

SA-4320 Handheld Terminal Instruction Manual

U00104848701

Read this manual carefully before using the device, use the device correctly, and keep this manual for future reference.



Caution

To reduce the risk of injury and damage to the device, read and understand the "Safety Precautions" in this manual.

SII Data Service Corp.

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Dispose of the device according to the regulations of your local government.

For details, consult your local government.

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, use 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.

WARNING

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

CAUTION

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End-users must follow the specific operating instructions for satisfying RF exposure compliance.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Introduction

This manual explains how to operate the SA-4320 Handheld Terminal (the “device”) and the Handheld Terminal operating system (the “Handheld Terminal OS”) that is operated with the device.

Read the “Safety Precautions” before using the device, use the device correctly and safely, and keep this manual for future reference.

This manual consists of seven chapters and appendices. The main contents are described below.

Chapter 1 Explains the device characteristics, components, and features. The system described here is composed of the SA-1320 Wireless Station (the “Wireless Station”) and the SA-2330 Wireless Repeater (the “Wireless Repeater”).

See relevant manuals for detailed instructions of components.

Chapter 2 Explains prohibited actions and precautions when using the device.

Chapter 3 Explains how to insert the battery pack, which is necessary when first using the device.

Chapter 4 Explains the functions of the device in terminal settings mode.

Chapter 5 Explains how to transfer application programs to the device.

Chapter 6 Describes solutions if an error occurs in the device.


Chapter 7 Explains the maintenance methods required to use the device in optimum conditions.

Appendices Describes device specifications, and the environmental conditions for using or storing the device.


Safety Precautions

Read the “Safety Precautions” before using the device, and use the device correctly and safely.

This manual uses the following symbols to describe precautions for the correct and safe use of the device, and to prevent damage to the equipment.



 : Precautions (including danger and warning).

 : Prohibited actions.

 : Forced actions or instructions.

Some of these symbols with graphics indicate specific precautions, prohibitions, and instructions as below.

Read carefully before continuing.

 Warning	Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 Caution	Caution: Indicates a potentially hazardous situation which, if not avoided, could result in injury, or damage to the equipment.

Examples of Symbols



“Do not disassemble”.



“Remove the power supply plug from the outlet”.

Warning



Never disassemble the device yourself.
This may result in malfunction, electric shock or fire.



Remove the battery pack immediately if the device emits abnormal smoke, smell, or the display suddenly disappears. Keep using the device under such conditions may cause fire.
Make sure that the device stopped smoking, and consult your local service center for repairs.

Caution



Use only the specified battery pack with the device.
Failure to do so may result in fire or injury due to battery pack damage or fluid leak.



Do not insert foreign objects, such as metals or liquids, into the open vents or cracks.
This may result in malfunction, electric shock or fire.
If a foreign object should enter the device, immediately remove the battery pack, and consult your local service center for repairs.



Do not use the device if it is malfunctioning.
This may result in electric shock or fire.

Follow all other warnings and precautions described in each section.

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Chapter 1 Overview

This chapter explains the device characteristics, components and features.

1.1 Characteristics

This device is a data input device used for Order Entry Systems. A network with the host computer and POS terminal using a Wireless Station enables a wide range of applications and advanced Order Entry System features.

The device has the following features:

(1) Excellent portability and operability

Compact design that fits in your pocket. The device is easy to carry and can be used anywhere and any time.

(2) Many display functions

A TFT color liquid crystal panel is built-in that enables a maximum of 256 colors to be displayed simultaneously. The display abilities are as follows: 15 columns x 20 rows of double-byte characters (16 x 16 dots), 30 columns x 20 rows of single-byte characters (8 x 16 dots), 10 columns x 13 rows of double-byte characters (24 x 24 dots), and 20 columns x 13 rows of single-byte characters (12 x 24 dots). Double-byte and single-byte characters can also be mixed.

(3) Wireless communications functions

This is a wireless facility that conforms to low-power data communications systems (RCR STD-33 and ARIB STD-T66).

This function enables the immediate transfer of data entered in the device to the Wireless Station.

(4) Built-in touchscreen

The device's built-in touchscreen offers excellent operability. Touch the display directly and select the required menu.

(5) Available in a wide range of environments

A connector is not required for communications between the device and the Wireless Station. The device is designed with excellent waterproof and dustproof properties.

(6) Built-in backlight

The built-in backlight with a luminosity adjustment function enables settings for optimum brightness from light to dark.

(7) Auto power OFF function

To minimize battery consumption, the device is designed to turn off automatically after certain period of time passes without any input. Press any key or touch the screen to turn it on again.

(8) Backup function

The built-in backup battery saves memory data when the battery pack is being replaced.

(9) Resume (auto recovery) function

Operations will be suspended if the battery pack voltage drops while the device is being used. Insert a charged battery for auto recovery.

(10) Uses the Linux operating system

The device uses the Linux OS as the operating system.

(11) Uses a battery pack

The device uses a rechargeable SA-4003-01 battery pack. The actual battery life depends on the application programs used and the use environment, but a fully-charged battery pack can be used for about 1 day. A dedicated SA-5320 charger is required for charging.

(12) Functions tailored to user purposes

The majority of device functions are determined by the application program, so the user can install the device functions suited to their purpose.

(13) Built-in 3-color LED

The built-in 3-color (green, red, and orange) LED on the upper surface of the device indicates status including wireless data transfer and errors.

(14) Replaceable sheet key unit

The device has a removable sheet key unit, which allocates menus in the device. The device can be operated with or without the sheet key unit.

The sheet key unit is a consumable. Replace the SA4004-00 sheet key unit if it malfunctions in order to continue using the device.

1.2 Device Components and Features

Fig. 1-1 shows view from the front, Fig. 1-2 shows view with the top cover open, and Fig. 1-3 shows view from the back. Fig. 1-4 shows the battery pack components and features, and Fig. 1-5 shows the sheet key unit components and features.



Fig. 1-1: Appearance 1

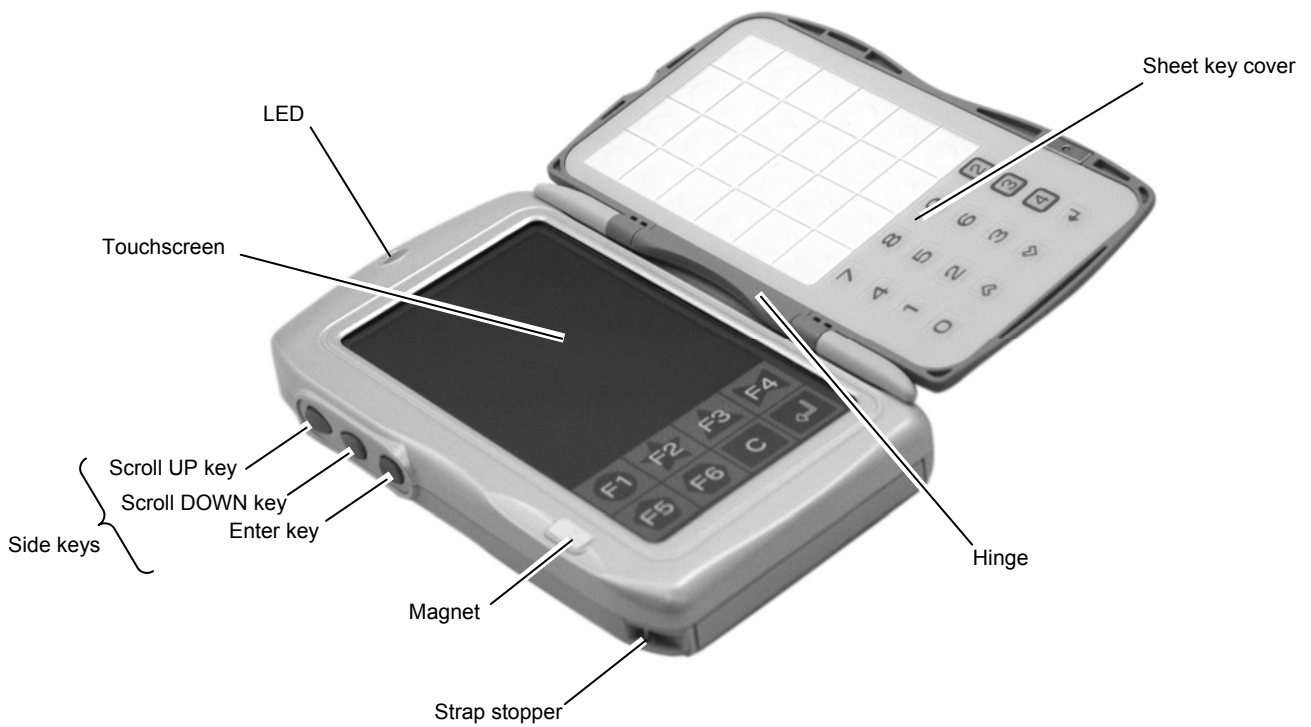


Fig. 1-2: Appearance 2 (with top cover open)



Fig. 1-3: Appearance 3 (back view)



Fig. 1-4: Battery pack appearance

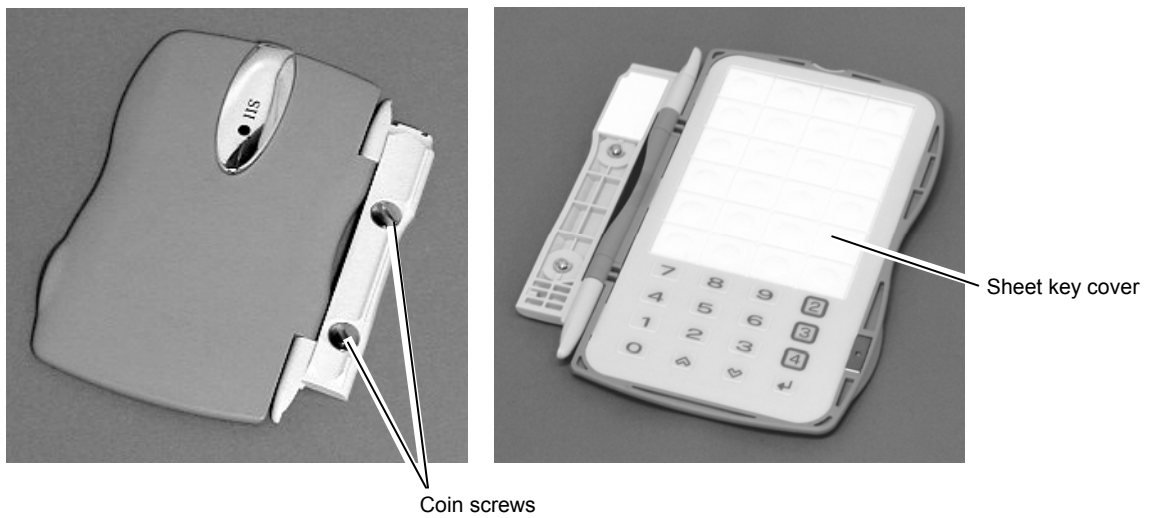


Fig. 1-5: Sheet key unit appearance

Chapter 2 Before Use

This chapter explains the prohibitions and precautions when using the device. To always use the device in its proper state, follow all the instructions below without fail. Failure to do so may cause malfunction or damage. SII Data Service Corp. takes no responsibility for damage caused by use of the device that does not comply with proper usage outlined in this manual.

2.1 Precautions for use

- (1) Never alter or modify the device. The device has a built-in wireless facility that has received technical standard compliance certification according to the Radio Law. Using illegally modified devices may be punishable under the Radio Law.
- (2) Take care not to drop, bend, or strongly shock the device, as the device has a highly-sensitive wireless facility built-in. Contact your local service center if the device is damaged in an accident or is dropped during use. Never get the device repaired anywhere other than the service center.
- (3) Do not place objects or rest your hand on the device.
- (4) Do not place food or drinks, such as coffee, or hot objects such as cigarettes, on the device.
- (5) Do not wash or pour liquids, such as water or oil, over the device. It is not waterproof.

- (6) Never store or leave the device in any of the following locations. This may result in case deformation or device malfunction, such as reduced or deteriorated battery performance, or memory loss.
- Locations with temperatures below 5°C
 - In vehicles during summer
 - Locations near air-conditioning equipment
 - Locations with direct sunlight
 - Locations with temperatures higher than 40°C
- (7) Avoid using the device in the following locations:
- Locations with magnetic fields (i.e., near microwave ovens, electromagnetic cookers, industrial refrigerators, ice makers, devices with built-in motors.)
 - Locations surrounded by conductive materials, such as metals
 - Locations near high-temperature devices, such as microwave ovens and electrotherms
 - Locations potentially exposed to moisture or water vapor
 - Locations with severe environmental changes in temperature and humidity
 - Locations where corrosive gasses or saline may be generated
 - Dusty or dirty locations
 - Locations where vibration occurs
 - Locations with direct sunlight
- (8) Do not press the sheet keys, side keys, or touchscreen with sharp or hard objects, such as a ballpoint pen. This may result in malfunction. Operate the device with your fingers, and do not press forcefully with fingernails.
- (9) Do not apply excessive force to open a fully open cover. The sheet key unit is configured with a hinge for double truck. Force may damage the sheet key unit hinges, resulting in reduced service life.
- (10) Do not press the touchscreen forcefully or apply shock. This may result in cracking, as the screen is made of glass.
- (11) Precautions for battery pack use
1. The battery pack is not charged before shipping. Charge it before using. The battery will be charged in about 4 hours, but it could take longer if using two chargers in tandem.
Follow all precautions described in each chapter.
 2. If the LED starts flashing orange, replace with a charged battery pack immediately.
Continued battery use without replacement may cause loss of internal data. The fully charged backup battery saves the data for about 10 minutes.
 3. Do not remove the battery pack even when the device is not in use. If the device is left without the battery pack mounted, the internally stored programs and data will be deleted. This may also reduce the backup battery life. After mounting the battery pack, the backup battery will require 1 to 2 days to charge.
Note: Do not “use the battery pack during the day, and remove at night to charge”. Ensure you leave the battery pack mounted to the device throughout the night.

(12) Dispose of the device according to the regulations of your local government. For details, consult your local government.

Follow all precautions described in each chapter.

2.2 Charging a Battery Pack

Charge the battery pack with the SA-5320 Charger before use. See “SA-5320 Charger Instruction Manual” for how to charge.

Caution

Charge the battery pack before using it for the first time.

2.3 Carrying the Device

When using the device, use the strap to prevent the device from being dropped. Do not carry the device in a way that unreasonable force is constantly applied. This may cause malfunction or deformation.



Fig. 2-1: Mounting the strap

2.4 Storing the Device

(1) Short-term storage

If not using the device for a short period of time or less than 1 week, store it with a fully-charged battery pack mounted. Without a battery pack, the application programs could be deleted.

(2) Long-term storage

If not using the device for one week or longer, remove the battery pack before storage. Before resuming use of the device, mount a fully-charged battery pack, reset (see “3.4: Reset”), and transfer the application programs from the Wireless Station.

Chapter 3 Power Supply

This chapter explains how to turn on the device, how to handle the battery pack, and how to reset.

The device uses a rechargeable battery pack as its main battery.

Charge the battery pack with the dedicated SA-5320 charger before using it for the first time. See the “SA-5320 Charger Instruction Manual” for charging procedures.

3.1 Turning the device on/off

This device does not have a power supply switch. Mount the battery pack to turn on the device. Turn off the device using the application programs. To turn on the device again, press the touchscreen or a side key.



Caution

1. Safety Handling:

Never perform the following actions, as these may result in damage to the battery pack or fluid leaks.

- (1) Short circuits Placing the battery pack's + and – terminals together, or placing the terminals to metal, may cause a short circuit. For example, this is equivalent to the case when battery packs are in tandem without a proper connection, which may result in the battery pack overheating, breaking, or catching fire.
- (2) Overheating Heating the battery pack to 100°C or more may cause the battery pack to overheat, break, or catch fire due to an internal short circuit, or damage the resin material of the gaskets and separators, which will cause fluid leaks.
- (3) Inserting into flames Inserting the battery pack into flames may result in damage or fierce burning.
- (4) Disassembly Disassembling the battery pack may result in fire, or the escaping gas may irritate the throat.
- (5) Soldering Soldering the battery pack directly may cause the battery to overheat, break, or catch fire due to an internal short circuit, or damage the resin material of the gaskets and separators, which will cause fluid leaks.
- (6) Pressure deformation Pressure deformation to the battery pack may cause the battery pack to overheat, break, or catch fire due to an internal short circuit, or cause fluid to leak due to warping of the seals.

2. If a leak has occurred:

If any leaked fluids adhere to the skin or clothing, wash away using clean water. If the fluids come into contact with the eyes, wash using clean water, and consult a doctor immediately for medical treatment.

3. Recycling used battery packs:

Please recycle used battery packs rather than discarding.

3.2 Precautions for Handling a Battery Pack

Follow the precautions below when using a battery pack.



Caution

- Do not open the interior of the battery pack.
- Do not discard a used battery pack onto a fire. This may result in an explosion.
- Placing the battery pack's + and - terminals to metal, or placing the battery pack terminals together may result in a short circuit and overheating. If storing the battery pack, do not place on metal, and align all battery packs in the same direction to prevent the terminals from contacting each other.
- Isolate the poles on the used battery pack with tape.
- Please recycle a used battery pack. (See Appendix C.)

3.3 Mounting and Removing a Battery Pack

3.3.1 Mounting a battery pack

Insert the battery pack into the battery pack mount on the back of the device. Align the rails in the direction of the arrows and push in until it clicks.



Fig. 3-1: Mounting the battery pack

Caution

Since the backup battery is not charged before shipping, the following phenomena may occur when mounting it for the first time. See “3.4: Reset” and reset the device.

- Meaningless characters or images are displayed onscreen.
- Nothing appears onscreen.
- Key entries are disabled.
- A buzzer sounds.

3.3.2 Removing a battery pack

Press and hold the battery pack eject button on the side of the device. Remove the battery pack in the direction as shown.

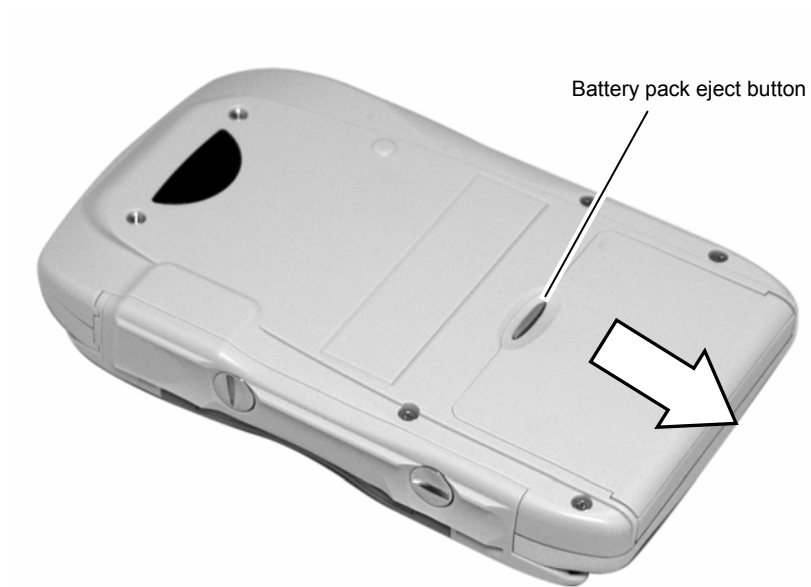


Fig. 3-2: Removing the battery pack

3.4 Reset

Caution

Resetting will delete all the programs (application programs, and others) except for the data, OS, and terminal settings mode program stored in the device.

Reset the device in the following cases:

- When mounting the battery pack for the first time
- When receiving applications from the Wireless Station
- When the program has not been operating normally

Reset the device as described below.

Press the Scroll UP key and the Enter key at the same time for about 5 seconds.



Fig. 3-3: Reset operation

Chapter 4 Terminal Settings Mode Functions

4.1 Functions Overview

The following settings are available on the device.

Version

Displays the version information for the OS, firmware, and library.

Parameter

Sets the OS parameters.

WLAN test

Tests communications between the handheld terminal and the Wireless Station or the Wireless Repeater.

Touchscreen Calibration

Adjusts the touchscreen coordinates.

Reboot

Restarts the OS.

4.2 Startup

Start the terminal settings mode as described below.

- (1) Press and hold the Scroll UP key and the Enter key at the same time for about 5 seconds to reset the device.
- (2) When the red LED turns on, immediately press and hold the "Right UP key" on the sheet key for about 3 seconds.
- (3) When the screen shown in Fig. 4-2 is displayed, the terminal settings mode has properly started.



Fig. 4-1: Terminal settings mode startup

4.3 Functions Specifications

4.3.1 Function Menu

Press menu keys for terminal settings.

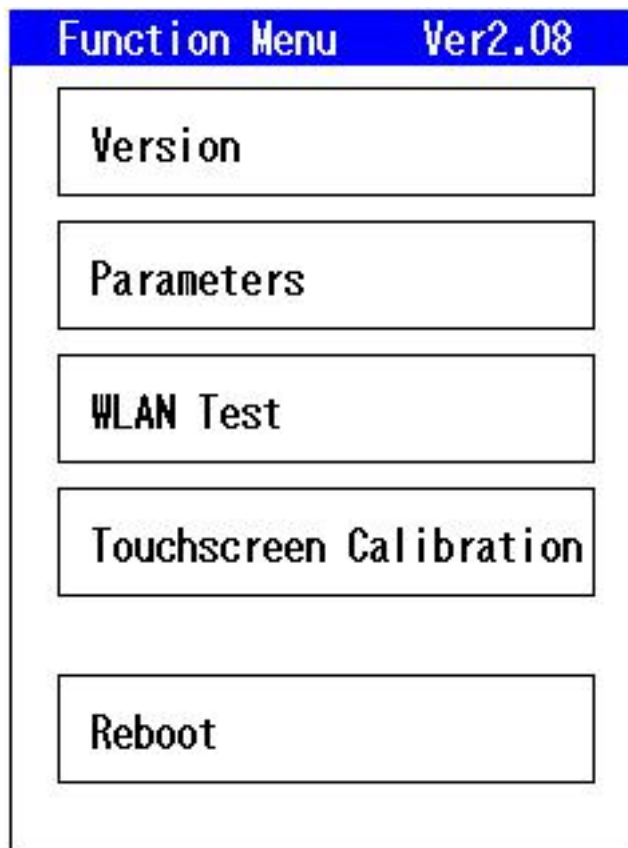


Fig. 4-2: Function Menu

[Version] displays the version screen.

[Parameters] displays the parameters screen.

[WLAN Test] displays the WLAN test screen.

[Touchscreen Calibration] displays the touchscreen calibration screen.

[Reboot] restarts the OS.

4.3.2 Version

This function displays the versions of the OS, firmware, and library in the terminal.

Select [Version] on the function menu.

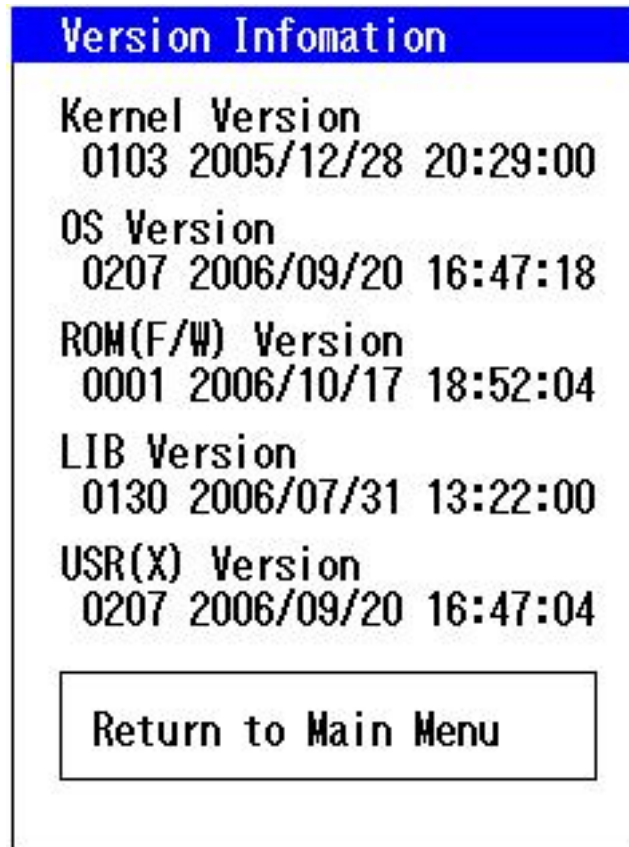


Fig. 4-3: Version

4.3.3 Parameters

This function sets the parameters.

Select [Parameters] on the function menu.

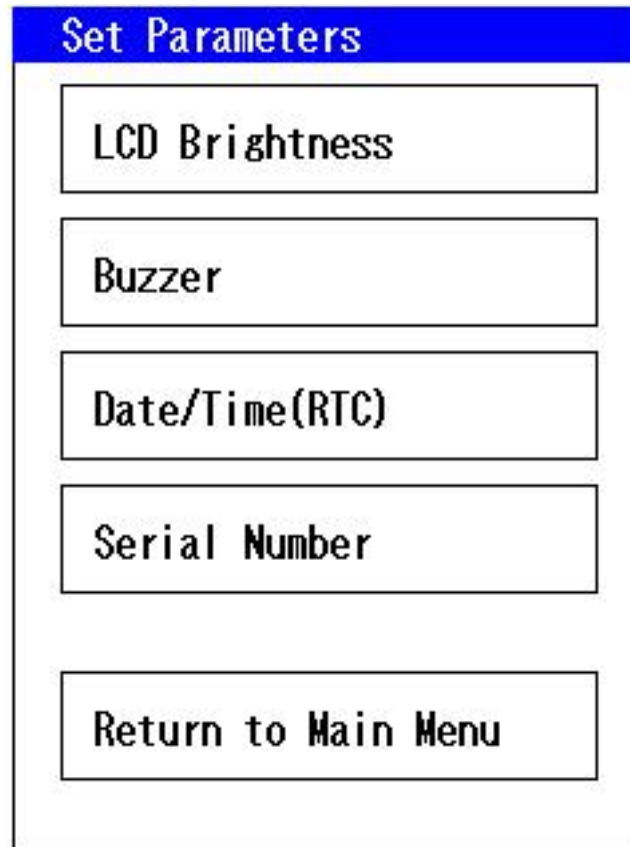


Fig. 4-4: Parameters

(1) LCD Brightness

Use this function to set the LCD brightness. The set values are stored and saved, even if the device is reset.

Select [Parameters] – [LCD Brightness] from the function menu.

Select and press number from [1] to [5] onscreen to set the brightness. [5] is the brightest. The setting is preconfigured to [3].

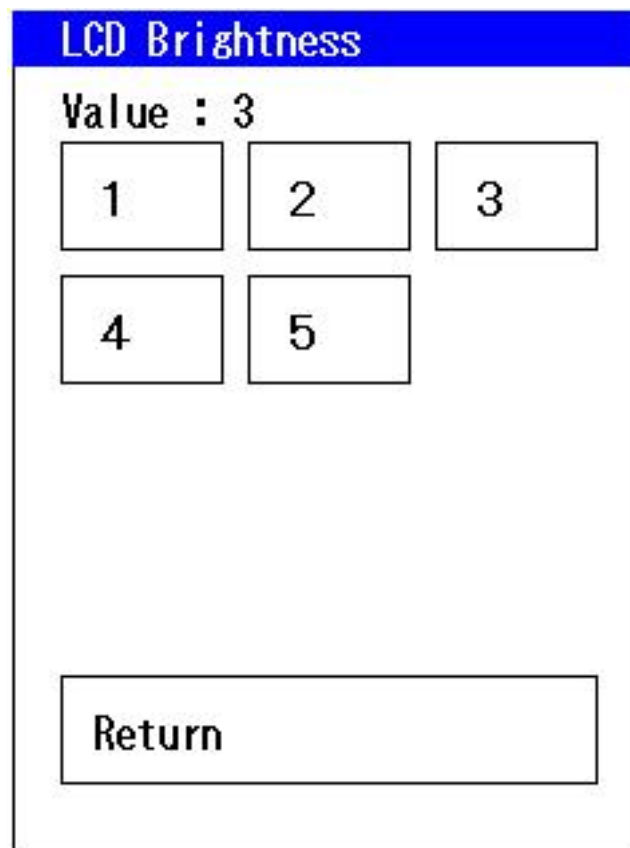


Fig. 4-5: LCD brightness

(2) Buzzer

Use this function to set the buzzer. The set values are saved, even if the device is reset.

Select [Parameters] – [Buzzer] from the function menu.

Select and touch the screen to change the settings. The settings are preconfigured to “Small and Low”.

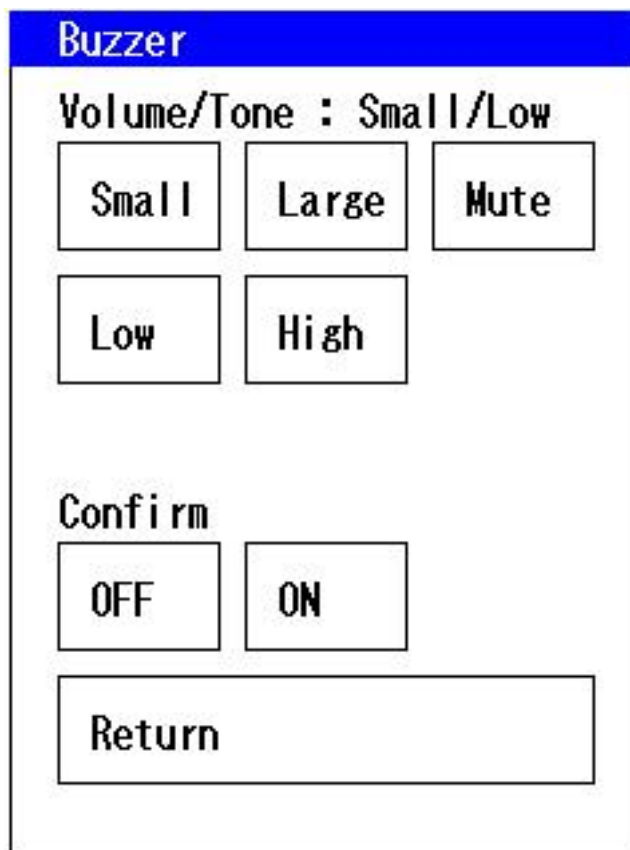
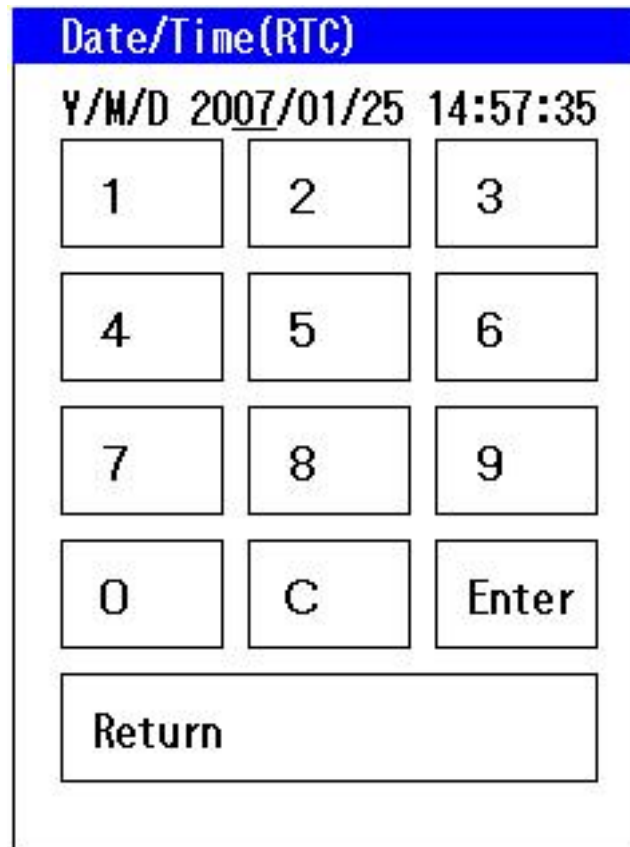


Fig. 4-6: Buzzer

(3) Date/time

Use this function to set date and time. The set date and time are saved, even if the device is reset, when the battery voltage is within operating parameters.

Select [Parameters] – [Date/time] from the function menu.



The current set value is displayed at the top of the screen. Touch the parameter to be changed. The selected parameters are underlined. Press the numeric keypad onscreen to change the value. Always enter two digits; for example, enter "01" for January. Press [Enter]. The message "Settings completed" appears, and the settings are saved.

Fig. 4-7: Date/time

(4) Serial Number

Use this function to refer to the product serial number and the wireless module MAC address.

Select [Parameters] – [Serial No.] from the function menu.

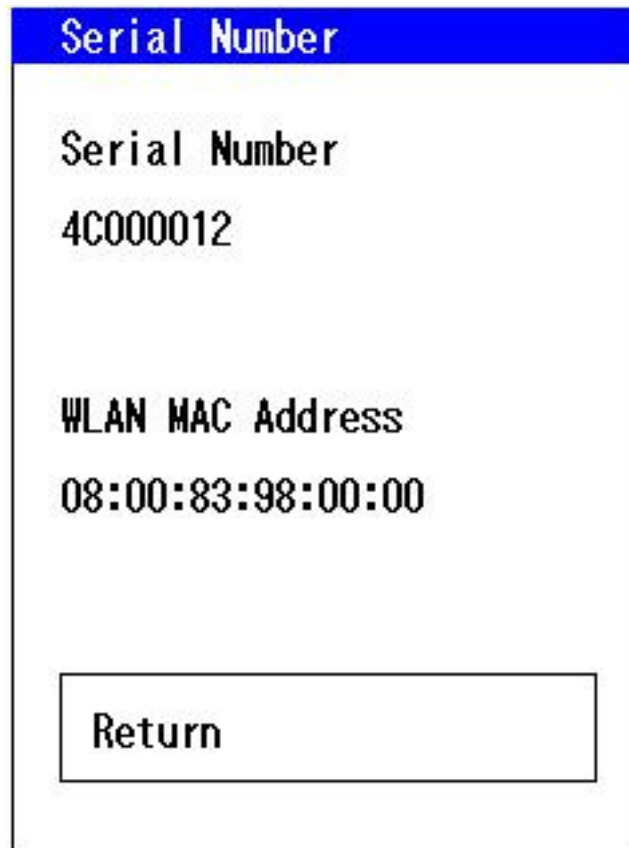


Fig. 4-8: Serial No.

4.3.4 WLAN test

- Standard test

This function tests the communications between the device, the Wireless Station, and the Wireless Repeater. Test the communication environment of the anticipated installation sites if the wireless area measurement does not assure it as an optimum site.

When performing the standard test before installing in the store, place the Wireless Station (or Wireless Repeater) at the expected installation site, and set to test mode. Refer to each device's manual for how to set to test mode. Use normal mode if the operation has already started in the store.

Select [WLAN Test] – [Standard Test] from the function menu.

- Advanced test

This function tests the communications between the device, the Wireless Station, and the Wireless Repeater.

When performing the standard test before installing in the store, place the devices at the expected installation sites, and set to test mode. Refer to each device's manual for how to set to test mode. Use normal mode if the operation has already started in the store.

Select [WLAN Test] – [Advanced Test] from the function menu.

- Receive mode

This mode sets the receiver.

- Area test

This function lists signal levels between the device and all the stations (repeaters) available for the device. The signal level data is refreshed every 8 seconds. Set the same system ID as the station when performing this test.

Follow the standard test instruction below. The advanced test has additional screens to set the sender.

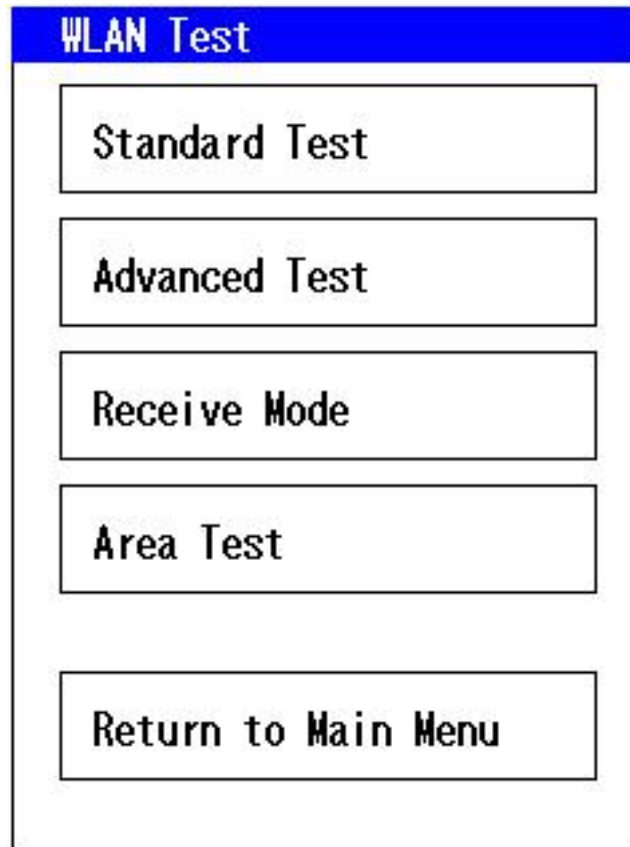
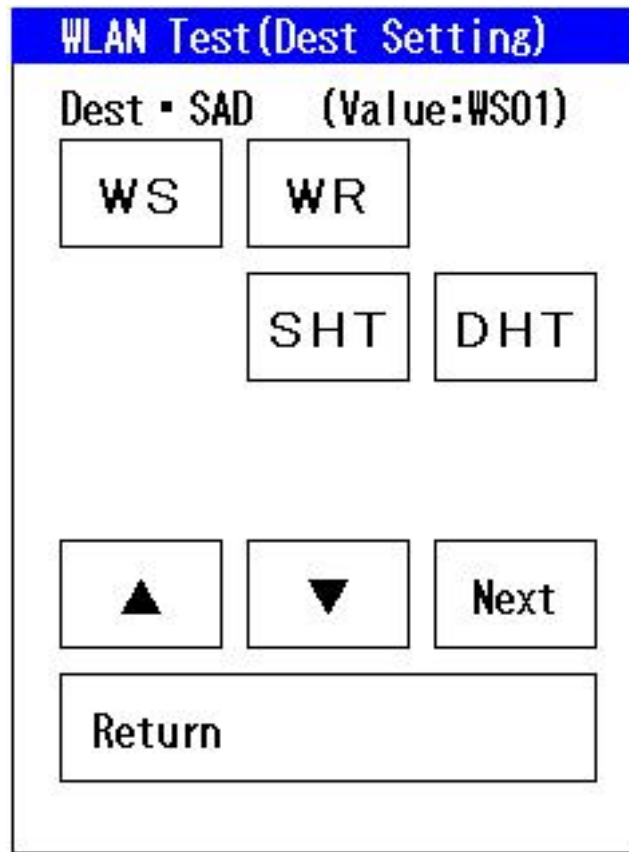


Fig. 4-9: WLAN test



Specify the destination. Select Wireless Station (WS) or Wireless Repeater (WR). If several communications destinations have been installed, change the station address using [▲] and [▼].

Fig. 4-10: WLAN test (Specifying destination)

WLAN Test(Channel Setting)		
Channel	: 1ch	
<input type="text" value="1"/>	<input type="text" value="6"/>	<input type="text" value="13"/>
Source	: SHT01	
Dest	: WS01	
Mode	: Test	
Press [Start] to test		
<input type="text" value="Mode"/>	<input type="text" value="Start"/>	
<input type="text" value="Return"/>		

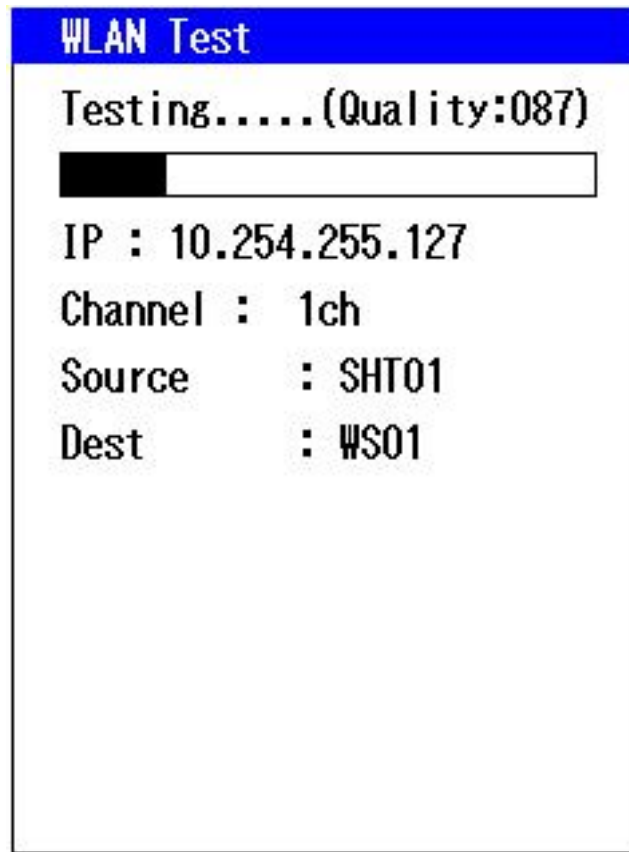
Specify the communications channel from 1, 6 or 13. Confirm the settings, and touch [Start].

Communications may be performed via the channel set in the partner device, not via the channel set in this device.

[Mode]: There are two modes, test mode and normal mode. Use the test mode if the station is set to test mode. When performing the test after installing the devices at the store, use the normal mode and set the same system ID as the station.

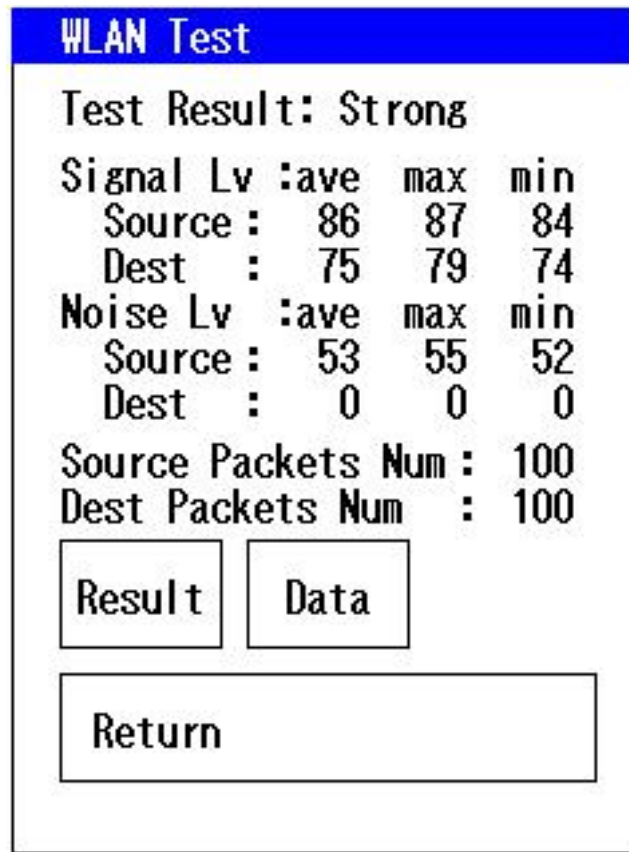
Note that some countries and regions cannot use channel 13 due to Radio Law regulations.

Fig. 4-11: WLAN test (Specifying channel)



During the test, the color of the progress bar changes according to the status.

Fig. 4-12: WLAN test (Testing)



Press [Result] after the test to display the result. The higher the value of each signal, the better the communications environment.

The noise level value of the station is displayed as "0" because only the Handheld Terminals can measure noise level.

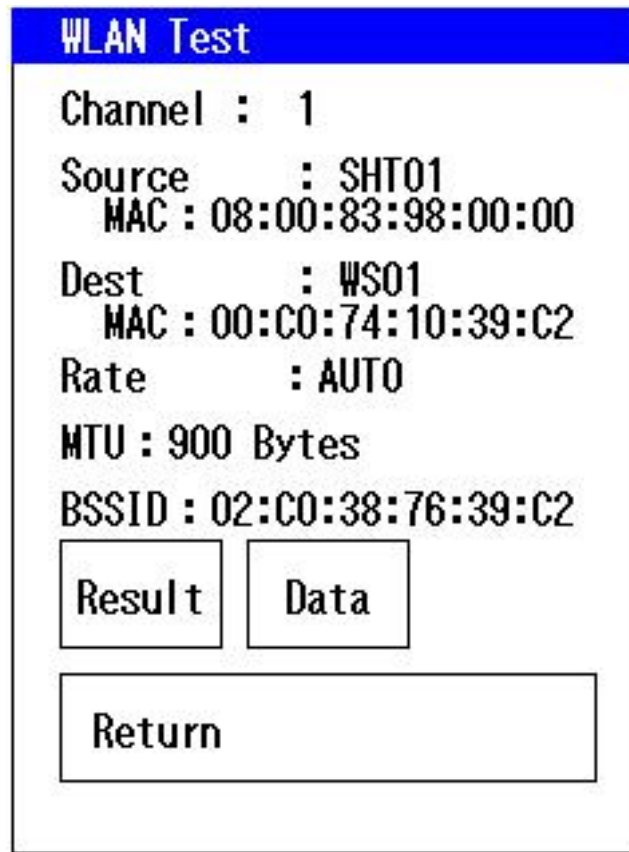
[Strong]: Communications are performed in the best conditions.

[Good] : Communications can be performed.

[Poor] : Communications cannot be performed.

Note that the test result is an approximate indication. Environmental changes may cause communications malfunctions even if the installation sites have not changed.

Fig. 4-13: WLAN test (Results screen 1)

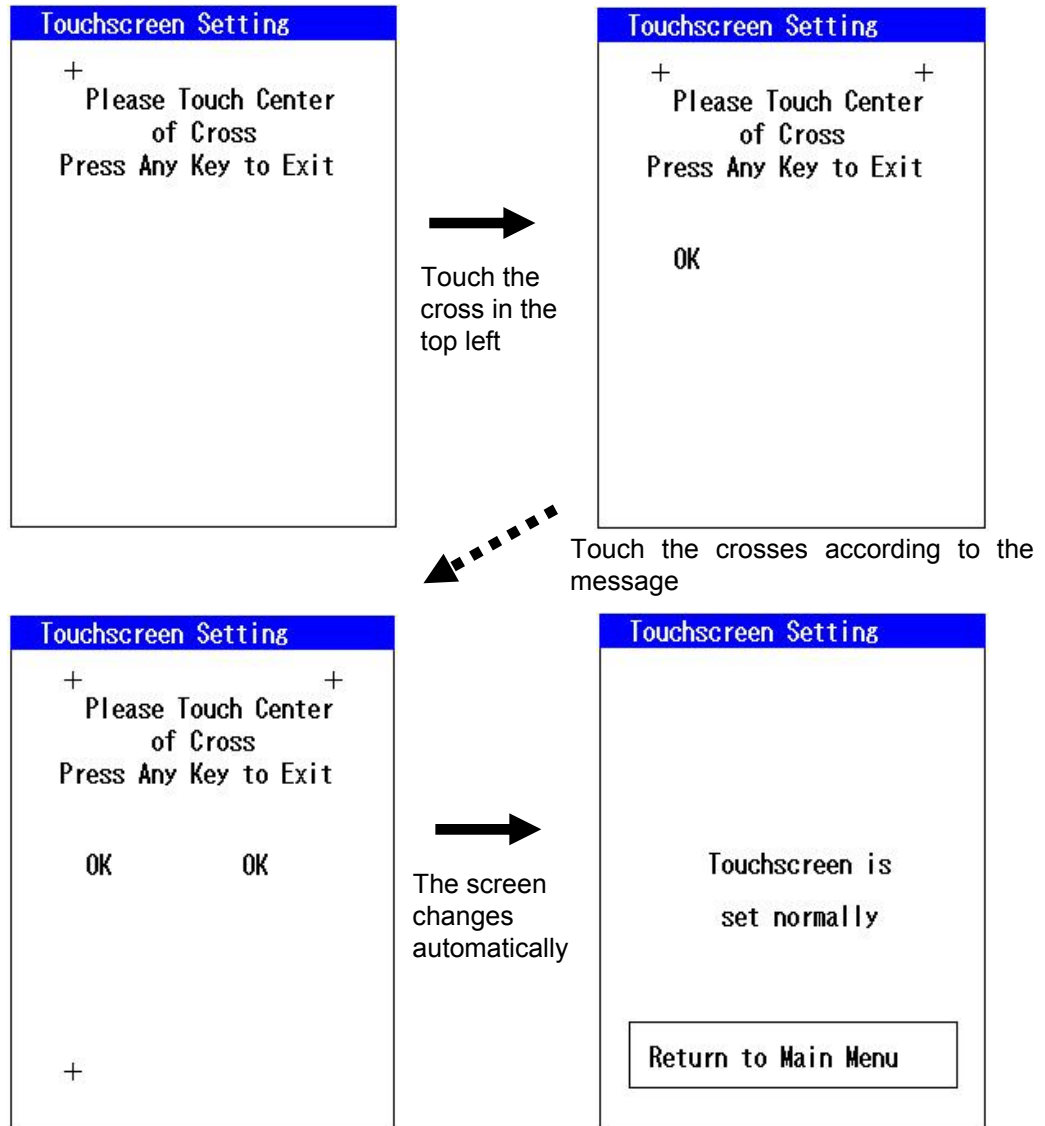


Test data shows the test environment and parameters.

Fig. 4-14: WLAN test (Results screen 2)

4.3.5 Touchscreen Calibration

Use this function to adjust the touchscreen calibration.



Touch the crosses according to the messages. The following displays will appear: top left OK, top right OK, bottom left OK, and bottom right OK. [Return to Main Menu] appears when the screen is adjusted properly.

If the crosses cannot be touched accurately, the touchscreen calibration can be canceled by pressing any side key or sheet key. In this case, the settings will not be saved.

Fig. 4-15: Touchscreen Calibration

Chapter 5 Transferring and Starting Application Programs

To use the device, an application program needs to be started. Transfer application programs from the Wireless Station to the device in the following cases:

- When using the device for the first time since unpacking
- When an application program has been accidentally deleted
- When changing an application program

The procedure for transferring application programs is described below.

5.1 Downloading Application Programs

5.1.1 System ID settings

When the Handheld Terminal is properly turned on, the system ID prompt appears.

The system ID is the same 7-digit number used for the Wireless Station.

Enter the 7-digit system ID and press the "Set" button to save. After saving, press the "Return" button to reboot the device.

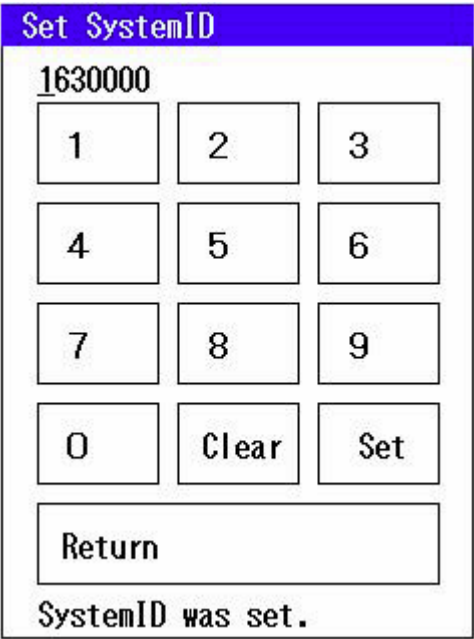


Fig. 5-1: System ID settings

5.1.2 Transferring application programs

The following steps are taken while transferring the application programs:

- (1) Checking the system ID
- (2) Checking the battery charge
- (3) Turning on the wireless LAN network and checking the link
- (4) Checking the firmware version of the Handheld Terminal
- (5) Downloading the setting files, font files, and application files

If no error occurs, 'OK' will be displayed after each checkpoint as shown in the figure below and the application programs will start.

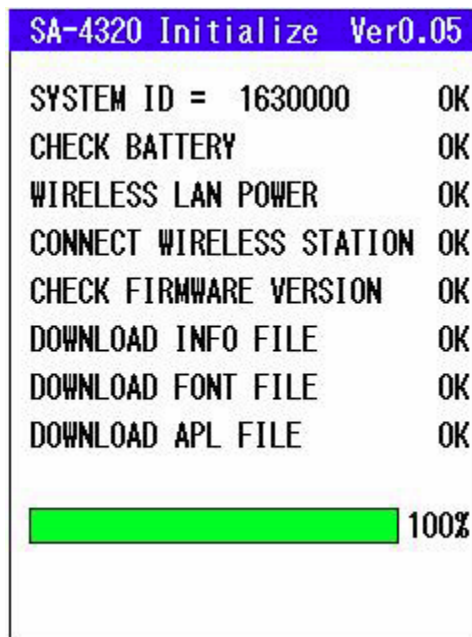


Fig. 5-2: Transferring application programs

5.1.3 Wireless communications error

Transferring the application programs from the Wireless Station requires being within its communication range. If communications with the Wireless Station cannot be established, the following screen shown on the left will be displayed.

If the wireless LAN reports a Link error shown on the right, the system ID may have been incorrectly input. Press the "ID" button to jump back to the screen for the setting the system ID.

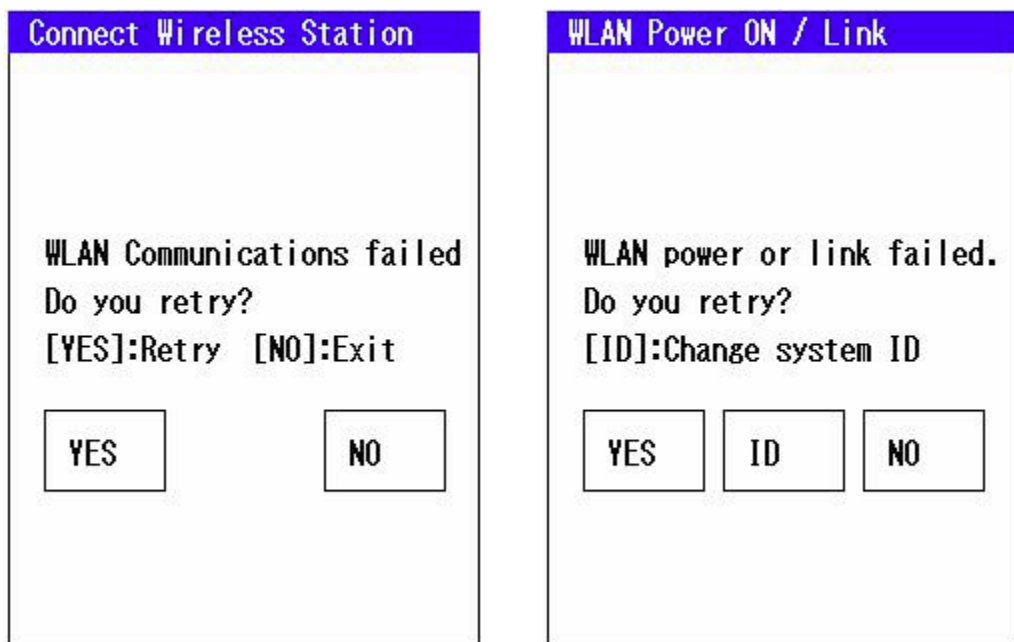


Fig. 5-3: Trouble communicating with the Wireless Station

5.1.4 File transfer error

The settings, font files, and application files are transferred from the Wireless Station. Thus, this must be performed in the range where communications with the Wireless Station can be established. If communications with the Wireless Station cannot be established, or if the files within the Wireless Station are missing or corrupt, the following screen will be displayed:

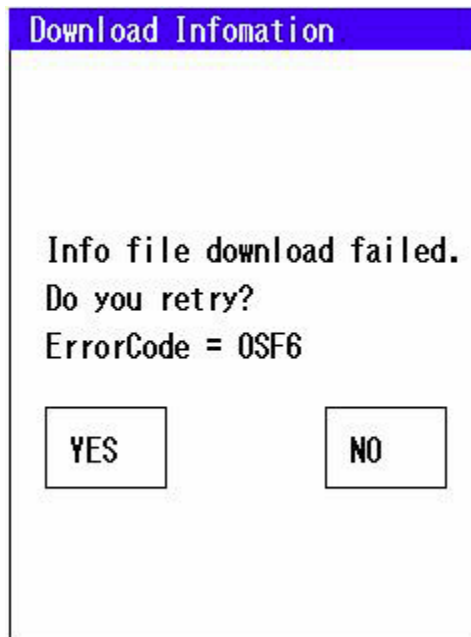


Fig. 5-4: File transfer error

5.1.5 Firmware version upgrade

The Handheld Terminal's firmware upgrades are transferred from the Wireless Station. This requires the units being within communication range of each other.

When the new firmware is ready in the Wireless Station, the screen shown below is displayed. Press the "YES" button to start the version upgrade process. Press the "NO" button to skip the version upgrade process and return to the current task.

When the version upgrade is in progress, the ROM is overwritten, so take care not to remove the batteries during the upgrade.

After the firmware has been upgraded, the device must be rebooted for the upgrade to become effective.

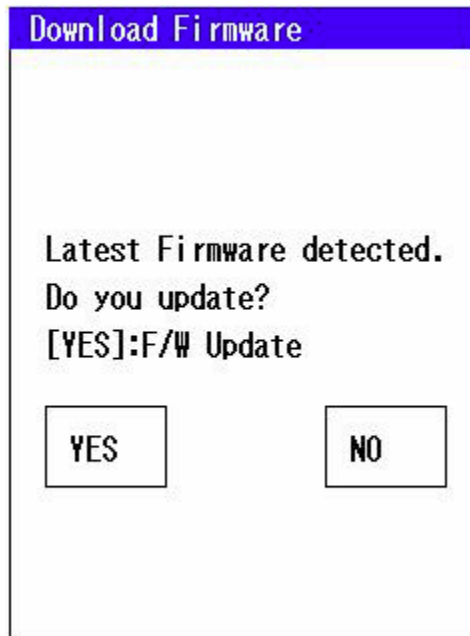


Fig. 5-5: Firmware version upgrade

5.2 Starting Application Programs

See the application program operation manual for how to start an application program.

Chapter 6 Troubleshooting

This chapter explains the causes of device problems and their solutions. Determine whether or not the problem is a malfunction of the device based on these troubleshooting tips.

6.1 Wireless transfer failure

If wireless transfer fails, apply solutions according to the following conditions.

- Several Handheld Terminals are malfunctioning (See 6.1.1)
- The Handheld Terminals cannot communicate depending on location or method of use (See 6.1.2)
- A specific handheld terminal cannot communicate (See 6.1.3)

6.1.1 Transfer failure caused by the system (or device) , or several Handheld Terminals are malfunctioning

Problem	Probable Cause	Solution
None of the Handheld Terminals can communicate.	<ul style="list-style-type: none"> - Wireless Station is malfunctioning 	<ul style="list-style-type: none"> - Turn on the power supply to the Wireless Station again.
The malfunctioning Handheld Terminals cannot be specified.	Communication failures due to other radio waves <ul style="list-style-type: none"> - External noise - A device with the same frequency is being used nearby. 	<ul style="list-style-type: none"> - Remove the source of the external radio waves, for example try stopping nearby microwave ovens.
There are locations where wireless communications are disabled.	The Wireless Stations are not installed at appropriate sites.	<ul style="list-style-type: none"> - Search for an available communication area. Select [Function Menu] – [WLAN Test]. - Move the Wireless Station to a suitable site.
<ul style="list-style-type: none"> - A specific Handheld Terminal is malfunctioning. - Multiple Handheld Terminals are likely to be malfunctioning simultaneously. 	Frequency drifts or other abnormalities on the Wireless Station	(1) Specify the combination of Wireless Station and Handheld Terminals that cannot communicate. Select [Function Menu] – [WLAN Test]. (2) If malfunctioning Handheld Terminals can communicate with other Wireless Stations, the Wireless Station is malfunctioning.

The device is malfunctioning if wireless transfer is still disabled after trying the above solutions.

Return the device to your local service center.

6.1.2 Communication failure caused by the use of a Handheld Terminal, or malfunction frequently occurs with a single Handheld Terminal

Problem	Probable Cause	Solution
<ul style="list-style-type: none"> - The Wireless Station is too far from the Handheld Terminal. - The Wireless Station is not in sight. 	<ul style="list-style-type: none"> - The device is used in an area with electromagnetic wave interference. - The signal does not reach. 	Move to a closer location where the Wireless Station is visible.
<ul style="list-style-type: none"> - Occurs in a specific Handheld Terminal when used in conjunction with the maintenance Handheld Terminal. 	System IDs are incorrect.	(1) Set the system ID according to the application program operation manual.

The device is malfunctioning if wireless transfer is still disabled after trying the above solutions.

Return the device to your local service center.

6.1.3 Communication failure caused by the Handheld Terminal

Problem	Probable Cause	Solution
<ul style="list-style-type: none"> - A specific Handheld Terminal cannot communicate. 	<ul style="list-style-type: none"> - The Handheld Terminal is malfunctioning - Operations temporarily malfunctioned due to a shock, such as being dropped. - Operations temporarily malfunctioned due to a drop in battery voltage. 	<ol style="list-style-type: none"> (1) Replace with a charged battery pack if the LED is flashing (orange). (2) Reset the device. (3) Check whether the Handheld Terminal is malfunctioning. Select [Function Menu] – [WLAN Test]. Change the distance to test and compare with other Handheld Terminals. (4) If the test result is normal, the operations malfunction was probably temporary. Download the application program again.

The device is malfunctioning if wireless transfer is still disabled after trying the above solutions.

Return the device to your local service center.

6.2 Nothing appears onscreen, or not properly displayed

Probable Cause	Solution
The power supply terminals on either the battery pack or the main unit are dirty or broken.	Clean according to "7.1: Daily Maintenance". If broken, request repairs.
The battery pack contacts are defective due to a shock, such as being dropped.	Remove the battery pack, wait several seconds and remount to the main unit.
Battery power has run out	Replace with a charged battery pack.
Runaway due to defective memory backup	Reset the device and download the application program again.
Program runaways See "6.10: Program runaway" for the causes of runaway.	Reset the device and download the application program again.

The device is malfunctioning if the screen display is still malfunctioning after trying the above solutions.
Return the device to your local service center.

6.3 The keypad tone does not sound, or the sound is too loud or too quiet

Probable Cause	Solution
The set volume for the keypad tone is inappropriate.	<ul style="list-style-type: none">• Set the volume again.• If the volume is still inappropriate after resetting, adjust the volume: select [Function Menu] – [Parameters] – [Buzzer].

The device is malfunctioning if the volume still cannot be adjusted after trying the above solutions.
Return the device to your local service center.

6.4 The system does not respond to key entries

Probable Cause	Solution
Program runaways Keys are malfunctioning	<ol style="list-style-type: none">(1) Reset the device.(2) Assess if the device is malfunctioning. See “6.10: Program runaway”.(3) Download the application program.
Sheet key unit service life	If the above procedures do not solve the problem, the malfunction may be due to the sheet key service life. Purchase and replace with a new sheet key unit.

The device is malfunctioning if the system still does not respond after trying the above solutions.
Return the device to your local service center.

6.5 Not properly operating

Probable Cause	Solution
Program runaways	(1) Reset the device. (2) Download the application program. (3) Assess if the device is malfunctioning. See "6.10: Program runaway".
Multiple menu keys are pressed	Do not press two or more menu keys including side keys simultaneously.

The device is malfunctioning if the device still does not operate properly after trying the above solutions.

Return the device to your local service center.

6.6 Operating time is too short

Probable Cause	Solution
Battery pack service life (rechargeable approximately 500 times)	Purchase and replace with a new battery pack.
The charger is malfunctioning if the operating time of the Handheld Terminals is too short, even with a new battery pack.	Return the charger to your local service center.

The device is malfunctioning if the operating time is abnormally short even with a new battery pack.

Return the device to your local service center.

6.7 The application programs are deleted when the battery pack is replaced

Probable Cause	Solution
The built-in backup battery has not been thoroughly charged.	The backup battery has not been charged before shipping. Mount a charged battery pack for 24 hours minimum when using the device for the first time. The Handheld Terminal can take orders during this time. To fully charge the backup battery, mounting the battery pack for a further 1 or 2 days is necessary.
Backup battery service life (approximately 3 years at use temperature of 35°C, and approximately 5 years at use temperature of 20°C)	Replace the backup battery.

Note: If the device is not used for a long time, the backup battery will be fully drained.

The device is malfunctioning if the application programs are still deleted when the battery pack is replaced after trying the above solutions.
Return the device to your local service center.

6.8 The backlight does not turn on

Probable Cause	Solution
The backlight has not been set.	The backlight may not turn on depending on the application program. If settings can be edited, change the settings again according to the application program.

The device is malfunctioning if the backlight still does not turn on after trying the above solution.
Return the device to your local service center.

6.9 Program runaway

Probable Cause	Explanation	Solution
Used in or left out of the rated temperature range (in particular 5°C or less)	The data may not be saved, depending on the memory characteristics.	This is not a malfunction. Reset the device and download the application program.
There is a powerful external electromagnetic field	<ul style="list-style-type: none"> - Program runaway during operations. - No reproducibility. 	This is not a malfunction. Reset the device and download the application program.
Memory software error	<ul style="list-style-type: none"> - Mainly due to radiation from the memory package. - No reproducibility. 	This is not a malfunction. Reset the device and download the application program.
The Handheld Terminal is malfunctioning	<ul style="list-style-type: none"> - Operations are not possible immediately after resetting. - Program runaways due to shock. 	Return the device to your local service center.

The device is malfunctioning if still has runaway programs after trying the above solutions.

Return the device to your local service center.

6.10 LED is flashing (Orange)

Condition	Probable Cause	Solution
The LED is flashing (orange) even when a battery pack has been mounted.	Battery pack voltage is low.	Replace with a charged battery pack.

The device is malfunctioning if the LED still flashes orange after trying the above solutions.

Return the device to your local service center.

Chapter 7 Maintenance

This chapter explains the maintenance methods to use the device in optimum conditions. Consult your local service center if you have any further questions.

7.1 Daily maintenance

- Do not use a volatile solvent. If the device is dirty, slightly wet a soft cloth with a neutral cleaning agent, wring out the cloth thoroughly, and gently wipe the device.
- Wiping with liquid dripping from the cloth may result in a malfunction due to the liquid seeping in the case, between gaps of the side keys or touchscreen, or into the sheet keys.
- Prevent the device from getting dirty. Contact will be defective and the device may not operate properly if the device power supply terminals or battery pack terminals are dirty. Wipe gently using cotton buds if the terminals are dirty.
- Make sure to prevent dirt. Leaving dirt on the battery pack rails until the dirt hardens may make it impossible to remove the battery pack.

Caution

Never touch the terminals except for cleaning. This may result in defective contacts.

Never raise or push down on the terminals.



Fig. 7-1: Device rails

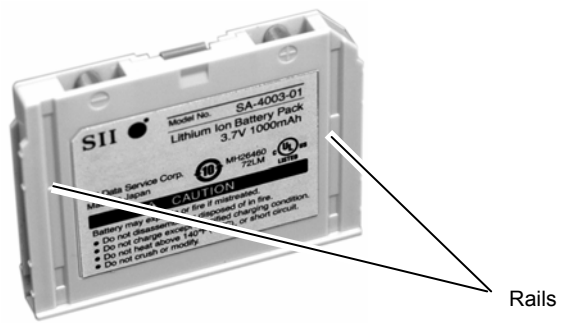


Fig. 7-2: Battery pack rails

7.2 Regular maintenance

7.2.1 Replacing a battery pack

(1) Battery pack replacement period

The device uses a rechargeable battery pack. A battery pack life depends on the conditions of use, but is about one day if 100 orders are entered per day. When the battery power is exhausted, the LED on the device flashes orange. Replace with a charged battery immediately since further wireless communications are not available.

See 3.3 for how to mount/remove a battery pack.

Caution

Always prepare a fully-charged battery pack in advance for replacement. A battery pack takes about 4 hours to charge.

(2) Limits to battery pack replacement time

Handheld Terminals have a built-in backup battery (a rechargeable battery for backup). Even if the battery pack is removed, the application programs and data will be saved for 10 minutes. Replace the battery pack within 10 minutes.

Caution

- Leave the battery pack mounted to the Handheld Terminal for 24 hours minimum after first mounting since its backup battery is not charged before shipping. The device can take orders during this time.
- Never touch the terminals on the Handheld Terminals or battery packs with bare hands. If the terminals are dirty, contact may become defective.

7.2.2 Service life of repeatedly charged battery packs

Battery packs can be repeatedly charged with a charger and used, but will need to be changed more frequently after charging about 500 times. As this is the operating life of the battery pack itself, replace with a new battery pack.

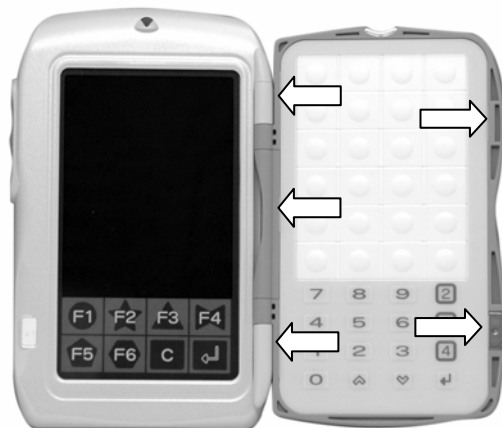
7.3 Replacing Parts

7.3.1 Replacing the sheet key cover

Step 1: Bend the sheet key cover and remove the clips as shown below. Remove the sheet key cover.



Step 2: Mount the new sheet key cover. Insert the clips firmly to fix them in their original position.

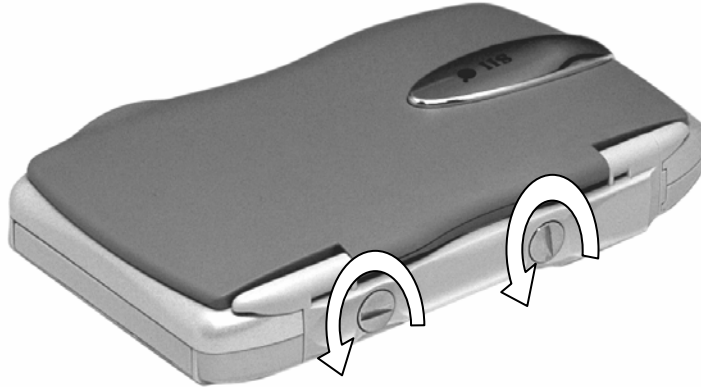


Caution

Do not apply excessive force to the clips. This may break or deform the clips.

7.3.2 Replacing the sheet key unit

Step 1: Turn the screws at least three times with a coin. (x2 screws)



Step 2: Insert your fingernail into the gap as shown, and remove the panel by pushing out.



Caution

Do not use hard objects, such as metal or glass, to remove screws.

Step 3: Align and mount the notches of the new sheet key unit to the clips of the device.



Step 4: Tighten the screws securely.



Caution

Regularly check that the screws are not loose.

Consult your local service center for replacement of other parts.