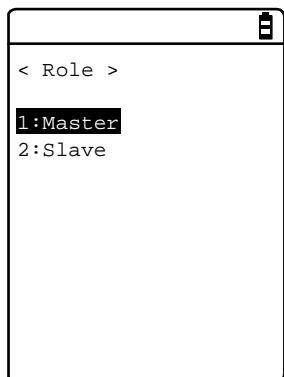
Before executing Bluetooth communication, you have to set the target device as the default device. (The target device means a slave device or terminal when your device is set as Master, or a master device when your device is set as Slave.)

Refer to "4-9-3 Bluetooth: Registering and Setting the Bluetooth Device"—"■Remote device" (P. [171](#)).

STEP

[System Menu] → [9: Test] → [2: Bluetooth]

① Set the Handy Terminal as Master or Slave.



Select the method for connection with the Bluetooth device to communicate to.

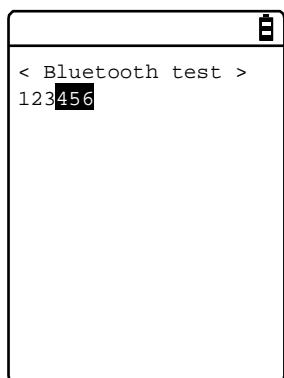
A master has the initiative in connection, and a slave follows the instructions of its master. Connection is possible only between a master and a slave.

Start a test based on the following: when the local device is a master, the other device is its slave, and when the local device is a slave, the other device is its master.

Note that this master-slave relationship applies just temporarily at the time of connection.

The master-slave relationship will disappear after connection.

② A communication test starts.



When a key is pressed, the corresponding key data is sent and at the same time, it is also displayed on the screen (local echo).

When the data is received at the other end, it is highlighted on the screen.

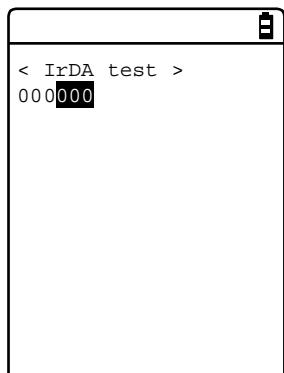
4-11-3 IrDA: Testing Infrared Communication

Perform one-to-one communication with another terminal via Infrared communication.

STEP

[System Menu] → [9: Test] → [3: IrDA]

An infrared communication test starts.



Place the infrared communication ports of your device and another terminal so that they face each other, and start infrared communication also on that terminal.

When a key is pressed, the corresponding key data is sent and at the same time, it is also displayed on the screen (local echo).

When the data is received at the other end, it is highlighted on the screen.

4-11-4 Barcode

Perform a barcode scanning test.

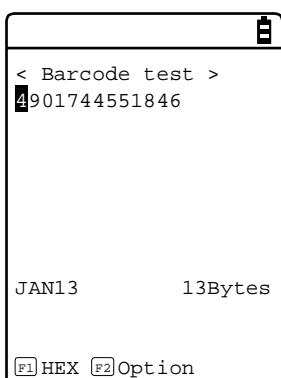
Note that barcode input here will not be affected by the trigger mode.

STEP

[System Menu] → [9: Test] → [4: Barcode]

When the scan mode arises, press the [SCAN] key or the Trigger key to scan a barcode.

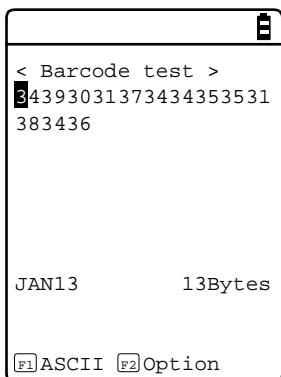
●Barcode scanning



Scan a barcode.

The scanned barcode, barcode type, and the number of digits will be displayed.

●Display through character code conversion



Press the [F1] key to display the scanned data through character code conversion.

- ASCII (Default)

Display the scanned data by converting it into ASCII characters.

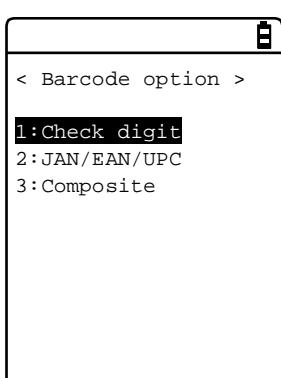
- HEX

Display the scanned data by converting it into hexadecimal values.

Through hexadecimal conversion, one character is displayed using two hexadecimal digits such as "35" for "5" and "6D" for "m".

Press the [F1] key to alternate the display methods.

■Barcode Option



Press the [F2] key to set barcode option items.

Note that the settings made here are enabled during barcode test only.

●Check digit

Set whether to check the check digit.

- Check Enable not marked (Default)
Do not check the check digit.
- Check Enable marked
Check the check digit.

●JAN/EAN/UPC

Set the scanning condition for add-on codes of JAN/EAN/UPC.

- Ignore Add-on (Default)
Do not scan add-on codes.
- Read all
Allow JAN/EAN/UPC to be scanned regardless of whether add-on codes exist.
- Read Add-on only
Allow only JAN/EAN/UPC with add-on codes to be scanned.

●Composite

Set the scanning condition for Composite.

- Prohibition (Default)
Do not allow Composite to be scanned.
- Permission
Allow Composite to be scanned.

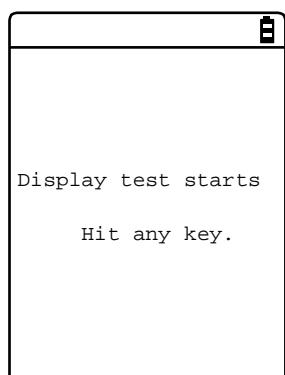
4-11-5 Display: Testing the LCD Screen

Test the screen display condition.

STEP

[System Menu] → [9: Test] → [5: Display]

A test pattern is displayed.



Test the LCD display condition.

Each time a key other than **[F4]** and **[PW]** is pressed, the LCD screen changes its color one after another.

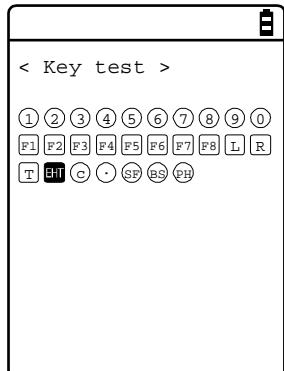
When you finish displaying all colors, you return to the previous operation.

4-11-6 Key: Testing Key Operations and Indicators

Test key input operations as well as indicators (buzzer/vibrator/LED).

STEP

[System Menu] → [9: Test] → [6: Key]



When a key is pressed, the icon for that key displayed above the partition line in the middle of the screen is highlighted (for the **【ENT】** key only, its icon, which is highlighted by default, ceases to be highlighted), and the icon corresponding to the pressed key is displayed below the partition line (local echo).

And, in conjunction with each key, the indicators corresponding to it operate.

The indicators assigned to each key are as follows:

Key	Buzzer	Vibrator	LED	Audio playback
【0】 ~ 【9】 , 【・】	○	×	Green	×
【ENT】 , 【C】 . 【BS】 , 【SF】	○	×	Orange	×
【SCAN】	×	○	Orange	×
【F1】	○	×	Red	Melody
【F2】	○	×	Red	Voice (Scan the barcode.)
【F3】	○	×	Red	Voice (Charge the battery.)
【F4】	○	×	Red	Voice (An error occurred.)
【◀】 (【F5】)	○	×	Red	Voice (Five)
【▲】 (【F6】)	○	×	Red	Voice (Six)
【▼】 (【F7】)	○	×	Red	Voice (Seven)
【▶】 (【F8】)	○	×	Red	Voice (Eight)

When the **【C】** key has been pressed twice or when every key has been pressed, the test becomes complete.

Hint You cannot operate the **【PW】** key until you finish testing all the keys.

Chapter

5

Specification

5-1 Product Specifications

5-1-1 GTX-221-G Wireless Two-Dimensional Handy Terminal

CPU	32-bit RISC CPU	
OS	μ ITRON	
Memory	ROM	32MB (User area 12MB or more)
	RAM	64MB (User area 12MB or more)
Scanner section	Decoded barcodes	
	NW-7, Code39, JAN-13/8, UPC-A/E, Industrial 2of5 ITF, Code93, Code128, GS1-128, GS1 DataBar (RSS)	
	QR, Micro QR, PDF417, Micro PDF417, MaxiCode, DataMatrix, EAN/UCC Composite (GS1 DataBar Composite),	
	Light source	Red semiconductor laser
	Laser class	IEC60825 Class2 compliant
	Maximum output	1mW
	Wave length	655±10nm
	PCS	0.45 or larger (reflection factor of space and margin, 70% or more)
	Resolution	One-dimensional
		0.127mm
LCD display section	One-dimensional	
	Two-dimensional	
	0.25mm	
	Resolution	
Font	Display device	
	TFT, Color LCD, 262,144 colors	
	Number of displayed pixels	
	QVGA (320×240)	
Font	Display size	
	2.4 inches	
	Backlight	
	White LED 5-step luminosity adjustment (4-step adjustment and light-off)	
Font	Font size	
	30 dots: 16 single-byte digits×9 lines 24 dots: 20 single-byte digits×12 lines 16 dots: 30 single-byte digits×18 lines	
Font	Displayed characters	
	JIS level 1 and level 2 kanji, ANK, symbols, gaiji (external characters) (Double-sized width, double-sized height, and quadruple-size available)	

Key input section	Number of keys	27keys(left and right trigger keys included)
	Backlight	Orange
Illuminance sensor		Available (LCD luminosity, key backlight ON/OFF control)
Displayed LEDs	SCAN	Green/red/orange (user-specified, battery level display)
	ALARM	Orange (No signal LED)
Speaker		8-step volume adjustment (7-step adjustment and OFF) Sound when scanning and when errors of various types occur (can be specified by the user).
Vibrator		Generate vibrations: when scanning and when errors of various types occur (can be specified by the user).
Communication section	Bluetooth	Complied international standards
		ARIB STD-T66
		Spread spectrum method (frequency hopping method)
		2.4GHz band
		Maximum 1Mbps (theoretical)
		Class2
		Built in the main unit.
	WLAN	Maximum 10m *1
		SPP
		IEEE802.11b/g

	Baud rate	OFDM: 54/48/36/24/18/12/9/6 Mbps DSSS: 11/5.5/2/1 Mbps				
	Number of channels	OFDM: 13ch				
Security	Encryption standard	Authentication method	Encryption method			
	WEP (40/128)	OPEN, SHARED	WEP (40/128)			
	WPA-PSK (compatible)	PSK	TKIP			
	WPA2-PSK (compatible)		CCMP (AES)			
	WPA (compatible)	EAP-TLS EAP-PEAP-MSC HAPV2	TKIP			
	WPA2 (compatible)		CCMP (AES)			
	Antenna	Built in the main unit.				
	Transmission distance	Indoor: maximum 75m, Outdoor: 200m				
	IrDA		IrDA Ver1.2 Physical Layer compliant Baud rate: maximum 115,200bps (SIR)			
Management function		SNMP Agent				
Supported MIB		MIB-II (RFC1213), Welcat Enterprise MIB				
External connection terminal	microSD	SD Memory Card Specification, Ver. 1.1				
Dimensions		58 (W) × 171 (D) × 45 (H) mm Grip section 45 (W) × 29 (H)				
Weight		225g (battery pack included)				
Main unit charging function		Available (with temperature protection function)				
Power supply	Main battery	Li-ion rechargeable battery *2				
	Backup battery	Li-ion rechargeable battery (maintenance-free)				
Hours of continuous use ^{※3}		Approx. 11 hours (Typ.)				
Backup time	With main battery (Main battery fully charged)	RAM retention time	19 days (actual value)			
			11 to 37 days (guaranteed value at normal temperature)			

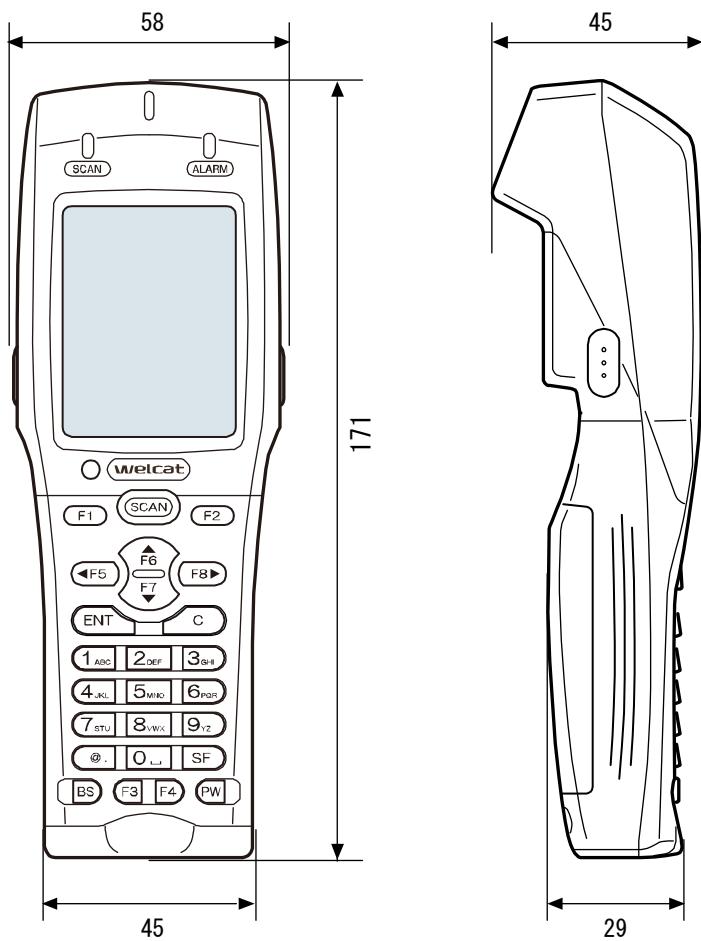
	Without main battery (Backup battery fully charged)	RAM reten- tion time	15 hours or longer			
		RTC reten- tion time	No RAM retention	One year		
			RAM retention	Six months		
	Backup battery charged	Charging time	One day			
Charging time		Approx. 2.5 hours				
Clock function	Functionality	Year (4 digits), month, day, hour, minute, second/with leap-year correction, timer functionality available				
	Difference per month	Approx. ±30 seconds				
Environment	Operating temperature	-5°C~45°C				
	Operating humidity	20 to 80% RH (No condensation)				
	Storage temperature	-10°C~60°C				
	Storage humidity	10 to 90% RH (No condensation)				
	Illuminance conditions	Artificial light: up to 4,000 lx Sunlight: up to 80,000 lx				
	RoHS instructions	Complied				
Durability	Drop resistance	1.5m (for each of the six sides of the main unit, five drops on concrete tested) *4				
	Water and dust proof	IEC IP54				

*1 For stable communication, we recommend using the Handy Terminal within 2 m away from the target, with no obstruction between the terminal and the Bluetooth USB adapter or the Bluetooth communication unit.

*2 When deeply charged repeatedly, the main battery may reach its end of life due to capacity reduction caused by deterioration.

*3 Hours of continuous use are an actual value under the following conditions:
One second of barcode reading per 20 seconds, one WLAN transmission/reception
LED ON, speaker ON, luminosity: level 2, vibrator OFF

*4 A value obtained by testing, not a guaranteed value.

■Dimensions

5-1-2 QC-006 Single Charger

Charging section	Operating temperature	0~40°C
	Operating humidity	20~80% (No condensation)
	Storage temperature	-10°C~60°C
	Storage humidity	10~90% (No condensation)
	Charging time	Approx. 2.5 hours ※ Depending on the battery condition or the use environment, the required charging time may become longer.
	Dimensions	93 (W) × 117.5 (D) × 105.4 (H) mm
	Weight	225g
AC adapter	Rated input	AC100 to 240V 50-60Hz 75VA
	Rated output	DC5.5V 2.5A 13.75W
	Weight	180g (AC cable not included)
	Dimensions	41.5 (W) × 90 (D) × 28 (H) mm (Power cable, DC cable not included)
	AC cord length	1.8m
	DC cord length	1.8m

5-1-3 QC-007 Multi Charger

Charging section	Operating temperature	0~40°C
	Operating humidity	20~80% (No condensation)
	Storage temperature	-10°C~60°C
	Storage humidity	10~90% (No condensation)
	Charging time	Approx. 2.5 hours *Depending on the battery condition or the use environment, the required charging time may become longer.
	Dimensions	375.5 (W) × 120 (D) × 106 (H) mm
	Weight	910g
AC adapter	Rated input	AC100 to 240V 50-60Hz 150VA
	Rated output	DC12V 4.6A 70W
	Weight	300g (AC cable not included)
	Dimensions	58 (W) × 132 (D) × 30 (H) mm (Power cable, DC cable not included)
	AC cord length	1.8m
	DC cord length	1.8m

5-1-4 IU-004 USB Communication Unit

General	Operating temperature	0~40°C
	Operating humidity	20 to 80% (No condensation)
	Storage temperature	-10°C~60°C
	Storage humidity	10 to 90% (No condensation)
	Dimensions	93 (W) × 117.5 (D) × 105.4 (H) mm
	Weight	215g
Communication section	USB cable length	1m
	Infrared communication	IrDA Ver. 1.2 Physical Layer compliant Baud rate: maximum 115,200bps
	External interface	USB2.0 Full Speed Connector: TYPE B
	Power supply	USB BUS power
	Current consumption	100mA or less

5-1-5 IU-004C USB Communication/Charging Unit

General	Operating temperature	0~40°C
	Operating humidity	20~80% (No condensation)
	Storage temperature	-10°C~60°C
	Storage humidity	10~90% (No condensation)
	Dimensions	93 (W) ×117.5 (D) ×105.4 (H)mm
	Weight	216g
Communication section	USB cable length	1m
	Infrared communication	IrDA Ver. 1.2 Physical Layer compliant Baud rate: maximum 115,200bps
	External interface	USB2.0 Full Speed Connector: TYPE B
	Power supply	USB BUS power *
	Current consumption	100mA or less
Charging section	Charging time	Approx. 2.5 hours *Depending on the battery condition or the use environment, the required charging time may become longer.
AC adapter	Rated input	AC100 to 240V 50~60Hz 75VA
	Rated output	DC5.5V 2.5A 13.75W
	Weight	180g (AC cable not included)
	Dimensions	41.5 (W) ×90 (D) ×28 (H)mm (Power cable, DC cable not included)
	AC cord length	1.8m
	DC cord length	1.8m

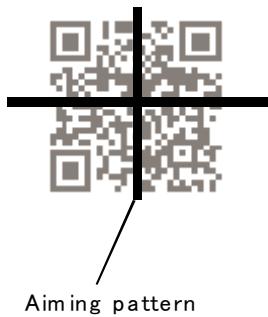
* Used to supply power to the communication function. Use the AC adapter for charging.

5-2 Scan Specifications

5-2-1 How to Scan Barcodes

When scanning a barcode, cross-shaped laser beams (aiming pattern) are irradiated. Align the center of an aiming pattern with a barcode for scanning.

During scan, the illumination LED is lighted ON. However, in a bright environment or when continuously scanning the same barcode, it may be lighted OFF.



5-2-2 Scan Depth

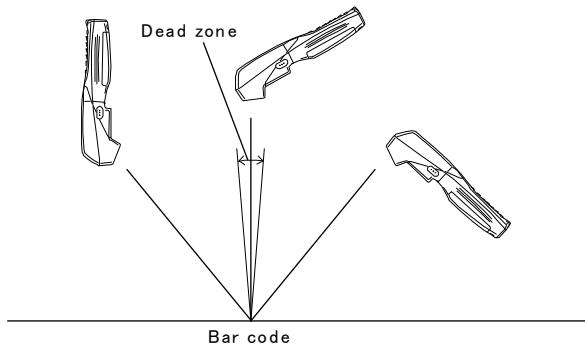
Depending on the barcode type, the scannable distance may change.

When scanning is difficult, change the distance between the barcode and the main unit and try again.

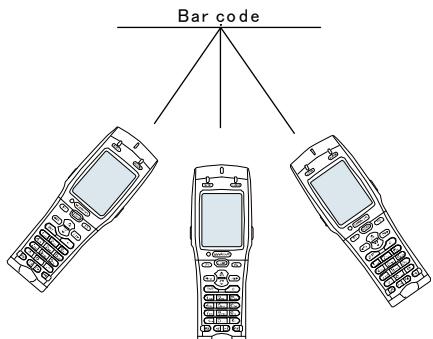
5-2-3 Barcode Skew and Scannable Angle

When a laser light is irradiated perpendicularly to a barcode, scanning may become difficult due to specular reflection (dead zone).

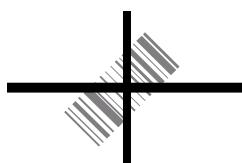
In such a case, change the scanning angle and try again.



When scanning diagonally from the left or right in relation to a barcode, it may become difficult to perform a scan. In such a case, change the angle to scan a barcode.



Scanning can be performed at all angles (360 degrees).



5-3 Characters to Output on Screen

■Double-Byte Characters

シフト JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
f040	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
f050	N_U	S_H	S_X	E_X	E_T	E_Q	A_K	B_L	B_S	H_T	L_F	V_T	F_F	C_R	S_O	S_I
f060	D_L	D_1	D_2	D_3	D_4	N_K	S_Y	E_B	C_N	E_M	S_B	E_C	F_S	G_S	R_S	U_S
f070	0_X	1_X	2_X	3_X	4_X	5_X	6_X	7_X	8_X	9_X	PW	(C)	(BS)	(SF)	(.)	
f080	(-)	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	□	□	□	□	
f090	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
f0a0	□	△	S	□	□	□	□	□	□	□	□	□	□	□	□	
f0b0	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
f0c0	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
f0d0	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
f0e0	□	□	□	□	□	□	□	□	□	□	(T)	(O)	□	□	□	
f0f0	J_A_N	U_P_C	N_W_7	I_T_F	I_N_D	C_3_9	C_128	E_128	M_R_X	M_X_I	W_P_C	I_N_T	C_9_3	R_S_S	P_D_F	Q_R

■Single-Byte Characters

位置	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	.	.	.	0	@	P	‘	p	.	‘	タ	ミ	.	.	.	
1	.	.	!	1	A	Q	a	q	.	‘	ア	チ	ム	.	.	
2	.	.	”	2	B	R	b	r	.	‘	イ	ツ	メ	.	.	
3	.	.	#	3	C	S	c	s	.	‘	ウ	テ	モ	.	.	
4	.	.	\$	4	D	T	d	t	.	,	エ	ト	ヤ	.	.	
5	.	.	%	5	E	U	e	u	.	,	オ	ナ	ユ	.	.	
6	.	.	&	6	F	V	f	v	.	,	カ	ニ	ヨ	.	.	
7	.	.	,	7	G	W	g	w	.	,	ア	キ	ヌ	ラ	.	
8	.	.	(	8	H	X	h	x	.	,	イ	ク	ネ	リ	.
9	.	.)	9	I	Y	i	y	.	,	ウ	ケ	ノ	ル	.	
A	.	*	:	J	Z	j	z	.	,	エ	コ	ハ	レ	.	.	
B	.	+	;	K	[	k	{	.	,	オ	サ	ヒ	ロ	.	.
C	.	,	<	L	¥	l	|	.	,	ヤ	シ	フ	ワ	.	.	
D	.	-	=	M	]	m	}	.	,	ユ	ス	ヘ	ン	.	.
E	.	.	>	N	^	n	-	.	,	ヨ	セ	ホ	。	.	.	
F	.	.	/	?	0	_-	0	.	,	ツ	ソ	マ	。	.	.	

6

Chapter

FAQs and Answers

6-1 FAQs and Answers

This section explains FAQs and trouble, and explains items required to check and sections to refer to for troubleshooting.

Q: The power cannot be turned ON.

- Make sure that the electrodes of the Handy Terminal and battery pack have not been soiled or deformed.
- Make sure that the battery pack is correctly attached.
- Make sure that the battery pack is charged sufficiently.
- Make sure that the battery cover is correctly attached.
- To turn the power ON for the first time after re-attaching the battery pack, hold down the **【PW】** key for two seconds or longer.

 "1-2 How to Use the Main Unit" (P. 34) / "1-4 How to Clean the Main Unit" (P. 57)

Q: Nothing is displayed on the screen.

- Make sure that the electrodes of the Handy Terminal and battery pack have not been soiled or deformed.
- Make sure that the battery pack is correctly attached.
- Make sure that the battery pack has not run out of power.
- Make sure that the battery cover is correctly attached.

 "1-2 How to Use the Main Unit" (P. 34) / "1-4 How to Clean the Main Unit" (P. 57)

⟨If the problem cannot be solved even after confirming the above⟩

Take the following procedure to start the system menu.

1. Remove the battery cover and battery pack.
2. Wait for 10 seconds, then attach the battery pack and battery cover.
3. Hold down the **【PW】** key for two seconds or longer while holding down the **【SCAN】** key.

Q: After suspending the operation for a while, the power is turned OFF.

- Make sure that the battery pack is not old.

The battery pack has its life. The battery pack's capacity gradually reduces as the battery pack is used over and over again and as time passes. If the battery pack's usable time becomes extremely short, the battery pack is supposed to reach its end of life. In such a case, purchase a new one.

- Make sure that the battery pack has not run out of power.

 "1-2 How to Use the Main Unit" (P. [34](#)).

- Make sure that Auto power off is disabled ----- (P. [111](#)),

- Make sure that power saving is not set to the application program.

Q: The product cannot be charged.

- Make sure that the main unit is correctly placed in the charging cradle.

- Make sure that the power adapter is correctly placed in the charging cradle.

- Make sure that charging is performed at an ambient temperature of 0°C to 40°C.

 "1-2-4 Charging the Battery Pack" (P. [43](#))

<If the problem cannot be solved even after confirming the above>

The battery pack may be faulty.

Contact your dealer.

Q: To check or correct the date...

Refer to "4-3-2 Clock: Setting the Time" (P. [104](#)).

Q: The system menu does not start.

- To forcibly start the system menu, press the **【PW】** key while holding down the **【SCAN】** key.

 "4-1-2 Starting the System Menu" (P. [94](#))

- If you want the system menu to always start,

Select as **[1: System] → [1: Auto execute]** on the system menu, and select the **[System Menu]** radio button.

 "4-3-1 Auto execute: Automatically Executing an Application Program" (P. [103](#))

Q: To change the application program starting up when the power is turned ON...

- Select as **[1: System] → [1: Auto execute]** on the system menu, select the desired application program's radio button.

 "4-3-1 Auto execute: Automatically Executing an Application Program" (P. [103](#))

Q: To start another application program...

- Select as **[5: File] → [1: Application]**, and then select **[Execute]** on the submenu.

 "4-7 File: Executing, Uploading, and Deleting Files"—■**Execute: Execute an Application Program**" (P. [156](#))

Q: A barcode cannot be scanned well.

- Make sure that scanning is performed on the barcode appropriate for the settings of the application program.

Depending on the settings of the application program, it is prohibited to scan specific types of barcodes.

- Make sure that specular reflection does not occur.

Make sure that the barcode's surface is not covered in vinyl or laminated ⇒ even if the scanning angle is not an angle at which specular reflection occurs, scanning may become difficult. Change the scanning angle and try again.

- Make sure to scan the barcode correctly.

There are specifications for the resolution and the scan distance; perform a scan in the distance range that meets the minimum widths of barcode bars and spaces.

- Make sure that the scan distance is correct. (Refer to "5-2 Scan Specifications" (P. [218](#)).)

- Make sure that the quality of the barcode label is good.

- Otherwise, scanning may not be performed correctly. In any of the following cases, make

the quality of the barcode label better:

- ① Faintly printed barcode (as if printed by a dot impact printer or on a carbon copy slip)
- ② Barcode that is soiled or has missing bars
- ③ Barcode with the widths of its bars/spaces being too narrow for the resolution of this product to handle
- ④ Barcode without left and right blank spaces (quiet zones) (characters or lines exist to the left and right of the barcode)
- ⑤ Barcode with irregularities in bar and space widths due to smearing or fading
- ⑥ Warped or wrinkled label
 - Change the decoding level setting and try again. For details on the decoding level setting, refer to "4-9-1 Barcode: Configuring the Barcode Scanner"—"■ Decoding level (P. [164](#))".
- Make sure that there is no problem with laser lights.
 - If dirt or dust adheres to the scan window, it may become impossible to scan correctly. In such a case, wipe the filter at the scan window clean with a dry soft cloth.

Q: To check the drive's free space...

Select as [8: Manage]→[4: Drive] to check the free space.

 "4-10-4 Drive: Displaying Drive Information" (P. [195](#))

Q: WLAN communication does not work.

■ Make sure that the access point is connected to the Ethernet LAN.

Depending on the access point, WLAN communication does not operate if the LAN cable is disconnected or a link is not established.

■ Make sure that the SSID setting matches the access point.----(refer to P. [114](#).)

Match the SSID to the access point.

If "ANY" (blank) is set for the SSID in the Handy Terminal, connection may not be possible due to the access point's functionality. Refer to the manual for the access point.

■ Make sure that the authentication settings are correct----(refer to P. [116](#)).

Match the authentication method to the access point.

For "Shared", check the WEP settings.

■ Make sure that the WEP settings are correct.

Make sure that the WEP method is correct (disable, 40bit, 128bit).

Make sure that the WEP TxKey_ID matches the WEP key (refer to P. [116](#)).

■ Make sure that there is no access point for which the same channel or an interfering channel is set.

When a non-interfering channel is set, a maximum of four access points can be used in one area.

■ Make sure that no radio signal is generated that may cause trouble.

Check that there is no device causing trouble such as a WEB camera, radio house-phone system,

microwave oven, and another WLAN communication.

In addition, PCs may generate noise. Keep PCs 1m or more away from the access point and the Handy Terminal.

- Make sure that there is no problem with the TCP/IP settings such as IP address----(refer to P. [131](#)).

Check connection to the PC by using the ping command.

- DHCP fails.

Network Management Tool is not running, or general DHCP is used that does not specify a particular port number.

Caution

Network Management Tool uses its own DHCP port number (8067). For that reason, the port number in the Handy Terminal should match the above.

Q: Bluetooth communication does not work.

- Make sure that the remote device to connect to is running.
- Make sure that the remote device to connect to is set as the default device.
Set the above by selecting as [7: Device] → [3: Bluetooth] → [2: Remote device].
- Make sure that the main unit has the same security settings as the remote device to connect to.

 "4-9-3 Bluetooth: Registering and Setting the Bluetooth Device" (P. [169](#))

- Make sure that communication software such as BluePorter is running correctly.

Q: The BluePorter-V COM port does not open.

- Check if you use our application program called WL7-KEY in the PC with BluePorter-V embedded in it.
If the version of WL7-KEY is Ver1.02 or earlier, the COM port is occupied and cannot be opened.
In such a case, contact your dealer.

Q: Infrared communication (IrDA) does not work.

- Make sure that the USB cable is connected securely.
- Make sure that the USB driver software for the USB communication unit (IU-004/004C) is installed in the PC to connect to.
- Make sure that the transfer utility BluePorter-V is installed in the PC to connect to.
- Make sure that the BluePorter-V icon is displayed in the notification area at the far right of the Windows task bar on the screen. Otherwise, even if BluePorter-V is installed, it is

not activated.

- Make sure that the infrared communication ports (windows) of the Handy Terminal and the USB communication unit (IU-004/IU-004C) are not soiled.

 "3-4 How to Build an Infrared (IrDA) Communication Environment" (P. [81](#)) / "1-4 How to Clean the Main Unit" (P. [57](#))

Q: To use WLAN communication and Bluetooth communication together in the same environment...

You can use both types of communication together, but communication delay may occur due to mutual radio interference.

Q: "Writing failure" is displayed while uploading/receiving files.

- This message appears in such cases as when the free space on the F drive is insufficient. Delete files on the F drive, S drive, or R drive to increase the free space and then try again.

Q: "Timeout" is displayed while uploading/receiving files.

This message appears when a certain period of time passes in a transmission or reception waiting state.

- Make sure that the PC's Network Management Tool is running.
- Make sure that the communication settings are correct.
- Make sure that the main unit is connected to the PC correctly.

 "3-2 Building WLAN Communication Environment" (P. [68](#))

- Make sure that the PC's resources are sufficient.

If a communication software application program (Network Management Tool or BluePorterV) is running, file transmission or reception may fail due to PC resource shortage. Terminate application programs not necessary for communication as much as possible and try again.

Q: "Connection failure" is displayed while uploading/receiving files.

- Make sure that the WLAN communication settings are correct----(refer to "4-4 WLAN: WLAN Communication Settings" [P. 114](#)).
- Make sure that FTP server software is running on the PC.
- Make sure that the access point (a device recommended by us) and the PC are connected correctly on the LAN----(refer to "4-4 WLAN: WLAN Communication Settings" [P. 114](#)).
- Make sure that the FTP settings are correct----("3-5-3 FTP: FTP Settings" (refer to [P. 136](#)).

- When Bluetooth is selected, make sure that the remote device to connect to is the target remote device.
- When Bluetooth is selected, make sure that the same security settings as the remote device are applied.
- When Bluetooth is selected, make sure that the remote device is set correctly.
- Make sure that the PC is not using a file with the same name (such as a file being opened by editor software or opened by some database operation).

 "4-8 ID: Setting the Terminal Identification ID" (P. [163](#)) / "4-9-3 Bluetooth: Registering and Setting the Bluetooth Device" (P. [169](#))

Q: To collectively configure settings for the Handy Terminal such as IP address from the PC...

- Using the DHCP Server of Network Management Tool in the WebGlider Integrated Server (optional) package, settings for the Handy Terminal can be automatically configured.

Q: Application programs cannot be activated or files cannot be uploaded or received.

- Some functionality does not operate if the battery pack voltage is too low. Make sure that the battery pack is charged sufficiently.

 "1-2-4 Charging the Battery Pack" (P. [43](#))

Q: Files are corrupted.

- Files can get corrupted in the following situation: while files are being written to (during data communication, file reception, file backup, etc.) or being defragmented, the battery pack is removed, or the product is mistakenly dropped or receives strong impact and eventually, the power gets turned OFF.

Either delete such files or transfer them to a PC for data recovery.

If the product does not operate correctly even after the above, it is suspected that the product becomes faulty. In such a case, ask for repair.

 "4-7 File: Executing, Uploading, and Deleting Files" (P. [152](#))

- Some application program processes defragmentation or backup before turning the power OFF. When replacing the battery pack, make sure that the power is turned OFF.

Q: The system settings of the Handy Terminal are initialized.

- Since the initial settings are stored in the registry file, if file corruption as above occurs, initialization may be performed.

Q: When the power is turned ON, the message "SDrive has been initialized." is displayed.

- During operation, if the battery pack or battery is removed or if the power is turned OFF due to drop impact, etc., normal termination will not be performed and data on the S drive will not be backed up.
- The same message appears when the product is powered ON for the first time after purchase.

Q: When the power is turned ON, the system menu starts up.

- Make sure that the application program name (*****. OUT) is selected after selecting as [1 : System] → [1 : Auto execute] on the system menu.
 - Otherwise, the application program will not be automatically executed.

Q: When "System error" is displayed, a key is pressed. Then, the power is turned OFF.

- This message appears when the system program fails to identify the causes of errors. This problem occurs due to hardware, system program, or application program trouble or due to external factors such as strong static electricity. When the system error message appears, press the [PW] key, and the power is turned OFF. The next time the product is started, self recovery is performed as much as possible.
Turn the power ON again.

Q: The microSD becomes inaccessible.

- The Handy Terminal does not support the SDHC standard. Use microSD cards proved operable. For microSD cards proven operable, please contact your dealer.

Consumables

For consumables (consumable parts), their performance degrades as the product continues to be used. Depending on the use environment and use frequency of the product, how long it takes to reach the degradation of their performance varies, and depending on the usage, replacement before the expiration of our warranty period (charged replacement) may be required.

- Operation key (push button)
- Vibrator (vibration motor)
- Image Handy Terminal (barcode reader)
- Electrode plates (electrodes for charging main unit and battery pack and battery pack terminal)
- Battery pack
- Backup battery
 - The backup battery is maintenance-free, but when deeply charged repeatedly, its capacity may be significantly reduced. In such a case, the backup battery needs to be replaced.
- Battery cover (water stop packing)

These are consumables.

Appendixes

Appendix-1 Factory Default List

Setting Items	Settable Range	Factory Default
Auto execute program	Any application program on the system menu	1: System Menu
Power Management, Resume	Enabled, Disabled	Disabled
Power Management, Auto wake up	Every day, every week, every month	No setting
Power Management, Auto power off time	0000 or 0060 to 3600 seconds	0600 seconds
Password	4 to 30 alphanumeric characters and case-sensitive	No setting
SSID	Up to 32 alphanumeric characters and case-sensitive	XIT
Roaming level	Slow, Normal, Fast	Normal
Power saving timeout	Immediately, one second, none	One second
Security, Encryption method	Disabled, WEP(40bit), WEP(128bit), TKIP, CCMP(AES)	Disabled
Security, Encryption WEP TxKeyID	KEY-1、KEY-2、KEY-3、KEY-4	KEY-1
Security, Encryption WEP Key modification	A string made up of hexadecimal characters (0-9, A-F, and a-f) is assigned to each of KEY-1 to KEY-4. For WEP 40bit, the number of characters is fixed as 10, for WEP 128bit, the number of characters is fixed as 26 characters.	No setting
Security, Encryption PSK(TKIP/CCMP)	8-63 characters in ASCII code, and fixed as 64 characters in hexadecimal characters (0-9, A-F, and a-f).	No setting
Security, Authentication method	Open, Shared, EAP	Open
Security, Attention	Displayed, Not displayed	Displayed
Advanced, Rate control	11b Auto, 11bg Auto, 11g 9M, 11g 6M, 1M, 2M, 1 or 2M, 5.5M, 11M	11b Auto
TCP/IP IP Address	Any value in IP address format	000.000.000.000

Setting Items	Settable Range	Factory Default
TCP/IP NetMask	Any value in IP address format	000.000.000.000
TCP/IP Default gateway	Any value in IP address format	000.000.000.000
TCP/IP MTU	0064~1500	1500 (octets)
DHCP, Startup type	Disabled, Application startup	Disabled
DHCP, Item not to Update	IP address, NetMask, Default gateway, ID (more than one can be selected)	No setting
DHCP, Server port	00001~65534	08067
FTP, Server address, Set method	IP, (Host) Name	IP
FTP, Server address, IP	Any value in IP address format	000.000.000.000
FTP, Server address, (Host) Name	Up to 62 alphanumeric characters and case-sensitive	No setting
FTP, (User) Name	Up to 18 alphanumeric characters and case-sensitive	No setting
FTP, Password	Up to 20 alphanumeric characters and case-sensitive	No setting
FTP, Advanced Server port	00001~65534	00021
FTP, Advanced, Mode	Passive、Active	Passive
FTP, Advanced, Folder Current	/(root), /(user name), /(specified value)	/(root)
FTP, Advanced, Folder Specific	Up to 62 alphanumeric characters and case-sensitive	No setting
DNS, Primary	Any value in IP address format	000.000.000.000
DNS, Secondary	Any value in IP address format	000.000.000.000
DNS, Advanced, server port	00001~65534	00053
DNS, Advanced, Timeout time	01 to 99 seconds	03 seconds

Setting Items	Settable Range	Factory Default
DNS, Advanced, Trial count	0~9	1
NMP, Community (R/Only), Community name	Up to 16 alphanumeric characters and case-sensitive	public
SNMP, Community (R/W), Community name	Up to 16 alphanumeric characters and case-sensitive	private
SNMP, Advanced, Agent port	00001~65534	00161
SNMP, Advanced Trap port	00001~66534	00162
ID	000~999	000
Barcode, Trigger mode, Trigger key operation	Normal, Double, Release, Auto	Normal
Barcode, Trigger mode, Power saving	Full, Quick, None	Full
Barcode, Trigger mode, Irradiation time	1 to 60 seconds	20 seconds
Barcode Picklist mode	Enabled, Disabled	Enabled
Barcode Inverse	Regular only, Inverse only, Auto detect	Regular only
Bluetooth, Local device, Device name	Up to 30 alphanumeric characters and case-sensitive	XIT-220
Bluetooth, Local device, Authentication	Enabled, Disabled	Disabled
Bluetooth, Local device, PIN code	Up to 16 hexadecimal characters (0~9 and A~F)	No setting
Bluetooth, Remote Device 1~7, Device name	Up to 30 alphanumeric characters and case-sensitive	None registered
Bluetooth, Remote Device 1~7, BD Address	Fixed as 12 hexadecimal characters (0~9 and A~F)	00:00:00:00:00:00

Setting Items	Settable Range	Factory Default
Bluetooth, Remote device 1–7, Authentication	Enabled, Disabled	Disabled
Bluetooth, Remote device 1–7, PIN code	Up to 16 hexadecimal characters (0–9 and A–F)	No setting
Bluetooth, Remote device, Search option	1~9	9
Display, SetAlsSensor	Enabled, Disabled	Enabled
Tone/Vibrator, Volume	Level: 1–8	Level: 8
Tone/Vibrator, Click Sound	Yes, No	No

Appendix-2 Sample Barcodes

Caution

Scanning may become impossible if the print quality is extremely poor such as a barcode being enlarged, reduced, and soiled.

- JAN13



- JAN8



- UPC-E



- CODE39 (Check Digit added)



- CODE39 (Check Digit not added)



- NW-7 (Check Digit added)



- NW-7 (Check Digit not added)



- NW-7 (HEX)



- ITF (Check Digit added)



- ITF (Check Digit not added)



- ITF (Standard version ITF-14)



- ITF (Extended version ITF-16)



- ITF (Add-on version ITF-6)



- CODE128 (Code set A)



- CODE128 (Code set B)



- CODE128 (Code set C)



- EAN128 (Code set A)



- EAN128 (Code set B)



- EAN128 (Code set C)



- GS1 DataBar

- Standard



- Stacked



- GS1 DataBar Limited



- GS1 DataBar Expanded

- Standard



- Stacked



- GS1 DataBar Stacked Composite

- CC-A



- CC-B



- PDF417



The PDF417 barcode can store up to 2725 digits (numeric characters only), 1850 text characters (alphanumeric characters only), or 1108 bytes (binary data only).



The PDF417 barcode can handle alphanumeric and binary data.

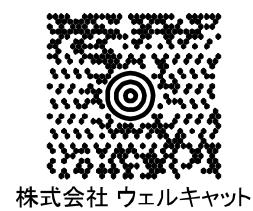
- Data Matrix



The DataMatrix barcode can store up to 3116 digits (numeric characters only)
2335 text characters (alphanumeric characters only)
or 1556 bytes (binary data only).

The DataMatrix barcode is a two-dimensional symbol based on a matrix-type symbology that can handle alphanumeric and binary data.

- Maxi Code



- QR コード



The QR code can store up to 7089 digits (numeric characters only)
4296 text characters (alphanumeric characters only)
2953 bytes (binary data only)
or 1817 kanji characters (kanji characters only).

The QR code can handle alphanumeric, binary, and kanji data.

Appendix-3 Glossary

Terms used in this manual are described as follows:

FDrive

An area to store application programs, the database master file, etc. Application programs downloaded from the PC are stored into the F drive.

SDrive

An area to be used for storage of temporary files while application programs are running.

RDrive

A drive to be used as an external expansion area when storing files into microSD card.

System program

OS installed in the Handy Terminal.

System Menu

A program to operate the system program's functions.

Default device

A device set as the default device, among the Bluetooth devices registered as remote devices in the system menu. On the system menu, connection is always made to the default device.

Battery pack

Li-ion rechargeable battery (BP-004).

Backup battery

A battery used to temporarily store the built-in clock's data and files when the main battery is removed or the battery level becomes low.

Remote device

A Bluetooth device the local device connects to.

Local device

The Bluetooth device currently operated. When operating the Handy Terminal, the Handy Terminal is the local device.

Wireless Two-dimentional Handy Terminal
GTX-221-G
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