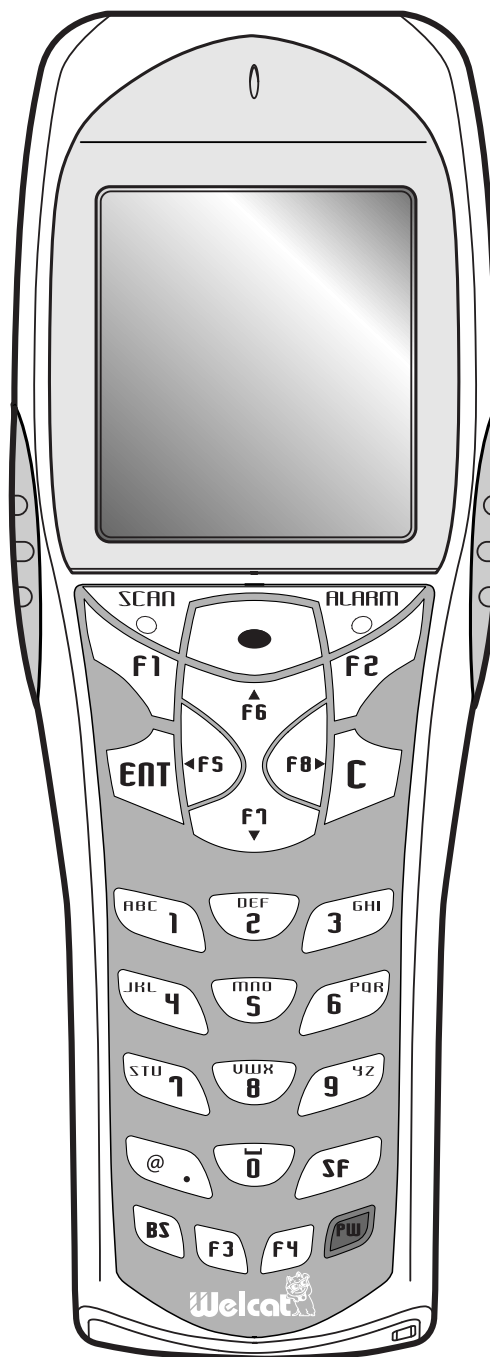


XIT-100-BW

User's Manual



Wireless Hand-held Terminal XIT-100-BW Hardware / System Menu



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SAFETY PRECAUTIONS

- Be sure to read these precautions before using this product in order to insure safe operation of the equipment.
- Keep this User's Manual on hand for future reference whenever you may need it.

Strict observance of these warning and caution indications are **MUST** for preventing accidents, which could result in bodily injury and substantial property damage. Make sure you fully understand all definitions of these terms and related symbols given below, before you proceed to the text itself.

Warning

This symbol indicates an item that can result in death or serious personal injury if ignored.

Caution

This symbol indicates an item that can result in serious personal injury or material damage if ignored.

Meaning of Symbols



A diagonal line through a circle indicates something you should not do.



A black circle indicates something you must do.



A triangle inside indicates something you should be careful about.

WARNING

Only use the specified battery pack (HBC-51).



Using a different type of battery pack could cause damage to equipment, battery –rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Only use the specified charger (QC-001, QC-002) for charging the battery pack.



Using a different type of charger could cause battery –rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Do not heat the battery pack, nor put into fire or water.



Doing so could cause battery –rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Do not attempt disassemble or modify the battery pack.



Doing so could cause battery –rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

Do not carry or store the battery pack together with metallic object such as ballpoint pen, necklaces, coins, hairpins, etc.



Doing so could short-circuit the terminal pins, causing the batteries to rupture the battery fluid to leak, resulting in a fire, burn, and bodily injury.

Do not use the battery if leakage, change of color or shape, or other abnormalities occur.



Doing so could cause fire, burn, bodily injury, or serious damage to property. If it brings close to fire, this cause ignition in leakage of battery fluid.

Avoid dropping the battery pack or letting it undergo any shock or impact.



Doing so could cause the batteries to break, generate heat, rupture or burn.

Do not charge the battery pack where any inflammable gases may be emitted.



Doing so could cause battery –rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.

WARNING



Do not place or charge the battery in the hot places such as a fireside, a stove side, under the burning sun, etc.

Doing so could cause battery –rupture or leakage of battery fluid and resulting in a fire, burn, bodily injury, or serious damage to property.



If battery fluid gets in your eyes, wash it out with clean water and contact a physician immediately.

If it is left, there is fear of loss of eyesight.



If battery fluid gets on your skin, or clothes, wash it off with clean water.

If it is left, there is fear of damage of skin.



Do not attempt disassemble or modify the terminal.

Doing so could cause failure, excessive heat, fire, or electrical shock.



Be careful not to hook a strap when carrying the terminal.

If strap is caught in an obstacle, it could cause injury or accident.



Do not stare into laser beam. Do not aim the laser at a person's eye.

The laser beam emitted through the reading window is harmful to the eyes.

CAUTION



Do not place or use the terminal in the hot places such as a fireside, a stove side, under the burning sun, etc.

Doing so could cause fire, modification of a case or equipment trouble.



Do not place or use the terminal in high humid or dusty areas.

If moisture or dust will get into the terminal, resulting in failure, fire or electrical shock.



Do not soak in water.

If water will get into the terminal, resulting in failure, fire or electrical shock.



Do not drop the terminal or subject it to strong impact or vibrations.

This could cause malfunction or failure.

Laser Safety

This product using the laser complies with US 21CFR1040.10.

This equipment is certified as a Class 2 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the equipment does not produce hazardous laser radiation.

FDA Regulations

U.S. Food and Drug Administration (FDA) have implemented regulations for laser products manufactured on and after August 2, 1976. Compliance is mandatory for products marketed in the United States. The labels on the product indicate compliance with the FDA regulations and must be attached to laser products marketed in the United States.

Caution:

Do not look into the laser beam source through the reading window or point the reading window towards the eyes. The laser beam emitted through the reading window is harmful to the eyes.

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous invisible radiation exposure.

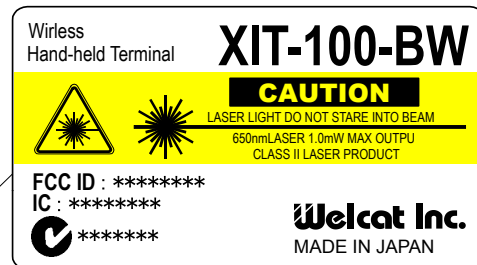
Class 2 laser scanners use a low power, visible light diode. As with any very bright light source, such as the sun, the user should avoid staring directly into the light beam.

Momentary exposure to a Class 2 laser is not known to be harmful.

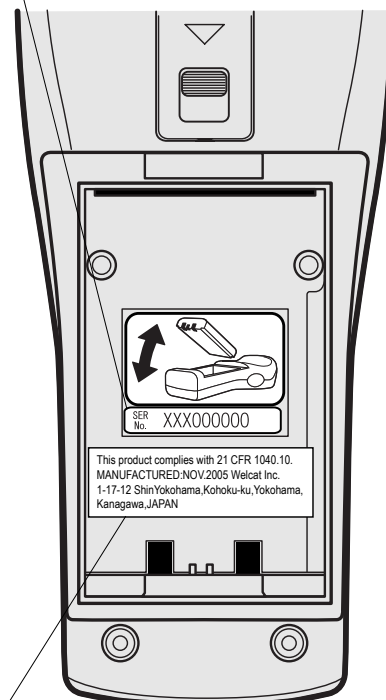
XIT-100-BW

Labels

Product Label



Serial Label



(INSIDE)

FDA Label

This product complies with 21 CFR 1040.10.
MANUFACTURED: NOV.2005 Welcat Inc.
1-17-12 ShinYokohama, Kohoku-ku, Yokohama,
Kanagawa, JAPAN

US and Canada Regulations

This device complies with Part 15 of FCC rules, Canada ICES-003 and RSS-Gen rules.

Operation is subject to the following two conditions:

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

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used on accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note:

This Class A digital device apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

FCC Warning:

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

FCC Radiation Exposure Statement

Caution:

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 to 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. The XIT-100-BW has been tested and found to comply with FCC radiation exposure limits set forth for an uncontrolled equipment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65. The maximum SAR levels tested for the XIT-100-BW has been show to be 0.6101 W/kg at Body.

Co-location:

This Hand-held Terminal (XIT-100-BW) must not be co-located or operated in conjunction with any other antenna or transmitter.

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Introduction

Thank you very much for purchasing a XIT-100-BW Wireless Hand-held Terminal.
This user's manual explains about the hardware and the System program of the XIT-100-BW.
We hope the XIT-100-BW will improve efficiency of your business.

Enclosed items

- XIT-100-BW 1
 - Battery pack(HBC-51) 1
 - Hand Strap..... 1
 - Manual CD-ROM(GID-001)..... *
- * Attached in exclusive package.

Optional Extras

- Dust protection cover(DC-001)
- Anti-shock cover(DC-002)
- Access point(AP-4131)
- Single Charger(QC-001)
- Multi Charger(QC-002)
- BluePorter(WLF-001) - Bluetooth file transferring utility.
- WebGlider-X(WBG-001) - Integrated middleware package for web applications.
- Handy 5250(HTN-5250A) - 5250 Emulator for handy terminals.

Notational Information

	Indicates a note you can refer to.
	Indicates a caution.
"XIT-100-BW" "Terminal"	Wireless LAN Terminal, Wireless Hand-held Terminal XIT-100-BW.
Access point	The wireless communication interface to allow data to be sent between the XIT-100-BW and a PC connected to an Ethernet communicating via TCP/IP. Please use our recommended equipment based on the IEEE802.11b WLAN standard.
WLAN	Wireless LAN
System Program	The OS stored in the XIT-100-BW.
System Menu	A function of the system program.
WebGlider-X browser	The browser operates as an application of the terminal when web based system is configured by using "WebGlider-X".
WebGlider-X	"WebGlider-X" is an integrated middleware package for web applications (WBG-001). Please purchase separately if needed.
BluePorter	Utility software for executing file Transfer using Bluetooth communication between the PC and the terminal. Please purchase separately if needed.
F Drive	The storage area for storing application, database, and master files. etc. The application data downloaded from the host computer will be stored in F drive.
S Drive	Used for the storage area to store a temporary file during the application is running.
Battery pack	"HBC-51"
Backup battery	The battery to perform a temporary saving the built in clock data and files when the battery pack is removed or the power becomes short.
Scan key	Used when scanning a barcode.
Local device	Bluetooth device during operation is running. When the XIT-100-BW is in operation, "Local device" means the XIT-100-BW.
Remote device	Bluetooth device to which the local device is connected.
Default device	The Bluetooth device setup as default among the registered Remote device list in the System Menu. In the System Menu always this default device is connected to.

Manual Contents

- Chapter 1 Hardware

Explains the standard handling, specifications and operation methods of the XIT-100-BW.

- Chapter 2 Software

Explains an outline of the software installed, and related to the XIT-100-BW.

- Chapter 3 System menu

Explains the System Menu setup and Operation Method.

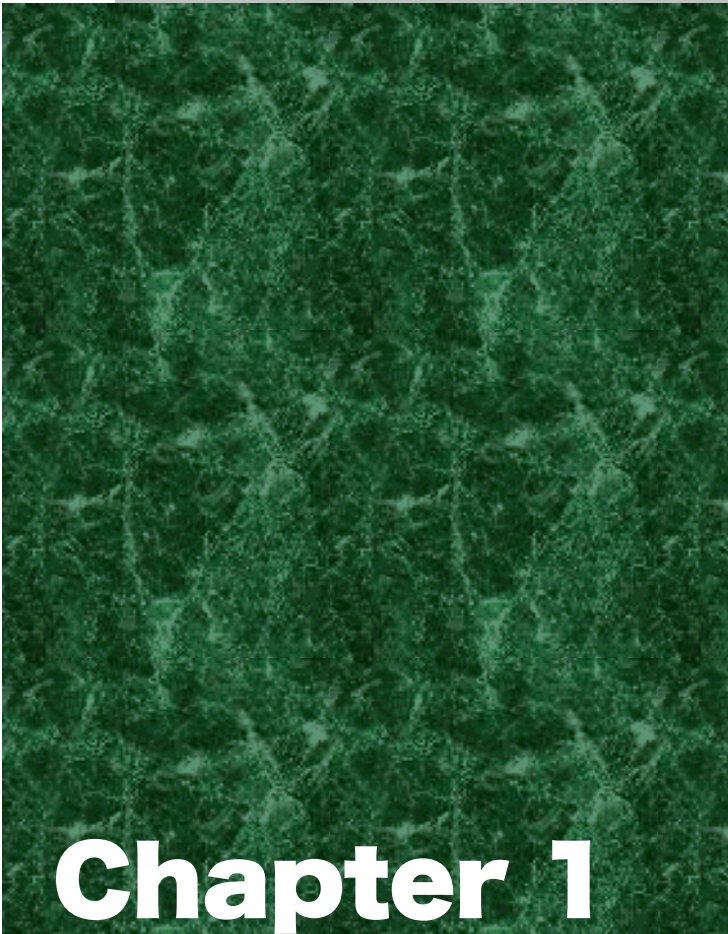
- Chapter 4 FAQ (Frequently Asked Questions)

Questions and troubles frequently asked, and the items required for resolving them, reference pages of this manual are also commented.

- Appendix. A System Menu Factory Settings List

- Appendix. B Sample Barcode

- Index

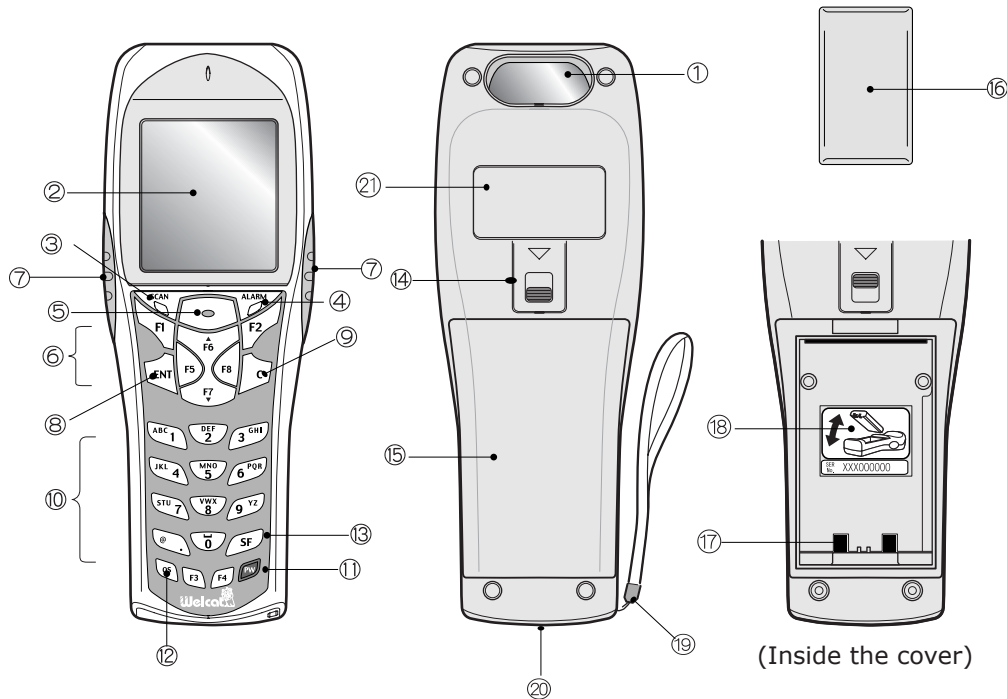


Chapter 1

Hardware



1-1 Part Names



1. Barcode window
The opening from where the Barcode is read. As the laser light is irradiated, be sure NOT to look into the window.
2. LCD (Liquid Crystal Display)
Data, characters and images are displayed on the LCD.
3. SCAN LED (LED Indicator)
If a barcode is read correctly, the light will turn green.
While the battery is being charged, the light will turn ON red. When the battery charging is completed, it will turn ON green.
4. ALARM LED
Shows the status of Wireless Communications. Shows the status of wireless communication between the access point and the status of EAP authentication. (P.1-12).
5. Scan Key
Press this key to read a Barcode.
6. Function Keys(F1toF8)
Used for changing functions and cursor operation.
7. F9 key, F10 key
Used for changing functions and cursor operation. Leftward by F9 key, Rightward by F10 key, when using this key to scan a barcode, support by the software is required.
8. **ENT** key (Enter Key)
Press this key to confirm and to execute the entered data or operation.
9. **C** key (Cancellation Key)
Used to return to the previous screen, or deleted all the characters entered.
10. Numeric Keys (0to9, *, #)
Used to input assigned numeric, characters, or, select the corresponding item in the Menu.
11. **PW** key (Power Switch)

12. ⌫key (back space key)
Deletes the last character entered.
13. ⇧key (Shift key).
Used to switch to the character input mode, or special functions can be accessed by pressing this key together with other keys.
14. Battery Cover Lock Lever
Move the lever to the direction of an arrow to lock. Be sure to keep it locked when using it.
15. Battery Cover
Always attach the battery cover while in use.
16. Battery Pack
After purchasing, be sure to charge the battery pack before you use. Be careful not to have the Charging terminal jack attached with dust or dirt. When dust or dirt is attached, remove it with a swab etc.
17. Charging jack
Be careful not to have the Charging terminal jack attached with dust or dirt. When dust or dirt is attached, remove it with a swab etc.
18. Serial number seal
The seal is attached that carries serial number and a description about the direction to which remove/install the battery pack.
19. Hand Strap
20. Speaker Hole
21. Product plate
Product name, manufacturer and the laser alarm etc. are described.

1-2 Preparation before Use

Please carry out following preparations before using the XIT-100-BW

- **Battery Pack HBC-51**

The battery pack is required in order to use the XIT-100-BW. The battery pack should be charged before use, attached correctly and locked with the battery cover.

- **Isn't the barcode window dirty?**

If the barcode window is dirty, a barcode cannot be scanned correctly. When dirty, please wipe lightly with a soft cloth etc.

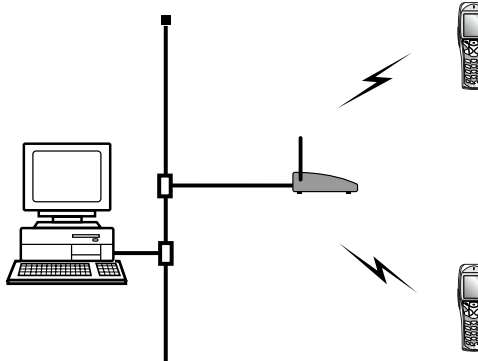
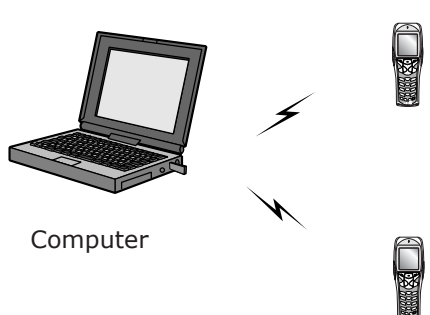
- **Isn't charging terminal dirty?**

If the charging terminal is covered with dust or dirt, charging error or failure may occur. When dirty, please remove the dust or dirt by using a swab etc.

1-2-1 Equipment Connections

Data entered can be transmitted from the XIT-100-BW to a host computer or the XIT-100-BW can receive data from a host computer.

The following are the Methods for connecting to a host computer. Preparations required depend on the application environment.

In the case of WLAN communication	P.1-8
The XIT-100-BW communicates via wireless LAN communication to a host computer through an access point, which is connected to the Ethernet LAN. ■ Purchased Separately Access Point (our recommended product) Ethernet cables, HUB For details about setting up a wireless network, refer to the Access point Manual and the document.	
In the case of Bluetooth communication	P.1-9
The XIT-100-BW communicates via Bluetooth communication to a host computer through USB adapter, which is connected to the USB port of the host computer. ■ Purchased Separately Transfer Utility "BluePorter" (Bluetooth USB adapter is included.)	

1-2-2 Additional Software

In the case where you want to create a system for data communication between the XIT-100-BW and a host computer or build a system using theXIT-100-BW browser, the following software is required.

For details of the System configuration, please refer to the online Manual attached to respective software.

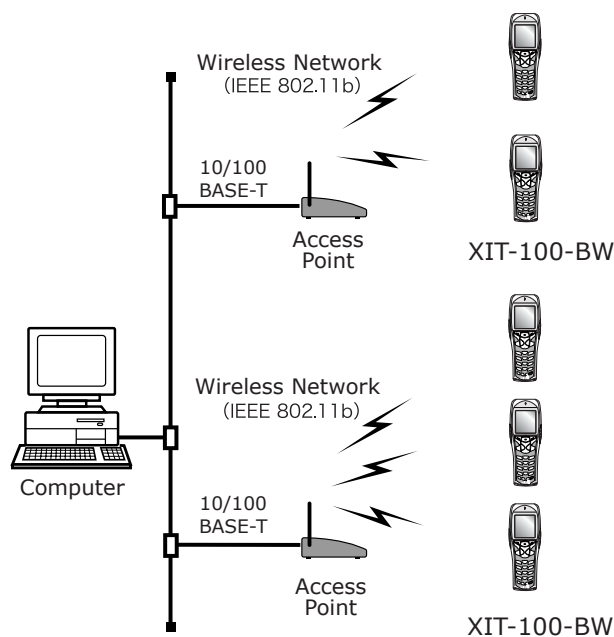
Software name	Preparation/Use
Web based integrated middleware package WebGlider-X	The WebGlider-X software is required when building a Web based wireless system using the WebGlider-X Browser. Please install the "WebGlider-X" package on a computer and setup the communication environment, before performing data communication between the computer and the "WebGlider-X" browser.
5250 Emulator for handy terminal Handy5250	The Handy 5250 software is required when creating a system to connect to an AS/400 host via the 5250 emulation environment. Please purchase separately if needed. Before using, install the Handy 5250 setup utility, which will allow the setup of the communication environment.
Transfer utility Blue Porter	The Blue Porter is utility software to perform File Transfer for Bluetooth communication. Please purchase separately if needed. Before using, installing the driver software and the Bluetooth USB adapter setups are required.

1-3 Wireless Communications

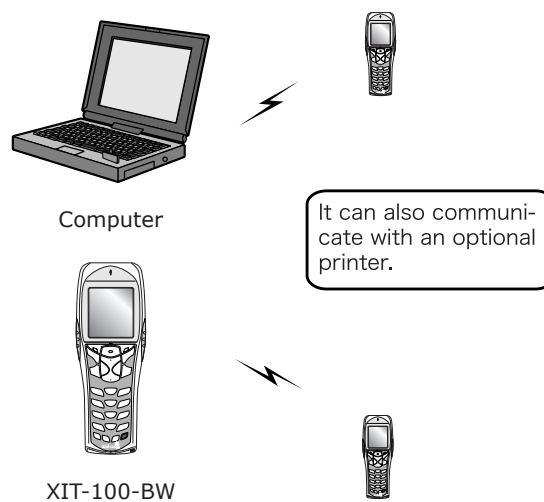
■ Wireless function of the XIT-100-BW

The XIT-100-BW is a handy terminal network system incorporating a wireless communication system. The Barcode terminal is small, lightweight and excels in portability. It is also suitable for moving around the work place, operating remotely from the computer while collecting Barcode data.

The XIT-100-BW 's wireless communication system is based on WLAN and Bluetooth methods. WLAN conforms to the WLAN standard, IEEE802.11b. The maximum possible wireless transmission speed is approximately 11Mbps, enabling the indoor wireless communication up to 75m distance. Bluetooth conforms to the Bluetooth Specification ver1.1, enabling up to 10m communications. Transmission and reception of scanned Barcode data or files can be performed in real time through the wireless network.



Network example (WLAN communication)



Network example (Bluetooth communication)

■WLAN Communications

The wireless communication system is based on the IEEE802.11b standard, which is generally used in Wireless Local Area Networks (WLAN). In almost all cases, wireless communication can be performed if the access point used is based on the IEEE802.11b standard, however, please use our recommended product to perform a stable communication.



As for this product, only the infrastructure mode is supported. It does not support ad-hoc mode.

■The role of an access point

An access point provides a wireless service area to a terminal (XIT-100-BW) and acts as a local bridge, which performs packet transmission between the cabled LAN and wireless network.

Each terminal has a unique IP address, which allows direct Ethernet LAN connection through an access point. This allows TCP/IP communication between the computer and the terminal.



Please use our recommended access points. For information on manufactures and part numbers of the recommended access points, refer to our catalog or contact our sales department.

1-3-1 Preparations for Data Communication

For data communication between a computer and the XIT-100-BW, perform the following setup.

■WLAN communications

	Item	Description	Reference page
1.	SSID Setup	Set the SSID (or ESSID) of the XIT-100-BW to the same as that of the access point. XIT-100-BW includes an AP search function that will acquire and set up the SSID of an available access point.	P.3-22
2.	Security Setup	Make the security settings to the same as the access point.	P.3-24
3.	TCP/IP Setup	Set the TCP/IP address to allow communication with a computer via the Ethernet LAN.	P.3-33
4.	FTP Setup	Make the FTP settings to allow wireless file transfer. The FTP settings corresponds to the "WebGlider -X" FTP server or general FTP server settings.	P.3-36
5.	DHCP Setup	Make the DHCP settings when using the DHCP client function. This corresponds to the "WebGlider-X" DHCP server.	P.3-34
6.	DNS setting	Make the DNS settings in the case where the DNS is used for name resolution. Whether or not the DNS is used depends on the application.	P.3-39

Items mean:

Using the DHCP client function on the computer side (P.3-34), all configurations are performed at the same time. When you use the DHCP client function, "WebGlider-X" is required.



Since setting the "1. SSID Setup" and "2. Security Setup" using the DHCP client function creates a security weak point, please do not use this function whenever possible.

■Bluetooth communication

	Item	Description	Reference pages
1.	Terminal ID setup	ID number for Identification to each XIT-100-BW. "BluePorter" and "WebGlider-X" identifies the terminal using this ID.	P.3-55
2.	Bluetooth device setup	The setup of registrations to connect required for communication, and Security etc.	P.3-61

1-3-2 Data-Communication Method

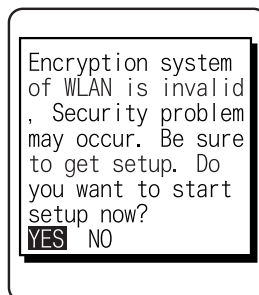
Once the equipment has been setup, data communication can be performed using the following procedures.

■In the case of WLAN communications

The procedure for performing WLAN communications is as follows.

Operational Procedure

1. Connect the access point to the Ethernet LAN, then setup the access point so that it can communicate with a host computer.
At this point, be sure to perform Security setup.
2. In order to enable the Security setup of 1. , Restart the access point. (Some access points do not require restarting.)
3. Turn ON the XIT-100-BW and setup the WLAN and TCP/IP from the System Menu. At this point, be sure to perform Security setup.
When the XIT-100-BW is started up without Security setup, the warning screen "NO WLAN Security " is displayed.



Though it is possible to make this warning screen being not displayed, this is not recommended for Security reason. Please set this screen if there is no special reason for not displaying it.

4. From System menu, set up TCP/IP. (P.3-33)
5. When setup is complete, first perform the Ping test toward the IP address of the access point, then toward the IP address of the computer.

6. Setup FTP to transmit and receive a file.
 - See P.3-51 for transmitting a file to a host computer from the XIT-100-BW.
 - See P.3-44 for receiving a file from a host computer to the XIT-100-BW.



In the case using the DHCP function (P.3-34), "WebGlider-X" is required separately.

■ In the case of Bluetooth communication

The procedure to perform Bluetooth communication is as follows.

Operational Procedure

1. Starting up the host computer in which "BluePorter" is installed.
2. Connect the Bluetooth USB adapter to the USB port of the computer.
3. Starting up the "BluePorter", and perform the setup required for transmission or reception of files.
4. Turn ON the XIT-100-BW, perform setup for connection and so on.
5. Perform transmission or reception file.
 - See P.3-51 for transmitting a file to a host computer from the XIT-100-BW.
 - See P.3-44 for receiving a file from a host computer to the XIT-100-BW.

1-4 Product Specifications

CPU		32 bit RISC CPU
OS		μITRON
Memory	ROM	16MB(including 12MB for file area) Download file has 6MB max .In case the extension is "wav" or "out", the download file has 5MB max.
	RAM	16MB(including 6MB for file area)
Scanner	Codes scanned	NW-7, CODE39, JAN-13/8(add-on: enabled), UPC-A/E, Industrial 2of5, ITF, CODE93, CODE128, EAN128, RSS-14 (Stack: enabled), RSS Limited, RSS Expanded ^{*1}
	Number digits scanned	MAX 74 digits (data digits)
	Scanning width	MAX 360mm
	Light source	Red light semiconductor laser
	Laser class	Class2 (JIS C 6802)
	MAX output	1mW
	Wavelength	650±10nm
	Scanning speed	100scanning/ seconds
	PCS	0.45 or more (reflectance space and margin: 70% or more)
	Resolution	0.127mm
LED	SCAN LED	Green / Red / Orange
	ALARM LED	Orange (which illuminates when out of range)
LCD	Display element	FSTN dot matrix
	Display size dots	132(W)×128(H)
	Display Characters (Kanji)	10 chracters×10 lines (12dot font) 8 chracters×8 lines (16dot font)
	Display Characters (Single-byte characters)	20 chracters×10 lines (12dot font) 16 chracters×8 lines (16dot font)
	Display area	38(W)×44(H) mm
	Display Characters	JIS level-1 kanji set, JIS level-2 kanji set, ANK, Symbols, external characters. (Wide, tall and quad characters are enabled)
	Contrast adjustment	8 levels
	Backlight	White LED (Luminosity adjustable)
Speaker		Beep sound, audio, play via speaker. At the time of scanning, various kinds of Error (can be specified by the user)
Vibrator		Vibrated at the time of scanning, various kinds of Error (can be specified by the user)
Key Input part	Keys	27
Size		58(W)×162(D)×40(H) mm Grip part 45 (W)×26(H) mm
Weight		Approximately 203g(battery pack included)
Cradle charging function		Enabled (However the environment during charging conforms to charger's temperature specification)

Power	Main Battery		Lithium-ion battery
	Backup Battery		Lithium-ion battery (Maintenance free)
Operating environment	Working temperature		-5 to 50°C
	Working humidity		20 to 80% (non condensing)
	Storage temperature		-10 to 60°C
	Storage humidity		10 to 90% (non condensing)
	Drip-proof / Dust-proof		IEC IP54
	Drop impact proof		1.5m (onto concrete)*2
	Illumination conditions		Artificial light up to 4,000lx Sunlight up to 80,000lx
Continuous operation time			Approximately 20 hours Setup conditions: scan once in 20 seconds WLAN transmission or reception
Clock function			Year (4 digits) Month/Date/Hour/Minute/Second With automatic leap year compensation, With timer function
Wireless part	Blue-tooth	Specification	Bluetooth Specification Ver1.1
		Communication Method	Spread spectrum (frequency hopping)
		Frequency	2.4GHz band
		Communication rate	MAX 921.6kbps
		Transmission power class	Class2
		Antenna	Built in the body
		Communication distance	MAX 10m
	WLAN	Standards	IEEE802.11b
		Communication Method	Spread spectrum (direct sequence)
		Frequency	2.4GHz band
		Antenna power output	Less than 10mW/MHz
		Transmission rate	11/5.5/2/1 Mbps (Switched automatically/fixed)
		Number of channels	11
		Security	SSID, WEP (40/128), PSK-TKIP, IEEE802.1X
		Antenna	Built in the body
		Transmission range	Indoors : MAX 75m, outdoors : MAX 200m
Management function			SNMP agent
Support MIB			MIB-II (RFC1213), Welcat Enterprise MIB

*1 a part of the specification RSS Expanded Stacked is not supported. About details please contact our sales department.

*2 test value, not guaranteed value.

■Display of ALARM LED during wireless communications

The state and meaning of the alarm LED during wireless communications are as follows.

LED state	Meaning
OFF	Communication with an access point is possible. Or no communication is currently taking place.
Blinking	Continuous blinking during EAP authentication (P.3-28)
ON	Communication with an access point has been attempted but synchronization with the access point cannot be achieved. When the barcode scanner goes out of sync with the access point, the LED will turn ON.

■SCAN LED Display during terminal charging

SCAN LED status and Meaning during terminal charging is as follows.

LED status	Meaning
Red ON	Performing terminal charging.
Green ON	Charging terminal has normally completed.
OFF	During terminal charging, an Error occurred.

1-5 Scanning Specifications

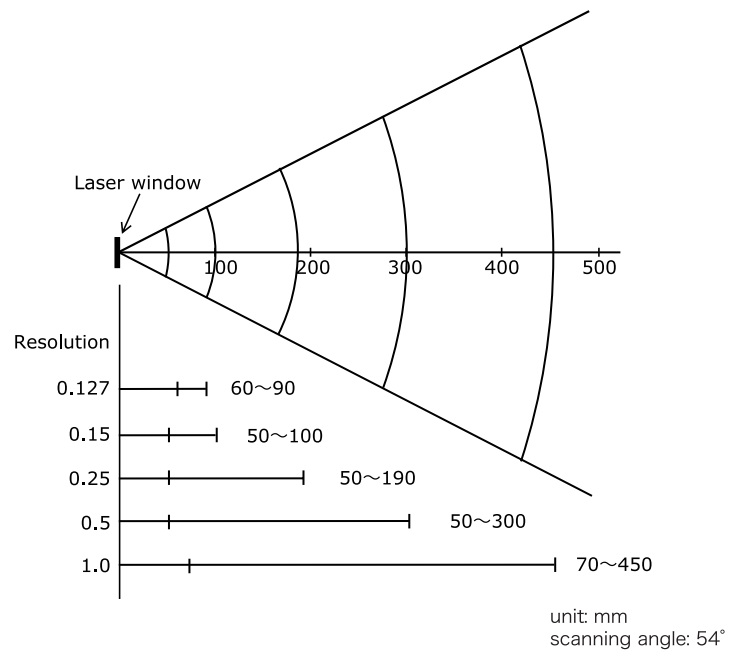
■ Laser light irradiation angle

The angle of the laser light irradiated from the XIT-100-BW is 54 degrees.

■ Scanning Depth

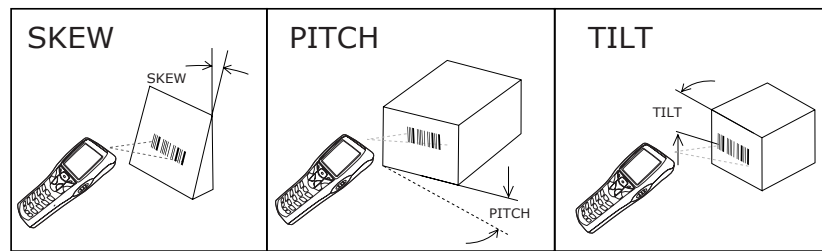
The range across which a Barcode can be scanned is called a "scanning depth."

The scanning depth for the XIT-100-BW is as shown in the figure below.



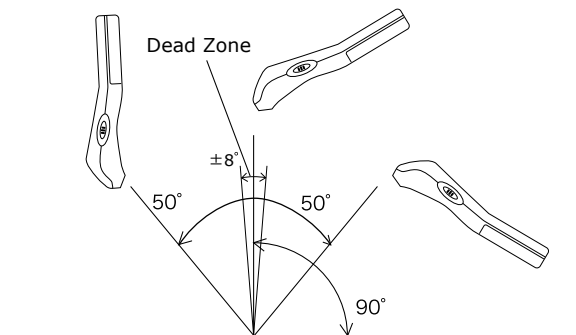
■ Inclination of a Barcode and the angle with which it can be read

The following are the three kinds of a Barcode inclination



- Skew

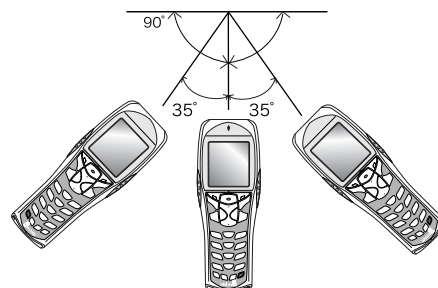
Scanning is possible up to 50° perpendicular to the upper and lower sides of a Barcode.



The range of $\pm 8^\circ$ around a vertical line from the front face of a Barcode is the "Dead Zone" caused by the specular reflection; scanning may become poor within this range. Change the angle if you cannot read the Barcode and scan it again.

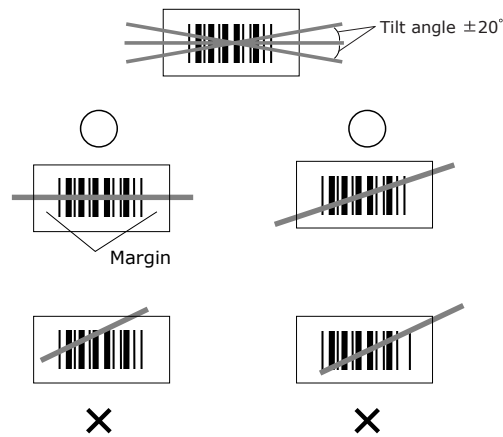
●Pitch

Scanning is possible up to 35° perpendicular to the right and left of a Barcode.



●Tilt

The Tilt is the angle with which the laser light irradiates the Barcode.



The laser light should always cross the whole label. Make sure it also irradiates the unfilled space (margin) to the right and left of the Barcode.



Measurement Condition is as follows.

- 110mm from the head of the Laser scanner module.
- Used label
At the time of measurement of pitch angle, skew angle, dead zone :
PCS=0.9, Resolution=0.25mm, 9 digits Code39, Narrow/Wide ratio=1:2.5, margin=10mm
At the time of measurement of tilt angle : PCS=0.9, Resolution=0.26mm, 13 digits JAN, margin=10mm

1-6 Charging specification

1-6-1 Charging the Battery Pack

XIT-100-BW allows charging with a battery pack installed on the terminal by using dedicated charger (QC-001/QC-002). Though the operation can be performed in this status, but be sure to avoid the key operation lest it may fall or cause poor contact with the charging terminal.

1-6-2 Charging Method using Single Charger (QC-001)

When the XIT-100-BW and the battery pack are set at the same time, the XIT-100-BW charging has a priority. After the XIT-100-BW charging completed, the battery pack charging starts.

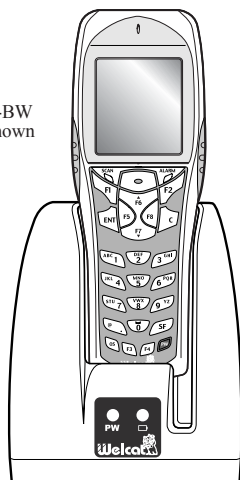
The chargers can be connected by using the joint enclosed in the Single Charger (QC-001). (Limited to single Charger). However carrying them as connected gives a large load on the joint fixed part, take care in handling. When more than four chargers are connected, please use the Multi Charger (QC-002).

■Charging with the battery pack attached to the XIT-100-BW

During charging, the SCAN LED on the XIT-100-BW will turn ON red, when charging completed turn ON green. Charging time is approximately 2.5 hours.

Take notes to the direction of the XIT-100-BW when set it on the charger.

Place the XIT-100-BW in the charger as shown below.



During charging	SCAN LED red turn ON,
Charging complete	SCAN LED green turn ON,
Charging Error	SCAN LED turn OFF,



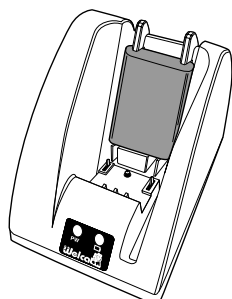
In case an error occurred during charging in the state of running on, the screen on the right will be displayed for 5 seconds, and then the power will turn OFF.

[Charge Alert]

Charge Error!!
Shutdown...

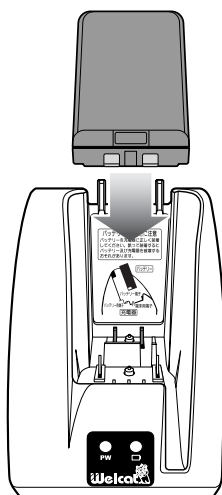
■Charging the Battery Pack alone

During charging, the Battery charging LED in the upper part of battery mark on the front of the charger turns ON red, while charging has completed it turns ON green. Charging will be completed in approximately 2.5 hours.



During Charging	Battery charging LED red turn ON
Charging complete	Battery charging LED green turn ON
Charging Error	Battery charging LED turn OFF,

Please take care for the direction of the battery pack when you set it on the charger.



Place the battery pack in the charger, as it should turn a label side to the back, and should set a electrodes downward.

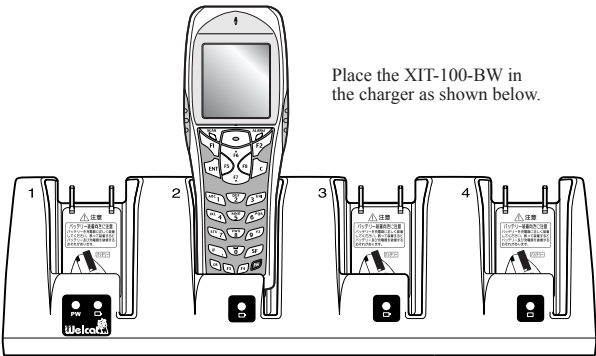
1-6-3 Charging Method using Multi Charger (QC-002)

The Multi Charger (QC-002) allows charging many batteries simultaneously. In the XIT-100-BW and the battery pack which are set in the same number as that of the Multi Charger, the XIT-100-BW charging has the priority; the battery pack charging starts automatically after the XIT-100-BW charging has completed.

■Charging the battery pack attached to the terminal.

During charging the SCAN LED on the XIT-100-BW terminal will turn ON red, when charging completes turn ON green. Charging time is approximately 2.5 hours. Take notes to the direction of the XIT-100-BW when set it on the charger.

During charging	SCAN LED red turn ON
Charging complete	SCAN LED green turn ON
Charging Error	SCAN LED turn OFF,



When error occurred during charging in the state of running on, the power will turn OFF displaying the screen on the right for 5 seconds.

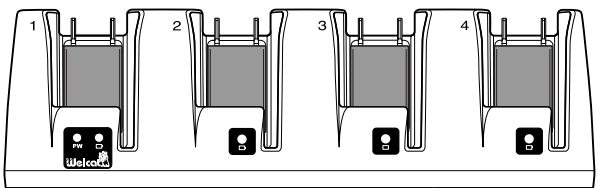
[Charge Alert]

Charge Error!!
Shutdown...

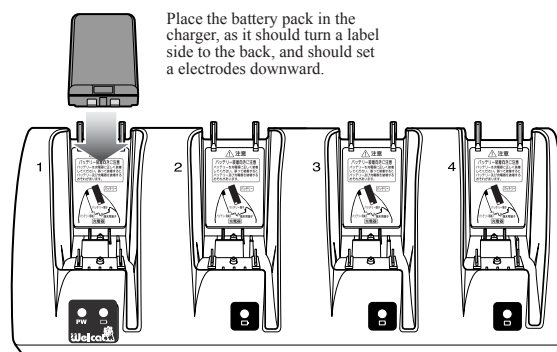
■Charging a battery pack alone

While charging, the LED on the upper part of the mark on each battery turns ON red, and when charging completes, it turns ON green. Charging time is approximately 2.5 hours.

During charging	Battery charging LED red turn ON
Charging complete	Battery charging LED green turn ON
Charging Error	Battery charging LED turn OFF,



When setting battery on the charger, please take notes to the direction of the battery pack.



When charging Error occurred, charge it again. If the error occurs repeatedly, remove the battery and contact our sales department. Take care not to use the battery that the error occurred.

1-7 Battery pack (HBC-51)

1-7-1 Charging the Battery Pack

Be sure to follow the precautions below when handling the battery pack.

- After purchasing, be sure to fully charge the battery pack before using.
- Be sure to shut off the power before removing the battery pack. If the battery pack is removed during operation, the data file in the S drive may be corrupted.
- Be sure not to touch the electrodes with your hand, and avoid dust on the electrodes. Otherwise this may cause poor contact with the battery pack and the XIT-100-BW.
- When dirty, wipe clean with a dry soft cloth.
- When installing and removing the battery pack, use a desk or other appropriate surface as the working table so that it cannot fall onto you feet.
- Be sure to attach the battery cover and lock it before use.

1-7-2 Installing and Removing a Battery

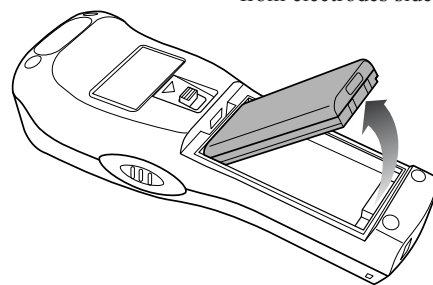
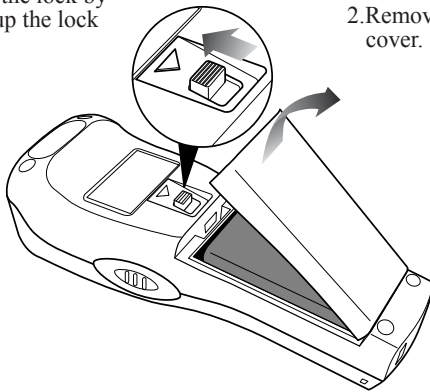
A packing material to protect the water immersion is attached to the Battery cover. When installing the Battery cover, please confirm if the dust or dirt NOT attached to the packing or the packing inserted correctly. If the dust or dirt is attached, wipe it softly with dry clean cloth.

■ Removing the Battery Pack

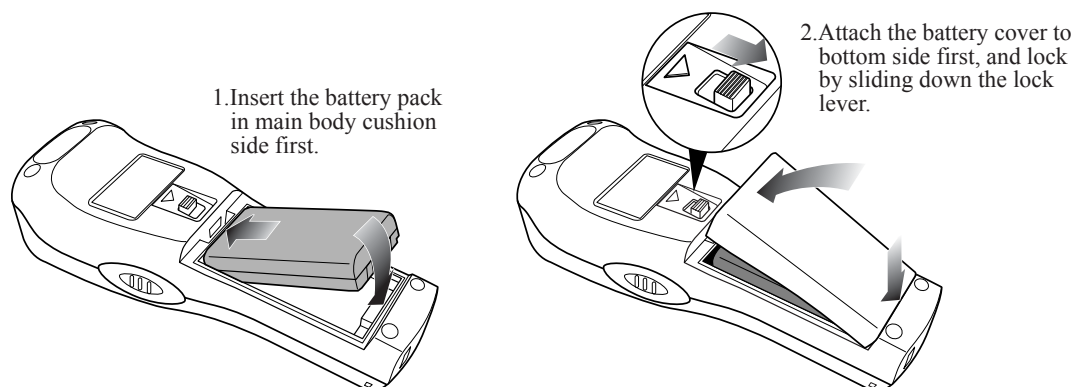
1. Release the lock by sliding up the lock lever.

2. Remove the battery cover.

3. Take out the battery pack from electrodes side.



■Installing the Battery Pack



1-7-3 Replacing the Worn out Battery Pack

A battery pack is an expendable item. Even if the battery pack is used correctly, it will deteriorate gradually in the course of being charged and discharged repeatedly.

If the usage time is becoming shorter even after charging for the specified charging time, please replace the existing battery pack with a new one.

1-7-4 Cautions about Cleaning of Electrodes

When the operational time has become shorter or it is having trouble starting, poor contact between electrodes because of dirt, may be the cause instead of a degrading battery. If this is the case, cleaning both the battery electrodes and the main body electrodes will improve this condition.

●Methods for cleaning the electrodes

Please wipe the dirty electrodes with a clean dry soft cloth, a swab, etc. Never rub the electrodes with an unclean cloth, fingers or a hard object. Wipe the electrodes lightly, especially the main body electrodes, else they may get scratched or deformed.

1-7-5 Charging the Backup Battery

This section describes the Method for charging the backup battery.

Operational Procedure

1. Put the XIT-100-BW (with no battery pack installed) and one fully charged battery pack at a handy place.
2. Install the XIT-100-BW with the battery pack. The charging process for the backup battery will then be started. If the Backup Battery has completely been discharged, do not remove the battery pack for at least two days after the start of the charging process.

1-8 Memory Backup Period (Battery for backup)

XIT-100-BW has two drive areas to store the file: F drive (Non-volatile) and S drive (Volatile). The application data download from host computer is stored in F drive, so the data won't be lost even if the battery pack has worn out. (Refer "2-1-1 Data Storage" "■Information about the data storage (drive configuration)" See P.2-2).

■Memory Back Up by battery pack

Battery	Battery pack
Use	The operation by XIT-100-BW
Charging time	Charging the battery by using a Dedicated charger, Approximately 2.5 hours to complete charging.
Backup Period	The data storage period with a full charged battery pack attached is as follows. The data in S drive and resume (suspended) information: Approximately 25 days
Notes in Use	When the battery pack is removed during operation, the data in the S drive and resume information will be lost. When temporary storage is performed, be sure to press the  key to power off, and then remove the battery pack. Refer to "1-10 Resume function"(P.1-25) for resume function. If such an operation as removing a battery pack each time the terminal is not used (the memory back up by the back up battery is applied), the backup period will get extremely shortened in approximately half a year. In this case, the replacement of the backup battery is necessary (paid) therefore please attach the battery pack except for changing the battery.

■Memory Back up by backup battery

Battery	Battery for Backup
Use	The Clock data built in XIT-100-BW is kept. In addition, The data in the S drive is saved only for a certain period while replacing batteries etc. When resume function setup is enabled, the resume information is stored.
Charging time	Approximately 2 days after fully charged battery pack is attached to the XIT-100-BW.
Backup period	Data storage period after removing the battery after Normal termination ^{*1} is as follows. • S drive data and resume information (when resume function is enabled): Approximately 15 hours • Built in clock data: Approximately 6 months Data storage period after terminating by Mothball Menu ^{*2} is as follows. • Built in clock data: Approximately 1 Year (with or without battery pack)
Notes in Use	For details of prolonged storage of the terminal, please refer to "1-9 Not use in long time" (P.1-24). The data lost due to the worn out of the battery for back up will not be restored. Be sure to save the data other than the temporary one in the F drive.

^{*1} Normal termination: The termination method after pressing the  key remove the battery pack.

^{*2} Termination by Mothball : The method to terminate to select mothball from the System menu.



The Memory backup time varies depending on the surrounding environment. For example, backup time will be drastically reduced in temperature below 0oC and over 40oC and more. It is recommended to use the battery at room temperature.

1-9 Not use in long time

■Not use in long time (the terminal)

If you do not use the terminal for a long period (more than 6 months), it is recommended to setup the terminal to Mothball, the power will soon turn off.

By Mothball setup, though the data in the S drive and resume information will disappear, the built in clock data will be kept, thus saving the consumption of the battery. About setup method, refer to "3-15-6 Mothball"(P.3-81) for the Setup method of Mothball.

■Not use in long time (the battery) for Battery

When you do not use the battery for an extended period of time, setup the terminal to Mothball and removing the battery to keep it in a cool spot charged about 50%. When you do not use it for one month or more, remove the battery pack and keep it at room temperature.

The battery may deteriorate rapidly by over discharging or under high temperature.

1-10 Resume function

The XIT-100-BW supports resume function, from System menu, setup, the behavior of the power on by the  key. For setup method, see "3-8-3 Resume (resume function)"(P.3-17).

Resume function enabled	After pressing  key to turn off the XIT-100-BW and start up with the  key, the processing resumes what was executed immediately before the power off.
Resume function disabled	After pressing  key to turn off the XIT-100-BW and start up with the  key, the processing always starts from the first stage.



Please be informed that when the battery pack is removed during the operation of the terminal, the program will be executed from the beginning regardless whether the resume function is enabled or disabled.



Please be informed that when the back up battery is consumed, the program will be executed from the beginning regardless whether the Resume function is enabled or disabled. With regard to charging the battery for backup, please refer to "1-7-5 Charging the Backup Battery"(P.1-21).

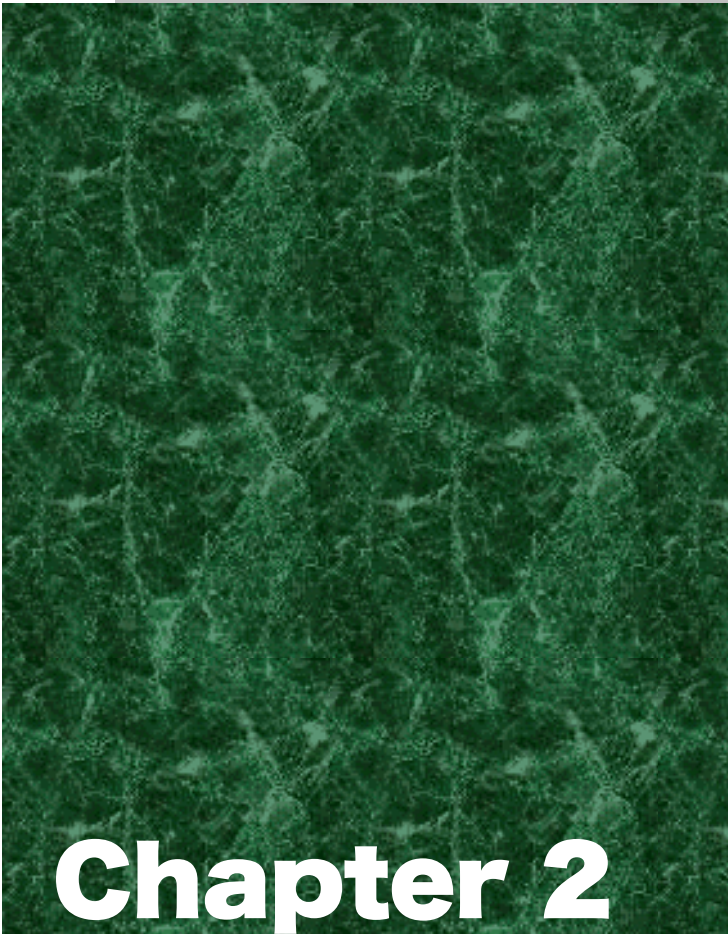
1-11 Screen Output Characters

■Welcat specific Double-byte characters

Shift-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)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	⒠	⒡	⒢	⒣	⒤		
f080	←	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	
f090	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	
f0a0																	
f0b0	L																
f0c0																	
f0d0																	
f0e0																	
f0f0	J _A	U _P	N _W	I _T	I _N	C ₃	C ₁₂₈	E ₁₂₈	M _R	M _X	W _P	I _N	C ₉				

■Single-byte characters

Upper Lower	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		⌌		0	@	P	‘	p	△		⌌	ー	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			ヲ	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		S
E	■	→	.	>	N	^	n	—			ヨ	セ	ホ	°		入
F	※	←	/	?	O	—	o				ツ	ソ	マ	°		力



Chapter 2

Software



2-1 XIT-100-BW Software

The XIT-100-BW Software consists of the following two types.

System program	Controls the basic operation of the XIT-100-BW. It is equivalent to an OS (operating system) of a personal computer, and is preinstalled in the XIT-100-BW. The System Menu, which sets the basic parameters for operation and performs various verifications, is a part of the system program.
Application program	Used for user operations processing. This program is mainly used for scanning Barcodes, data transmission to a computer, etc. If you purchase "WebGlider-X", you can easily combine it with the WebGlider-X Browser to build a Web based system. If you purchase "Handy5250", it allows you 5250 emulation and configures the handy terminal system with high reliability of AS/400 host computer.



Refer to "Chapter 3 System Menu" (P.3-2) for detailed information about the System Menu.

For information about "WebGlider-X," see the online manual included with the product package.

2-1-1 Data Storage

■Information about the data storage (drive configuration)

The XIT-100-BW has two drives for storing data. The S Drive and the F Drive.

Drive	Data Retention	Use	Maximum Capacity
F drive	●Non-volatile memory The contents of this drive will be retained after the backup battery is discharged.	Used to store all files, such as application, the database master files and normal data files, etc.	64 files
S drive	●Volatile Memory Once the battery pack is suddenly removed during operation or the backup battery is discharged the contents of the drive will be lost.	S Drive Used to store temporary files when an application is running on.	64 files

When the F Drive receives a file, the S Drive receives the file first then moves it to the F Drive.

In case where the F Drive receives a file, confirm that there is enough storage space on both the S Drive and F drive beforehand.

When receiving files if there is a file with identical name on the S drive, the old file will be erased.

■File Naming

The file names used by the XIT-100-BW are subject to the following restrictions.

File name length	A file name allowed to enter is up to 31byte long, including extension.
Characters that can be used.	Characters can be composed of as any combination of the following characters. • Alphabet(A to Z) • Numbers (0 to 9) • Symbols(!#%&'()@^_{}~.) • Single-byte space
Other restrictions	A space, or, "."(Period) is prohibited to use at the head of the file name.

■About extensions

The XIT-100-BW recognizes files through extensions.

".OUT"	Recognizes as an application.
".WAV" ".MP3" ".SFL"	Recognizes as audio data. Subject to format restrictions for the WAV file and MP3 file that can be played on XIT-100-BW. (P.3-47) SFL is a system original style text file. (P.3-47)
".BMP"	Recognizes as a Bitmap image. The bitmap file displayed on XIT-100-BW is subject to format restrictions. (P.3-47)

■The files generated by the system and application

A part of the System program and application program of the XIT-100-BW create a temporary file and a file to save the setup value. If these files could not be generated for such reasons that there are too many files, or no space in the drive etc., each program fails to work normally.

System program generates a registry file in the F drive to save the Setup value of the System menu. Four files are created in this case, however, this is a hidden file and not displayed in the System menu.

By using WebGLider-X browser following files are created in the S drive during HTTP communication.

Since a file with the same name is overwritten, be sure to use a different name than the following file names.

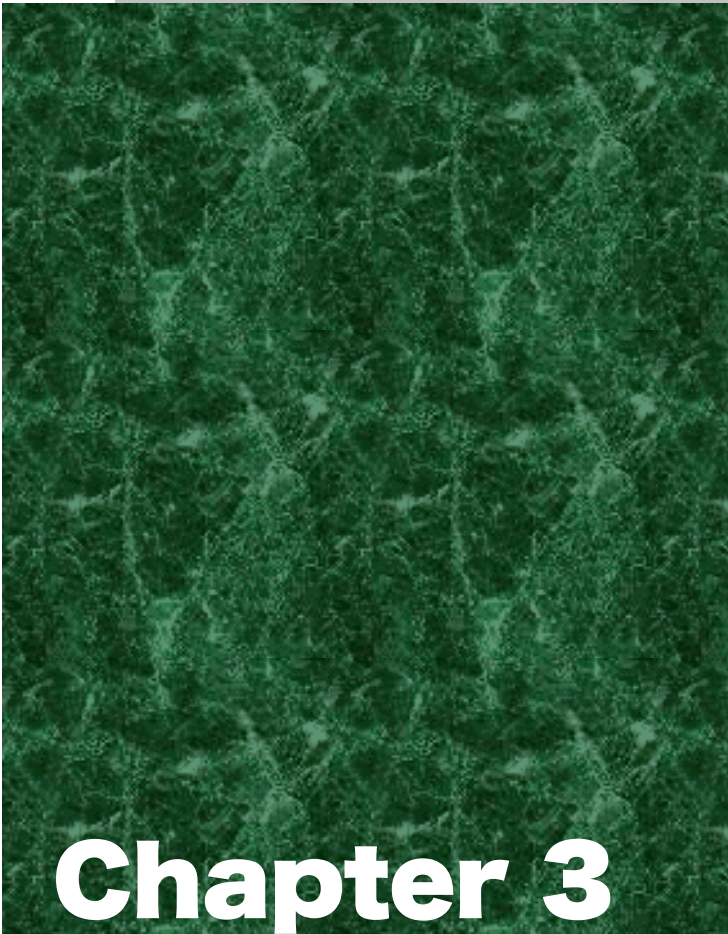
- HTTP.LOG
- HTTPTEMP (with no extension)
- HEADTEMP (with no extension)

When an application is programming, and SQLite Library is used, a temporary file will be created in the S drive during database operation. The file name will be created randomly to avoid overlapping with the existing file.

2-2 System menu

Through the System Menu, you can make the XIT-100-BW fundamental operation settings, install the application program and transmit data files, etc.

Refer to "Chapter 3 System Menu" (P.3-2) for details about the System Menu.

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Chapter 3

System menu

A small horizontal rectangular area with a green marbled texture, serving as a background for the section title.

3-1 Introduction

The System menu is a part of the system program, which is preinstalled in the XIT-100-BW as one of the functions that comprise the operating system. It also provides a platform for installing application programs and performing environmental setup for the whole system.

This chapter describes how to set up the XIT-100-BW and perform various verification checks, with primary focus on how to use the "System menu."

3-2 Save the System Parameter

3-2-1 Registry

The system parameters that are set up in the System menu are called "Registry".

In addition, as these registry files are not displayed in the System menu as these are hidden files. As the registry is saved in the F drive, it will be not erased even though the back up battery is worn out.

Registry is classified into five categories as below.

User Registry	General set up value. Most part of the items setup in the System menu creates the User Registry.
Security Registry	Security related setup value such as WEP key and SSID etc.
Unique Registry	Setup value unique to the terminal such as IP address and terminal ID, which generally does not overlap to the other terminals.
System Registry	Using a unique setup value used by the XIT-100-BW. The execution of Setup or reference from the System menu is not enabled.
Device Registry	This is the item such as Battery level or radio signal level that is to refer the parameter that changes in real time during the operation of the terminal. The setup value that belongs to this device registry can only be referred to, but unable to setup.

The four registries except for Device registry are saved in an independent file respectively. For this reason there are four files are always stored in the F drive of XIT-100-BW. As the registry is stored in the F drive, it will be not erased even if the battery is disconnected.

The Device registry is not saved in a file, as it varies according to the operation status of the terminal.

Please refer to "Appendix. A-1 System menu Factory Settings"(P.A-2) with regards to what menu the setup value belongs to.

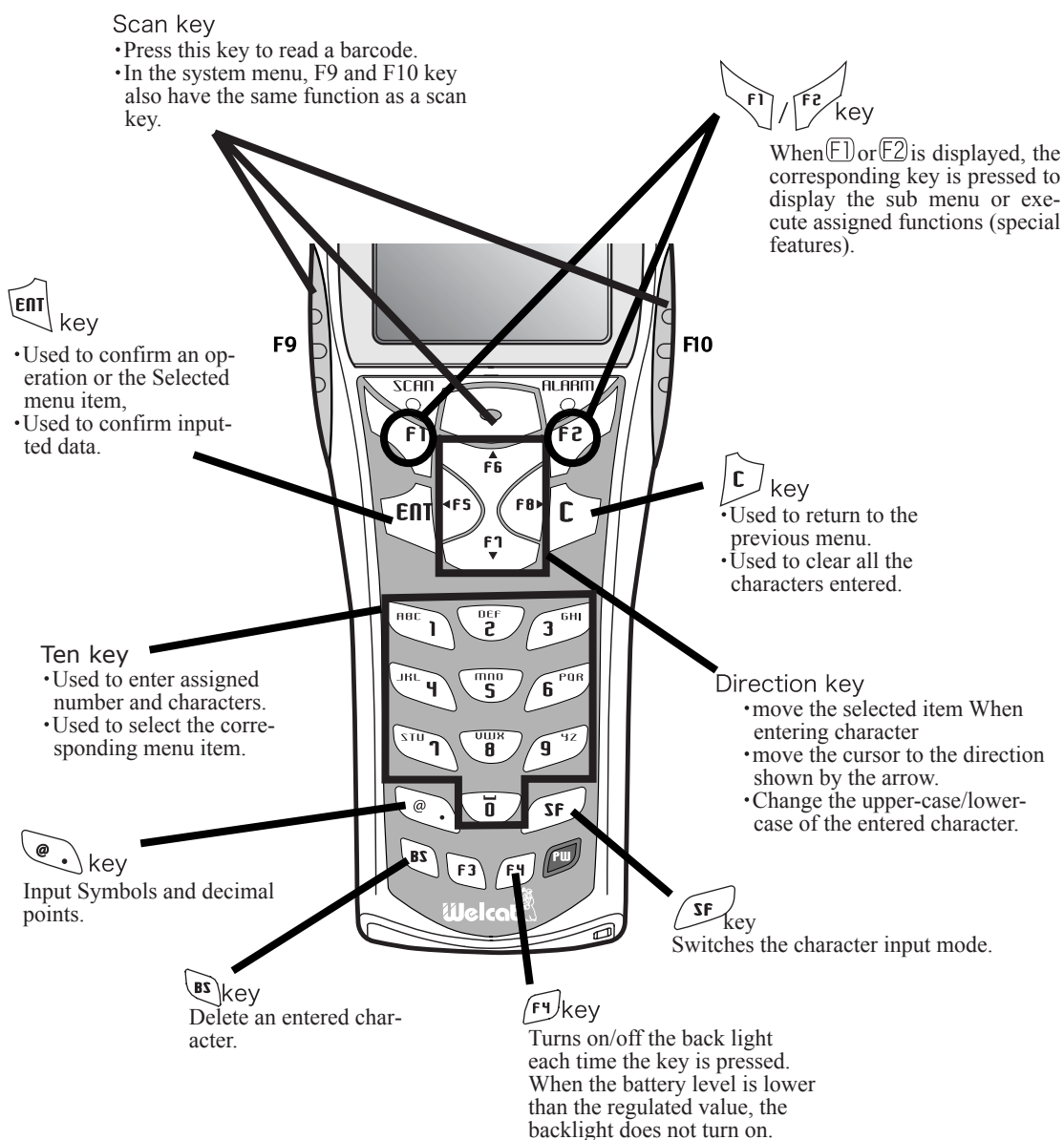
The Clone (P.3-77) allows the other terminal to copy the registry and duplicate the terminal with the same setup as that of the original.

By using "initialize" Menu (P.3-75), the registry will be erased, restoring the terminal to the status of Factory Setup.

3-3 Key Names and Functions

This Chapter explains about keys and functions used in the System menu.

In this Manual each key is described as follows.



■Assigned key character list

Key	Numeric input mode	Alphabet input mode
	1	ABC
	2	DEF
	3	GHI
	4	JKL
	5	MNO
	6	PQR
	7	STU
	8	VWX
	9	YZ
	0	␣(space)
	.	\$ - + / % : # @ &

3-4 System Menu Operations

Here explains the Standard Operation Method of the System menu.

■Select the target item from the menu

●Selecting a Menu Item

Selected item becomes **highlighted** (colors reversed= selected).

Move the cursor either by pressing $\odot$ to $\ominus$ key, which corresponds to the item, or, by using the direction ($\overleftarrow{\text{F5}}$ to $\overrightarrow{\text{F8}}$) key.

●confirm the selected item

Press the $\overrightarrow{\text{ENT}}$ key, and, confirm the selected item.

The behavior after confirmation differs according to the item.

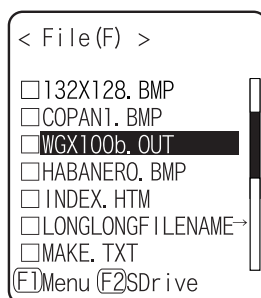
- Execute the corresponding function
- Show the decision [Yes] or [No] (check box)
- Next Menu is displayed.
- Sub menu is displayed.

●Cancel Selecting

Press the $\odot$ key, to return to the previous operation.

●Screen display

When the items in the Menu are not housed in a screen, the scroll bar for vertical direction is displayed on the right of the screen. In addition, when the item name exceeds 1 line, the tail of the item name is displayed being converted in "→"



■Input Barcode data

●Barcode Scanning

Press the scan key and irradiates the laser to scan a barcode.

The irradiation time of the laser and scanning behavior are set up with trigger mode. In addition, Barcode test menu is not subject to trigger mode.

●Barcode scanning condition

The Barcode that can be scanned in the data input mode is as follows.

NW-7, CODE39, JAN13/8, UPC-A/E, Industrial 2of5, ITF, CODE93, CODE128, RSS-14, RSS Limited

■Input by the key

●Switching the Character Input mode

XIT-100-BW allows inputting characters using numeric keys and  key.

The character allowed to enter is Numeric, Alphabet (upper-case/lower-case) and Symbols, changing input modes according to the character to enter.*¹

- "Numeric input mode"

Numeric and decimal point are allowed to enter.

- "Alphabet input mode"

Alphabet (upper-case/lower-case) and Symbols are allowed to enter.

Each time the  key is pressed, the input mode changes.*¹

●Numeric input

Make the character input mode to numeric input mode(cursor:  (rectangle)).

Press  to  key, and input corresponding numeric. Press the  key, and input decimal point.

●Alphabet input

Make the character input mode to alphabet input mode(cursor:  (under bar)).

Press  to  key, and input the assigned alphabet.

When an assigned Alphabet on the same key is continuously entered, press the  key to move the cursor, and input the next alphabet.

Press the  /  key, and alphabet at the cursor position changes ;Upper-case character $\Leftrightarrow$ Lower-case character.*²

●Input the symbol

Make the character input mode to alphabet input mode(cursor:  (under bar)).

Press the  key, or  key, and input the assigned symbol.

When an assigned symbol on the same key is continuously entered, press the  key to move the cursor, and input the next symbol.

When the cursor is at the end of the entered data, press the  key, and a space is inserted to the right of the cursor.*²

●Confirm the entered data.

Press the  key.

●Delete the character*³

Press the  key, and delete the character at the cursor by 1 character.

Press the  key, and delete all characters.

●Cancel the input

In such an item that deleting characters is not allowed (refer to *³), press the  key, and stop the input immediately. In such an item that deleting characters is allowed, after deleting all characters entered and press the  key.

●Others

When the input characters are filled over the field length, the cursor returns to the top.

*¹ The item that the kind of characters allowed to enter is restricted (example:terminal ID is numeric only)cannot change the Input mode.

*² The Characters allowed to enter may be restricted according to the item.

*³ In the item of which format to enter is fixed(example:IP address) the character cannot be deleted. In this Manual the Input Format fixed items are shown with the icon in the right.



■Other operations

●Returning to the previous menu.

Press the **⏮** key.

●Check box operation

By applying or removing checks in the square box, making the item selected/not selected. Each time the **ENT** key is pressed, the status of Select /Not Select switches.

Each time the **ENT** key is pressed, [Yes]/[No] switches.

The check box is also applied when selecting many items at the same time.

●Radio button operation

The item the inside of the small circle is dotted shows that it is currently enabled.

Radio button is used to select one item from many items.

●Message box operation

When two buttons are displayed in the lower part of the box; [Yes]/[No] etc., press **①** or, **②** key, or select the button by using the direction (**F5** to **F8**) key (**Highlighted**), and then press the **ENT** key to confirm. Press the **⏮** key to select the right button.

In such a case with one button like "OK", press the **ENT** key or **⏮** key.

●Level meter operation.

Setup value adjustment by stages.

Move the slider Up and Down by **F6**/**F7** key. And then, press the **ENT** key to confirm the level value.

Press the **⏮** key to cancel setup.

●Turning ON/ OFF the backlight.

Each time by pressing the **F4** key, the backlight turns ON/ OFF. However in case the battery level is less than the regulated value, the backlight does not turn ON.

●Accessing to the Sub menu or function.

When **F1** or **F2** is displayed in the lower part of the screen, press the corresponding key to display the Sub menu or execute the function.

●Modifying the indicator when operating

The indicator (buzzer/audio/vibrator/LED) that works when operating allows itself to be modified to user's original setup. With regard to the modification Method, please refer to "■Indicator function"(P.3-69).

By modifying this setup users' are allowed to create their original indicator easily.

In addition, there are some operations that the indicator is not applied.

3-5 Battery Level

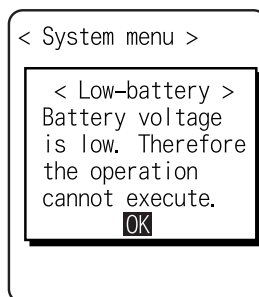
When the battery level of the battery pack lowered, operation is restricted or the power may turn OFF.

- Checking the current battery level

From the System menu, select "8:Manage", and then "1:Battery level".

- Restricted operation when the battery level is low.

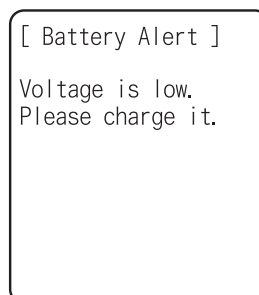
Some operations of the System menu are restricted, when the voltage level is less than the regulation level (the level differs according to the operation) at the time of execution.



In this Manual, the operation that will be restricted is shown with the icon.

- Battery Alert

The Display below and the buzzer inform the user of the battery shortage.



Approximately after 5 seconds, the power is forcibly turned OFF.

3-6 Starting the System Menu

3-6-1 How to Start the System menu

Operational Procedure

1. Once the XIT-100-BW has been correctly installed with a battery pack and if the current state is OFF, press the  key for approximately 1 second. The power will turn ON and the System menu will be started.
2. The System menu is displayed immediately after the opening screen.

```
< System menu >
1: System  6: ID
2: WLAN   7: Device
3: Network 8: Manage
4: Receive 9: Test
5: File
```

If an application is set for "Auto execute" (P.3-15), hold down the scan key (excluding F9 and F10), and then press the  key to start the System menu.

3-6-2 Executing a DHCP Request

If the "■Startup type"(P.3-35) is setup at [application boot], [System menu boot], the DHCP request will be executed every time of booting.

If the system is in the state where wireless communications with an access point is possible and if the DHCP server and FTP server of the "WebGlider-X" Network Manager have been started, the various environmental setting values and specified files will be downloaded to the XIT-100-BW and automatic setup will be performed via the TCP/IP network.

After the DHCP request has been executed, the applications set for "Auto execute" if any, will start. (P.3-15)

```
< DHCP client >
```

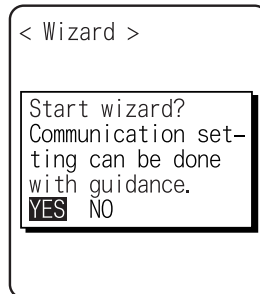
```
Connect to
DHCP server..
```

3-6-3 Starting State for Wireless LAN Operation

Immediately after starting, the XIT-100-BW's wireless LAN communication unit is set to a resumed state. If the wireless communications related menu is selected immediately after starting, the XIT-100-BW will be ready for communication within 0.5 to 1 second.

3-6-4 Executing Setup Wizard

At the initial startup of the terminal, the setup wizard is executed to perform the minimum setup of the request for communication between the terminal and the server.

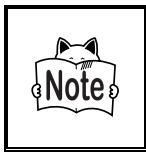


Select either [Yes] or [No].

Select [Yes], then the wizard will be executed to perform the setup of WLAN and TCP/IP.

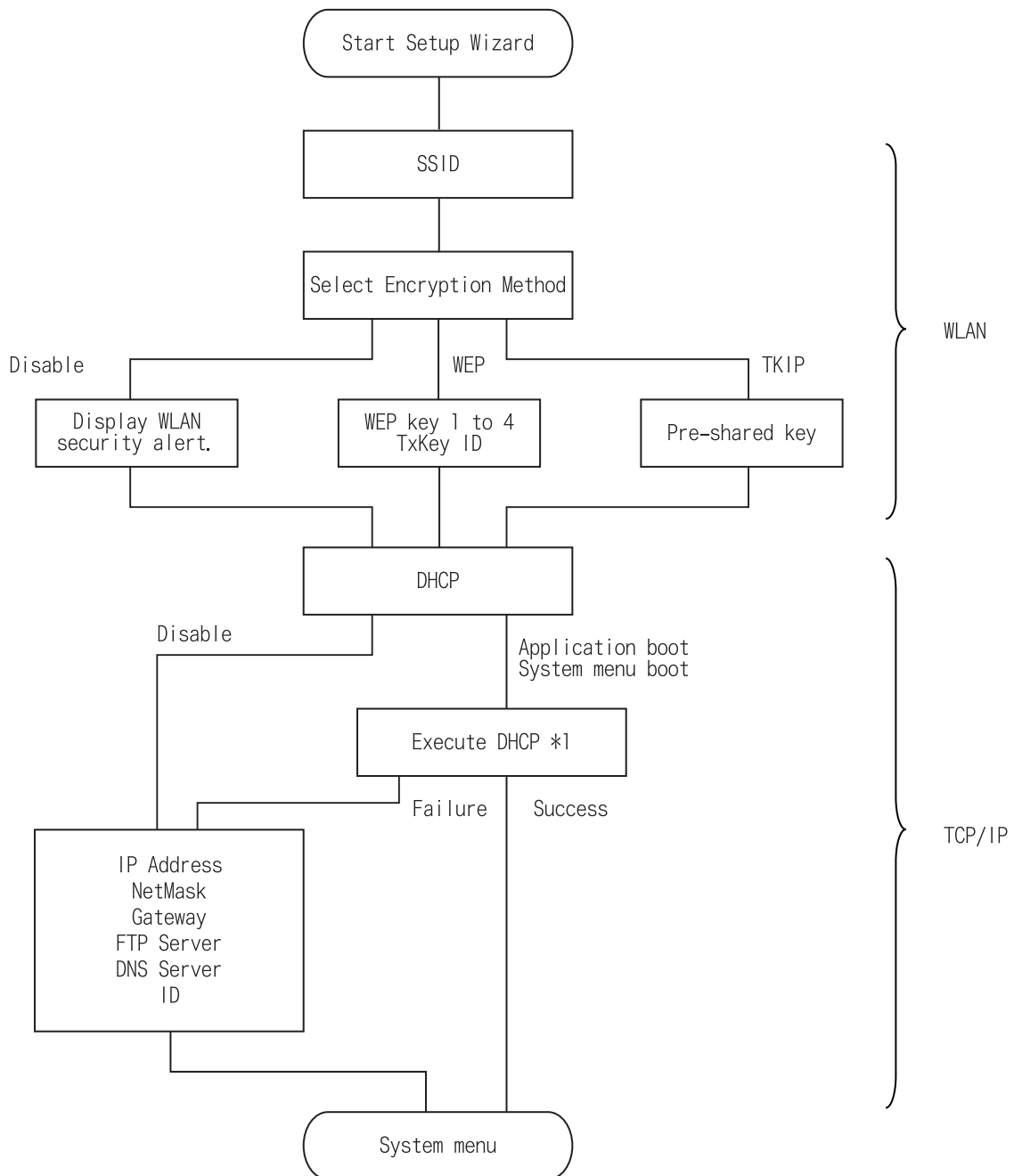
Select [No], then the System menu will start up.

When selecting [No] to skip the Setup Wizard, or, completing the setup to the last moment by executing Setup Wizard, the Setup Wizard will not startup from next time and after.



Each item to be entered in the Setup Wizard can be set up each by each in the System menu. In addition, Setup Wizard can be arbitrarily executed from the System menu (P.3-81).

With the Setup Wizard, each item is setup respectively according to the flow of the following Chart. The accompanying item differs by the branch of the selection.



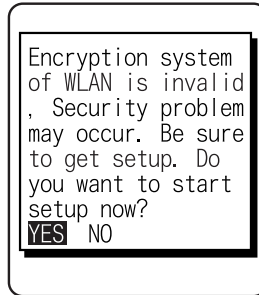
*1 This is only performed by Wizard Execute when starting up the terminal. When "Wizard Execute" is performed from the System menu (P.3-81). It returns to the System menu without executing DHCP.



WLAN authentication method is not allowed to setup by the wizard. Especially IEEE802.1X requires receiving the files such as Certificate etc., complicating the setup, please perform the setup manually.

3-6-5 WLAN Security Alert

When the WLAN Encryption Method is disabled, the dialog to alert the setup is displayed at the time of starting up.



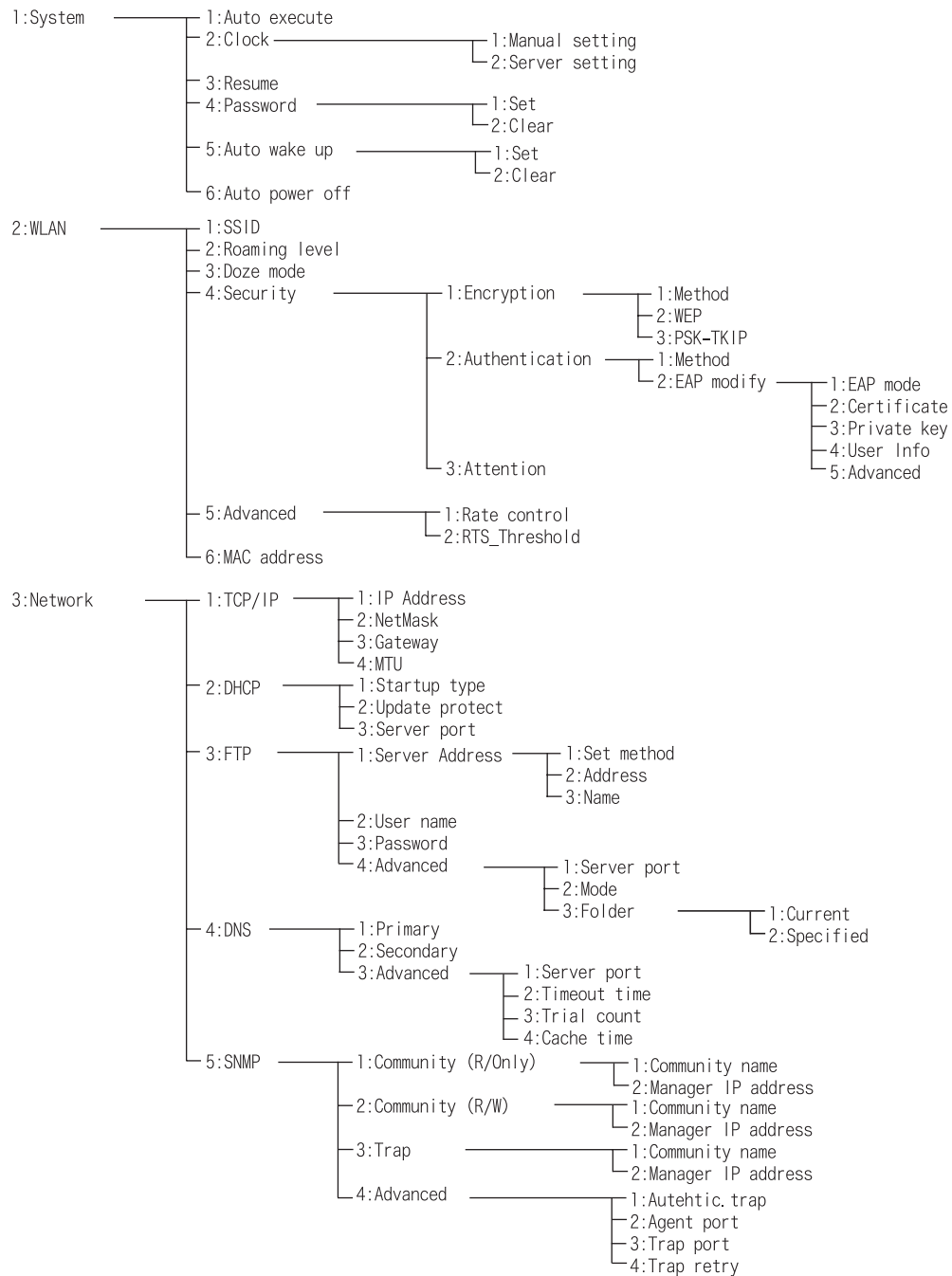
Select either from [Yes] or [No]

Select [Yes], moves to "2:WLAN". Select [No], System menu is displayed.

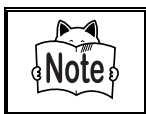
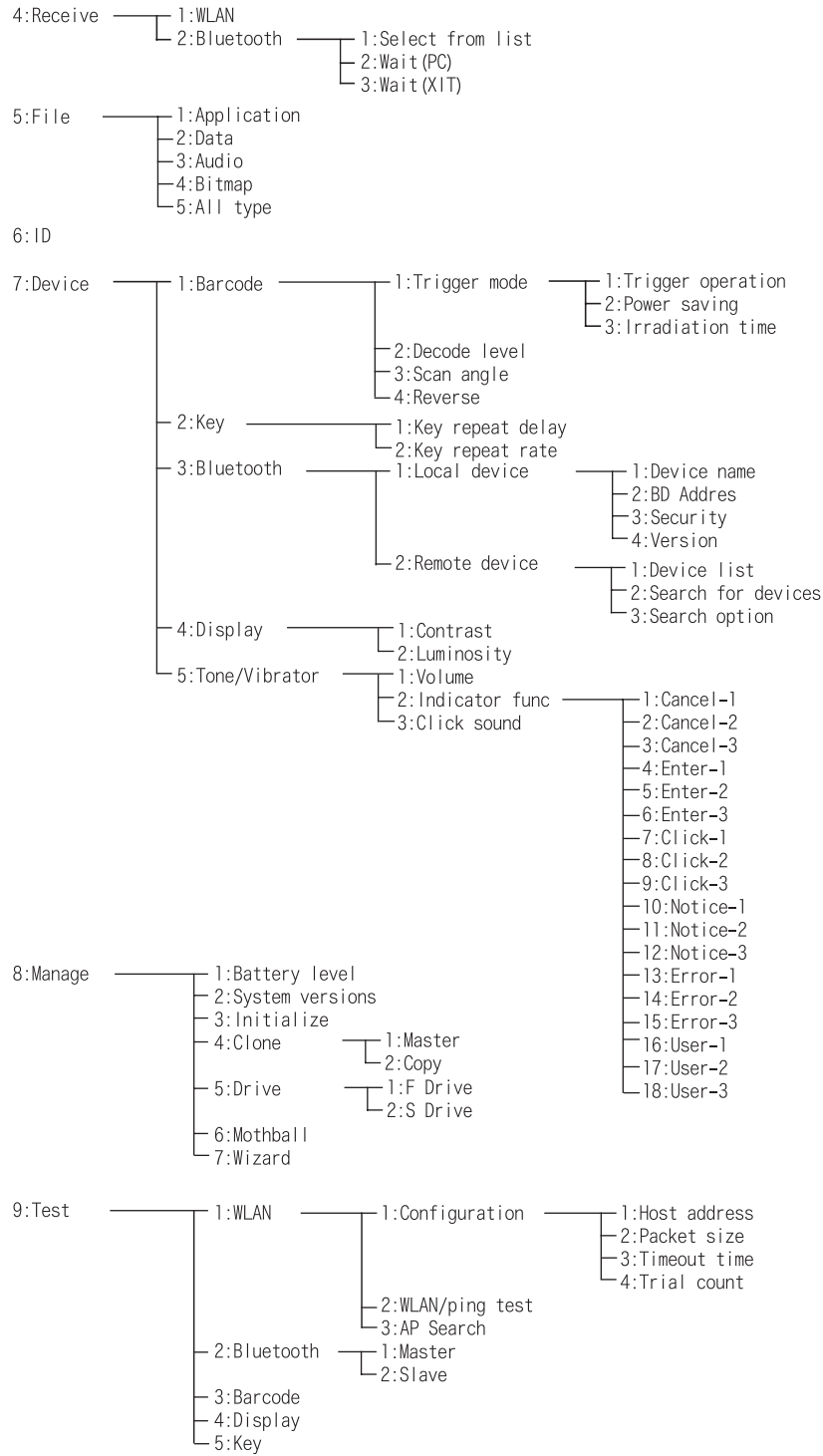
When the resume is enabled, this dialog is not displayed.

3-7 System Menu List

System menu is configured as a structural architecture that is classified for respective functions.



Chapter 3 System menu



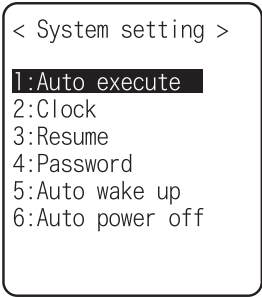
Please refer to the "System menu Factory Settings" (Appendix A-2) for information about the System menu factory settings.

3-8 System Setup Menu

The setup for convenient functions to facilitate your XIT-100-BW.

Operational Procedure

1. From System menu, select "1:System".



Select the item to setup.

- Auto execute
- Clock
- Resume
- Password
- Auto wake up
- Auto power off

3-8-1 Setting the programs for Automatic Launch

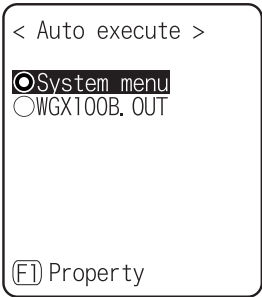
You can set programs to launch automatically when the power is turned ON. In the factory settings, the System menu is set to launch automatically. When the DHCP function is enabled, these settings can be made automatically.



In the case to have the DHCP function enabled, refer to the "WebGlider-X" Manual for details

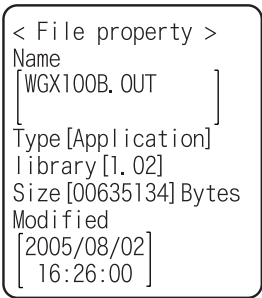
Operational Procedure

1. From the System Setting Menu, select "1:Auto execute".



From the list, select "System menu" or "application program".

The current program name is displayed with dotted radio button.



Press the **F1** key, and information related to the **Selected application program** is displayed.

Press the **C** key, and return to the previous Menu.

3-8-2 Clock

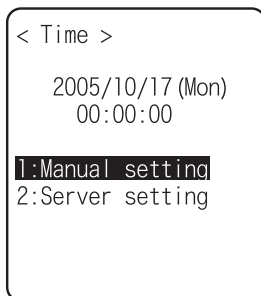
This function is to confirm the current time, and set up the time.

In addition to Manual Setup, setting up the clock via the "Server Setting" to adjust the time of the terminal to that of the host computer is possible, when the DHCP function is enabled.

■Current Time

Operational Procedure

1. From the System Setup Menu, select "2:Clock"



Current Time is displayed.

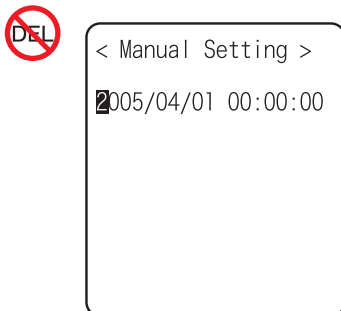
Select the item to setup.

- Manual setting
- Server setting

■Manual setting

Operational Procedure

1. Input the time data.



Press the  key, and confirm the time.

Press the  key to cancel setting and return to current time.

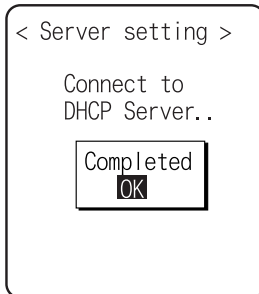
■Server setting

Server setting, confirm the following beforehand.

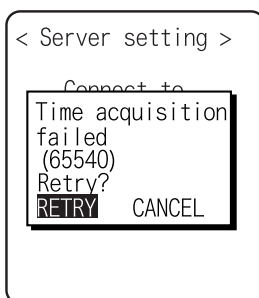
- WLAN communication setup(SSID, Security etc.) between the terminal and the access point is correctly setup.
- The power of the access point and the host computer is ON.
- The access point and the host computer is correctly setup and connected.
- The access point is normally operating.
- DHCP server of the "WebGlider-X" Network manager is running.

Operational Procedure

1. Receiving the time data from the DHCP of "WebGlider-X" Network Manager.



Press **[ENT]** key or **[C]** key to return to check the current time.



When receiving is failed, the screen on the left is displayed.

[Select RETRY], to receive the Time data from the server again.

Select [CANCEL], or Press the **[C]** key to cancel setup and return to Current time.

3-8-3 Resume (resume function)

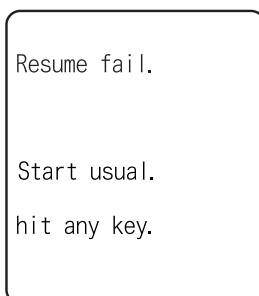
The XIT-100-BW supports a resume function. The resume function can be enabled through the System menu and if selected, the next time the key is pressed on the XIT-100-BW, the resume function will be used. Resume mode ON after the XIT-100-BW is powered OFF, the next time the key is pressed, it will resume operation where it was just before the power was turned OFF. For details of the resume function, please refer to the "1-10 Resume function"(P.1-25).

Operational Procedure

●Resume mode ON

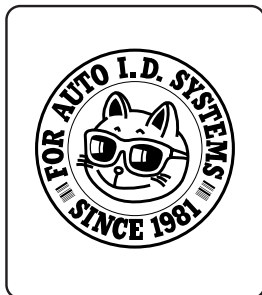
After the XIT100B is powered OFF, the next time the **[PW]** key is pressed, it will resume operation where it was just before the power was turned OFF. (Power ON, pressing the **[PW]** key while pressing the scan key to cancel resume mode)

●Resume Fail



Resume setup will fail when the power OFF by removing the battery and without pressing the **[PW]** key.

●Resume mode OFF



After the XIT-100-BW is powered OFF, the next time the  key is pressed, it will begin operation from the start.

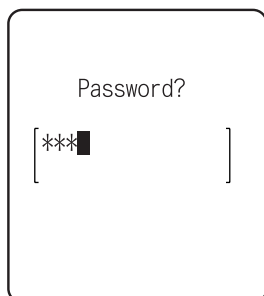
When the application is setup to " Auto Execute", the assigned application will startup.



In the case where the battery is disconnected while the power is ON, the operation will begin from the start regardless of the resume mode settings. In order to enable the resume function, turn ON/OFF the power by pressing the key.

3-8-4 Password

The password to avoid unnecessary running on of the System menu will be setup. By setting a password, the third person other than the system administrator unable to confirm or modify the setup contents.



In case a password is setup, the password confirmation will be performed at the time of starting up of the System menu. The System menu will not start up unless the password is entered.

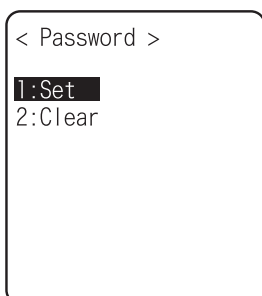
However, when the power OFF by pressing the  key, with resume function enabled, while System menu is displayed, the password check will not performed when the terminal will restart from the System menu.



Be sure to take notes of the encryption number, and keep it so that you may not forget it. In case you forget the number, please contact our sales department.

Operational Procedure

1. From the System setup, select "4:Password".



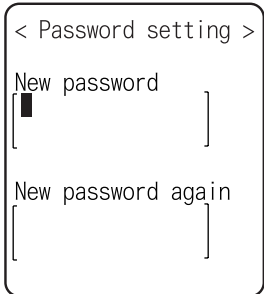
Select the item to setup.

- Set
- Clear

■ Password setting

Operational Procedure

1. Input a new password.

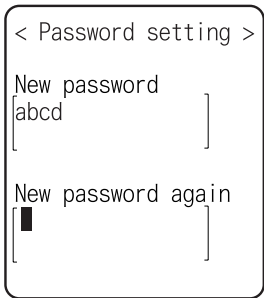


The screenshot shows a menu titled "< Password setting >". It contains two input fields: "New password" and "New password again". The "New password" field has a cursor at the beginning, and the "New password again" field is empty.

Password should be alphanumeric characters from 4 to 30, Upper-case character/Lower-case character are distinguished.

Input a new password, then, press the **ENT** key.

2. Input the password again.



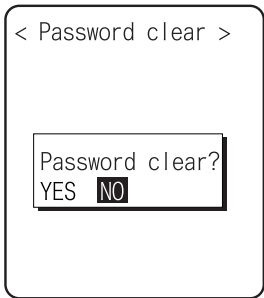
The screenshot shows the same menu as before, but the "New password" field now contains the text "abcd". The "New password again" field has a cursor at the beginning.

After the password is entered, confirm by pressing the **ENT** key.

■ Clearing a Password

Operational Procedure

1. From the confirmation dialog, select [Yes].



The screenshot shows a confirmation dialog titled "< Password clear >". It contains a box with the text "Password clear?" and two options: "YES" and "NO". The "YES" option is highlighted with a black background.

The setup password is erased.

Select [No], or press the **Ⓢ** key, and clear to stop.

3-8-5 Auto wake up

Auto wake up is a function to start up the terminal automatically according to the preset schedule. By combining Auto wake up and DHCP Execute running on, which allow the application and the master file automatically updated before starting operation.



Auto wake up function is enabled only when the terminal is closed by the  key. The terminal will not start up, even at the preset Auto wake up time, when after replacing the battery or forced termination due to a low battery.

■Schedule confirmation

Operational Procedure

1. From the System setup, select "5:Auto wake up".

```
< Present Schedule >
at 07:00
on Monday
every week.
1:Set
2:Clear
```

Currently setup schedule is displayed.

Select the item to setup.

- Set
- Clear

■Schedule setting

Operational Procedure

1. Select Schedule accrual cycle.

```
< Schedule setting >
Cycle [every day]
every week
every month
```

Selected from among every day (time is specified), every week (week and time are specified), and every month (date and time are specified). Date is set from "01" to "31", time for 24 hours style. When setting has completed, then return to Schedule confirmation.

Press the  key to stop setting and return to Schedule confirmation.



```
< Schedule setting >
Cycle [every month]
Date [01]
Time [01:00]
```

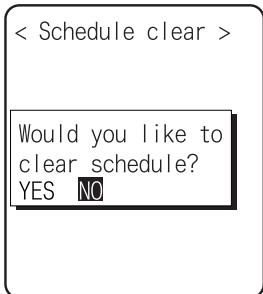
Input the time in 24 hour-style (00:00 to 23:59).

Thus complete the setup, and return to Schedule confirmation.

■Schedule Clearing

Operational Procedure

1. From the confirmation dialog, select[Yes].



The setup Schedule is erased.

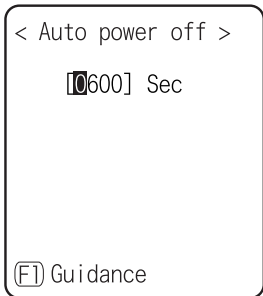
Select [No], or Press the **C** key to stop clearing.

3-8-6 Auto power off

Auto power off is a function to make the power OFF automatically when there is no operation performed for a certain period.

Operational Procedure

1. From the System setup, then select "6:Auto power off".



Input the Auto power off time.

The time allowed to setup is from 0060 seconds to 3600 seconds. In addition, when set to 0000 seconds, the Auto power off is disabled.

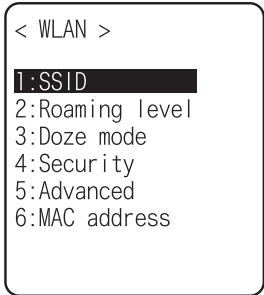
Press the **F1** key, and, setup value related guidance is displayed.

3-9 WLAN Menu

Wireless LAN related setup is performed.

Operational Procedure

1. From the System menu, select "2:WLAN".



Select the item to setup.

- SSID
- Roaming level
- Doze mode
- Security
- Advanced
- MAC address

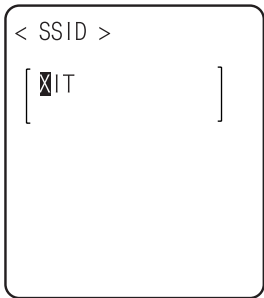
3-9-1 SSID

SSID setup. The characters allowed to enter are single-byte alphanumeric characters whose number should be up to 32, and Upper-case character/Lower-case character is distinguished.

When DHCP function is enabled, automatic setup is possible, but this is not recommended as security problems may occur.

Operational Procedure

1. From the WLAN, select "1:SSID".



Input the SSID.

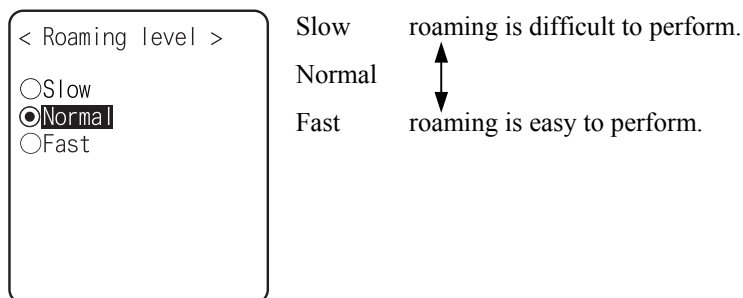
SSID should be in alphanumeric character up to 32 characters, and Upper-case character/Lower-case character distinguished.

3-9-2 Roaming level

Roaming means a function, which switches the access point by choosing the access point with stronger radio signal when the terminal moves. The roaming level created as the judgment value to judge whether to perform the switching. When DHCP function is enabled, automatic setting is possible. The roaming is performs only between the access points with identical SSID.

Operational Procedure

1. From the WLAN, select "2:Roaming level".



3-9-3 Doze mode

The time during which the WLAN switches into Doze mode after transmission finished.

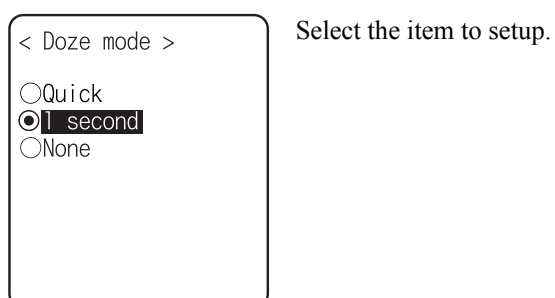
The shorter this time is the less consumption of the battery pack becomes, however, the responsiveness of WLAN decreases.

When DHCP function is enabled, automatic setting is also possible. The WLAN response time varies according to the beacon cycle and DTIM setting of the access point.

For details about the beacon and DTIM, please refer to the access point's Manual.

Operational Procedure

1. From the WLAN, select "3:Doze mode".



In the case to have the DHCP function enabled, please refer to the "WebGlider-X" Manual for details

3-9-4 Security

Security related setting of WLAN is performed.

Operational Procedure

1. From the WLAN menu, select "4:Security".

< Security >

- 1:Encryption
- 2:Authentication
- 3:Attention

Select the item to setup.

- Encryption
- Authentication
- Attention

■Encryption

Operational Procedure

1. Select the item to setup.

< Encryption >

- 1:Method
- 2:WEP
- 3:PSK-TKIP

- Method
- WEP
- PSK-TKIP

●Method

Operational Procedure

1. Select the item to setup.

< Method >

- ☒ Disabled
- ☐ WEP (40 bit)
- ☐ WEP (128bit)
- ☐ TKIP
- ☐ TKIP + WEP128bit
- ☐ TKIP + WEP40bit

Select the item to setup.



In the Authentication Method using "EAP"(P.3-28), communication cannot be performed when "Disabled", "WEP (40bit)" or "WEP (128bit)" is setup.

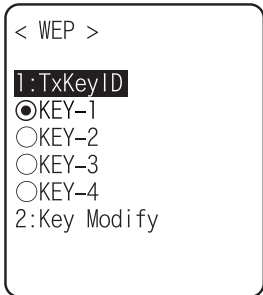
●WEP(Wired Equivalent Privacy)

Since IEEE802.11b is a general wireless standard, it may be easily intercepted by a third person. The danger of data being intercepted between an access point and a terminal (XIT-100-BW) is avoidable by using WEP, which is the standard of encryption of wireless communication.

XIT-100-BW is compliant with two kinds of WEP keys (common key), "40 bits (also called 64 bits)" and "128 bits."

Operational Procedure

1. Select the item to setup.



From the sub menu, select the item to setup.

• TxKey_ID

Select the ID used for transmission from KEY1- KEY4 set in the next paragraph " KEY setup." This becomes effective if the WEP settings are set to other than "Disabled."



Communication is possible only if the contents of both the WEP key of selected Tx KEY_ID and the access point WEP key are the same, and if the contents of both the Transmit KEY WEP key set on the access point and the terminal's WEP key are the same. For example, when the Tx KEY_ID of a terminal is set to "2," the contents of the terminal WEP key 2 and the contents of the access point WEP key 2 need to be the same. On the other hand, when an access point Transmit key is set to "3," the contents of the access point WEP key 3 and the contents of the terminal WEP key 3 need to be the same.

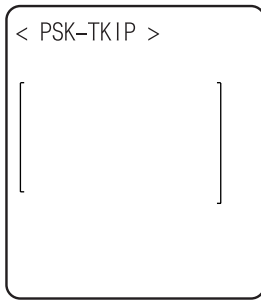
• KEY Setup

Setting the contents of each WEP key (1, 2, 3, 4). Characters which can be used are "0" - "9", "A" - "F" and "a" - "f." When a 40 bits is Selected for "WEP," the WEP is a fixed 10 characters. When 128 bits is Selected, it is a fixed 26 characters. The number of characters that are actually input is always 26. Therefore, when 40 bits is Selected, the first 10 characters of the 26 characters are applied. If a trigger key is pressed, the setup can be done by scanning a barcode.



Each WEP key setup can be overwritten but cannot be edited. On entering the KEY setup screen, it displays "00000." for security purposes.

●PSK-TKIP



When PSK-TKIP is selected by encryption method, input the Encryption key, and perform the same setup as that of the access point.

When setup is performed in ASCII Characters, input the characters from 8 to 63. When the set up is performed by 16-digit number, input up to 64 characters.

When using PSK-TKIP, set the Authentication Method (P.3-28) to "Open".

About TKIP function

XIT-100-BW stores "PSK-TKIP" as WLAN Security function.

■PSK-TKIP

•PSK

PSK means Pre-Shared Key. Before the wireless connection is performed between the access point and the terminal the keys of the same encryption key are setup.

This key should go under strict management to avoid being known by the third person. In this sense, the key setup in WEP is PSK.

•TKIP

TKIP (Temporal key Integrity Protocol) is a part of the Encryption Standard for IEEE802.11i wireless LAN using an temporary key. This is a strengthened function of WEP by using encryption algorithm RC4. The temporary key is not merely encrypted by RC4, but by performing Key mixed processing in two steps to execute encryption for each packet with different keys.

•PSK-TKIP

In this case, the PSK same as that of the access point is setup to the XIT-100-BW, and TKIP is used as Encryption Method. In PSK-TKIP Method, PSK is not directly made into the encryption key but by using random numbers for each cycles of connection between each access point and the terminal or by using random number periodically thus creating a temporary key. Due to this processing, some seconds delay occurs at wireless connection between the access point compared to "Disabled" or "WEP".

■TKIP setup

●Group Key(Broadcast/Multicast Key)

When TKIP is used as the encryption method of XIT-100-BW, the Broadcast /Multicast Packet transmitted from the access point to the entire wireless terminal, encryption is made in the manner of encryption key called Group. According to the Encryption Method of the Group Key setup at the access point (TKIP, WEP128bit, WEP40bit), the Group Key Encryption Method of XIT-100-BW should be setup. (Refer to "TKIP Encryption Method").

●TKIP Encryption Method

In the TKIP related Encryption Method of XIT-100-BW, there are "TKIP", "TKIP+WEP128bit" and "TKIP+WEP40bit". These setup are confirmed according to what is used as the Group Key. Being depend on the setup of the access point, please confirm the setup in line with the manual for the access point.

Encryption Method of XIT-100-BW is as follows.

- TKIP

Setup when the Group Key is TKIP. When one SSID setup is made at the access point, most of them are this setup.

- TKIP+WEP128bit

Setup when the Group Key is WEP128bit. Many SSID of the access point are setup, when WEP128bit is setup as the Group Key, the terminal is setup same as this setup (This is used when you want to mix it at the same access point same terminal running by WEP128bit).

- TKIP+WEP40bit

Setup when the Group Key is WEP40bit. When many SSID of the access point's setup, and WEP40bit is setup as a Group Key, the terminal is setup in this style (This is used if you want to use this in the terminal of the same access point running at WEP40bit).

■Authentication

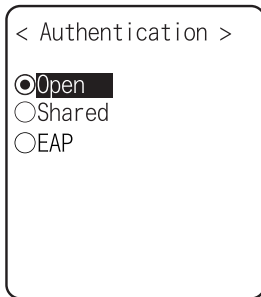
Operational Procedure

< Authentication >

1:Method
2:EAP modify

Select the item to setup.

●Method



- Open

"Open Authentication" system.

If an authentication request frame from a terminal (XIT-100-BW) is received, an access point will reply with an authentication response frame, which will permit data communications.

When WEP is valid, authentication is possible but data communications cannot be performed if both WEP keys do not match.

- Shared

"Shared Key Authentication" system.

If a terminal performs an authentication request, an access point will transmit a non-encrypted identity request authentication text character string (hereinafter called as "challenge code"). Then, the terminal replies a challenge code encrypted using the WEP key. The access point decrypts the challenge code via the WEP key and checks to see if it is the same as the transmitted challenge code and if the same, permits authentication.

- EAP

"EAP"(IEEE802.1X) Authentication system.

If this authentication method is used, Certificate, Private key, user information setting etc. is needed. There is a limitation also in the environment (Certification Authority (CA), authentication (RADIUS) server etc.) that can be used. Therefore, when using the "EAP" authentication method, please contact our sales department.



If the challenge code before and after encryption is intercepted by a third person, the WEP key is easily determined. The "Shared Key Authentication" system thus creates a security weak point and should not be used whenever possible.

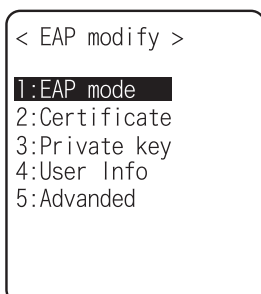


Some access points do not disclose their authentication type. In this case, please try "Open Authentication," and if connection is impossible, try "Shared Key Authentication."

●EAP setup

When using the EAP (IEEE802.1X) authentication, the required items are set.

After setup, perform the "wireless/ping test" (P.3-84), and confirm that the communication by EAP authentication is enabled.



Select the item to setup.

Operational Procedure

1. Select the mode.

• EAP-TLS

Server certificate for server authentication, and client certificate for client authentication are the necessary authentication method.

The necessary items for setting is as follows.

- CA root certificate
- Client certificate
- Private key
- User name

• EAP-PEAP-MSCHAPv2

Server certificate for server authentication, while user name, password for client authentication are the necessary authentication Method.

The necessary items for setting is as follows.

- CA root Certificate
- User name
- Password

2. Certificate file is setup.

Each certificate file is received via FTP (P.3-36) or Bluetooth (P.3-61).

• CA root certificate(file)

The CA root certificate issued by the server certificate agency required for server authentication. This does not support the layered chain of certificate. Press the **F1** key to clear.

• Client certificate(file)

Client certificate is necessary for client authentication. Press the **F1** key to clear.

Select from received files.

(Press the **F1** key to refer the file Properties.)

Press the **F1** key to clear the setup contents.

3. Private key setting.

Private key(file) is received via FTP (P.3-36), or Bluetooth (P.3-61).

• File

Private key is in contrast to the client Open key included in the client certificate. This private key is very important for security reason. Encryption should be made on the private key file, and manage so that the password is not known to the third person.

• Password

Single-byte alphanumeric characters from 0 to 31 characters
Upper-case character/Lower-case characters distinguished for setup.

For security purpose, the input password after entered is converted and displayed as the hidden character (*).

Select from the received files.

(Press the  key to refer the file properties.)

Press the  key to clear the setup contents.

4. Set up user information.

• User Name

User name is used for authentication.

From 62 single-byte alphanumeric characters, it is set by distinguishing Upper-case character/Lower-case character.

• Password

Password is used for authentication

From 0 to 31 single-byte alphanumeric characters, it is set by distinguishing Upper-case character/Lower-case character. For security purpose, the entered password is displayed being converted as a hidden character" *".

5. Setup the detail. This setup usually is not modified.

< EAP Advanced >

1:AuthenticationTime
[060]sec

- At starting up authentication Time out
When WLAN start up, it waits the authentication to complete up to the second setup here.
possible setup value :15 to 120 seconds

■Attention

< Attention >

☒Display
☐Not Display

The default is set to "Display".

In the case when the terminal is started up without WLAN security setting, "WLAN Security setting" attention screen is displayed. By setting this attention to OFF, this message is not displayed at starting up even when WLAN security setting is disabled.



It is not recommended to set this Attention to setting to OFF, for security reason. Be sure to perform security setting when using WLAN communication.

3-9-5 Advanced

WLAN communication Advanced setting

Operational Procedure

1. From the WLAN, select "5: Advanced".

< Advanced >

1:Rate control
[Auto]
2:RTS_Threshold
[2347] Bytes

Select the item to set.

●Rate control

Setup the transmission rate. When DHCP function (P.3-34) is used, the automatic setup is enabled. Select any from the following. In addition, in the far distance, the high-speed communication cannot be performed, if the transmission rate fixed with 5.5Mbps or more, the possible transmission area of the terminal becomes narrow.

- Auto
Automatically modified to a proper transmission speed according to the distance between the terminal and the access point.
- 1Mbps
Transmission speed is 1Mbps fixed.
- 2Mbps
Transmission speed is 2Mbps fixed.
- 1or2M
Transmission speed is automatically changed only at 1Mbps or 2Mbps.
- 5.5M
Transmission speed is 5.5Mbps fixed.
- 11M
Transmission speed is 11Mbps fixed.

●RTS Threshold

This determines whether an RTS packet is transmitted before transmission of a data packet. When the size of a data packet is larger than the set value, an RTS packet is transmitted, and RTS-CTS control is performed. When a large number of terminals are connected to the same access point, or terminals cannot detect each other because they are dispersed remotely even if detection of an access point is possible, RTS-CTS control becomes effective. Although RTS-CTS control is effective in this case, the throughput reduces. Usually set it to the default value (2347 bytes).

- Setting range : 0 to 2347 bytes

3-9-6 MAC address

MAC address (hardware unique address) is displayed. MAC address cannot be changed.

Operational Procedure

1. From the WLAN, select "6:MAC address".

< MAC address >

[00:10:C6:45:6B:6D]