NEC

Hand Held Terminal
Operator's Guide

Model
S1635-01/01A/01B

Thank you for using the Hand Held Terminal.
Please read this manual thoroughly prior to operation to ensure full use of the product's functionality, and store safely in a convenient location for quick reference even after reading.
This manual contains only the basic details required for operation.
Please refer to the User's Manual for further details on general operation.

Bundled Item
- Hand Held Terminal
- Battery
- Hand Strap
- Stylus
- Operator's Guide
- Safety Precautions

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Some of the pixels on the LCD touch screen may not illuminate or stay permanently illuminated. Furthermore, there may also be inconsistencies in color and brightness. None of these aspects represent an LCD defect.
A thin Newton's ring (rainbow-like patterns) may appear on the touch panel. This does not necessarily indicate a problem with the touch panel.

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- NEC Infrontia does not assume any product liability (including damages for lost profits, interruption of operations, or the loss of business-related information) arising out of, or in connection with, the use of, or inability to use the HHT system software or related manuals.
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Usage Precautions

Usage environment restrictions
- **Do not use the HHT where it may be exposed to fire, high temperatures, or direct sunlight.**
  (Failure to observe this may result in damage, overheating, explosion, or fire.)
  * When the HHT is stored in a high-temperature, high-humidity environment of 50 to 60°C, leave to sit in a location at room temperature and normal humidity for at least 1 day prior to use. Failure to observe this may cause a reading failure or damage the HHT.
- **Do not use the HHT in places with extreme temperature variations.**
  (Failure to observe this may lead to HHT malfunction due to condensation.)
  * Leave the HHT for a short while prior to use when moved from a cold to a warm environment.
- **Do not use the HHT in places where it may be exposed to strong impact or significant static electricity.**

Keep the HHT away from electromagnetic waves and metallic objects.
Wireless communication may not be possible in the following locations.
- **In the vicinity of the following devices operating on a 2.4/5GHz waveband**
  (Communication may not be possible due to electromagnetic interference.)
  - Industrial, scientific, or medical equipment such as microwave ovens
  - Wireless LAN devices
  - Logistics systems in places such as plants or warehouses
  - Wireless devices such as personal or amateur radio stations
- **In the vicinity of household appliances emitting electromagnetic waves such as computers or televisions**
  (Communication may not be possible due to electromagnetic noise.)
- **In the vicinity of metallic objects, in places with high levels of metallic dust, or in places surrounded my metal walls**
  (Communication may not be possible due to the presence of metallic objects.)

⚠ WARNING

Handling the battery
Incorrect handling of the battery could cause the batteries to generate heat or smoke, or to rupture or burn. This is DANGEROUS. Be sure to observe the following.
- Never disassemble or modify the battery.
- Never connect the positive and negative terminals of the battery with a wire or other metallic materials.
- Do not carry or store the battery together with ballpoint pens, necklaces, coins, hairpins, or anything else metallic.
- Never burn or heat the battery.
- Do not use or leave the battery where it is excessively high temperature (60°C or higher), such as near fire or stoves.
- Do not put the battery into water of any kind or moisten it.
- Never charge the battery near a fire or anywhere exposed to direct sunlight.
  Failure to do so could activate the protector due to high temperature and thus prevent the battery from being full charged. Or it may break the protector, resulting in the battery to overheat, blowout, or combustion.
- Never charge the battery when at high temperature.
  Doing so could cause fire.
- Do not stick a needle into the battery, hammer at it, or tread on it.
- Do not let the battery undergo any shock or impact or throw it at something hard.
- Do not use batteries that are deformed, scratched or cracked remarkably.
- Solder nothing to the battery directly.
- The battery is exclusively for the HHT. Do not use the battery for purposes other than charging the HHT.
- If battery fluid leaks from the battery and it gets into your eyes, rinse them with clean water thoroughly without rubbing and consult a doctor as soon as possible. Otherwise, you may damage your eyes.
- If the battery does not finish recharging within the specified time, stop recharging.
- Never place the battery in a microwave oven or high-pressure container.
- If abnormal odor, heat, discoloration, deformation or any other abnormal conditions are noticed when the battery is in use, being charged, or is in storage, remove it from the HHT or HHT Station and avoid further use.
- Only use the HHT Station for charging the battery.
- The battery may be warm immediately after charging or use.

To System Designers:
- When introducing HHTs in those systems that could affect human lives (e.g., medicines management system), develop applications carefully through redundancy and safety design which avoids the feasibility of affecting human lives even if a data error occurs.

Handling the HHT
Incorrect handling of the HHT could cause electric shock, impaired vision, skin problems, injury, burns and generation of heat and smoke from the HHT. Be sure to observe the following to use the device correctly.
- Never put the HHT into a microwave oven or high-pressure container.
  Doing so could cause the HHT to break, generate heat, rupture or burn.
- Never put the HHT in places where there are excessively high temperatures, such as inside closed-up automobiles, or in places exposed to direct sunlight.
  Doing so could affect the housing or parts, resulting in a fire.
- Avoid using the HHT in extremely humid or dusty areas, or where there are drastic temperature changes.
  Moisture or dust will get into the HHT, resulting in malfunction, fire or electrical shock.
- If smoke, abnormal odors or noises come from the HHT, immediately turn off the power, pull out the battery, and contact your nearest dealer.
  Failure to do so could cause smoke or fire.
- If you drop the HHT so as to damage its housing, immediately turn off the power, pull out the battery.
  Failure to do so could cause smoke or fire.
- Do not use batteries or power sources other than the specified ones.
  Doing so could generate heat or cause malfunction.
- Never disassemble or modify the HHT; doing so could result in an accident such as break or fire.
- Do not insert foreign materials in the HHT.
- If foreign material or water gets into the HHT, immediately turn off the power, pull out the battery, and contact your nearest dealer.
  Failure to do so could cause smoke or fire.
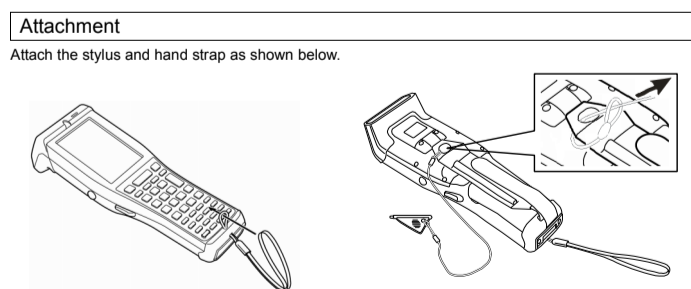- If the LCD breaks and the liquid leaks from the LCD by mistake, do not swallow, inhale or touch it.

⚠ CAUTION

Handling the HHT
Incorrect handling of the HHT could cause generation of heat and smoke from the HHT, and malfunction. Be sure to observe the following to use the device correctly.
- When using the hand strap or neck strap, exercise due care to avoid getting them caught in other objects or entangled in rotating machinery.
  Failure to do so could result in accident or injury.
- Do not use the HHT in the vicinity of wireless devices such as personal radios and ham radios. This could cause malfunction of the HHT.
- Do not place magnetic cards or the like near the HHT speaker.
  Doing so may result in the loss of magnetic data from cash cards, credit cards, etc.
- Do not place your ear near the speaker/beeper when tones are being emitted.
  Doing so may result in hearing loss.
- Do not apply excessive force when inserting or removing the battery.
  Doing so will result in damage.
- In environments where static electricity can build into significant charges (e.g., if you wipe off the plastic plate with a dry cloth), do not operate the HHT.
  Doing so will result in malfunction or machine failure.
- Do not drop the HHT on the floor or apply strong shock to it.
  Doing so could cause malfunction of the HHT.
- Do not use batteries other than the specified ones.

Wireless Equipment

●Precautions relating to the frequency used by this device

In addition to industrial, scientific, and medical equipment such as microwave ovens, static wireless stations (permit required) used for mobile identification in places such as plant manufacturing lines and specified low-power wireless stations (no permit required) operate on the same frequency band as this device.

1. Before using this device, ensure that no static wireless stations or specified low-power wireless stations for mobile identification are being used in the vicinity.
2. In the event of instances of electromagnetic interference from this device to a static wireless station being used for mobile identification, either promptly alter the usage frequency, or halt the electromagnetic discharge
3. If other problems arise due to reasons such as electromagnetic interference from this device to a specified low-power wireless station being used for mobile identification, please contact our sales office.

● Requests to system designers
- Communication may not be possible depending on the environment in which the device is being used. Ensure that problem-free communication is possible prior to use.
- Use a program capable of retransmitting data if communication fails.
- If the HHT is introduced into an environment in which a device using 2.4/5GHz waveband electromagnetic waves is operating, or if another device using 2.4/5GHz waveband electromagnetic waves is introduced following introduction of the system, run all devices and ensure that communication with the HHT is possible prior to use.
- Check communication once again prior to use if any changes are made to the usage environment (addition of household appliances, movement or addition of shelves, equipment and so on) following introduction of the system.

Components and Functions

Indicator LED
When succeeding in the reading of the barcode, illuminates in blue.
Illuminates in red during charging, and turns green on completion of charging.

IEEE802.11a/b/g built-in antenna*
Bluetooth® built-in antenna*

LCD (with Touch panel)
Display characters and graphic patterns.
Data may be entered by tapping the screen directly with the stylus.

Trigger Key

* Do not cover this antenna section with metal-evaporated tape or by hand.
  Doing so may result in communication failures.

Interface port
HHT charge terminals and Interface terminals

Reading window
Speaker
Hand belt
Battery cover
Trigger Key
Stylus
Hand Strap

Key pad

The HHT key functions can be set at user programs.
The diagram below shows an example of settings for each key function.

Input Method

Using the Stylus

The HHT liquid crystal display (LCD) is a touch screen. Buttons, menus and so displayed on the screen can be selected using the stylus provided.
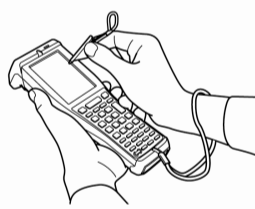
Touch Screen Operation

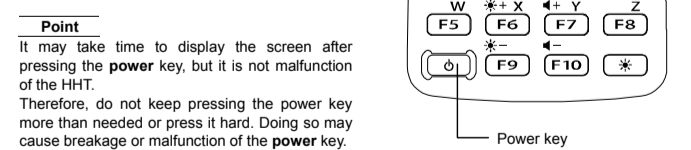Select the LCD touch screen buttons and menus and so on using the stylus provided.

Action	Description
Tap	This involves tapping the touch screen once. This function is the equivalent of a "click" with a mouse on a computer.
Double-tap	This involves tapping the touch screen twice in quick succession. This function is the equivalent of a "double-click" with a mouse on a computer.
Drag	This involves moving the stylus to an object while pressing the touch screen. This function is the equivalent of "dragging" with the mouse on a computer.
Long-tap	This involves tapping the touch screen for several seconds. This function is the equivalent of a "right-click" with the mouse on a computer.

- Always use the stylus provided to operate the touch screen. Never use fingernails or any pointed or hard objects, or apply strong pressure or impact to the touch screen. This may result in damage or a malfunction.
- If dirty, clean the touch screen and stylus tip prior to operation. Failure to observe this may result in scratches to the LCD screen or hinder smooth movement of the stylus.

Key Function Table

No.	Key	Name	Function and Description
	BKSP	Backspace key	Moves back one character.
	SCAN	Scan key	Press to scan barcodes. (This key performs the same function as a Trigger key.)
	SHIFT	Shift key	Used in combination with other keys such as the numerical keys or power key for special input procedures.
		Trigger keys	Press to scan barcodes. (This key performs the same function as the Scan key.)
	◄ ►	Cursor keys	Used to move the cursor and select menus.
	7 8 9 / 4 5 6 / 1 2 3 / , 0 .	Numerical keys	Used to enter data.
	ENT	Enter key	Press to finalize entered data or execute operations.
	TAB	Tab key	Used to enter a tab character.
	CTRL	Control key	Used to modify the function of the next key pressed.
	ALPHA	Alphabetical mode key	Switches to alphabet entry mode.
	ESC	Escape keys	Cancels the operation.
	FUNC	Function mode key	Switches to Function mode.
	F1 F2 F3 F4 / F5 F6 F7 F8 / F9 F10	Function keys	Used to select functions.
	✳	Backlight key	Turns the LCD backlight ON and OFF.
	⏻	Power key	Turns the HHT power ON and OFF.

Proper Care of the HHT

Make sure to turn OFF the HHT before cleaning.

● Terminal dirt on the HHT and battery
Periodically wipe any dirt from the terminals of the HHT and battery with a cotton swab or similar soft object. The terminal should be treated with the utmost care so as not to be scratched or bent during a cleaning.
Never use organic solvents such as benzene or alcohol, as this may cause the coated surface to come off.

● Housing dirt
Wipe any dirt from the housing with a dry, soft cloth.
If excessively dirty, wipe with a soft cloth that has been soaked in soapy water (always use neutral detergent) and wrung out thoroughly.
Never use organic solvents such as benzene or alcohol, as this may cause the housing to be marred or paint to peel off.

● LCD screen dirt
Never rub or strike the LCD screen with anything hard, as this may result in scratches on the screen or breakage.

● Keypad dirt
When cleaning the keypad, do not scrub the surface too hard or pull on the keys, as this may break the keys.

● Code reading window dirt
Any dirt or dust adhering to the clear plate of the code reading window will adversely affect reading performance.
When using in dusty areas, perform periodic inspections to check whether any dust has accumulated on the clear plate of the code reading window, and if so, first blow the dust away with an airbrush, and then gently wipe the plate with a cotton swab or similar soft object.
If sand or hard particles have accumulated, rubbing the plate will result in scratches. Blow the particles away with an airbrush or wipe with a soft brush.

Preparation

Follow the steps below to prepare the HHT for use.

Step 1 Charging the Battery	Charge the battery.
Step 2 Attaching the Stylus and the Hand Strap	Attach the stylus to prevent it from being lost. Attach the hand strap to prevent from dropping
Step 3 Turning ON the Power	Preparation is now complete.

Step 1 Charging

The battery is not charged when purchased and must therefore be charged prior to use.
The following HHT Station can be used with the HHT.
  HHT Station: S1635-03

Full charging takes approximately 3 hours.
- A slightly discharged battery takes less than 3 hours to fully charge.
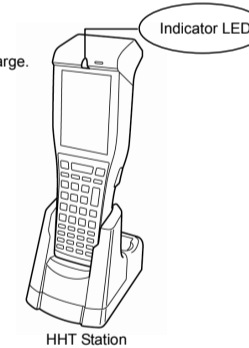
Indicator LED

■Charging with the HHT
Place the HHT on the HHT Station.*
The LED illuminates in red and charging begins.
The HHT Indicator LED will change to green when charging is complete.

HHT Station

The indicator LED flashing in red indicates the following causes. The proper action stated below must be taken.
- Abnormal temperature of the battery is detected.
  · Charge the battery under the proper temperature (10° to 40° C).
  · Avoid places where there are objects generating heat nearby or exposed to direct sunlight.
  · Terminate charging and replace the battery if there are no objects generating heat nearby.
- The charge terminals contact failure
  · Wipe any dirt or dust from the charge terminals.
- Charging is not completed even after the specified time has elapsed.
  · Terminate charging and use a dedicated AC adapter to charge the battery.
- The battery is broken or the battery life has ended.
  · Replace the battery.

  * Refer to "How to Replace the Battery" for how to insert the battery into the HHT main body.

- Remove the battery from the HHT main body or the HHT Station and store at cool and dry place, when you don't use your HHT for an extended period of time.
- Check the condition of battery on the following points before you store it for a long time:
  - If the battery is full charged (a state right after charge is completed), and
  - If the remaining battery level is very low (there is not enough power left to activate the HHT).
  Long-term storage under these conditions may deteriorate the performance and life of the battery. You are recommended to ensure that the battery is at least at the ▢▢▢ charge level required for long-term storage
  In addition, even you don't use the battery for a long term, keep this power level by recharging once a year in order to maintain the battery performance.
- The battery may swell over the years. This is a natural characteristic of a lithium-ion battery and is not safety hazard.

Step 2 Attaching stylus and hand strap

Attach the stylus to the hand belt to prevent it from being lost.
Attach the hand strap to prevent from dropping the HHT accidentally.

Attachment
Attach the stylus and hand strap as shown below.

Holding the HHT
Put your hand through the hand strap and hold the HHT as shown below. This will prevent you from dropping the HHT accidentally.

OR

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

Step 3 Turning ON the Power

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

When turning ON the HHT power for the first time or when using after long periods of time, If the dialog box does not display, first perform a "full reset".

> **Point**
> It may take time to display the screen after pressing the **power** key, but it is not malfunction of the HHT.
> Therefore, do not keep pressing the power key more than needed or press it hard. Doing so may cause breakage or malfunction of the **power** key.

Power key

Turning the Power OFF
Use one of the following three methods to turn OFF the HHT power.

(1) Normal power OFF
Press the **power** key.
The HHT power turns OFF after the message right displays.

Shutdown in progress. Do not remove the battery.

> **Point**
> Do not remove the battery while the message on the right is displayed.
> Failure to observe this may result in data stored in the HHT being lost.

(2) Turning the power OFF after registry back-up
Hold down the **CTRL** key and press the **power** key.
The message right displays and registry back-up is commenced.
The power turns OFF automatically when the back-up is complete.

Now saving Registry. Do not remove the battery.

> **Point**
> Do not remove the battery while the message on the right is displayed.
> Failure to observe this may result in data stored in the HHT being lost.
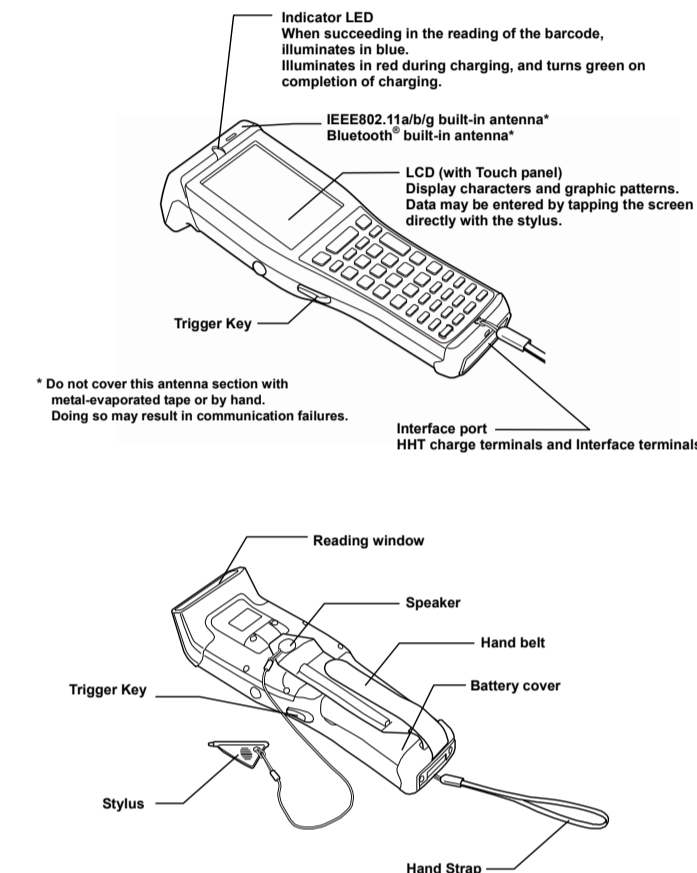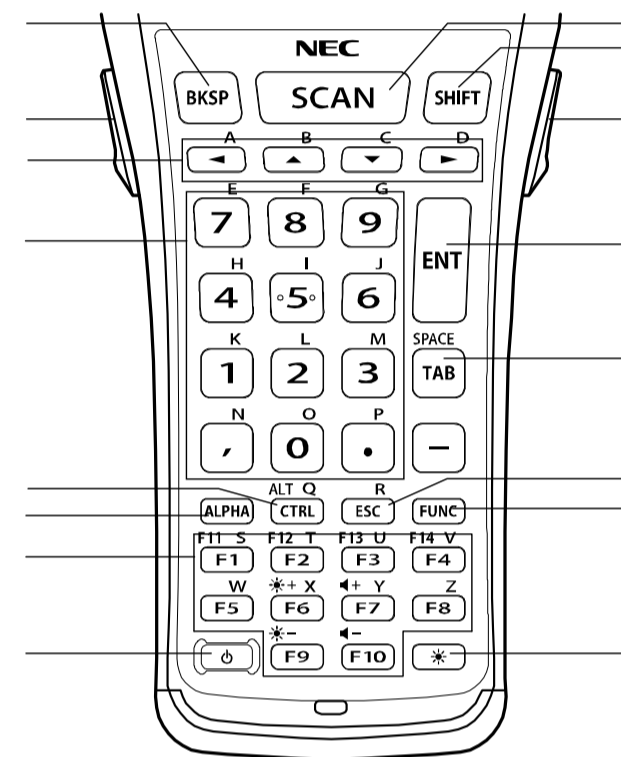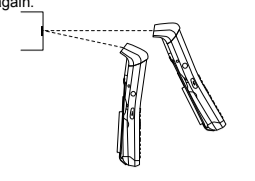
(3) Auto power OFF
The power turns OFF automatically when the HHT is not used for the length of time set at the user program. The default time is set to 3 minutes when the HHT is shipped from the factory.
* Refer to the User's Manual for further details of auto power OFF.

> **Point**
> Do not remove the battery while Auto power OFF is processing.
> Failure to observe this may result in data stored in the HHT being lost.

Scanning Barcodes

Follow the procedure below to scan barcodes.

1 Turn the HHT power ON.

Power key

2 Press the trigger key.
The HHT emits an illumination LED.

Illumination light

3 Hold the HHT close to the barcode to align the illumination LED.

When the HHT has read the barcode successfully, the indicator LED will illuminate in blue.

Barcodes can be read also by pressing the Scan key.

Blue LED

> **Point**
> The barcode scanning method may differ depending on the application. Perform scanning in accordance with the instructions provided in the application User's Manual.

When Unable to Successfully Read Codes

	Cause	Countermeasure
Specular reflection	When the light is focused on the printed surface of the code from directly above, the HHT may not read the code due to specular reflection.	Change the HHT scanning angle and try again.
Distance from code	Scanning may be unsuccessful if it is too close to or too far from the HHT reading window, even when the code is within the read area.	Move the HHT slowly toward or away from the code and try again.
Code surface curvature	Scanning may be unsuccessful if the code surface is curved.	Scan the barcode at the center of the barcode reading window.
Code surface dirt	Scanning may be unsuccessful if its surface is dirty.	Wipe the dirt from the code and try again.
Code reading window dirt	Scanning may be unsuccessful if the code reading window is dirty.	Blow any dust away with an airbrush, and then gently wipe the reading window with a cotton swab or similar soft object.
Direct sunlight, ambient light	Code scanning may be adversely affected by direct sunlight or the brightness of the surrounding light.	Perform code scanning away from direct sunlight. Try adjusting the brightness of the surrounding light when scanning indoors.

Battery Power Level Indicator
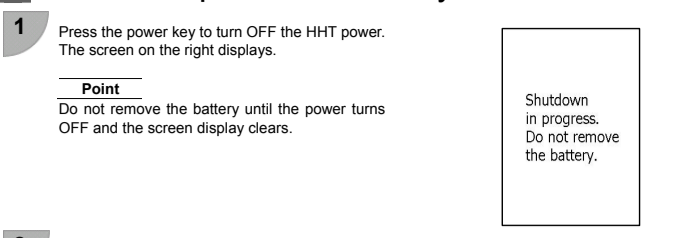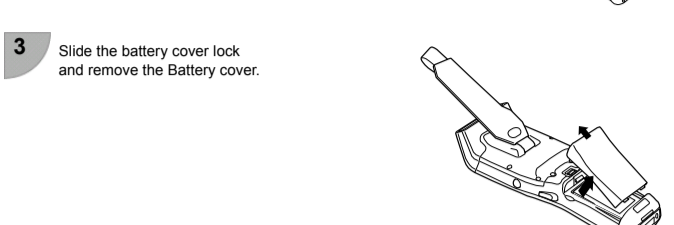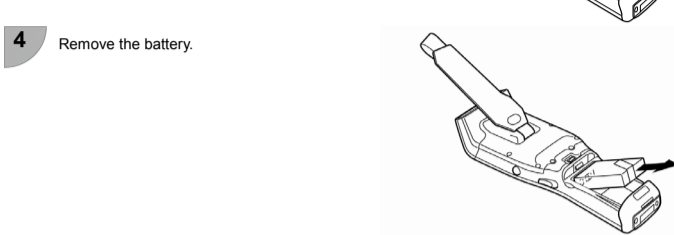
The battery power level can be checked at the (🔋) icon that displays in the task tray.
The battery power displays in four levels. The battery power level indicator is a guideline to notify the operator to charge the battery promptly when discharged.
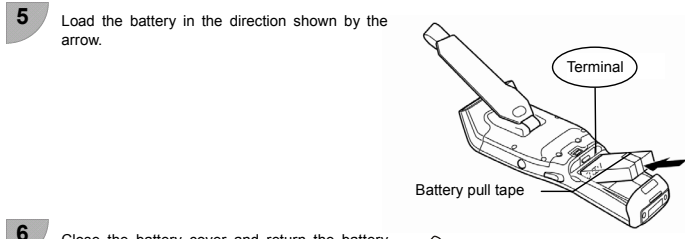
🔋 : Sufficient battery power remains

🔋 : The battery power is partially depleted. Charge promptly.

🔋 : The battery power is almost fully depleted and should be charged immediately.

🔋 : The battery power is fully depleted. Charge immediately or replace with a fully charged battery.
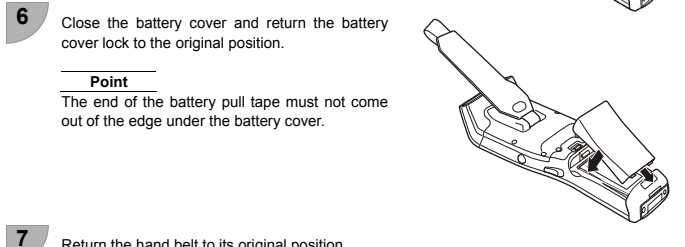
Battery Service Life
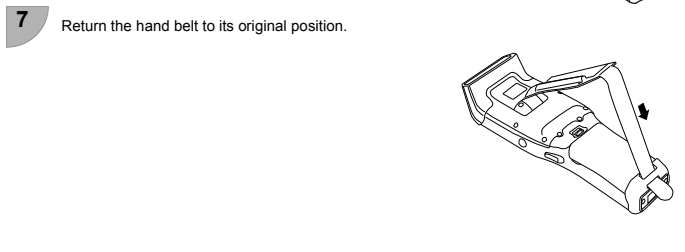
The battery is a consumable part. And it should be replaced upon the earlier of one year or after being charged approximately 300 times. The performance of the battery's lithium-ion battery will deteriorate gradually with repeated charging and discharging, even during normal use. When the battery operation time becomes shorter even after charging for the specified length of time, replace the battery with a new one.

Turning ON/OFF the Backlight

To turn the backlight ON or OFF, hold down backlight key.

Backlight key

Hold down the **backlight** key.

Backlight OFF or dim (backlight function enabled)

If no key is pressed for 3 seconds.*

Press any key (except for the **backlight** key) or tap the touch screen.

Backlight ON

Hold down the **backlight** key.

Hold down the **backlight** key.

Backlight OFF or dim (backlight function disabled)

* Under 1 minute if the HHT is placed on the HHT Station.

– Point –
● Time until auto OFF can be set at user programs.
● As opposed to pressing the backlight function enable/disable key, the backlight function can be enabled or disabled at the Backlight settings menu.

How to Replace the Battery

1 Press the power key to turn OFF the HHT power.
The screen on the right displays.

Point
Do not remove the battery until the power turns OFF and the screen display clears.

Shutdown in progress.
Do not remove the battery.

2 Loosen the hand belt.

3 Slide the battery cover lock and remove the Battery cover.

4 Remove the battery.

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

Terminal

Battery pull tape

6 Close the battery cover and return the battery cover lock to the original position.

Point
The end of the battery pull tape must not come out of the edge under the battery cover.

7 Return the hand belt to its original position.

Resetting and Full Resetting

Reset

Reset the HHT in the following cases.
● The HHT makes no response to entry from the touch screen or keys.
● Programs in the HHT malfunction for some unknown reason.

Reset Method

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

Point
Data stored as a file will not be lost even after resetting.
However, any data currently being edited will be lost.

Full Reset

Perform a full reset if the problem persists even after resetting.

Full Reset Method

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

Point
When performing full reset, all data including files and settings stored in the RAM will also be lost and the RAM will revert to the factory default. It is recommended that any important data be backed up to the "FLASH" folder or to the computer before full reset. When the HHT turns ON after the data in the RAM is deleted, the HHT starts from the "Initial Setup".

Memory Contents after Reset/Full Reset

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

(Note) If the Registry has been backed up (Refer to "Turning the power OFF after registry back-up".), the backed up Registry will be used

Using the HHT after Long Non-Use

Data stored in the HHT may be lost or damaged and the calendar clock may stop if the HHT is left unused for a long period of time.
· Keep a backup copy of important or critical information.
· Reset the calendar clock if it is stopped.
· The battery is also used as a backup power source. You should not remove the battery from the HHT for at least 2 days until memory backup power is fully charged.
Please refer to the User's Manual for more information on trouble shooting.

Troubleshooting Guide

Problem The HHT power does not turn ON.
● Make sure that the battery is properly inserted into the HHT.
● Check the battery power level and charge the battery if necessary.
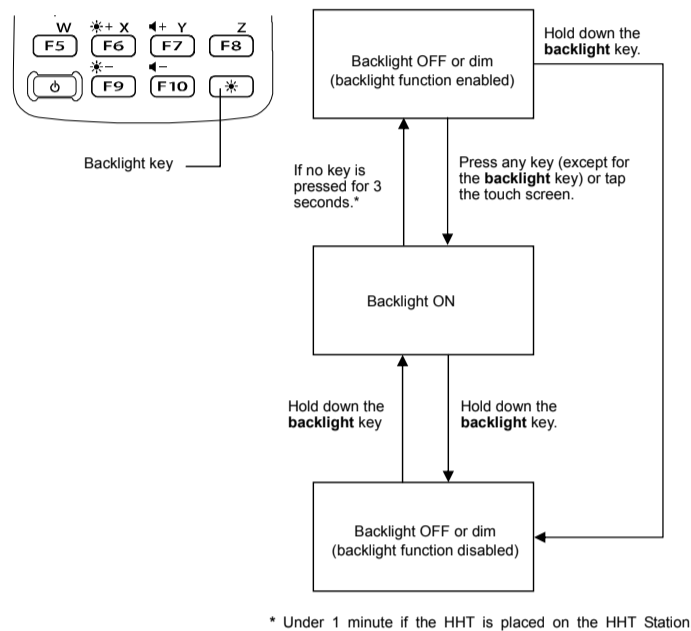● Wipe any dirt from the battery and HHT terminals.

Problem The HHT cannot be charged.
● Make sure that the HHT Station is being used.
● Make sure that the battery is properly inserted into the HHT.
● Make sure that the HHT has been properly placed on the HHT Station.
  The HHT LED will turn red when properly placed on the HHT Station.
● Wipe any dirt from the battery and HHT terminals.
● If the battery in use is an old one that has been repeatedly charged 300 times or more, or if more than one year has elapsed, replace it with a new one.

Problem The HHT unexpectedly turns OFF
● Make sure that the battery has been fully charged. If not, charge the battery.
● The HHT may be set to auto power OFF. If so, the HHT will automatically turn OFF when it is not used for the specified period of time.
  The auto power OFF setting can only be changed with the user program.

If the HHT cannot be tuned ON even after taking all the above measures, there is a possibility that the HHT Station is broken. Notify the system administrator.
Refer to the User's Manual for appropriate measures if an error message is displayed on the HHT during the operation.

Battery Recycling Request

● This product uses a lithium-ion battery that contains scarce, valuable recyclable resources.
We kindly ask for your cooperation in recycling to promote reuse of these resources.

The crossed-out wheeled bin is applicable for EU member status only.

● Used batteries must not be disposed of as combustibles.
● Contact your nearest local sales office for information on disposal procedures.
● When disposing of used batteries, cover the terminals with vinyl tape to insulate and protect them from overheating or fire that may be caused by short-circuit.
● Never disassemble or break down the battery.