NEC Factory Computer **FC-NOTE** Series

ShieldPRO

FC-N21S

User's Manual

Notes on Use

The following includes information necessary for proper and safe operation of the product.
Before using this product, read this manual carefully and keep cautions.
Keep this manual at hand to see whenever it is necessary.

The following symbols are used in this manual so that the user can avoid personal injury or damage to the properties.

- The meaning of these symbols are as shown below. Fully understand the meaning before reading this manual.

⚠ WARNING	■ Indicates there is a risk of death or serious personal injury.
⚠ CAUTION	damage.

- The following symbols are used to avoid personal injury or property damage due to an improper operation.

	Prohibited	Indicates prohibited action.
	Attention to fire	Indicates there is a risk of fume and/or a fire.
	Attention to electric shock	Indicates there is a risk of electric shock.
	Attention to personal injury	Indicates there is a risk of personal injury.
	Attention to laser beam	Indicates there is a risk of loss of eyesight due to laser beam.
	Attention to high temperature	Indicates there is a risk of failure due to high temperature.
	Unplug the power cord.	Indicates an instruction to unplug the power cord.
	Connect grounding conductor.	Indicates an instruction to connect the grounding conductor.

⚠ WARNING	General
	■ If smoke, odor, noise, or abnormal heat is generated, immediately turn off the power of this product and disconnect the power plug from the outlet. Remove a battery, if installed, after making sure that you can safely remove it. Using the computer in such conditions may cause a fire, burn, and/or electric shock.
	■ Do not hold the power plug with a wet hand. Do not hold the plug while your hands are wet. Failure to follow this warning may cause an electric shock.
	■ Do not touch the computer when it thunders. Do not touch the computer, connected cables, and peripheral devices, or install/remove such devices when a thunderstorm is approaching. Failure to follow this warning may cause an electric shock due to thunderbolt.
	■ Do not disassemble or modify the product. Failure to follow this warning may cause an electric shock, fumes, and/or fire.
	■ Do not place the product in a fire, apply excess heat, or short-circuit the terminal. Failure to follow this warning may cause a heating, fire, and/or explosion.

⚠ WARNING Installation Environment

- Observe the following precautions and use the product in a place where environmental requirements are satisfied.
  Failure to follow this warning may cause an electric shock, fumes, and/or fire.
  - Do not install or use the product in a location with medical vapor emitting in the air or medicals being contact with the product.
  - Do not use the product into which any liquid such as water, metals, and other foreign substances are entered.
  - Do not use or store the product in a place of extremely high or low temperature or drastic temperature change.
  - The AC cord shipped with this product can be exclusively used for 100 VAC.
    Do not connect this AC cord to an outlet of which rating exceeds 125 VAC.
  - The AC adapter and AC cord are designed on the assumption that it is connected to this product. Do not use them for any other equipment.

⚠ WARNING Power Supply and Power Cord

- The AC adapter and AC cord are designed on the assumption that it is connected to this product. The AC adapter may be damaged if it is connected to a device other than this product.
- The AC cord must be approved by an acceptable accredited agency responsible for evaluatio where the AC cord will be installed.
- The AC cord shipped with this product can be exclusively used for the specified country.

修正

- Do not connect the power cord to an outlet that has an illegal number of connections.
  The electric current exceeding the rated flow overheats the outlet, which may cause a fire.

- The AC cord shipped with this product can be exclusively used for 100 VAC.
  Do not connect this AC cord to an outlet of which rating exceeds 125 VAC.
  Failure to follow this instruction may cause a fire and/or electric shock.
- Insert the power plug into the outlet as far as it goes.
  A halfway inserted power plug may cause a fire and/or an electric shock.

- Do not use this product if dusts are accumulated on the AC power cord plug.
  With dust accumulated power plug, the electrical discharge (tracking) occurs between plug pins and it may cause a fire.

- Always hold the plugs of the AC cord in its removal. Do not pull the cord.
  Breaking of wire may cause a fire.
- Do not use the AC cord with the plug blades being unstable.
  Poor connection may cause a fire.

- Do not pull the AC cord forcibly or put any heavy object on it.
  Breaking of wire may cause a fire and/or electric shock.

⚠ WARNING Power Supply and Power Cord

- The drip-proof and dust-proof performance conforming to IP54 are not applied to the AC adapter and AC cord. Follow instructions described below when handling them to prevent fume, fire, and/or electric shock to occur.
  - Do not drop or give impact to the AC adapter.
  - Do not use the power cord with bent or bundled state.
  - Do not forcedly bend the root of the power cord.
  - Do not put any heavy object on the AC adapter and power cord.
  - Do not wrap the AC adapter with cloth or the like.
  - Do not use the AC adapter in a place where the liquid such as water splashes
  - Do not use any damaged AC cord and/or AC adapter.
  - Do not put the AC adapter in a place near the thermal appliance.
  - Do not put the AC adapter in a place where temperature changes drastically (e.g., near the exhaust port of air conditioner and vicinity of entrance).
  - Do not use the AC adapter in an area where inflammable gas and/or combustible substance are placed.
  - Do not put the AC adapter in a place where lamp black and/or steam is generated (e.g., galley and near the humidifier).
  - Do not use the AC adapter in a place where salinity (e.g., sea breeze) or the corrosive gas (e.g., hot spring) is generated.

- Use only the specified AC adapter and AC cord. Never attempt to disassemble or modify the AC adapter. Doing so may cause an electric shock, smoke, and/or fire.

⚠ Battery

- The provided battery is designed to be used in this product only. Do not use the battery for any other device. In addition, do not use any other battery than the provided battery for this product. Failure to follow this instruction may cause a fire and/or electric shock.

- To charge the battery, install it in FC-N21S for charging or use dedicated charger (FC-N013: option). Charging with another method may cause a fire and/or electric shock.

- Do not make a battery short-circuited. Doing so may cause a fire.

- Do not place a battery into fire. Doing so may cause a fire.

- Do not heat the battery. Doing so may cause a fire.

- Do not disassemble the battery. Doing so may cause a fire and/or an electric shock.

- Risk of explosion if battery is replaced by incorrect type. Dispose of used batteries according to the instructions.

- Do not drop or throw the battery. Doing so may cause damage to the battery.

⚠ WARNING Miscellaneous

- Any users with implantable cardiac pacemakers should make this product apart from the pacemakers by 30 cm or longer.
  The pacemakers may be influenced by radio waves radiated from this product.

- In any areas where medical agencies prohibit wireless LAN from being used, turn off the power of this product or disable the wireless LAN feature.
  Failure to follow this instruction may have some influences on medical equipment to cause accidents by malfunctions.

- If use of wireless and electronic devices are prohibited in the airplane, turn off the power of this product or

CAUTION Miscellaneous	
	■ After turning off the power of this product, wait for five seconds or longer before the power is turned on again. Turning on the power just after turn-off without a certain interval may cause a malfunction or fault to occur.
	■ In removal of the AC adapter, first pull out a plug from the mating power outlet and then the other plug from this product. Removing the plugs in the reserve order may cause the AC adapter and/or this product to be damaged.
	■ Avoid handling the product while eating, drinking and/or smoking cigarettes. A floppy disk contaminated with cigarette ash may cause data read/write error or damage to the floppy disk drive.
	■ Do not use any dirty floppy disk and/or CD-ROM. Using a dirty floppy disk with sand, dust, and/or liquid (e.g., water) may cause failure of the drive.
	■ Pay attention when relocating the product. When relocating the product, pay attention not to give an excessive shock and/or vibration defined in environmental specification. If a shock and/or vibration given to the product exceeds the environmental specification, internal hard disk drive and/or other components may be damaged.
	■ Notes on storage Unplug the AC cord from the outlet if you do not use the product for a long time. Do not leave any object made of rubber and vinyl contacting to the product. Do not wrap the product with vinyl bag or leave rubber bands or the like put on the product. Doing so may cause transformation of the product surface.

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(2) The contents of this manual may be revised without prior notice.

(3) All efforts have been made to ensure the accuracy of all information in this manual. If you notice any part unclear, incorrect, or omitted in this manual, contact your service representative.

(4) NEC assumes no liability arising from the use of this product, nor any liability for incidental or consequential damages arising from the use of this manual regardless of Item (3).

(5) This product is not intended for use or control in the facilities or devices concerning human lives, including medical devices, nuclear facilities and devices, aeronautics and space devices, transportation facilities and devices; and facilities and devices requiring high reliability. NEC assumes no liability for any accident resulting in personal injury, death, or property damage if this product has been used in the above conditions. To use this product in facilities and devices and/or control system, take sufficient considerations for safety such as redundant configuration, fire delay measures, and malfunction prevention measures.

(6) This product (including software) is intended to be sold and used only in the specified country. NEC does not support maintenance service and technical support in any country outside the specified country.

(7) The components used in this product may be changed to equivalent one to maintain long-term supply.

(8) Use an operating system (Windows® XP or Linux) pre-installed in the internal hard disk drive and CD-ROMs provided with the product can be used for this product only.

(9) It is a piracy to replicate a part or whole of software, or distributing it without permission of the copyright owner.

(10) Pay attention not to lose a license label of installed operating system (COA label) that is attached to this product of pre-installed model.

(11) The data you have saved in hard disk drive, floppy disk, and/or CD-ROM are excluded from the warranty of this product. Be sure to make a backup copy of user data.

(12) It is recommended to install an anti-virus software and update the virus definition file in a regular basis.

Precautions on Export

This product (including software) is produced for the specified country, and does not conform to the standards of any other country than specified country. NEC assumes no liability arising from the use of this product in any other country than the specified country. In addition, no maintenance service and technical support for this product are not provided in any other country than the specified country.

This product is a product controlled under the Foreign Exchange and Foreign Trade Control Law of each country and is subject to restriction in export (including carrying with you). Therefore, you should take necessary procedures in accordance with the above Law to export this product. Contact your service representative before exporting this product.

EMC Notice

Only cable less than 3 meter (except the LAN cable)need to be used with this product to satisfy the electromagnetic compatibility (EMC directive 89/336/EEC).

(1) VCCI Notice

- This product is a VCCI Class B information technology equipment conforming to the reference level of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this product is used near a radio, TV and/or wireless device, this product may cause poor receptions. Use this product according to descriptions in "Notes on Use" and relevant sections.
- The wireless LAN (5 GHz) can only be used indoors due to relevant radio laws. Use the wireless LAN feature indoors only.
- This product is a radio equipment that satisfies "Station of the small electric power data communications system" defined in Article 6, Paragraph 4 of the radio law ministerial ordinance in Japan. It also satisfies "Local telecommunication terminal equipment using the radio wave" defined in Article 36 of ordinance for terminal equipment in Japan. Disassembling and/or modifying this product offense these laws. Never attempt to disassemble or modify the product. In addition, this product can be used only in Japan.
- The radio wave output of this product is lower than the reference value defined in "Radio Frequency-Exposure Protection Standard (RCR STD-38)" by Association of Radio Industries and Businesses.
- In the use frequency band of this product, RFID Equipment for Premises Radio Station (license required), Specified Low Power Radio Station (license not required), and Radio Equipment for Personal Use (license required) are operated as well as industrial, scientific, and medical equipment.

  (1) Before using this product, make sure that the specific small-power wireless station or amateur wireless station is not operating around you.

  (2) If this product generates harmful radio interference to the local station for mobile object identification, immediately change frequency bandwidth or stop emitting radio wave. Then, consult with your service representative about measures to avoid radio interference (e.g., installing a partition).

  (3) If this product generates harmful radio interference to the specific small-power wireless station or amateur wireless station, contact your service representative.
- Stop emitting radio wave immediately if this product generates radio interference to the local station for mobile object identification.

(2) Federal Communications Commission (FCC) Notice

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

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

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

Properly shielded a grounded cables and connectors must be used for connection to host computer and / or peripherals in order to

3. Wireless LAN

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. FC-N21S 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. Please refer to the SAR test report that was uploaded at FCC website.

The following safety precautions should be observed:

- Do not touch or move antenna while the unit is transmitting or receiving.
- Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; if not, the radio may be damaged.
- Use in specific environments:
  - The use of wireless devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
  - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
  - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.
- Antenna use:
  - High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from the body of all persons.
    Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

- Explosive Device Proximity Warning

⚠ WARNING	Do not operate a portable transmitter (such as a wireless network device) near unshielded blasting caps or in an explosive environment unless the device has been modified to be qualified for such use

- Antenna Warning

⚠ WARNING	FC-N21S series are not designed for use with high-gain directional antennas. Use of such antennas with these products is illegal.

- Use on Aircraft Caution

⚠ CAUTION	Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

■ Local Restrictions on 802.11a, 802.11b, and 802.11g Radio Usage

⚠ CAUTION	Due to the fact that the frequencies used by 802.11a, 802.11b and 802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, and 802.11g products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use.

■ USA:Federal Communications Commission (FCC)
This device complies with Part 15 of the FCC Rules. Operation of the device is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference that may cause undesired operation.

NOTE: The radiated output power of the wireless network device is far below the FCC radio frequency exposure limits. Nevertheless, wireless network device should be used in such a manner that the potential for human contact during normal operation is minimized.

In according with 47 CFR Part15.407 (e) U-NII devices operating in 5.15-5.25GHz frequency bands are restricted to indoor operations only.

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

■ Europe Frequency Bands

- 2.400 - 2.4835 GHz (Europe ETSI)
- 5.15 - 5.35 GHz and 5.47-5.725 GHz (Europe ETSI)
- Low band 5.25 - 5.35 GHz is for indoor use only
- 5.47 - 5.725 GHz is current not allowed in Czech Republic and France.

MODEM

⚠ CAUTION	**IMPORTANT SAFETY INSTRUCTIONS** When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following: 1. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool. 2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning. SAVE THESE INSTRUCTIONS.

Federal Communications Commission (FCC)

- This equipment complies with Part 68 of the FCC rules. On the bottom of FC-N21S is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.
- A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part68 rules and requirements adopted by the ACTA.
- The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.
- If this NEC equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the

it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone number provided may not be a 900 number or any other number for which charges exceed local or long-distance transmission charges.)

- In order to program this information into your FAX software, you should refer to the manual of the FAX software being used.

R&TTE Directive

We, the manufacturer (NEC Corporation) hereby declare that this equipment (FC-N21S), model XXX is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

For Sweden

Härmed intygar (NEC Corporation) att denna (FC-N21S) står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Transfer to Third Party

The following must be observed when you transfer (or sell) the product or software provided with the product to a third party. In addition, be sure to include this User's Guide when you transfer (or sell) the product to a third party.

- About data on the hard disk drive

  Be sure to take appropriate measures not to leak important data (e.g., customers' information or companies' management information) on the hard disk drive to be transferred to any third parties.

  Data seems to be erased when you empty "Recycle Bin" or execute the "format" command of the operating system. However, the actual data remains written on the hard disk drive. Data not erased completely may be restored by special software and used for unexpected purposes.

  It is strongly recommended that the Hard Disk Erase feature in BIOS SETUP menu or the software or service (both available at stores) for data erasure should be used in order to avoid the trouble explained above.

  NEC shall not assume any liability for such data leakage caused by your failure to take necessary measures.

- Provided software

  To transfer or sell any software that comes with the product to a third party, the following requirements must be satisfied:

  - All provided software must be transferred and no backup copies must be retained.
  - Transfer requirements listed in "Software License Agreement" that comes with each software must be satisfied.
  - Software that are not approved for transfer must be uninstalled before transferring the product.

Disposal of Consumed Parts and Equipment

Consult with your service representative for disposal of the product and optional devices.

Recycling Batteries

- A lithium ion battery is used for this product.
- Lithium-ion batteries are valuable resources being recyclable.
- To protect valuable resources, do not dispose batteries becoming unnecessary but bring them to any of the following carry-on centers:

  * For details of the carry-on centers, see the NEC environmental web page below:

    URL:http://www.nec.co.jp/eco/ja/products/3r/indes_denchi.html

- Notes on handling batteries in recycling
  - Insulate connectors with tape.
  - Do not peel off coating.
  - Do not disassemble batteries.
  - To keep batteries, enter them in a rugged case and put the lid on the case.
  - Keep batteries so that they may not get wet with rain.
  - Do not leave batteries in the sun.

Text Conventions

Symbols in the Text

This User's Guide uses the following symbols to distinguish each element of sentences.

Symbol	Description
	If the description is ignored to handle the product, the product may be defected, some software used in the product may be broken, and/or the data created by the user may be broken.
	If the description is ignored to handle the product, the product may be defected and/or some software used in the product may not operate normally.

This User's Guide also uses the following symbols.

Symbol	Description
	Supplement of the text
	Reference page

Typographical Conventions concerning Keyboard Operation

Keyboard keys are represented in bold-faced letters.

Example: Press Enter to exit.

When several keys are combined with plus sign (+), press and hold the first key, press another key, and then release all the keys. Keys may be indicated by an illustration.

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Chapter 1 System Overview

This chapter overviews FC-N21S, the FC-NOTE Series ShieldPRO System.

1.1 HARDWARE SPECIFICATION

Item			FC-N21S (Note 1)
CPU (Note 2)			Intel Core Solo U1400 ultra-low voltage processor (Extended Intel SpeedStep technology (Note 3) installed [1.20 GHz])
Cache memory		Primary	32KB for instruction/32KB for data (built in CPU)
		Secondary	2.048KB (built in CPU)
System bus			533 MHz (memory bus: 400 MHz)
Chip set			Mobile Intel 945GM Express chip set ICH7-M
Security chip (Note 4)			Conforming to TPM V.1.2
Memory (Note 5)			2GB max. (Note 6) 2 SO-DIMM slots DDR2-SDRAM (PC2-3200 (DDR2-400))
Display feature	Display element (Note 7)		12.1-in. TFT color LCD display (XGA) with touch panel (Note 8)
		Stuck pixels of LCD (Note 9)	0.0005% or less
	Graphic accelerator		Built in mobile Intel 945GM Express chip set (Dual display (Note 10), smoothing, and screen rotation features available)
		Video RAM	128MB max. (use of main memory)
	Resolution and display colors		LCD: 1024×768 dots (16.77 million colors (Note 11)) External monitor: 1600×1200 dots max. (Note 12) (16.77 million colors (Note 11))
Auxiliary storage (Note 13)	Floppy disk drive		[Option] FC-FD002U connectable (USB connection)
	CD-ROM type drive		[Option] FC-CW002U connectable (USB connection)
	Fixed disk drive (Note 14)		[Selectable item] 60GB (Serial ATA specification) or 40GB (wide temperature range and Ultra ATA specification)
	Silicon disk drive (Note 14)		[Selectable item] 8GB (Ultra ATA specification)
Input device	Keyboard (Note 15)		[Selectable item] Standard or backlight keyboard (with or without keyboard cover selectable) English keyboard Key pitch: 17.55 mm Key stroke: 2.4 mm（backlight keyboard : 2.0mm）
	Pointing device		Touch pad
	Tablet button		10 (5 buttons and 5 Tb + buttons) (Note 16)
Interface (Note 13)	USB (Note 17)		3 ports (including 1 connect/disconnect-proof enhanced port), USB2.0 compatible
	Serial		1 D-sub 9-pin connector of 115,200 bps max. (male)
	Display		Mini D-sub 15-pin connector (female) (for analog RGB monitor)
	Network	Built-in LAN	1 RJ45 (1000BASE-T / 100BASE-TX / 10BASE-T) LAN connector
		Wireless LAN	[Selectable item] Conforming to IEEE802.11a/b/g (Note 18) WEP [encryption key length: 64/128 bits (user setting key length: 40/104 bits)], WPA-PSK (TKIP/AES) and WPA2-PSK (AES) compatible
	Built-in modem (Note 19)		1 RJ11 modular connector Modem: 56k bps max. (Note 20) (V.90/V.92 compatible) FAX: 14.4k bps max. (V.17 compatible)
	Sound feature		Built-in PCM record/replay feature and monaural speaker Microphone input (stereo, mini jack) and output common to headphone/line (stereo, mini jack)
PC card slot (Notes 13 and 21)			1 Type I/II slot (Type III unavailable) conforming to PC Card Standard and compatible

Item		FC-N21S (Note 1)
Power supply	This machine	Operating voltage: 16 V±5%
	Battery (Notes 23 and 24)	[Selectable item] Standard type: driving period - 8 hours, charging time (in power-on/off states) - about 3 hours/3 hours and weight: 0.3 kg
	AC adapter	100 to 240 VAC ±10%, 50/60 Hz [Do not use the specified AC adapter and AC Code.]
Conforming standard		Suitable to RoHS direct and conforming to VCCI Class B. Designed based on EMC direct (EN55022 and EN61000-6-2) (Note 25) and low voltage direct (EN60950-1) (Note 25) standards. Power design based on standard UL60950-1
Power consumption		About 15 W (about 50 W max.)
Energy efficiency (Power saving achievement rate)		Target year: 2005 (Note 26), S division 0.00025 (AAA) Target year: 2007 (Note 27), I division 0.0020 (A)
Outside dimension		284(W) × 255(D) × 48(H) mm (excluding projections and bumper)
Weight		About 2.5 kg (including standard battery)
Installed OS		[Selectable item] Microsoft Windows XP Professional (Service Pack 2) Japanese / English or Linux (Note 28)

Notes:

1: See "1.2 Selection Menu Table" for type names and numbers.

2: FC-N21S includes a control feature enabling the CPU to operate dynamically depending on use environments and loads.

3: In any OS environment other than preinstalled OS environment, the expanded IntelSpeedStep feature may be unavailable.

4: The security chip is unavailable to any OS other than preinstalled Windows XP Professional.

5: The capacity of a memory board can be selected out of 256MB, 512MB, 1GB and 2GB on the selection menu. Expanded RAM boards FC-UG-M011 (256MB, PC2-4200), FC-UG-M012 (512MB, PC2-4200) and FC-UG-M013 (1GB, PC2-4200) are available.

6: Replacement of an expanded RAM board is enabled only on a single slot. The maximum memory capacity can be installed if memory of 1GB or larger is selected.
If memory of less than 1GB is selected, the maximum memory capacity is "selected memory capacity" + 1GB.

7: The LCD display is manufactured based on extremely high-precise technology. However, dot drops (such as negligible black points and red, blue or green points always illuminating) may appear on a part of the screen. In addition, color and/or brightness irregularities may appear depending on view angles. These are caused by characteristics of LCD displays and do not indicate any defects.

8: The touch panel is unavailable under USB locking.

9: The base dot drop rate is calculated in sub-pixels according to the standard of ISO13406-2.

See http://www.express.nec.co.jp/products/pc/lcddot.html for details.

10: The feature allows an external display for desktop screen to be different from the LCD display of FC-N21S.

11: 16.77 million color display is accomplished by the dithering feature of graphic accelerator.

12: FC-N21S has the resolution and the number of colors. However, FC-N21S cannot realize them depending on the resolution and refresh rate of the connected display. The LCD display on FC-N21S and the external display connected to FC-N21S can display the same screen. However, if the enlarged display feature is not used, display data may not extend to all over the external display.

13: Before a commercial product can be used for FC-N21S, you should previously evaluate the product to confirm that the product is valid.

14: Fixed and silicon disk drives should be installed exclusively with each other.

15: The standard English keyboard is only selectable for the Windows XP Professional (Service Pack 2) pre-installed model.

16: Each tablet button can be set to have the feature of starting any application.

19: Depending on line status, the communication speed may vary. The built-in fax modem is only applicable to the general subscriber phone line. The modem should be exclusively used in the specified country. 修

20: The maximum data transfer rate is 56k or 33.6k bps in data receive or send operation, respectively.

21: PC and SD cards are options. Purchase commercial products.

22: Refer to "5.2 Installing Attached Applications" for supporting OS of the attached security software.

23: The battery driving and charging times may be different from the specified values depending on situations in which the battery pack is used. The battery pack is a consumable. If the long driving mode is selected on the BIOS Setup Menu, the CPU operation performance is of the low mode.

24: The battery driving time is measured based on the JEITA battery operation time measurement method (Ver. 1.0). The time varies depending on operation environments, brightness of LCD display and system settings.

25: These standards are required for CE marking.

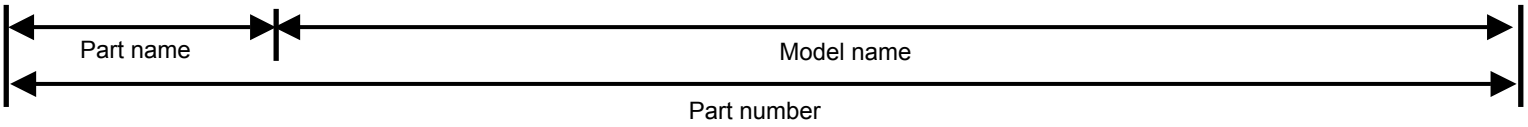
26: The energy consumption efficiency is obtained by dividing the power consumption measured based on the measurement method defined by the Rationalization in Energy Use Law (target year: 2005) by the composite theory performance defined by the Rationalization in Energy Use Law. Power saving achievement rates A, AA and AAA means achievement rates equal to or larger than 100% and less than 200%, equal to or larger than 200% and less than 500% and equal to or larger than 500%, respectively.

27: The energy consumption efficiency is obtained by dividing the power consumption measured based on the measurement method defined by the Rationalization in Energy Use Law (target year: 2007) by the composite theory performance defined by the Rationalization in Energy Use Law. Power saving achievement rates A, AA and AAA means achievement rates equal to or larger than 100% and less than 200%, equal to or larger than 200% and less than 500% and equal to or larger than 500%, respectively.

28: FC-N21S of Linux-installed model provides Linux environment optimized for uses requiring safety and high reliability based on public distribution. For FC-N21S of Linux pre-installed model, the wireless LAN and fingerprint authentication features are excluded from the selectable items. The built-in modem is not available for the Linux pre-installed model.

1.2 SELECTION MENU TABLE

Series title	Selection menu				
Base unit	Keyboard	OS	Memory capacity	Disk drive and battery	Wireless LAN and fingerprint authentication
FC-N21S CPU Intel Core Solo Processor Ultra-low voltage ver. U1400 (1.2 GHz) Memory (2 slots) PC card (1 slot) SD card (1 slot)	[B] Standard keyboard	[Y] Windows XP Professional (Service Pack2) English ver. preinstalled (Note 1)	[2] 256MB (256MB × 1)	[S] Standard HDD (SerialATA spec., 60GB) Standard battery	[S] Wireless LAN: Yes Fingerprint authentication: No (Note 2)
			[3] 512MB (512MB × 1)		[Z] Wireless LAN: No Fingerprint authentication: No
		[L] Linux preinstalled (Note 2)	[4] 1GB (1GB × 1)		
			[5] 2GB (1GB × 2)		
			[C] or [0] Custom No.	[X] Serial Number from “0” to “9” or from “A” to “Z”	[X] Serial Number from “0” to “9” or from “A” to “Z”



Notes:

1: The key assignments are based on the standard English keyboard layout.

2: For FC-N21S of Linux pre-installed model, the wireless LAN and fingerprint authentication features are excluded from the selectable items. The built-in modem is not available for the Linux pre-installed model.

* The part and generation numbers of FC-N21S are directed on the nameplate and warranty at shipment. See the NEC web site for details of the generation numbers.

  Ex.: For order number FC-N21S/BX2SS, the notation on the nameplate and warranty is FC-N21S/BX2SS** (**: generation number).

* FC-N21S of Windows XP pre-installed model already has Microsoft Windows XP Professional Operating System (Service Pack 2) installed. Note that deleting and down-grading of Service Pack is disabled.

  First partition: 20GB (NTFS) (Software already installed at shipment occupies about 5GB in the first partition.)
  Second partition: Remaining memory (NTFS)

* For FC-N21S of Linux pre-installed model, the distributed Linux is MIRACLE LINUX 4.0 kernel 2.6. Contact NEC for other distributed Linux.

  First partition: 20GB (ext3) (Software already installed at shipment occupies about 4GB in the first partition.)
  Second partition: 1GB (ext3)
  Remaining partition: Not formatted

1.3 ENVIRONMENTAL SPECIFICATION (MAIN UNIT)

Item			Condition Installation of standard hard disk drive and battery
Temperature	Operating		5 to 45 ºC
	Storage		-40 to 70ºC
	Evaluation standard		IEC 68-2-1,2,14 / MIL-STD-810F, Method 501.4, 502.4
Humidity	Operating		5 to 95% RH (without condensation)
	Storage		5 to 95% RH (without condensation)
	Evaluation standard		IEC 68-2-30 / MIL-STD-810F, Method 507.4
Altitude	Operating		15,000 ft (4,57 2m)
	Storage		40,000 ft (12,190 m)
	Change rate		2,000 ft/min (609.6 m/min)
	Evaluation standard		IEC 68-2-13 / MIL-STD-810F, Method 500.4
Shock resistance (Note 1)	Operating		147 m/s^2, 11 ms, half sinusoidal wave
	Storage		490 m/s^2, 11 ms, half sinusoidal wave
	Evaluation standard		IEC 68-2-27 / MIL-STD-810F, Method 516.5
Vibration resistance (Note 1)	Operating		[Sinusoidal wave] 0.075 mm (0-P) in frequency range 10 to 55 Hz 9.8 m/s^2 (0-P) in frequency range 55 to 500 Hz
	Storage		[Sinusoidal wave] 0.15 mm (0-P) in frequency range 10 to 55 Hz 19.6 m/s^2 (0-P) in frequency range 55 to 500 Hz [Random wave] $0.04G^2$/Hz in frequency range 20 to 1000 Hz –6 dB/Octave in frequency range 1000 to 2000 Hz
	Evaluation standard	Operating	Sinusoidal wave: IEC68-2-6
		Storage	Sinusoidal wave: IEC68-2-6 Random wave: MIL-STD-810F, Method 514.5 Category 24 FIGURE 514.5C-17
Dust proof and drip proof	Operating		IP54
	Storage		IP54
	Evaluation standard		IEC 529 / MIL-STD-810F

IEC: Abbreviation for International Electrotechnical Commission.

MIL: Abbreviation for Military Specifications and Standards.

Note 1: The vibration resistance of FC-N21S does not assure that it has sufficient strength against resonance generated when the frequency of added vibration is close to the natural frequency of FC-N21S.

* The specification does not assure that FC-N21S can operate continuously under the described environmental conditions in which FC-N21S is installed.

  In addition, if FC-N21S is equipped with one or more NEC or commercial options, the most severe environmental condition among those for FC-N21S and the options is applied.

  While FC-N21S is stored in a place at ambient temperature of 0ºC or lower, the clock built in FC-N21S may be shifted. Set the clock before FC-N21S is used again.

1.4 EXTERIOR VIEW

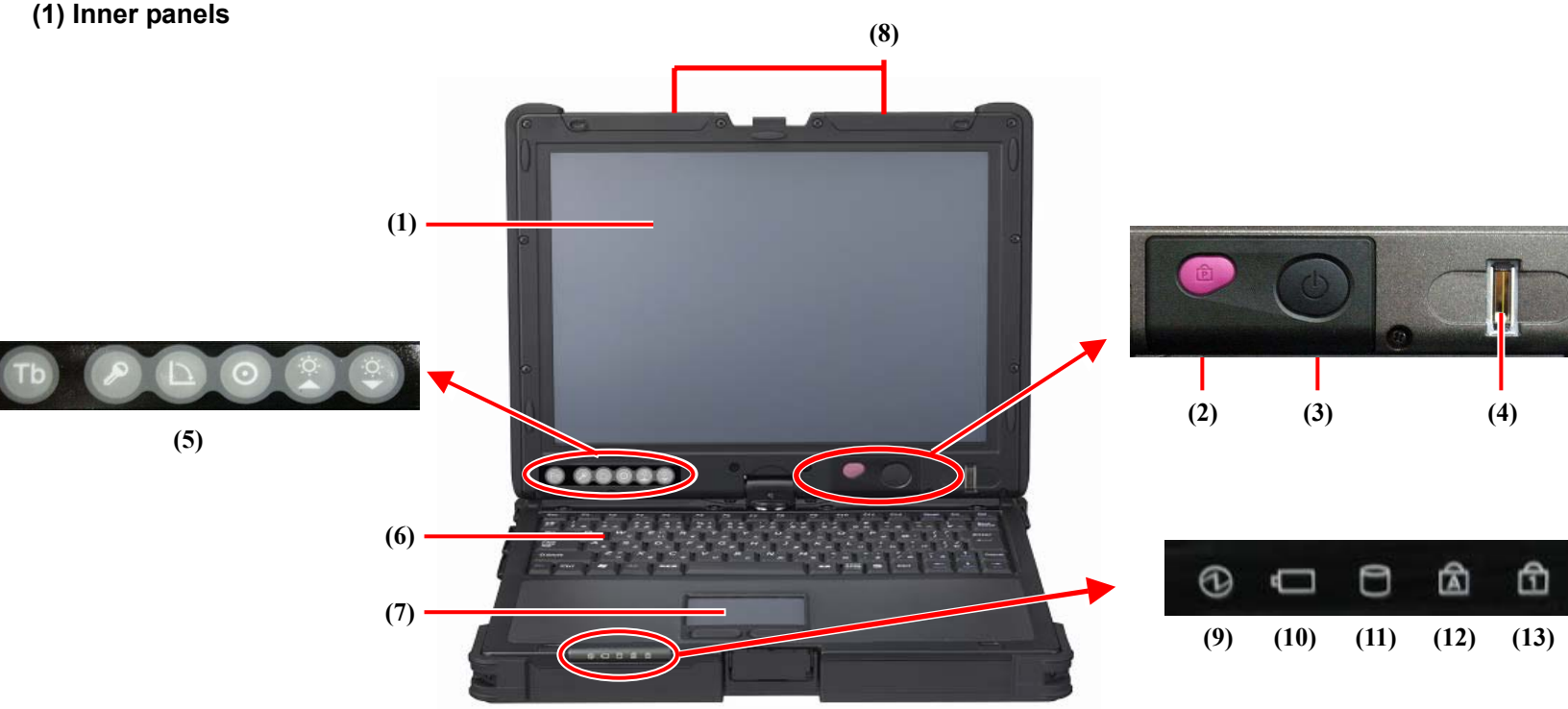
FC-N21S is of convertible type allowing it to be used as a note or tablet PC depending on uses.

FC-N21S also has several characteristics including light weight, various security features and installation of touch panel to be user-friendly.

On its bottom surface of FC-N21S, the hard disk drive, expanded RAM board and battery pack can be replaced with spares.

1.4.1 Names and Features of Sections of FC-N21S

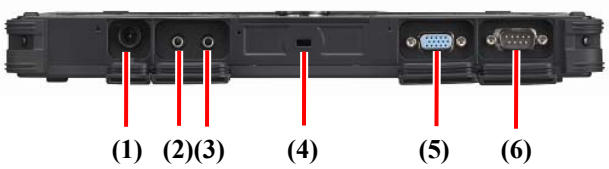
(1) Inner panels



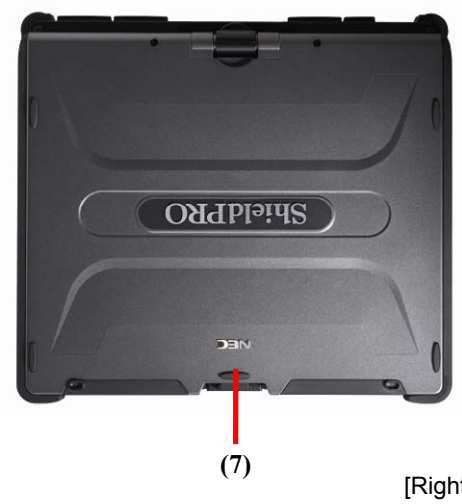
No.	Name	Description	Reference page
(1)	LCD display (with touch panel)	12.1-in. TFT LCD display	36
(2)	Power lock switch	Locks the power switch to prevent the switch from being set unintentionally (enabled by BIOS setting).	15
(3)	Power switch	Allows you to turn on/off power.	
(4)	Fingerprint sensor	Reads fingerprint (selection).	—
(5)	Tablet buttons	Allows the security, screen rotation and LCD brightness adjustment features to be executed directly. Setting BIOS appropriately, you can assign any key codes to these buttons.	30
(6)	Keyboard		31
(7)	Touch pad		31
(8)	Wireless LAN antenna	Used for wireless LAN.	39
(9)	Power lamp	While power is supplied to FC-N21S, the lamp illuminates or blinks in several colors depending on the status of FC-N21S or the remaining battery level as follows: • Illuminating in green: Power-on status • Blinking in green: Suspend (standby) status • Illuminating in yellow: Low battery level (7 to 10% of the full level) • Blinking in yellow: Low battery level in suspend (standby) state (7 to 10% of the full level) • Illuminating in orange: Extremely low battery level (0 to 6% of the full level) • Blinking in orange: Extremely low battery level in suspend (standby) state (0 to 6% of the full level) • OFF: Power-off or no use	15
(10)	Battery charge lamp	Indicates battery status. • OFF: Discharging, full discharge in no connection of AC adapter or full charge completed • Illuminating in orange: Charging • Blinking in orange: Occurrence of error	25
(11)	Disk access lamp	Illuminating (blinking) in green indicates built-in HDD activity	-

(2) Outside sections

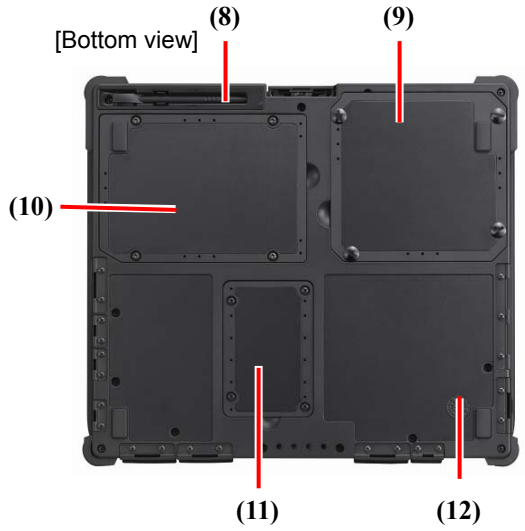
[Rear view]



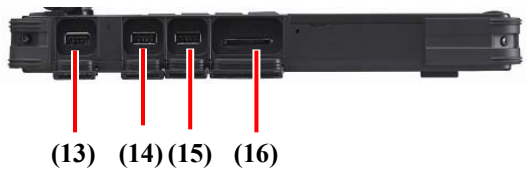
[Front view]



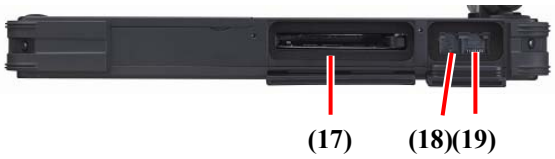
[Bottom view]



[Left side view]



[Right side view]



No.	Name	Description	Reference page
(1)	Power terminal	Connects with the AC adapter.	22
(2)	Mike terminal (stereo)	Connects with a commercial microphone (stereo and mini jack type)	46
(3)	Output terminal common to line and headphone (stereo)	Outputs sounds to a commercial audio device or headphone (stereo and mini jack type)	46
(4)	Antitheft lock	Connects with a commercial security cable.	83
(5)	External monitor output connector	Connects with an external analog RGB monitor.	36
(6)	Serial connector	Connects with a serial device such as a modem.	41
(7)	LCD display fixing lock	Locks the LCD display.	13
(8)	Touch pen storage area	Stores the attached touch pen.	—
(9)	Battery storage area	Stores the attached battery.	23
(10)	Disk drive storage area	Stores disk drives (installed).	87
(11)	Expanded memory storage area	Stores expanded RAM board of an option.	84
(12)	Built-in speaker (monaural)	Monaural speaker for sound replay.	46
(13)	USB connector (1) (Connect/disconnect-proof enhanced type)	Connects with a USB device (USB2.0 available).	42
(14)	USB connector (2)	Connects with a USB device (USB2.0 available).	42
(15)	USB connector (3)	Connects with a USB device (USB2.0 available).	42
(16)	SD card slot	Accepts an SD card.	44
(17)	PC card slot	Connects with a PC card (PCMCIA of type II) for feature expansion.	43
(18)	Modular connector for phone line	Connects with phone line.	37
(19)	LAN (1000BASE-T) connector	Connects with LAN (1000BASE-T/100BASE-TX/10BASE-T) cable	38

Chapter 2 Installation Guide

This chapter describes the notes on installations and connections of FC-N21S and peripherals. See this chapter to install FC-N21S and peripherals appropriately.

2.1 PROPER OPERATION OF FC-N21S

To operate FC-N21S properly, follow the notes described below.

(1) Notes on installation place

Install FC-N21S in a place where it can be operated properly. See "2.2 Notes on Use of FC-N21S in FA Environment" for details.

(2) Notes on operation

1. Before connecting or disconnecting cables to/from peripherals (excluding USB devices and PC and SD cards), confirm that the power of FC-N21S is OFF. Connecting or disconnecting the relevant cable to/from a peripheral with the power of FC-N21S being ON may cause a malfunction or fault to occur.
2. After turning off the power of FC-N21S, wait for five seconds or longer before the power is turned on again. Turning on the power just after turn-off without a certain interval may cause a malfunction or fault to occur.
3. Clean FC-N21S periodically.

(3) Notes on storage and use environment of FC-N21S

1. FC-N21S is a VCCI Class B information technology equipment (or information equipment mainly intended to be used in household environments) conforming to the reference level of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI).

   However, if FC-N21S is used near a radio, TV and/or wireless device, FC-N21S may cause poor receptions.
   On the other hand, a device generating intense magnetic field is located near FC-N21S, noises may have bad influence on FC-N21S to operate inappropriately. If this occurs, take FC-N21S away from such a device.
2. To use FC-N21S in an FA environment, always make FC-N21S meet the conditions described in "1.3 Environmental Specification (Main Unit)".

(4) Notes on cable connections

1. Use cables authorized by NEC.

   To connect FC-N21S with peripheral devices, use respective cables with connector shapes and signal alignments meeting those of FC-N21S and the peripheral devices.
2. Neither pull cables intensely and nor put objects on cables.

   Install peripheral devices at locations where cables connected to the devices may not be pulled excessively. Avoid using FC-N21S if cables are stretched intensely and/or objects are put on cables.
3. Insert connectors to mating ones securely.

   Inserting connectors loosely may cause FC-N21S and peripheral devices not to operate at all or operate invalidly.

(5) Notes on handling and use of HDD

Hard disk drives are precision devices.

FC-N21S can protect the built-in hard disk drive with buffer materials. However, note the following to protect data.

1. Do not apply shocks and vibrations exceeding over those defined in the environmental specification to FC-N21C.
2. Keep hard disk in the hard disk drive from being subject to strong shocks if the drive is removed from FC-N21S.

2.2 NOTES ON USE OF FC-N21S IN FA ENVIRONMENT

Note the following particularly to allow FC-N21S to be used in FA environments.

(1) Dust-proof and drip-proof and performance

FC-N21S is designed to have high seal performance to prevent liquid and dust from being entered into it from any directions.

FC-N21S can be used outdoor if it rains and handled with wet and/or dirt hands.

With optional dust-proof and drop-proof cables (FC-N015/FC-N016), FC-N21S has drip-proof and dust-proof performance conforming to IP54 if it connects with one or more external devices.

- Dust-proof performance:

  Protection class IP5x means that a device of the class cannot completely avoid entry of dust but the dust do not interrupt the defined operations and safety of the device.

  To make dust-proof performance effective, the connector, HDD, battery and memory covers must be closed appropriately.

- Drip-proof performance:

  Protection class Ipx4 means that a device of the class is not affected by spray from every angle (by a spray nozzle).

  FC-N21S should be provided with maintenance including water wiping and drying so that FC-N21S does not be left wet for a long period.

  To make drop-proof performance effective, the connector, HDD, battery and memory covers must be closed appropriately.

  Place and operate FC-N21S with its bottom facing downward.

> Use optional drop-proof cables as those connected to the power connector and LAN and serial ports. Use connectors connected to other ports with their connector covers closed securely.

(2) Operating temperature range

FC-N21S of wide temperature type can operate in the temperature range between -20ºC and 50ºC while FC-N21S of other types operate in temperature range between 5ºC and 45ºC.

To allow FC-N21S to be used in the wide temperature range (–20 to 50ºC), the main unit, HDD and battery should all be available in the wide temperature range.

In environment at a high temperature, the main unit may be heated. If so, wear gloves not to make your hands contact with the unit directly.

To suppress heat generation, the performance of FC-N21S may be restricted automatically.

In environment at a low temperature, the battery driving time is shortened.

In addition, the LCD display can make responses slower.

> FC-N21S in the tablet mode or the battery charging state and the AC adapter should be used in ambient temperature range 5 to 40ºC.

(3) Shock resistance

The chassis of FC-N21S is made of magnesium die-casting alloy and equipped with a hard disk drive subjected to shock resistance.

FC-N21S is designed to have the strength of enduring the test in which it is dropped from a height of 90 cm to plywood or concrete floor.

> The shock resistance of FC-N21S does not guarantee no damages and faults.

> FC-N21S damaged by shocks may reduce its dust-proof and drop-proof performance as well as the shock resistance. Accordingly, it is recommend to repair damaged FC-N21S.

(4) Vibration resistance

The vibration resistance of FC-N21S does not assure that it has sufficient strength against resonance generated when added vibration

(5) Continuous operation of FC-N21S for long period

If FC-N21S is operated continuously for a long period, deterioration of life parts in FC-N21S may be accelerated. Therefore, NEC may charge the repair of FC-N21S defected due to continuous operation for a long period within the warranty period.

In particular, NEC recommends use of a silicon disk drive for FC-N21S operated continuously for a long period.

If a hard disk drive (HDD) is used, leave the HDD rested periodically to reduce deterioration caused by continuous operation.

Operation sample:

The power management may be set by OS (Windows) to halt the HDD automatically if accessing to hard disks does not occur for a certain period:

Period set at shipment: 30 minutes (when FC-N21S is connected to AC power)

Recommended period: 3 minutes (when FC-N21S is connected to AC power)

2.3 CARE

(1) Preparation before care

If FC-N21S is dirt only a little, prepare dry and clean clothes made of soft materials.

If FC-N21S is dirt hard, prepare clean clothes soaked with water or lukewarm water and twisted hard.

- Do not use volatile organic solvents including thinner and benzene and chemical rigs for care of FC-N21S. Failure to follow this instruction may cause the exterior package to be damaged or a fault to occur.
- Do not throw water or lukewarm water on FC-N21S directly. Failure to follow this instruction may cause FC-N21S to be damaged or defected.

OA device cleaning kits are convenient to wipe dirt.
For OS device cleaning kits, contact NEC.

(2) Care of components

- Main unit, touch pad and keyboard

  Wipe the main unit, touch pad and keyboard with the prepared clothes.

  If dust is entered into clearances of the keyboard, remove the dust by using commercial computer cleaner.

  If such dust cannot be removed, contact NEC.

- LCD display

  Wipe the LCD display with soft, dry and clean cloth.

  Do not wet the cloth with water or lukewarm water.

- Power cord and AC adapter

  If FC-N21S is left connected with the power cord and/or AC adapter, dirt may be accumulated on the connected plugs.

  Remove the dirt periodically.

- Fingerprint sensor (only for FC-N21S equipped with fingerprint sensor)

  The fingerprint sensor is made contact with fingers directly to be dirt by fingers. Thus, always make the sensor cleaned.

  Wipe the fingerprint sensor with soft, dry and clean cloth to remove dirt lightly.

- Do not use volatile organic solvents including thinner and benzene and chemical rigs for care of the fingerprint sensor.
- Do not use a sharp object such as a ballpoint pen for care of the fingerprint sensor.

2.4 CARRIAGE AND STORAGE OF FC-N21S

Follow the procedure below if FC-N21S will be carried or stored.

Back up important data stored in the hard disk.
When you will transport FC-N21S, please close all covers.

1. Turn off the power of FC-N21S.
2. Disconnect the AC adapter from the mating receptacle.

To pull out a cord, be sure to hold the plug. Pulling a cord for removal may cause disconnection and further fire to occur.

3. Remove all cables connected to FC-N21S.
4. Remove the battery.
5. Package FC-N21S securely so that it may neither damaged nor subjected to shocks and vibrations.

Storage of FC-N21S

Remove the battery from FC-N21S if it will be stored for a long period.

Do not store the battery in a place where the temperature may exceed 60ºC to prevent it from being deteriorated.

Store the battery in the following temperature ranges:

–20 to 60ºC in storage for a month or shorter

–20 to 45ºC in storage for three months or shorter

–20 to 20ºC in storage for a year or shorter

Do not leave the battery for three months or longer without recharging.

2.5 DISPOSAL OF DEVICES

For the disposal of FC-N21S, hard disk drives and options, contact your service representative.

See "3.4.6 Recycling Batteries" for the battery.

Neither put the battery close to fire nor soak it with water. Failure to follow this instruction may cause the battery to fire, fume or explode.

Chapter 3 Uses of FC-N21S

This chapter describes fundamental uses of FC-N21S.

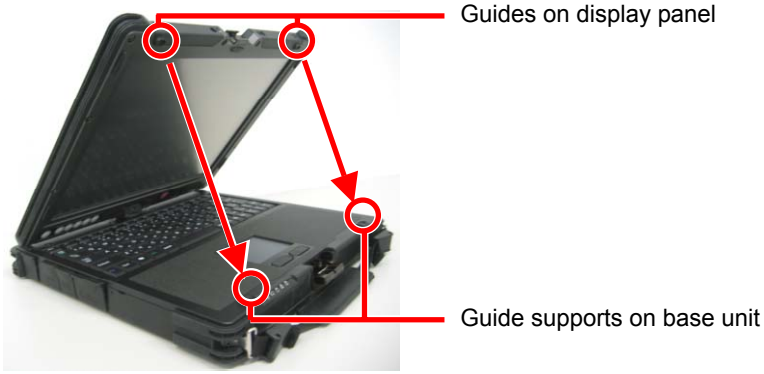
3.1 OPENING/CLOSING LCD DISPLAY PANEL AND SETTING TABLET MODE

3.1.1 Opening panel

1. Pull up latch A and unhook latch B.
2. Open the LCD display panel.

3.1.2 Closing panel

1. Fit the guide supports on the base unit to the guides on the LCD display panel and close the panel.



2. Pull up latch A.
3. Hook latch B on the LCD display panel and pull down latch A to fix the display panel.

3.1.3 Turning screen (to be in tablet mode)

1. Get the LCD display panel upright.
2. Turn the LCD display panel clockwise by 180º.

Do not turn the LCD display panel clockwise by larger than 180º or counterclockwise.

3. Fit the guides on the display panel to the guide supports on the base unit and close the panel with the LCD display facing upward.

4. Pull up latch A.
5. Hook latch B on the LCD display panel and pull down latch A to fix the LCD display panel.

- If latch B is hooked improperly, check if the guide on the LCD display is securely fit to the guide support on the base unit.
- To return to the original form, reverse the above procedure as follows:
  (1) Pull up latch A to unhook latch B.
  (2) Get the LCD display panel upright.
  (3) Turn the LCD display panel counterclockwise by 180º.

3.2 TURNING ON/OFF POWER

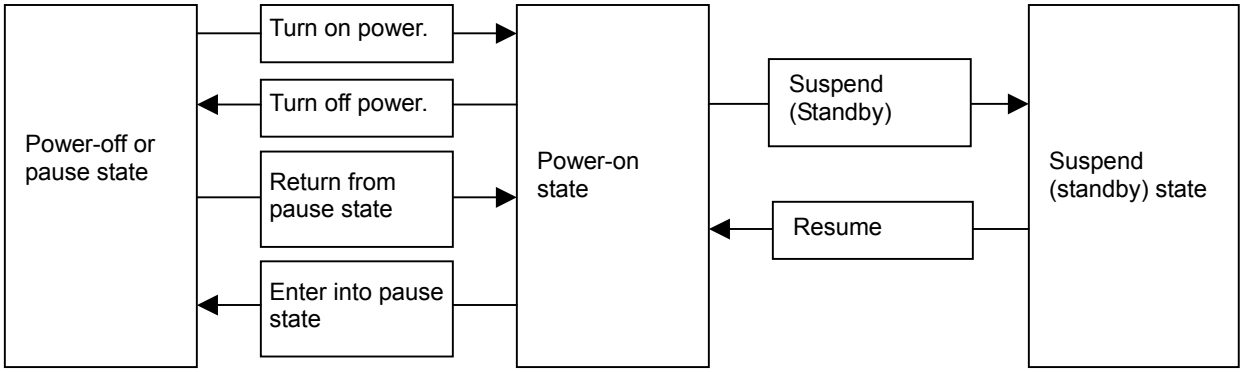
This section describes how to turn on or off the power of FC-N21S and power saving features (including suspend (standby) and pause states).

Take special note on turning off the power. If you turn off the power of FC-N21S improperly, not only data and programs but also the machine itself may be broken.

3.2.1 Power States and Operations

3.2.1.1 Power states

The power states of FC-N21S is divided into four states, or power-off, power-on, suspend (standby) and pause states. These states are changed as follows:



(1) Power-off state

In the power-off state, FC-N21S is not used at all due to shutdown of Windows or another exit operation.

(2) Power-on state

In the power-on state, FC-N21S is used normally.

(3) Suspend (standby) state

In the suspend (standby) state, working data is saved in memory temporarily and power consumption is suppressed by suspending the motors for the hard disk drive and other devices and entering the LCD display into power saving state only with supply of power for keeping memory data.

Because working data is saved in memory, FC-N21S can immediately return to the original state at recovery from the suspend (standby) state.

* Some OSs cannot enter FC-N21S into the suspend (standby) state.

(4) Pause state

Specifying the pause state allows the power of FC-N21S to be turned off after all memory data is saved in the hard disk drive. If the power is turned on again, FC-N21S is recovered to the same state as that at the power-off. Due to the power-off, it takes a longer time for recovery from the pause state than for recovery from the suspend (standby) state.

* Some OSs cannot enter FC-N21S into the pause state.

The power lamp changes its illuminating states depending on power states.

Supply of power	Power state	Power lamp
Supply of AC power	Power-off	OFF
	Power-on	Illuminating in green
	Suspend (standby) state	Blinking in green
	Pause state	OFF
No supply of AC power	Remaining battery level: 11% or larger	Illuminating in green
	Remaining battery level: 7 to 10%	Illuminating in yellow
	Remaining battery level: 0 to 6%	Illuminating in orange

3.2.1.2 Operating power supply

The power supply of FC-N21S is mainly operated as follows.

1. Turning on power (in either of the following two ways)

■Press the power switch.

■Connect the AC cable to FC-N21S (if "power state at AC power-on" of BIOS is set to "ON")

⚠ WARNING

- Do not use this product if dusts are accumulated on the AC power cord plug. With dust accumulated power plug, the electrical discharge (tracking) occurs between plug pins and it may cause a fire.
- Always hold the plugs of the AC cord in its removal. Do not pull the cord. Breaking of wire may cause a fire.
- Do not pull the AC cord forcibly or put any heavy object on it. Breaking of wire may cause a fire and/or electric shock.
- Use only the specified AC adapter and AC cord. Never attempt to disassemble or modify the AC adapter. Doing so may cause an electric shock, smoke, and/or fire.

- For the power lock release switch, see "Chapter 4 Setting BIOS".
- Press the power switch continuously for 1 second or longer. To avoid improper operations, FC-N21S is so designed that the power is turned on only by pressing the power switch for 1 to 2 sec consciously.
- If FC-N21S is activated only by the battery, it takes 1 to 2 sec to turn on LEDs after depression of the power switch. This is because FC-N21S is so designed as to prevent battery power from being consumed by turning off all powers including the standby power in the power-off state. This does not occur in use of "WakeOnLAN", since the standby power remains to sense LAN signals.

2. Turning off power (in either of the following two ways)

■Press the power switch.

■Select [Turn Off Computer] in the Windows Start menu and click [Turn off].

3. Entering FC-N21S into suspend (standby) state (in any of the following three ways)

■Select [Standby] in the Windows Start menu and click [Standby].

■Press the power switch (if OS setting is changed to allow this operation).

■Close the LCD display panel (if OS setting is changed to allow this operation).

- Some OSs cannot enter FC-N21S into the suspend (standby) and/or pause states.
- It may take some time to enter FC-N21S into the suspend (standby) state after the LCD display panel is closed.
- FC-N21S may not enter into the suspend (standby) state if the LCD display panel is closed only for a short period. If so, close the LCD display panel again.

4. Resume FC-N21S (recover FC-N21S from the suspend (standby) state (in either of the following two ways).

■Press the power switch.

■Open the LCD display panel.

- Some OSs cannot enter FC-N21S into the suspend (standby) state.
- Opening the LCD display panel during transition to the suspend (standby) state cannot recover FC-N21S from the suspend (standby) state. If so, close the LCD display panel once after FC-N21S is entered into the suspend (standby) state. Then open the LCD display panel.

3.2.2 Turning On/Off Power

3.2.2.1 Turning on power

To turn on the power in the power-off state, be sure to follow the procedure described below.

> To turn on the power again, wait for five seconds or longer after power-off.

1. Turn off the peripheral devices.

> Some peripheral devices may be recognized properly only when their powers are turned on before turning on the power of FC-N21S.
> Refer to the User's Guides of peripheral devices previously.

2. Press the power switch of FC-N21S.

- For memory initialization, it may take some time to allow the initial screen to appear after power-on.
- For the power lock release switch, see "Chapter 4 Setting BIOS".
- Press the power switch continuously for 1 sec or longer.
  To avoid operation mistakes, FC-N21S is so designed that the power is turned on only by pressing the power switch for 1 to 2 sec consciously.
- If FC-N21S is activated only by battery, it takes 1 to 2 sec to turn on LEDs after depression of the power switch. This is because FC-N21S is so designed as to prevent battery power from being consumed by turning off all powers including the standby power in the power-off state. This does not occur in use of "WakeOnLAN", since the standby power remains to sense LAN signals.

3.2.2.2 Turning off power

To turn off the power of FC-N21S, follow either of the procedures below.

> After power-on, do not turn off the power while Windows and one or more applications are activated. Before turning off the power, confirm that neither the mouse pointer nor the sand clock appear and the file access LED does not illuminate.

(1) Power-off procedure by using Windows End menu

1. Save edited data and quit all the applications.
2. Perform the following operation.

   For Windows XP:

   Click [Start] → [Turn Off Computer]. Then click [Turn Off].

   The power of FC-N21S is automatically turned off by software. Do not press the power switch during the shutdown processing.
3. After confirming that the power of FC-N21S is turned off, turn off the peripheral devices.

(2) Power-off procedure by using power switch

1. Save edited data and quit all the applications.
2. Press the power switch.

3.2.2.3 Suspend (standby)/resume

If you want to suspend jobs on FC-N21S temporarily, you can enter FC-N21S into the suspend (standby) state to save power consumption.

To suspend (standby) and then resume FC-N21S with the power switch, the setting of the power switch must be changed.

> Click [Control Panel] → [Performance and Maintenance] → [Power Options]. Click the [Advanced] tab on the [Power Options Properties] dialog box and select [Standby] in field [When I press the power button on my computer:].
> Click [Control Panel] → [Performance and Maintenance] → [Power Options]. Click the [Advanced] tab on the [Power Options Properties] dialog box and select [When I close the lid of my portable computer:] in the [Standby] field.

> Before you can suspend (standby) and then resume FC-N21S, wait for five seconds or longer after change of the power lamp status.

To enter FC-N21S into the suspend (standby) state in the power-on state manually, follow either of the procedures below.

(1) Procedure by using power switch

1. Entering FC-N21S into suspend (standby) state

   Press the power switch in the power-on state.

   The power lamp blinks in green and FC-N21S is set to the suspend (standby) state.

2. Resuming FC-N21S (recovering FC-N21S from suspend (standby) state)

   Press the power switch in the suspend (standby) state.

   The power lamp illuminates in green and FC-N21S recovers from the suspend (standby) state (or resumes).

> Do not press the power switch for four seconds or longer to suspend (standby) or resume FC-N21S.
> Pressing the power switch for four seconds or longer causes the power to be turned off forcibly, which results in erasing of unsaved data.

(2) Procedure by opening/closing LCD display panel

1. Entering FC-N21S into suspend (standby) state

   Close the LCD display panel in the power-on state.

   The power lamp blinks in green and FC-N21S enters into the suspend (standby) state.

2. Resuming FC-N21S (recovering FC-N21S from suspend (standby) state

   Open the LCD display panel in the suspend (standby) state.

   The power lamp illuminates in green and FC-N21S recovers from the suspend (standby) state (or resumes).

(3) Notes on entering FC-N21S into suspend (standby) state or resuming FC-N21C

To use the suspend (standby) and resume features, note the following. Failure to follow these instructions may cause working data for entering FC-N21S into the suspend (standby) state to be lost or not to be restored.

1. Erasing of data existing before suspend (standby) state

If any of the following events occurs in the suspend (standby) state, working data for entering FC-N21S into the suspend (standby) state is lost:

- The battery is fully discharged while FC-N21S is operated only by the battery power,
- With the remaining battery level being not enough, FC-N21S is used only by the battery power due to power interruption or disconnection of the AC adapter from FC-N21S, or
- The power is turned off forcibly by pressing the power switch for about four seconds or longer.

2. No assurance of resume (recovery from suspend (standby) state)

The following action during storage or restoration of working data for entering FC-N21S into the suspend (standby) state cannot assure the working data:

- Changing the environment or configuration of FC-N21S such as connection or disconnection of LAN cable.

In addition, if the suspend (standby) feature is activated in any of the following situations, working data for entering FC-N21S into the suspend (standby) state is not assured:

- Executing system change job (including setting driver or adding printer),
- Outputting data to printer,
- Replaying audio or motion picture,
- Reading/writing data from/to SD card or hard disk,
- Reading/writing data from/to floppy disk, CD-R or DVD-R,
- Using application not applicable to the suspend (standby) state feature,
- Using peripheral device or expanded board not applicable to the suspend (standby) state feature,
- Executing Windows start or exit processing, or
- If FC-N21S is entered into the suspend (standby) state during connection to network through fax modem or LAN by communication software, the network feature is aborted once. Some applications accessing to network may cause data to be lost when FC-N21S is entered into the suspend (standby) state. Before using an application accessing to network, contact a system administrator to check if the suspend (standby) state may be used.

3. Other notes

- Enter FC-N21S into the suspend (standby) state after aborting communication software if used. Entering FC-N21S into the suspend (standby) state under communication may leave the line connected to add up the communication fee.
- If a SCSI PC card is used, FC-N21S cannot be resumed properly depending on the combination of the SCSI PC card and the connected device.
- Before FC-N21S can be entered into the suspend (standby) state, USB devices should be removed from FC-N21S. FC-N21S with one or more USB devices connected may not be able to be entered into the suspend (standby) state.
- While FC-N21S transits to the suspend (standby) state, do not connect or disconnect a USB device to/from FC-N21S.
- While FC-N21S transits to the suspend (standby) state, do not replace disks and PC and SD cards. Failure to follow this instruction may cause data to be saved improperly.
- Changing the device configuration in the suspend (standby) state may cause FC-N21S to recover from the state improperly.
- To make FC-N21S resumed immediately after entering it into the suspend (standby) state, wait for five seconds or longer from transition to the suspend (standby) state. It is required not to impose a burden on FC-N21S excessively.

4. Resolution taken if resume feature is executed improperly

The following situations indicate improper execution of the resume feature:

- Applications do not operate or
- The data having existed before the suspend (standby) state cannot be restored.

3.2.2.4 Pause state and recovering from pause state

If jobs on FC-N21S are halted for a long period, entering FC-N21S into the pause state allows power consumption to be saved. To enter or recover FC-N21S into or from the pause state by using the power switch, you must change the setting in the [Power Options] dialog.

Click [Start] → [Control Panel] → [Performance and Maintenance] → [Power Options]. Click the [Hibernate] tab on the [Power Options Properties] dialog box and check [Enable hibernation].

(1) Entering power into pause state

To enter FC-N21S into the pause state in the power-on state manually, follow either of the following ways.

Procedure by using Windows Exit menu

1. Click [Start] → [Turn Off Computer].
2. Perform the operation below.

   For Windows XP:

   Click [Start] → [Turn Off Computer]. Then press **Shift** and click [Hibernate].

Procedure by using power switch

1. Press the power switch.

   The working conditions are saved in the hard disk drive. The power is turned off and FC-N21S is entered into the pause state.

Do not press the power switch for four seconds or longer to enter FC-N21S into the pause state. Pressing the power switch for four seconds or longer causes the power to be turned off forcibly, which results in erasing of unsaved data.

(2) Recovering power-on state from pause state

To recover the power-on state from the pause state manually, follow the procedure below.

1. Press the power switch.

   Windows is started to recover the state set when the power was turned off last by using the pause state feature.

(3) Notes on use of pause state feature

To use the pause state feature, note the following. Failure to follow the notes may cause working data for entering FC-N21S into the suspend (standby) state to be lost and/or FC-N21S not to be resumed.

1. No assurance of recovering from pause state

   Any of the following actions during storage of working data in transition to or recovery from the pause state cannot assure the working data:

   ■Changing configuration of peripheral devices (installing/removing a peripheral device)

   ■Removing or replacing floppy disk or CD-ROM

   In addition, if FC-N21S is entered into the pause state under any of the following situations, working data is not assured:

   ■Performing system change job (including setting driver or adding printer),

   ■Outputting data to printer,

   ■Replaying audio or motion pictures,

   ■Reading/writing data from/to SD card or hard disk,

   ■Reading/writing data from/to floppy disk, CD-R or DVD-R,

   ■Using application not applicable to the pause state feature,

   ■Using peripheral device or expanded board not applicable to the pause state feature,

   ■Executing Windows start or exit processing

   ■Connecting with network through fax modem or LAN by communication software

2. Other notes

- Enter FC-N21S into the pause state after aborting communication software if used. Failure to follow it may cause the communication to be cut forcibly.
- After recovery from the pause state, nothing may appear on the LCD display. If so, move the mouse or press any key on the keyboard to allow the display screen to appear properly.
- In use of a SCSI PC card, FC-N21S cannot be resumes properly depending on the combination of the SCSI PC card and the connected device.
- While FC-N21S transits to the pause state, do not connect or disconnect a USB device to/from FC-N21S.
- While FC-N21S transits to the pause state, do not replace disks and PC and SD cards. Failure to follow this instruction may cause data to be saved improperly.
- Changing the device configuration in the pause state may cause FC-N21S to recover from the state improperly.
- To make FC-N21S recover from the pause state immediately after entering FC-N21S into the pause state, wait for five seconds or longer from the transition to the pause state. It is required not to impose a burden on FC-N21S excessively.

3. Resolution taken if recovering from pause state is done improperly

The following situations indicate that FC-N21S has not been resumed from the pause state properly:

- Applications do not operate,
- FC-N21S cannot recover to the original state before it is entered into the pause state, and
- Pressing the power switch cannot make FC-N21S recover from the pause state.

During use of an application generating any of the above situations, do not use the pause state feature.

If FC-N21S cannot be recovered from the pause state despite depression of the power switch, press the power switch continuously for about four seconds or longer.

The power lamp disappears and the power is turned off forcibly. Then the settings in the BIOS SETUP menu may return to the factory default values. Provide settings for the BIOS SETUP menu again if required.

3.3 AC ADAPTER

3.3.1 Installing AC Adapter

⚠ WARNING

- The AC cord must be approved by an acceptable accredited agency responsible for evaluation in the country where the AC cord will be installed.
- The AC cord shipped with this product can be exclusively used for the specified country.
- The AC adapter and AC cord are designed on the assumption that it is connected to this product. The AC adapter may be damaged if it is connected to a device other than this product.
- Do not connect the power cord to an outlet that has an illegal number of connections. The electric current exceeding the rated flow overheats the outlet, which may cause a fire.
- The AC cord shipped with this product can be exclusively used for 100 VAC. Do not connect this AC cord to an outlet of which rating exceeds 125 VAC. Failure to follow this instruction may cause a fire and/or electric shock.
- Insert the power plug into the outlet as far as it goes. A halfway inserted power plug may cause a fire and/or an electric shock.
- Do not use this product if dusts are accumulated on the AC power cord plug. With dust accumulated power plug, the electrical discharge (tracking) occurs between plug pins and it may cause a fire.
- Always hold the plugs of the AC cord in its removal. Do not pull the cord. Breaking of wire may cause a fire.
- Do not pull the AC cord forcibly or put any heavy object on it. Breaking of wire may cause a fire and/or electric shock.
- Use only the specified AC adapter and AC cord. Never attempt to disassemble or modify the AC adapter. Doing so may cause an electric shock, smoke, and/or fire.

修

1. Connect the AC adapter to the power connector on the rear of FC-N21S.
2. Connect the attached power cord to the AC adapter.
3. Insert the plug at the other end of the power cord to a power outlet such as that installed on the nearest wall.

The AC adapter plays the role of converting AC power to DC power. In addition, the AC adapter charges the battery while it is connected to AC power. The AC adapter operates in the range between 100 and 240 VAC. However, the AC cord is intended for 100 VAC only.

修

- The AC adapter and AC cord attached to FC-N21S are provided for FC-N21S only. Do not use them for other devices. If the AC adapter is connected to another device, it may be damaged.
- The AC adapter and the AC cord attached to FC-N21S is intended to be used only in the specified country. If you want to use FC-N21S in a country other than the specified country, contact your service representative on the proper power cord.
- In removal of the AC adapter, first pull out the AC plug from the mating power outlet and then the other plug from FC-N21S. Removing the plugs in the reserve order may cause the AC adapter and/or FC-N21S to be damaged.
- Always hold each plug of the AC adapter in its removal. Do not pull the cord.

3.4 BATTERY

The battery is the power supply built in FC-N21S. The battery can be recharged by using the AC adapter, optional battery charger FC-N013 or optional car adapter FC-N014.

Installing the charged battery in FC-N21S allows it to be operated without AC power.

⚠ WARNING

- The provided battery is designed to be used in this product only. Do not use the battery for any other device.
  In addition, do not use any other battery than the provided battery for this product.
  Failure to follow this instruction may cause a fire and/or electric shock.
- To charge the battery, install it in FC-N21S for charging or use dedicated charger (FC-N013: option).
  Charging with another method may cause a fire and/or electric shock.
- Do not make a battery short-circuited. Doing so may cause a fire.
- Do not place a battery into fire. Doing so may cause a fire.
- Do not heat the battery. Doing so may cause a fire.
- Do not disassemble the battery. Doing so may cause a fire and/or an electric shock.
- Do not drop or throw the battery. Doing so may cause damage to the battery.
- Risk of explosion if battery is replaced by incorrect type. Dispose of used batteries according to the instructions

The available time of the battery fully charged varies depending on the environment and condition in which FC-N21S is used. The time may be shortened if applications access to peripheral devices frequently.

To use FC-N21S only with the battery, you should often check the remaining battery level.

3.4.1 Installing Battery

> The battery is not charged enough at shipment of FC-N21S from factory.
> Before the battery can be used for the first time, it should be charged.

1. Leave FC-N21S in the power-off state and disconnect the AC adapter.
2. Turn FC-N21S upside down.
3. Remove the screws (4) fixing the battery cover and remove the battery cover.

4. Insert the battery into the battery storage area from the top perpendicularly to make the connectors contact with each other.

> Install the battery with the battery removal support pulled out.

5. Put the battery cover on the original position and drive the screws (4) to fix the cover.

> - Put the cover so that the battery removal support may not be pinched.
> - If dust and/or dirt adhere to the silicon rubber on rear of the cover, the water-proof and/and dust-proof performance of the cover may be reduced. Wipe the silicon rubber to remove dust and dirt before installing the cover.