NEC

NEC Factory Computer
FC-NOTE Series

ShieldPRO

N22A

User's Manual

Introduction

Thank you for your purchase of the N22A Factory Computer.
This is a robust notebook PC providing in a highly mobile frame robust characteristics demanded for use in harsh fields.
This computer is useful as an information terminal in various fields, such as field maintenance and construction sites.

This manual explains how to use this product and how to expand options.
Note that illustrations and images in this document may differ slightly from actual products.

■ Trademarks

Microsoft and Windows are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
Windows® XP is an abbreviation for Microsoft® Windows® XP Home Edition Operating System and Microsoft® Windows® XP Professional Operating System.
Intel, Intel Core, and Intel SpeedStep are registered trademarks or trademarks of Intel Corporation or their affiliate companies in the UnitedStates and other countries.
Standby Rescue and Standby Rescue Lite are trademarks of NetJapan.
Sonic RecordNow! and Sonic DLA are registered trademarks of Sonic Solutions.
SD, miniSD, and microSD are trademarks of the SD Card Association.
Memory Stick and Memory Stick PRO are registered trademarks or trademarks of Sony Corporation.
Bluetooth® is a trademark of its owner. NEC Corporation uses it under a licensing agreement.
ShieldPRO is a trademark of NEC Corporation in Japan.
DeviceProtector is a trademark of NEC Personal Products, Ltd.
Adobe, Adobe logo, and Acrobat are trademarks of Adobe Systems Incorporated in the United States and other countries.

All other product, brand, or trade names used in this publication are the trademarks or registered trademarks of their respective trademark owners.

About this document

This is a guide for correctly setting up and using the FC-N22.

This document comes in the following structure.

■ Manual structure

Be sure to read the following before using the computer.			
Read me first	For safe use		Describes information required to safely use this computer
• Nomenclature and functions of parts	CHAPTER 1	1.3.1	Names and Features of Sections of FC-N22A
• Use environment conditions	CHAPTER 1	1.1.3	Environmental Specification (Main Unit)
• Turning on/off	CHAPTER 2	2.2	TURNING ON/OFF POWER
• Battery installation	CHAPTER 1	1.5	INSTALLING BATTERY

Read according to your model.			
• Battery types	CHAPTER 2	2.8	BATTERY
• Disk types	CHAPTER 2	2.13	HARD DISK DRIVE/SILICON DISK DRIVE
• Keyboard types	CHAPTER 2	2.4	KEYBOARD
• Wireless LAN model	CHAPTER 2	2.12.4	Wireless LAN (applied to N22A of wireless LAN installation model only)
• Bluetooth model	CHAPTER 2	2.12.5	Bluetooth (applied to N22A of Bluetooth installation model only)
• Fingerprint sensor model	CHAPTER 2	2.11	FINGERPRINT SENSOR (APPLIED TO FS-N22 OF FINGERPRINT SENSOR
	CHAPTER 5	5.2.4	Fingerprint authentication utility (only models with this feature)
	CHAPTER 3	3.4	FINGERPRINT AUTHENTICATION PASSWORD (APPLIED TO N22A OF FINGERPRINT SENSOR INSTALLATION MODEL ONLY)
• Windows® XP model	CHAPTER 5	5.1	Windows XP PRE-INSTALLED MODEL

Read the following, as required			
• Changing the BIOS setting	CHAPTER 4		SETTING BIOS
• Using the accompanying applications	CHAPTER 5	5.2	INSTALLING ATTACHED APPLICATIONS
• In case of difficulty	CHAPTER 6	6.4	FAILURE OR ABNORMALITY
	CHAPTER 6	6.1	TROUBLESHOOTING
• Interrupt level	CHAPTER 7	7.2	INTERRUPT LEVELS
• Profile of this product	CHAPTER 7	7.3	OUTSIDE DIMENSION

Provided in the accompanying manual

Provided in the electronic manual

For safe 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 following shows the extent of effects if the instruction in this document is followed.**

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

■ **The following labels describe how to prevent injury and/or damage to property.**

⊘	**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 on using the main unit

⚠ WARNING

- **If this device emits smoke or an odd smell, or the main unit is too hot to touch, turn the power off immediately then remove the power cable plug from the AC outlet. If the battery is connected, remove it after checking for safety.**
  Using the computer in such conditions may cause a fire, burn, and/or 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.

- **Place all bags and packing materials safely out of the reach of small children, especially infants and toddlers.**
  These items may pose a choking or suffocation hazard.

- **Do not intentionally remove or damage any of the warning labels.**
  The warning label is attached to components with possible danger in your computer inform the user that a hazardous situation may arise when using the product. If you find any labels totally/partially removed or illegible due to damage, contact your service representative.

■ Warning on installation environment

⚠ WARNING

- **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.
  - Always use or store each device under the installation environment conditions. Nevertheless, do not use or store the device in an environment where the temperature may fluctuate severely, such as where condensation may result, even if such an environment is within the installation environment conditions.

■ **Warning on connection of power supply**

⚠ WARNING

● **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 120 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 pull the AC cord forcibly or put any heavy object on it.**
Breaking of wire may cause a fire and/or electric shock.

● **Do not touch with a wet hand**
Touching the main unit or AC adapter with a wet hand while the power cable is connected to a power outlet poses an electric shock hazard.

● **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.

● **Never use a broken power cable.**
If the power cable becomes damaged, do not mend it with adhesive tape or the like. The mended part may overheat, posing a fire or electric shock hazard.

● **Use the specified AC adapter and power cable. Never disassemble or modify the AC adapter.**
Doing so may cause an electric shock, smoke or fire hazard.

● **Unplug the AC power cable when not using device for an extended period.**
Degraded insulation may cause a short-circuit fire.

- **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 battery.
- 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 battery.
- Do not wrap the battery with cloth or the like.
- Do not use the battery in a place where the liquid such as water splashes.
- Do not use any damaged battery.
- Do not put the battery in a place near the thermal appliance.
- Do not put the battery in a place where temperature changes drastically (e.g., near the exhaust port of air conditioner and vicinity of entrance).
- Do not use the battery in an area where inflammable gas and/or combustible substance are placed.
- Do not put the battery in a place where lamp black and/or steam is generated (e.g., galley and near the humidifier).
- Do not use the battery in a place where salinity (e.g., sea breeze) or the corrosive gas (e.g., hot spring) is generated.

■ **Warning on car adapter connection**

⚠ WARNING

- **Do not use the device while driving.**
  Doing so may cause a traffic accident.

- **The fuse should only be replaced with one of the specified value.**
  Be sure to replace the fuse with one having the specified current capacity (amperage). Use of a fuse having a current capacity exceeding the specified value poses a fire hazard.

- **Do not use the car adapter in vehicles with an electrical system other than 12 VDC or 24 VDC.**
  Otherwise a fire hazard may result. (If you are unsure, ask your automobile dealer.)

- **Be sure to use the car adapter only for the specified connection devices.**
  Use with other than the specified devices may pose an electrical shock or fire hazard.

- **Never disassemble the car adapter.**
  Disassembling may pose a fire or electric shock hazard.

- **Do not place any object onto the connection cable or wrap the cable with a cloth, to avoid a fire hazard.**

- **When connecting the car adapter, also check the vehicle's owner's manual for related information.**
  When supplying power from the cigar lighter socket, follow the cautions stated in the vehicle's owner's manual, to avoid an electric shock or fire hazard.

		● **When installing or removing a peripheral device, be sure remove the cigar lighter plug of the power cable from the cigar lighter socket, to avoid electric shock.**
		● **Do not insert or remove the cigar lighter plug of the power cable to or from the cigar lighter socket with a wet hand, to avoid electric shock.**
		● **Securely connect the cigar lighter plug in the cigar lighter socket of the vehicle.** A large current flows, so a bad connection poses a heat or fire hazard.
		● **Be sure to grab the cigar lighter plug when removing the power cable from the cigar lighter socket.** Pulling the cable may cause it to break or disconnect from the cigar lighter plug, posing a fire hazard.
		● **The drip-proof and dust-proof performance conforming to IP54 are not applied to the car adapter. 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 battery. • 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 battery. • Do not wrap the battery with cloth or the like. • Do not use the battery in a place where the liquid such as water splashes. • Do not use any damaged battery. • Do not put the battery in a place near the thermal appliance. • Do not put the battery in a place where temperature changes drastically (e.g., near the exhaust port of air conditioner and vicinity of entrance). • Do not use the battery in an area where inflammable gas and/or combustible substance are placed. • Do not put the battery in a place where lamp black and/or steam is generated (e.g., galley and near the humidifier). • Do not use the battery in a place where salinity (e.g., sea breeze) or the corrosive gas (e.g., hot spring) is generated. • Do not store the battery in a very hot or humid environment, such as on a dashboard or where it may be exposed to direct sunlight.

■ Battery warnings

⚠ 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.

- **Always charge the battery as specified.**
  Charge the battery using the method specified in the manual.
  Charging with another method may cause a fire and/or electric shock.

- **Never short-circuit the battery or expose it to heat or flame.**
  An explosion or rupture may result. Doing so may cause a fire.

- **Do not disassemble or attempt to modify the battery.**
  Disassembling or modifying the battery may cause an explosion or liquid leakage.
  Use of a battery other than one specified by NEC, or a disassembled or modified battery (except those repaired by NEC) are not subject to guarantee for quality, performance, or safety.

- **Do not drop or throw the battery.**
  An impact may cause a rupture or leakage.

- **The battery charger is not resistant to dust, dropping, vibration or shock. 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 battery.
  - Do not put any heavy object on the battery.
  - Do not wrap the battery with cloth or the like.
  - Do not use the battery in a place where the liquid such as water splashes.
  - Do not use any damaged battery.
  - Do not put the battery in a place near the thermal appliance.
  - Do not put the battery in a place where temperature changes drastically (e.g., near the exhaust port of air conditioner and vicinity of entrance).
  - Do not use the battery in an area where inflammable gas and/or combustible substance are placed.
  - Do not put the battery in a place where lamp black and/or steam is generated (e.g., galley and near the humidifier).
  - Do not use the battery in a place where salinity (e.g., sea breeze) or the corrosive gas (e.g., hot spring) is generated.
  - Do not store the battery in a very hot or humid environment, such as on a dashboard or where it may be exposed to direct sunlight.

- **Do not apply to a device containing the battery vibration or shock exceeding those of the installation environment conditions.**
  Applying a strong vibration or shock to the battery may damage it, posing a smoke or fire hazard.

■ Warning on use of wireless functions

⚠ WARNING

⚠ | ● **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 places where people may be close to one another such as crowded trains, turn off the power of the N22A or disable the wireless LAN feature.**
This is because N22A may be close to people using medical devices including cardiac pacemakers or rearing aids and have bad influences on the medical devices.

⚠ | ● **Turn off this product or turn of all wireless communication functions, such as wireless LAN or Bluetooth, where medical institutions prohibit use of this product.**
Turn off this product or turn of all wireless communication functions, such as wireless LAN or Bluetooth, if a medical device is used nearby, even if use of this product is permitted by a relevant medical institution.
Failure to follow this instruction may have some influences on medical equipment to cause accidents by malfunctions.
For details, contact the medical institutions where this product may be used.

⚠ | ● **Turn off this product or turn off the wireless communication functions, such as wireless LAN or Bluetooth, when use of wireless or electronic devices in aircraft is prohibited.**
This product may have bad influences on electronic devices to cause accidents.
For details, contact airline companies operating aircraft where this product may be used.

⚠ | ● **If this product induces radio disturbance to other devices during use of some wireless feature, disable the wireless feature or stop using this product.**
Failure to follow this instruction may have some influences on other devices to cause accidents by malfunctions.

■ **Other warnings**

⚠ WARNING

⚠	● **Keep the battery away from the reach of children, especially babies and toddlers.** Battery contains harmful materials. Swallowing or licking them can be very dangerous. If swallowed, contact a physician immediately.
⚠	● **Always use the specified battery with its polarities correctly orientated.** Use of a battery cell other than one specified or which is incorrectly oriented may cause it to rupture, causing injury or fire. Remove depleted batteries from the device.
🚫	● **Do not charge or directly solder battery.** Charging or direct soldering battery cells may break the cells, causing injury or fire.
⚠ 🔥	● **Never short-circuit the battery or expose it to heat or flame.** Short-circuiting the battery or exposing it to heat or flame may cause it to heat or rupture, resulting in injury or fire. If the internal liquid is touched or gets into the eye, thoroughly flush the affected area with water and immediately contact a physician.
⚠	● **Correctly install peripheral devices following the instructions described in the document, to prevent a smoke or fire hazard.**

■ Caution on use of the main unit

⚠ **CAUTION**

⚠ ⚠	● **Do not use the main unit on lap for a long time** The bottom surface of this product may heat during operation, causing a low-temperature burn. A low-temperature burn is a burn symptomized by redness or spotting of the skin when a specific portion has been in contact with a heating object for a long time. Those who have sensitive skin should be cautious.
⚠ ⚠	● **Note that some part may become hot when this product is operating, immediately after use, or the battery is being charged.** Burns may result.
🚫	● **Do not scratch the liquid crystal display surface with a pointed object.** ● **Do not strongly press the liquid crystal display surface or the outer frame.** ● **Do not swallow or touch the liquid of the liquid crystal display.** If the liquid crystal display breaks and the liquid inside enters the mouth, immediately gargle and rinse the mouth. If the liquid contacts the skin or an eye, immediately flush the skin or eye with flowing water for at least 15 minutes and contact a physician.
🚫	● **Do not use the accompanying CD-ROM or DVD-ROM disks in any device other than players supporting the CD-ROM or DVD-ROM disks.** A loud volume may cause hearing loss or audio speaker or disk damage.
⚠	● **The hard disk drive is a precision device. Handle it with caution and do not bump it.**

■ **Cautions on use of peripheral devices**

┌───┐

⚠ **CAUTION**

● **Be careful when using the device with the tray of the external CD/DVD drive ejected.**
Bumping or hitting hand or leg to the CD/DVD drive tray may cause injury or damage the device.

● **Never disassemble the external CD/DVD drive, to avoid risk of failure, overheating, damage, or electric shock.**

● **Do not directly view the laser light source of the external CD/DVD drive or other device, to avoid eye pain or vision damage.**

● **Press the eject button of the external floppy disk with the soft part of a finger.**
Pressing the floppy disk eject button with the tip of the nail may cause the floppy disk eject button to slip between the nail and finger tip, causing injury.

● **Be careful when installing or removing the expansion RAM board, so as not to bump, hit, or cut the finger, to avoid injury.**

● **Be careful when installing or removing a peripheral device, not to bump, hit, or cut the finger, to avoid injury.**

└───┘

■ **Caution on use of batteries**

┌───┐

⚠ **CAUTION**

● **Be careful not to bump your finger when installing or removing the battery, to avoid injury.**

● **Do not place the battery in a very hot or humid environment, or where it may be exposed to direct sunlight.**
Doing so may cause leakage and the performance or life of the battery may be degraded.

● **If a battery leaks liquid, do not touch the liquid, to avoid burning.**
If you touch the liquid, thoroughly flush the affected area with water and immediately contact a physician.

● **Do not combine different types of batteries for use, to avoid battery leakage or rupture as well as burning or other injury.**

└───┘

13

■ **Other cautions**

⚠ CAUTION

● **Use of wireless communication devices of this product may badly affect hearing aids, such as by producing noise.**
Check for correct operation before using, to avoid hearing damage.

● **Be careful not to adjust the volume too loudly when using headphones or headphone/microphone set.**
Using such devices for a long time at a high volume may harm hearing.

● **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.

● **Do not remove the memory cover when the power cable is connected to an outlet or a battery is installed.**
Doing so may cause electric shock.

● **When disconnecting the AC adapter/car adapter, first unplug the power inlet side (cigar lighter socket side), then unplug the PC side.**
Removing the plugs in the reserve order may cause the AC adapter/car 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.

● **Be sure to power off this device and peripheral devices, unplug the power cable from the outlet, and remove the battery before maintenance.**
Maintenance with power on poses an electric shock hazard.

● **Pay attention when relocating the product.**
When relocating the product, close the LCD display panel and fix the latches, 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.

■ **Notes:**

(1) No part of this manual may be reproduced in any form without the prior written permission of NEC Corporation.
(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 Japan. NEC does not support maintenance service and technical support in any country outside Japan.
(7) The components used in this product may be changed to equivalent one to maintain long-term supply.
(8) Use an operating system 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.
Pay attention not to lose a license label of installed operating system (COA label) that is attached to this product of pre-installed model.
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.
(10) 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 a Japan-domestic specification, and does not conform to the standards of the foreign country. NEC assumes no liability arising from the use of this product in any other country than Japan. In addition, no maintenance service and technical support for this product are not provided in any other country than Japan.

This product is a product controlled under the Foreign Exchange and Foreign Trade Control Law of Japan 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 2004/108/EC).

■ **Cautions on radio waves**

● 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 of radio waves the in 5 GHz (56) frequency band outdoors is not prohibited by the radio law.

- 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.

■ 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 ofthe 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 withthe 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 meet FCC emission limits.

■ 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 potential
       for human contact during normal operation is minimized.

In according with 47 CFR Part 15.407(e) U-NII devices operating in 5.15 - 5.25 GHz frequency
bands are restricted to indoor operations only.

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

■ **R&TTE Directive**

We, the manufacturer (NEC Corporation) hereby declare that this equipment (N22A), model
XXX is in compliance with the essential requirements and other relevant provisions of Directive
1999/5/EC.

■ **Notes on security in use of wireless LAN products**

The wireless LAN is advantageous to allow LAN connection freely within the radio wave range
because data is transmitted among wireless access points including computers through radio
waves instead of using LAN cables.
On the other hand, since radio waves reach any locations over obstacles (including walls)
within a certain range, the following problems may occur without security.

● Stealing communication data
   Malicious outsiders may intentionally intercept radio waves to steal communication
   data as follows:
   • Personal information including IDs, passwords and credit card numbers
   • Mail contents
   Invading into network illegally
   Malicious outsiders may access to personal and corporate networks without notice to
   take the following actions:
   • Acquiring private and confidential information (information leak)
   • Make communication as a specific person to spread illegal information (spoofing)
   • Rewrites intercepted communication data to be transmitted (falsification)
   • Spread computer virus to destroy data and/or systems (destruction)

Security-related setting to address the above issues is provided for wireless LAN cards and
wireless access points of this product.   It is recommended to use the product with the security
setting at your discretion and under your own responsibility after thoroughly understanding the
possible outcome if no security setting is made.

■ Information in use of wireless LAN/Bluetooth products

This product and your Health

This product, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this product however is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Because this product operates within the guidelines found in radio frequency safety standards and recommendations, we believe this product is safe for use by consumers.   These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situations or environments, the use of this product may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

- Using this product on board of airplanes, or
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization or environment (e.g. airports), you are encouraged to ask for authorization to use this product prior to turning on the product.

Regulatory Information

We are not responsible for any radio or television interference caused by unauthorized modification of this product.

The correction of interference caused by such unauthorized modification will be the responsibility of the user. We and its authorized resellers or distributors are not liable for damage or violation of government regulations that may arise from failing to comply with these guidelines.

■ 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.

18

■ 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 (As of May 2008)

- ● 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.

■ Notes on Use of N22A in FA Environment

Note the following particularly to allow N22A to be used in FA environments.
(1) Dust-proof and drip-proof and performance

N22A is designed to have high seal performance to prevent liquid and dust from being entered into it from any directions.
N22A can be used outdoor if it rains and handled with wet and/or dirt hands.
With optional dust-proof and drop-proof cables (FC-SC01N/FC-SC02N/FC-SC03N), N22A has drip-proof and dust-proof performance conforming to IP54 if it connects with one or more external devices.

To make dust-proof performance effective, the connector, HDD, battery and memory covers must be closed appropriately.
N22A should be provided with maintenance including water wiping and drying so that N22A does not be left wet for a long period.
In addition, place and operate N22A with its bottom facing downward.

IP54
- 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.
- 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).

Use optional dust-proof and drip-proof cables (FC-SC01N/FC-SC02N/FC-SC03N) as connection cables for the LAN, serial, or USB ports. For the power connector or PC slot cover, use an optional dust-proof, drip-proof cover (FC-SC04N/FC-SC05N).
For other connection ports, securely close the connector covers during operation.

---

(2) Operating temperature range

N22A of wide temperature type can operate in the temperature range between -20ºC and 50ºC while N22A of other types operate in temperature range between 5ºC and 45ºC.

To allow N22A 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 N22A 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.

- N22A in the tablet mode or the battery charging state should be used in ambient temperature range 5 to 40ºC.
- The AC adapter can be used where the ambient temperature is -20ºC to 50ºC.
- Note that, if a hard disk drive (wide temperature range type: FC-HD40KN/S) and replacement battery (wide temperature range type: FC-BP01N/W) are mounted in models other than wide temperature range types, they cannot be used in a wide temperature range (-20ºC to 50ºC).

---

(3) Shock resistance

The chassis of N22A is made of magnesium die-casting alloy and equipped with a hard disk drive subjected to shock resistance.

N22A 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.

- When relocating the product, close the LCD panel display and fix the latches.
- This product has excellent shock-proof characteristics, but prevention of damage or failure is not guaranteed.
  N22A 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 N22A.

---

(4) Vibration resistance

The vibration resistance of N22A does not assure that it has sufficient strength against resonance generated when added vibration is close to the natural frequency of N22A.

(5) Continuous operation of N22A for long period

If N22A is operated continuously for a long period, deterioration of life parts in N22A may be accelerated. Therefore, NEC may charge the repair of N22A defected due to continuous operation for a long period within the warranty period.

When using the LCD in the high brightness condition for a long time, it is recommended to set the backlight to automatically turn off when a specified time has elapsed, via the power management control of the OS (Windows). The backlight will degrade earlier in a high-temperature environment. Also, use of a silicon disk is recommended.
When using a hard disk drive, periodically shut down the computer so that the HDD will stop operating, to reduce degradation due to 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 N22A is connected to AC power)
Recommended period : 3 minutes (when N22A is connected to AC power)

The number of writes to a silicon disk is restricted. See "Consumables and End-of-Life Products" in "CHAPTER 6 MAINTENANCE" for details.

For health

The following explains recommendations to be noted for your health when using this product.

It is said that long-term work with a computer can lead to accumulated fatigue, causing eye fatigue, a heavy-head feeling, blurred vision, or neck numbness or pain, from the shoulders to the fingers. Maintain a good posture and properly adjust the devices when using a computer. Rest appropriately, about 10 to 15 minutes every hour, and exercise to prevent further fatigue.

■ **Preferable working posture**

It is recommended to operate a computer, while feeling relaxed without excessive intension.
- Seated with your back against the seat back so that your back is supported
- Placing the keyboard horizontally with the floor so that both hands are at the same height
- Setting the screen lower than your eyes so that the visual line is slightly low.

■ **Adjustment of devices**

If the device is adjustable, adjust it as required to be optimized for the user.

■ **Adjustment of screen brightness**

The optimum brightness of the screen differs depending on the individuals or ambient brightness. Adjust the screen brightness according to the conditions, whenever required.

■ **Clean the devices**

Dirty screens reduce visibility. Periodically clean the screen.

Information on the FC98-NX and FC-NOTE Series

Information on the FC98-NX Series/FC-NOTE Series is available at the following Web page.
This page provides information on these computers, such as what's new, product information, Features of FC98-NX Series/FC-NOTE Series, cautions for installation, shipping termination, and planned shipping termination.

Symbols in the Text

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

	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.

	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.

Titles, commands, setup items, or buttons displayed on screen are shown in bold-face characters. Values or options that can be selected for setup items are shown in italics.

An example is shown below.

Example: Select Power management, set to *Enabled*, and then click the OK button.

Contents

THIS PAGE INTENTIONALLY LEFT BLANK.

Chapter 1 SYSTEM OVERVIEW AND PREPARATION

1.1 SPECIFICATIONS

1.1.1 Hardware Specification

Item			N22A [(Note 1)]
CPU [(Note 2)]			Intel®CoreTM2Duo processor Ultra low voltage version U7500 (Extended Intel SpeedStep® technology [(Note 3)] installed [1.06 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: 533 MHz)
Chip set			Mobile Intel 965GM Express chip set ICH8-M
Security chip [(Note 4)]			Conforming to TPM V.1.2
Memory [(Note 5)]			4GB max. [(Note 6)] 2 SO-DIMM slots DDR2-SDRAM (PC2-4200 (DDR2-533))
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)]	0.0003% or less
	Graphic accelerator		Built in mobile Intel 965GM Express chip set (Dual display [(Note 10)], smoothing, and screen rotation features available)
		Video RAM	348MB 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] 80GB (Serial ATA specification) or 40GB (wide temperature range and Ultra ATA specification)
	Silicon disk drive [(Note 14)]		[Selectable item] 20GB (Ultra ATA specification)
Input device	Keyboard [(Note 15)]		[Selectable item] Standard or backlight keyboard English keyboard Key pitch: 17.55 mm Key stroke: 2.4 mm backlight keyboard : 2.0mm
	Pointing device		Touch pad
	Tablet button		Desired functions can be assigned (up to 10)
Interface [(Note 13)]	USB [(Note 16)]		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 17)] WEP [encryption key length: 64/128 bits (user setting key length: 40/104 bits)], WPA-PSK (TKIP/AES) and WPA2-PSK (AES) 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)

Item		N22A[Note 1]
PC card slot [Notes 13 and 18]		1 Type I/II slot (Type III unavailable) conforming to PC Card Standard and compatible with CardBus
Express card slot [Note 13 and 18]		ExpressCard/34 · /54×1 slot
Triple memory slot [Note 13 and 18]		1slot
Security feature		Security software normally attached [Note 19]
	Finger print sensor [Note 8]	[Selectable item] Built-in type (line type) Authentication by fingerprint at OS logon or release of screen saver
Power management		Automatic or arbitrary settings enabled (including CPU control [Note 2], hard disk control, monitor power saving, suspend (standby) feature and hibernation)
Power supply	This machine	Operating voltage: 16 V±5
	Battery [Notes 20 and 21]	[Selectable item] Standard type: driving period - 8 hours, charging time (in power-on/off states) - about 3.5 hours/8 hours and weight: about 0.4 kg Wide temperature range type: driving period - 6 hours, charging time (in power-on/off states) - about 4 hours/8 hours and weight: about 0.5 kg Stamina standard type: driving period - 12 hours, charging time (in power-on/off states) - about 4 hours/8 hours and weight: about 0.5 kg
	AC adapter	100 to 240 VAC ±10%, 50/60 Hz [A specific cord is required if used in another country other than Japan.]
	Car adapter	[Option] FC-VA01N connectable (DC12 to 24V , 7.5A)
Conforming standard		Suitable to RoHS direct and conforming to VCCI Class B/FCC. Designed based on EMC direct (EN55022 and EN61000-6-2) [Note 22] and low voltage direct (EN60950-1) [Note 22] 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: 2007 [Note 23], I division 0.0020 (A)
Outside dimension		290(W) × 255(D) × 47(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

1: See "Selection Menu Table" for type names and numbers.
2: N22A 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 512MB, 1GB, 2GB, and 4GB on the selection menu.
6: Replacement of an expanded RAM board is enabled only on a single slot. The maximum memory capacity can be installed if memory of 2GB or larger is selected.
    If memory of less than 2GB is selected, the maximum memory capacity is "selected memory capacity" + 2GB.
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.(As of May 2008)
10: The feature allows an external display for desktop screen to be different from the LCD display of N22A.
11: 16.77 million color display is accomplished by the dithering feature of graphic accelerator.
12: N22A has the resolution and the number of colors. However, N22A cannot realize them depending on the resolution and refresh rate of the connected display. The LCD display on N22A and the external display connected to N22A 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 N22A, 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: If Windows® XP Professional (Service Pack 2) English version preinstalled is selected, the product will be shipped with an English keyboard.

16: Any software using peripherals connected to N22A must be fit to the USB interface.

17: N22A is equipped with a wireless LAN module obtaining Wi-Fi®, standard of the Wi-Fi Alliance. The communication speed and distance may be affected by various factors including connected devices, radio wave environment, surrounding obstacles,   installation environment, use situation, used application software and OS. IEEE802.11b/g (2.4GHz) is not compatible with IEEE802.11a (5GHz). The wireless LAN is suitable to Super AG and Atheros XR (eXtended Range). The wireless LAN (5GHz) conforms to IEEE802.11a (W52, W53 and W56). W52, W53 and W56 are notations defined by the Japan Electronics and Information Technology Industries Association. 11a (W56), however, can be used outdoors.
The wireless LAN (5GHz) can only be used indoors due to relevant radio laws. To use N22A abroad, the wireless LAN feature may conflict with related laws in the country. Accordingly, disable the wireless LAN feature abroad.

18: PC card, SD card, and memory stick are options. Purchase commercial products.

19: Security software may not be used, depending on the OS for use.
See "5.2 INSTALLING ATTACHED APPLICATIONS" for the operating systems supported by software.

20: 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.

21: 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.

22: These standards are required for CE marking.

23: 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.

1.1.2 Selection Menu Table

● Windows XP pre-installed model

Series title	Selection menu				
Base unit	Keyboard	OS	Memory capacity	Disk drive and battery	Wireless LAN and fingerprint authentication
N22A CPU Windows® XP Preinstalled model Intel®Core™2Duo processor Ultra low voltage version U7500(1.06GHz) Memory (3 slots) PC card (1 slot) SD card (1 slot) Express card × 1 slot	**[B]** Standard Japanese keyboard	**[X]** Windows XP Professional (Service Pack2) Japanese ver. preinstalled	**[3]** 512MB (512MB × 1)	**[S]** Standard HDD × 1 (SerialATA spec., 80GB) Standard battery	**[B]** Wireless LAN: No Fingerprint authentication: No Bluetooth: Yes
	[C] Backlight Japanese keyboard	**[Y]** Windows XP Professional (Service Pack2) English ver. preinstalled (Note 1)	**[4]** 1GB (1GB × 1)	**[T]** Standard HDD × 1 (SerialATA spec., 80GB) Stamina standard battery	**[F]** Wireless LAN: No Fingerprint authentication: Yes Bluetooth: No
	[G] Standard keyboard		**[6]** 2GB (2GB × 1)	**[W]** Wide temperature range HDD × 1 (UltraATA spec., 40GB) Wide temperature range battery	**[S]** Wireless LAN: Yes Fingerprint authentication: No Bluetooth:Yes
	[H] Backlight keyboard			**[F]** Silicon disk × 1 (UltraATA spec., 20GB) Stamina battery	**[W]** Wireless LAN: Yes Fingerprint authentication: Yes Bluetooth: Yes
				[H] Silicon disk × 1 (UltraATA spec., 20GB) Wide temperature range battery	**[Z]** Wireless LAN: No Fingerprint authentication: No Bluetooth: No

```
  ←————————————→ ←——————————————————————————————————————→
        Part name                      Model name
  ←————————————————————————————————————————————————————→
                        Part number
```
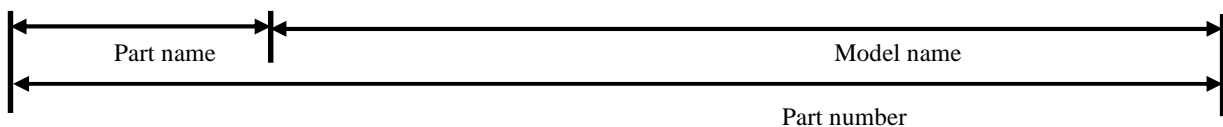
1: If Windows® XP Professional (Service Pack 2) English version preinstalled is selected, the product will be shipped with an English keyboard.

* The part and generation numbers of N22A 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-N22A/BX2SS, the notation on the nameplate and warranty is FC-N22A/BX2SS** (**: generation number).

* N22A 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)

1.1.3 Environmental Specification (Main Unit)

Item		Condition	
		Installation of standard hard disk drive and battery Installation of silicon disk drive and standard battery Installation of silicon disk drive and stamina standard battery	Installation of hard disk drive and battery of wide temperature range
Temperature	Operating	5 to 45 ℃ (Note 2)	-20 to 50℃ (Note 2)
	Storage	-40 to 70℃	
	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 (4,572m)	
	Storage	40,000 ft (12,190m)	
	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] 0.04G2/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	
	Evaluation standard — 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 N22A does not assure that it has sufficient strength against resonance generated when the frequency of added vibration is close to the natural frequency of N22A.

Note 2: Use the product with an ambient temperature of from 5℃ to 40℃ in tablet mode or while the battery is being charged.

* The specification does not assure that N22A can operate continuously under the described environmental conditions in which N22A is installed.
In addition, if N22A is equipped with one or more NEC or commercial options, the most severe environmental condition among those for N22A and the options is applied. Installation environment conditions for external optional devices are different that those for the main unit, see the document that comes with each device for detailed conditions.
When N22A is stored at high/low temperatures, the clock built in N22A may be shifted. Set the clock before N22A is used again.

1.2 CHECKING ACCESSORIES

The following accessories are included in the N22A package box. Check the accessories with the component list below.

■ List of N22A Components

Item No.	Product Name	Quantity
1	FC-N22A Main Unit	1
2	AC Adapter (Cable length: 1.8 m)	1
3	Power Cord (2.0 m) [*1]	1
4	Battery	1
5	Getting Started [*2]	1 copy
6	Warranty	1 copy
7	Recovery DVD-ROM [*4]	1 set
8	Backup CD-ROM (OS not included) [*2 *3 *4]	1 set
9	Touch Pen	1
10	Pre-installed Windows® XP License Agreement (English)	1 copy
11	Anti-theft screws (M2× 4 screw (Black))	4 (including 2 spare screws)

*1: The attached power code is dedicated to 100 VAC.
*2: An electrical manual including the same contents as the User's Manual is stored on the "Backup CD-ROM".
*3: Attached application software and electrical manuals are stored.
   Included software and electrical manuals are stored on the Recovery DVD-ROM.
*4: The optional external CD-R/RW with DVD-ROM drive is required.

Copies of notes not listed in this list may be included in the accessories.

1.3 EXTERIOR VIEW

N22A is of convertible type allowing it to be used as a note or tablet PC depending on uses.
N22A also has several characteristics including light weight, various security features and installation of touch panel to be user-friendly.
On its bottom surface of N22A, the hard disk drive, expanded RAM board and battery pack can be replaced with spares.

1.3.1 Names and Features of Sections of N22A

(1) Inner panels

No.	Name	Description	Reference page
(1)	LCD display (with touch panel)	12.1-in. TFT LCD display	P57
(2)	Power lock switch	Locks the power switch to prevent the switch from being set unintentionally (enabled by BIOS setting).	Pxx
(3)	Power switch	Allows you to turn on/off power.	
(4)	Fingerprint sensor	Reads fingerprint (selection).	P70
(5)	Tablet buttons	Allows the screen rotation and LCD brightness adjustment features to be executed directly. Setting BIOS appropriately, you can assign any key codes to these buttons.	Pxx
(6)	Touch pen storage area	Stores the attached touch pen.	Pxx
(7)	Keyboard		P51
(8)	Touch pad		Pxx
(9)	Built-in speaker (monaural)	Monaural speaker (0.5 W output) for playing sound.	
(10)	Indicator lamps	Each lamp indicates part statuses, such as the power supply status.	
(11)	Wireless LAN Antenna	Built-in Wireless LAN Antenna (selection)	
(12)	Bluetooth Antenna	Built-in Bluetooth Antenna (selection)	

(2) Outside sections

[Rear view]

(1) (2) (3)   (4) (5)(6) (7)
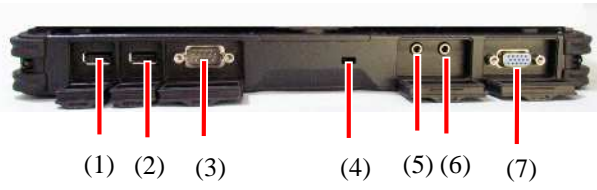
[Front view]   [Bottom view]   (9)

(8)

[Left side view]   [Right side view]

(10)   (11)   (12)   (13)   (18) (19)

(14)
(15)

(16)   (17)

No.	Name	Description	Reference page
(1)	USB connector (2)	Connects with a USB device (USB2.0 available).	P72
(2)	USB connector (3)	Connects with a USB device (USB2.0 available).	P72
(3)	Serial connector	Connects with a serial device such as a modem.	Pxx
(4)	Antitheft lock	Connects with a commercial security cable.	Pxx
(5)	Mike terminal (stereo)	Connects with a commercial microphone. Connect a ϕ3.5 mm plug to this jack. (stereo and mini jack type) Some devices may not be directly connected to this machine because of the connector shape specifications. In such a case, use a commercially available conversion cable.	
(6)	Output terminal common to line and headphone (stereo)	Outputs sounds to a commercial audio device or headphone (stereo and mini jack type) Connect a ϕ3.5 mm plug to this jack. Connect an audio device with an internal amplifier, according to the usage. Some devices may not directly connect to this machine because of the connector shape specifications. In such a case, use a commercially available conversion cable.	
(7)	External monitor output connector	Connects with an external analog RGB monitor.	Pxx
(8)	LCD display fixing lock	Locks the LCD display.	P43
(9)	Expanded memory storage area	Stores expanded RAM board of an option. See the explanation of expanded memory, in the manual that comes with the option.	
(10)	Power connector	Connect an AC adapter or a car adapter.	Pxx
(11)	LAN (1000BASE-T) connector	Connects with LAN (1000BASE-T/100BASE-TX/10BASE-T) cable.	P74
(12)	Battery storage area	Stores the attached battery.	Pxx
(13)	Disk drive storage area	Stores disk/silicon disk drives (installed).	P82
(14)	Wireless communication switch	Switches wireless communication devices such as wireless LAN or Bluetooth devices.	Pxx
(15)	Express card slot	Insert the Express card	P66
(16)	PC card slot	Connects with a PC card (PCMCIA of type II) for feature expansion.	P66
(17)	Triple memory slot	Insert an SD card or a memory stick into this slot.	P69
(18)	IEEE 1394 connector (4-pin)	Connect a peripheral device, such as a digital video camera, to this connector.	P73
(19)	USB connector (1) (Connect/disconnect-pro of enhanced type)	Connects with a USB device (USB2.0 available).	P72

(3) Indicator lamps

Name	Description
Power lamp	While power is supplied to N22A, the lamp illuminates or blinks in several colors depending on the status of N22A or the remaining battery level as follows: • Illuminating in green: — Power-on status • Blinking in green: — Suspend (standby) status • Illuminating in red: — Low battery level (7 to 10% of the full level) • Blinking in red (at 1 sec. in red / off at 2 sec.): — Low battery level in suspend (standby) state (7 to 10% of the full level) • Blinking in red (at 0.5 sec. intervals): — Extremely low battery level in suspend (standby) state (0 to 6% of the full level) • Illuminating in red and green alternately — AC adapter voltage abnormality • OFF: — Power-off status or in hibernate mode
Battery charge lamp	Indicates battery status. • Illuminating in orange: — Charging • Blinking in orange (at 1 sec. intervals): — Stop charging of the battery because of the ambient temperature. • Blinking in orange (at 0.5 sec. intervals): — Occurrence of error • OFF: — Discharging, full discharge in no connection of AC adapter or full charge completed
Disk access lamp	Illuminating (blinking) in green indicates built-in HDD/silicon disk activity.
Caps lock key lamp	Indicates whether the caps lock feature is enabled or disabled. • Illuminating in green: — **Caps lock** feature enabled with Caps Lock pressed once • OFF: — **Caps lock** feature disabled with Caps Lock pressed again
Numeric lock key lamp	Indicates whether the numeric lock feature is enabled or disabled. • Illuminating in green: — Numeral lock feature enabled with **Num Lk** pressed once • OFF: — Numeral lock feature disabled with **Num Lk** pressed again
Scroll lock key lamp	Indicates whether the scroll lock feature is enabled or disabled. • Illuminating in green: — Scroll lock feature is enabled by pressing the **Scr Lk** key once. • OFF: — Scroll lock feature is disabled by pressing the **Scr Lk** key again.
Wireless communication lamp (only for models with wireless communication feature)	Indicates the use status of the wireless communication feature, wireless LAN or Bluetooth. • Illuminating in blue: — Wireless communication feature is enabled. • OFF: — Wireless communication feature is disabled.

1.4 INSTALLATION GUIDE

From Installing to Operating

Steps from installation to operations are shown in the following flow.

Introduction	→Chapter 1" Preparation"
↓	
Checking installation environment	→Chapter 1 "Preparation SPECIFICATIONS"
↓	
Installing/Mounting	→Chapter 1 "Preparation INSTALLATION GUIDE"
↓	
Installing the battery	→Chapter 1 "Preparation INSTALLING BATTERY"
↓	
Setting BIOS	→Chapter 4 "Setting BIOS"
↓	
Installing and setting up operating system	→Chapter 5 "Installing OS and Applications"
↓	
Installing application software	→Chapter 5 "Installing OS and Applications"
↓	
Verifying system operations	
↓	
Carriage and storage	→Chapter 6 "Maintenance"
↓	
Maintenance	→Chapter 6 "Maintenance"

(1) Notes on installation place
Install N22A in a place where it can be operated properly. See "Notes on Use of N22A 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 N22A is OFF. Connecting or disconnecting the relevant cable to/from a peripheral with the power of N22A being ON may cause a malfunction or fault to occur.

2. After turning off the power of N22A, 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 N22A periodically.

(3) Notes on storage and use environment of N22A

1. N22A 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 N22A is used near a radio, TV and/or wireless device, N22A may cause poor receptions.
   On the other hand, a device generating intense magnetic field is located near N22A, noises may have bad influence on N22A to operate inappropriately. If this occurs, take N22A away from such a device.

2. To use N22A in an FA environment, always make N22A meet the conditions described in "1.1.3 Environmental Specification (Main Unit)".

(4) Notes on handling and use of HDD
Hard disk drives are precision devices.
N22A 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 N22A.

2. Keep hard disk in the hard disk drive from being subject to strong shocks if the drive is removed from N22A.

(5) Notes on handling of devices sensitive to magnetism (including floppy disks)
A magnet to sense opening or closing of the LCD display panel is contained at the upper left corner of the panel.
The magnet may destroy data saved in magnetic media. Do not put devices sensitive to magnetism (including floppy disks) close to the magnet.

Magnet

1.5 INSTALLING BATTERY

1   Turn off the N22A and remove the AC adapter or car adapter.

2   Unlock the LCD display to open the LCD panel.
(☞ See "Opening/Closing LCD Display Panel and Setting Tablet Mode" in "Chapter 2. Uses of N22A".)

3   While pressing the button of the battery cover on the left side, slide the cover upward to open it.
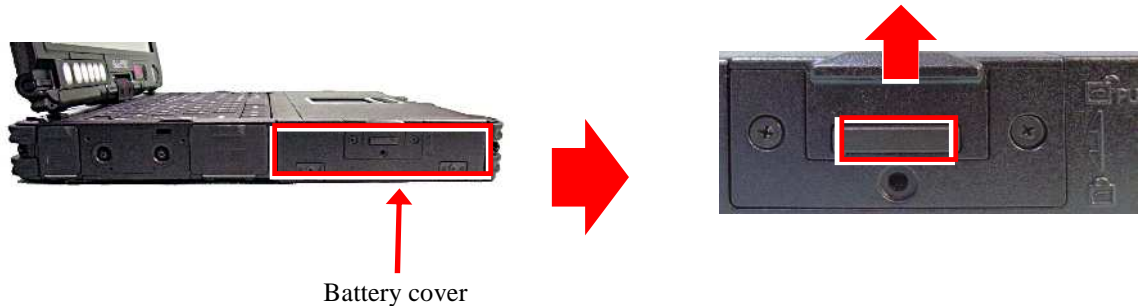
Battery cover

4   Insert the battery horizontally until it is securely connected.

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

Battery removal support
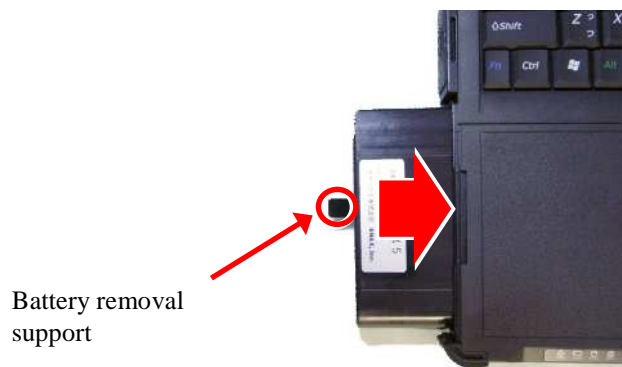
5   Close the battery cover, and then press the top part to return it to the original position.
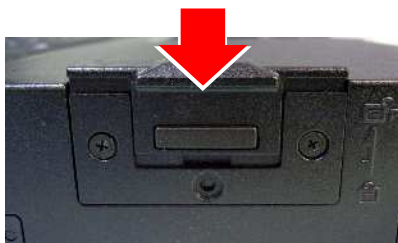
> If dust and/or dirt adhere to the drip-proof packing on rear of the cover, the dust-proof and the drip-proof performance of the cover may be reduced. Wipe the drip-proof packing to remove dust and dirt before installing the cover.

Drip-proof packing

> The battery is not charged enough at shipment of N22A from factory. Charge before use. When using the N22A for the first time, connecting it to the power supply automatically starts battery charging.

40

1.6 INSTALLING AC ADAPTER

1 **Insert the DC plug of the AC adapter into the power connector on the left side.**

2 **Connect the attached power cord to the AC adapter.**

3 **Plug the power cable into the power outlet.**
Charging of the battery automatically starts.
(☞ See "Battery" in "Chapter 2 Uses of N22A".)

The AC adapter operates in the range between 100 and 240 VAC.
The power cable accompanying with the N22A is designed for 100 V operation only. Note that it cannot be used with an input voltage exceeding 125 VAC.

The car adapter (optional, FC-VA01N) can be used for the power supply.

- The AC adapter and power cable accompanying the N22A are designed for use only with the N22A and the battery charger (optional, FC-BC01N). Do not use them for other devices. If the AC adapter is connected to another device, it may be damaged.
- The AC cord attached to N22A is intended to be used only in Japan. If you want to use N22A in a country other than Japan, contact your service representative on the proper power cord.
- Unplug the AC adapter from the outlet first, and then disconnect the N22A or battery charger end. If it is removed in the reverse order, the AC adapter, N22A, or battery charger may be damaged.
- Always hold each plug of the AC adapter in its removal. Do not pull the cord.

(1) Specification of AC adapter

Item		Specification
Temperature	Operating	-20 to 50ºC
	Storage	-20 to 70ºC
Humidity	Operating	25 to 85% RH (without condensation)
	Storage	10 to 90% RH (without condensation)
Input voltage		100 to 240 VAC ($\pm$10%), 1.1 to 0.5 A, 50/60 Hz ($\pm$5%) (The AC cord can be exclusively used for 100 VAC.)
Output voltage		16 VDC ($\pm$7%), 4.0 A
Maximum power		56 W
Cable length		1.8 m (AC cord: about 2 m)
Outside dimension		140 (W) $\times$ 63 (D) $\times$ 30.5 (H) mm
Weight		About 0.5 kg (including AC cord)

THIS PAGE INTENTIONALLY LEFT BLANK.

Chapter 2 Uses of N22A

2.1 OPENING/CLOSING LCD DISPLAY PANEL AND SETTING TABLET MODE

2.1.1 Opening Panel

1   **Pull up latch A and unhook latch B.**
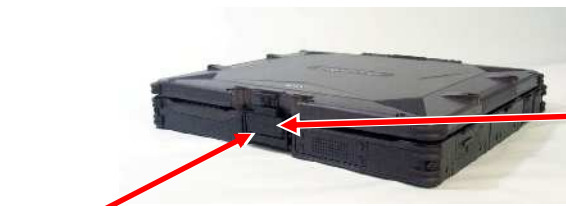
latch B

Unlatch latch B.

Pull up latch A.
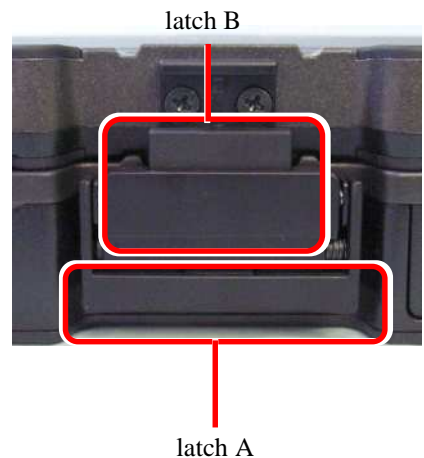
latch A

2   **Open the LCD display panel.**

* LCD display lock consists of latches A and B.

2.1.2 Closing Panel

1   **Fit the guide support on the base unit to the guide on the LCD display panel and close the panel.**

Guides on display panel

Guide support on base unit

2   **Pull up latch A.**

3   **Hook latch B on the LCD display panel and pull down latch A to fix the display panel.**
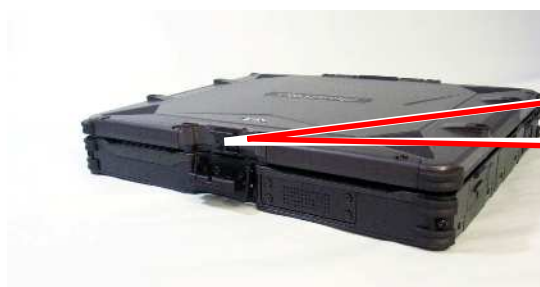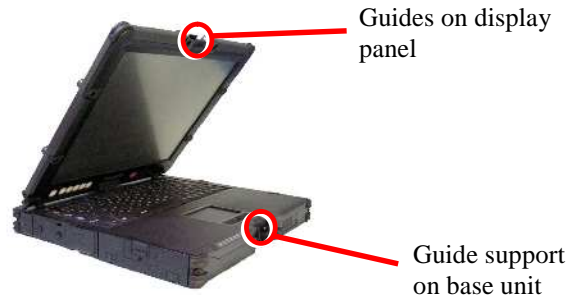
Hook latch B on the position.

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.

43

2.1.3 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.
Be careful not to pinch your fingers while rotating the LCD display panel.

3 **Fit the guide on the display panel to the guide support 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.**

2.1.4 Returning Screen to its Original Position

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.**

2.2 TURNING ON/OFF POWER

This section describes how to turn on or off the power of N22A 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 N22A improperly, not only data and programs but also the machine itself may be broken.

Power states

The power states of N22A is divided into four states, or power-off, power-on, suspend (standby) and pause states. These states are changed as follows:
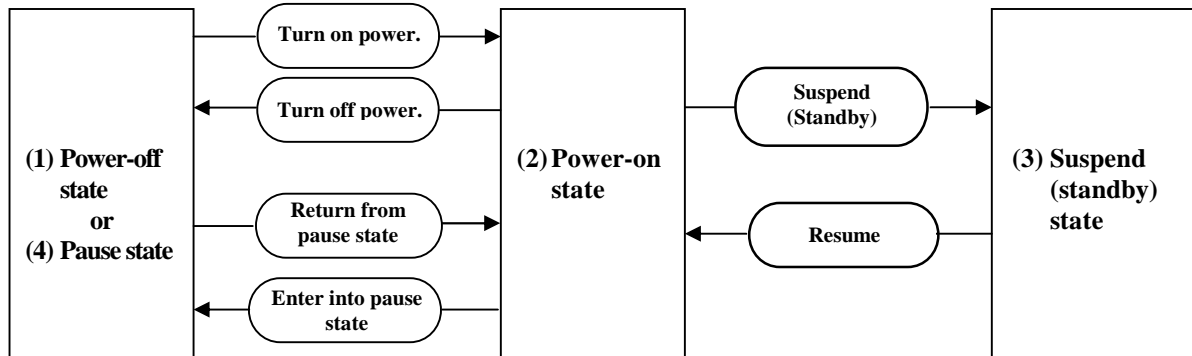
(1) Power-off state
   In the power-off state, N22A is not used at all due to shutdown of Windows or another exit operation.

(2) Power-on state
   In the power-on state, N22A is used normally.

(3) Suspend (standby) state
   Suspend (standby) is a power saving state where the power to the hard disk drive is shut off. The power supply of the N22A is not completely shut off.   In this state, the working data is temporarily saved in memory and necessary power is supplied to keep the data in the memory.
   Because working data is saved in memory, N22A can immediately return to the original state at recovery from the suspend (standby) state.

   * Some OSs cannot enter N22A into the suspend (standby) state.

(4) Pause state
   When the N22A enters the hibernate state, all data in the memory is saved to the hard disk and power to the N22A goes off without exiting Windows.
   If the power is turned on again, N22A 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 N22A into the pause state.

   See "Indicator lamps" of "Names and Features of Sections of FC-N22A" in "Chapter 1 Preparation" for details on the indicator lamp display according to the power status.

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 on the peripheral devices.

> Some peripheral devices may be recognized properly only when their powers are turned on before turning on the power of N22A.
> Refer to the User's Guides of peripheral devices previously.

2 Press the power switch for one second.

The N22A is turned on and the power lamp glows.

Power lock release switch

Power switch

> - 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, N22A is so designed that the power is turned on only by pressing the power switch for 1 to 2 sec consciously.
> - If N22A is activated only by battery, it takes 1 to 2 sec to turn on LEDs after depression of the power switch.
>   This is because N22A 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.

> The BIOS activation screen appears after power-on. To continue BIOS setting, press the **F2** key. The BIOS setup menu screen then appears.
> (☞ See "Chapter 4 Setting BIOS".)

2.2.2 Turning off Power (shutdown)

Turn off the N22A when it will not be used for a long time as well as before connecting devices to it.

> - 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.
> - Pressing the power switch for 4 seconds forcibly turns off power; data that has not been saved will be lost. Save the working data before pressing the power switch to turn off the N22A.

Power-off procedure by using Windows End menu

1 **Save edited data and quit all the applications.**

2 **On the Windows® XP screen, click [Start] → [Shutdown]. Next, click the [Shutdown] button.**
Do not press the power switch during the shutdown processing.

3 **Check that the power is turned off.**
After a few seconds, the screen will go dark and the power will turn off automatically.
Check that the power lamp goes off.

4 **Turn off the peripheral devices.**

Power-off procedure by using power switch

1 **Save edited data and quit all the applications.**

2 **Press the power switch.**

3 **Check that the power is turned off.**

4 **Turn off the peripheral devices.**

2.2.3 Power Saving Features

The suspend (standby) or hibernate features allow stopping of operation without exiting applications. When restored, different from shutting down, the screen immediately before the suspend (standby) or hibernate status is entered allows operation to be immediately started (resuming).

Notes on using suspend (standby) and resume feature or hibernate status

To use the suspend (standby) and resume features, note the following. Failure to follow these instructions may cause working data for entering N22A into the suspend (standby) state to be lost or not to be restored.

● Before entering suspend (standby) or hibernate status

- When any communication device is being used, quit the communication application before entering the suspend (standby) or hibernate status. Entering N22A into the suspend (standby) state under communication may leave the line connected to add up the communication fee.
Note that entering the hibernate status while communication being performed may forcibly disconnect communication.
- Before N22A can be entered into the suspend (standby) state, USB devices should be removed from N22A. N22A with one or more USB devices connected may not be able to be entered into the suspend (standby) state.

47

- Do not enter the suspend (standby) or hibernate status in the following cases:
  - Executing system change job (including setting driver or adding printer),
  - Outputting data to printer,
  - Replaying audio or motion picture,
  - Reading/writing data from/to memory 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,
  - When using a peripheral device or expansion card that does not support the suspend (standby) and hibernate features
  - Executing Windows start or exit processing, or
  - If N22A 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 N22A 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.

- When transiting to the suspend (standby) or hibernate status
  Do not replace disks and PC and memory card. Failure to follow this instruction may cause data to be saved improperly.
  Do not connect or disconnect a USB device and IEEE 1394 device to/from N22A.

- During suspend (standby) or hibernate status
  Power is consumed during the suspend (standby) status.   The saved data will be lost if the battery becomes depleted.   Be sure to connect the AC adapter during the suspend (standby) status.
  Do not connect or disconnect peripheral devices, otherwise this product may not resume normally.

  Other notes
  - If a SCSI PC card is used, N22A cannot be resumed properly depending on the combination of the SCSI PC card and the connected device.
  - To make N22A 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 N22A excessively.
  - After recovery from the pause state, nothing may appear on the LCD display. In this case, touch the touch pad (mouse) or press any key to restore the normal display.

- 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.
  - The machine will not resume even if the power switch is pressed.
  During use of applications causing these situations, do not use the suspend (standby) and resume features. If N22A cannot be resumed by pressing 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.

Perform power saving feature from [Power supply option] of Windows. Operation for manually executing the power saving feature and the time until the machine automatically enter the power saving mode can be set.

(1) Changing operation to execute the power saving feature

    1.   Click [Start] → [Control panel] → [Performance and maintenance] → [Power option] → [Detailed settings] tab.

    2.   In the [Power button] field, set the operation and the power saving feature to be executed.

        ■   **When the power switch is pressed**
        Select the power saving feature to be executed in [When the power switch of the computer is pressed].
        ■   **When the LCD display is closed**
        Select the power saving feature to be executed in [When the portable computer is closed].

    3.   Click the [Apply] button, and then click the [OK] button.

If you want to suspend jobs on N22A temporarily, you can enter N22A into the suspend (standby) state to save power consumption.
To suspend (standby) and then resume N22A with the power switch, the setting of the power switch must be changed.

> Before you can suspend (standby) and then resume N22A, wait for five seconds or longer after change of the power lamp status.

To enter N22A into the suspend (standby) state in the power-on state manually, follow either of the procedures below.

(1) Entering the suspend (standby) status
The following three methods are available.

    ■   Entering suspend (standby) status from the Windows shutdown menu
        Click [Start] → [Shutdown option], and then click [Standby].
    ■   Close the LCD display
        Enabled when [Standby] is selected in [When the portable computer is closed].
    ■   Press the power switch
        Press the power switch for about one second while the power is on.
        The power lamp blinks in green, indicating the suspend (standby) status.
        Enabled when [Standby] is selected in [When the power switch of the computer is pressed].

> Do not press the power switch for four seconds or longer to suspend (standby) or resume N22A.
> 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) Resuming from suspend (standby) status
The following three methods are available.

■ Press the power switch.
The power lamp illuminates in green and N22A recovers from the suspend (standby) state (or resumes).

■ Press any key
Press any key

■ Open the LCD display
When the N22A has entered into the suspend (standby) status by closing the LCD display, open the LCD display to resume from the suspend (standby) status.

> • It may take time from closing the LCD display panel until the N22A enters the suspend (standby) status.
> • When the time of closing the LCD display is too short, the N22A will not enter the suspend (standby) status. In this case, close the LCD display panel again.

Pause state

If jobs on N22A are halted for a long period, entering N22A into the pause state allows power consumption to be saved.

(1) Enabling hibernate status
1. Click [Start] → [Control panel] → [Performance and maintenance] → [Power option].
2. Click the [Hibernate status] tab, and then select "Enable hibernate status".
3. Click [OK].

(2) Entering to hibernate status
The following three methods are available.

■ Enter the hibernate status from the Windows Shutdown menu.
Click [Start] → [Turn Off Computer]. Then press **Shift** and click [Hibernate].

■ Press the power switch
Enabled when [hibernate] is selected in [When the power switch of the computer is pressed].

■ Close the LCD display
Enabled when [hibernate] is selected in [When the portable computer is closed].

(3) Resuming from hibernate status
The following two methods are available.

■ 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.

■ Open the LCD display
When the N22A has entered into the hibernate status by closing the LCD display, open the LCD display to resume from the hibernate status.

> 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.

2.3 TABLET BUTTONS

These buttons enable direct execution of screen rotation, LCD brightness control, etc. Button assignment can be changed as required.

(Tb) [Tb] button
(1)   Tablet button 1
(2)   Tablet button 2
(3)   Tablet button 3
(4)   Tablet button 4
(5)   Tablet button 5
(6)   Label pasting area

(Tb)   (1)   (2)   (3)   (4)   (5)

(1) Operations at depression of buttons

Button	Operation (defined at shipment)
Tablet button 1	**Ctrl** + **Alt** + **Del**
Tablet button 2	Rotates the Windows screen.
Tablet button 3	**Enter**
Tablet button 4	Increases brightness of the LCD screen.
Tablet button 5	Decreases brightness of the LCD screen.
[Tb] + Tablet button 1	**Esc**
[Tb] + Tablet button 2	**Tab**
[Tb] + Tablet button 3	Starts the screen keyboard.
[Tb] + Tablet button 4	Moves the cursor upward.
[Tb] + Tablet button 5	Moves the cursor downward.

(2) Label pasting area

When key assignment is changed, you can paste a label showing the new key assignment on the area.
The possible label size is as follows. Prepare the label if required.

Size: 3mm
       60mm
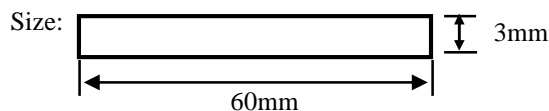
(3) Changing key assignment

Button assignment can be changed from the BIOS setup menu.

(☞ See "Tablet Button Submenu" in "Chapter 4 Setting BIOS.")

(4) Starting any application

From the BIOS setup menu, assign [FC button 1] and [FC button 2] to enable execution of the commands (starting application) registered using the FC button setting tool.

For FC button setting tool, see "FC Button Setting Tool" in "Chapter 5 Installing OS and Applications."

2.4 KEYBOARD

2.4.1 English Keyboard

Using Hot Keys [Fn]

Combining **Fn** with another key allows various operations on N22A to be done easily.
These are called hot key features.
Some icons indicating the features resulting from combinations of respective keys with **Fn** are printed on the keys with the same color as **Fn**.
The table below lists the hot keys and their features.

Key combination	Feature or description
Fn+**F1**	Switches the keyboard backlight from off to on (8 levels). (only for backlight keyboard). 8 levels → dark → bright OFF ← Note: Switches only between on and off when the keyboard backlight control is set to [Interlocked] in the BIOS setting.
Fn+**F2**	Switches the ON/OFF status of the wireless LAN feature. (The external switch is on.)
Fn+**F3**	Changes the display mode to any of the following three modes if an external monitor is connected to N22A. (for only Windows XP) → LCD → External monitor Display on both monitors ← Note: Alternatives may be limited to "External monitor" and "Display on both monitors", depending on the OS used.
Fn+**F4**	Turns off the backlight of the LCD display.
Fn+**F5**	Switches enlarged display/no enlarged display of the screen in the low resolution mode. Some operating systems do not support this feature.
Fn+**F6**	Disable computer sound (Mute Status)
Fn+**F7**	Raises the brightness of the LCD display.
Fn+**F8**	Lowers the brightness of the LCD display.
Fn+**F9**	Raises the volume of the speakers.
Fn+**F10**	Lowers the volume of the speakers.
Fn+**F11**	Switches scroll lock on/off.
Fn+**1**	FC button
Fn+**2**	Allows registered application to be started (see Chapter 5).
Fn+**PrtScr** (Sys Rq)	System request

Key combination	Feature or description
Fn+**ScrLK** (Num Lk)	Numeric lock If these keys are pressed once, the ⬆1 lamp goes on and blue numerals and symbols on keys are enabled. If the keys are pressed again, the ⬆1 lamp goes off and normal characters are enabled.
Fn+**Pause** (Break)	Break
Fn+↑ (Page Up)	Page Up
Fn+↓ (Page Dn)	Page Dn
Fn+← (Home)	Home
Fn+→ (End)	End
Fn+**Alt**	Right Alt
Fn+ ⊞	Right Windows

> Some OSs and software may disable a part of hot keys to be used.

Keyboard with backlight

If a keyboard with backlight is selected from the selection menu, a Japanese keyboard with backlight is installed. It is suitable for use in a dark place such as a warehouse or at night. Backlight brightness can be adjusted in 8 levels or off by pressing **Fn** + **F1**. It is set to off by default.

In the [Details] menu of the BIOS settings, set [Keyboard backlight control] to [Interlocked] to adjust the backlight and LCD brightness at the same time. It is set to [Interlocked] by default. In this case, press **Fn** + **F7** to increase brightness, or press **Fn** + **F8** to decrease brightness. Press **Fn** + **F4** to set to "off".

Keyboard backlight automatically turns off at any of the following events:
- When the LCD display panel is closed (opening it resumes the previous status)
- When entered into the suspend (standby) status (the previous status resumes by keyboard or mouse operation)
- When entered into the hibernate status (pressing the power switch resumes the previous status)

> The keyboard backlight does not automatically turn off during any of the following events:
> - When "LCD power off" is set for Power supply option.
> - When screen saver is being executed.
>
> Press **Fn** + **F1** to turn off the keyboard backlight.

To enter the euro symbol (€) printed on the **5**, change the keyboard layout as described below.

1 **Click [Start] → [Control Panel].**

2 **Click [Date, Time, Language, and Regional Option].**

3 **Click the [Details] button under "Text services and input languages" on the [Languages] tab.**
　　Note:　　When the desired keyboard exists in the installed service list, proceed to step 8.
　　　　　　Click the [Add] button under "Installed service".

4 **Select "English (United State)" in the "Input language" list.**

5 **Select "United States-International" in the "Keyboard layout/IME" list.**

6 **Click the [OK] button.**

7 **Select "English (United States)-United States-International" for "Default input language".**

8 **Click the [OK] button.**

9 **Restart the N22A.**

The above settings allow entering the euro symbol (€) by pressing **Ctrl** + **Alt** + **5**.

2.5 TOUCH PAD

The touch pad is a pointing device on which you can control the position of the pointer and select a proper button to communicate with N22A.
The touch pad is composed of a rectangle pad and two buttons. Moving a finger on the pad allows the pointer on the screen (also called the cursor) to be moved.
If the finger reaches to an end of the pad, let the finger away from the pad and put it at the opposite end.
Then you can continue to move the pointer.

- Do not make a sharp object such as a ballpoint pen contact with the touch pad.
  Failure to follow this instruction may cause the surface of the touch panel to be damaged.
- To maintain the optimum performance of the touch pad, keep your fingers and the pad clean and dry.
  Make a finger contact with the pad lightly without excess force.
- If "Static" for the pointing device is selected in the selection menu, touch operation with a gloved hand or a touch pen will not be possible.

Term	Operation
Point	Move a finger on the pad to make the cursor reach to the intended target on the screen.
Click	Press and release the left button, or hit the pad lightly.
Double-click	Press and release the left button twice fast, or hit the pad twice fast.
Drag & drop	With the left button remaining pressed, move the finger until the cursor reaches to the intended point (drag). After dragging to the intended point in the selected range, release the button (drop). The object is dropped at the new point. or Tap the pad twice with a finger lightly and leave the finger contact with the pad at the second tapping. Then move the finger on the pad to drag the selected object to the intended point. Releasing the finger from the pad, the selected object is dropped at the new point.
Scroll	The scroll means that the display area is altered in the longitudinal or transverse direction within the working area on the screen. To alter the display area in the longitudinal direction, put a finger at the right end of the pad and slide it along the end. To alter the display area in the transverse direction, put a finger at the bottom of the pad and slide it along the bottom. The feature can be used only when the touch pad driver attached to N22A is installed. Some applications may disable the feature to be operated.

2.5.1 Setting Touch Pad

Settings of the touch pad can be changed depending on user needs. For example, left-handed users can interchange the features of the left and right buttons to use the left and right buttons as the right and left buttons in the normal state, respectively. In addition, the size and speed of the pointer on the screen may be changed.

> - If the left and right buttons on the touch pad are interchanged, tapping the touch panel cannot substitute for pressing the left button.
> - The features of the touch pad can be enabled/disabled by changing some BIOS settings.

1 **Display the setting screen.**
Click [Start] → [Control Panel] → [Printers and Other Hardware] → [Mouse]. Then the [Mouse Properties] dialog box appears.

2 **Perform settings.**
Perform settings on each of the [Buttons], [Pointers], and [Pointer Options] tabs.

3 **Click [Apply] and then click [OK].**

2.6 TOUCH PANEL

The touch panel feature allows the same operation as the touch pad on the LCD display.   Use the provided touch pen to perform operation on the display.

> - Do not make a sharp object such as a ballpoint pen or a pencil contact with the touch panel. Failure to follow this instruction may cause the touch panel to be damaged.
> - If the surface of the touch panel is dirt, wipe the surface with a dry and soft cloth such as a glass wiping cloth. If manipulating the touch panel with dust adhering on the surface may cause the surface to be hurt.

> Neither put your hands on the surface of the touch panel nor push the surrounding of the touch panel hard.
> The pointer (cursor) may not be operated normally or moved to an end of the screen. While the touch panel is manipulated, do not put your hands on the keyboard. Failure to follow this instruction may cause key entries to occur.

Term	Operation
Point	Slide the pen or finger on the touch panel until the cursor reaches to the intended target on the screen.
Click	Tap a point on the touch panel lightly.
Double-click	Tap the touch panel twice fast.
Drag & drop	Press the touch panel with the pen or finger lightly and slide the pen or finger to the intended point (drag). After dragging to the intended point in the selected range, release the pen or finger (drop). The object is dropped at the new point.

2.6.1 Setting Touch Panel

Setting features

You can change the size and speed of the pointer on the screen. For settings, see "Setting Touch Pad."

Settings on the touch pad are also applied to the touch panel. The touch panel cannot be independent of the touch pad.

Compensating position

The position of pointer must be compensated in the following cases:
- Changing the resolution of the screen is changed, or
- The pointer is not moved properly to the point with which you make the touch pen contact.

Compensate the point of the pointer in the following procedure:

1 **Display the setting screen.**
Click [Start] → [All Programs] → [Gunze TPDD] → [Calibrate].

2 **Click the four sides specified with red mark × on the screen with the touch pen for calibration.**

2.7 DISPLAY FEATURE

The display features of N22A are characterized as follows:

- 12.1-in. TFT (Thin-Film Transistor) color LCD display of resolution 1024×768 XGA (Extended Video Graphics Array)
- Concurrent display of both LCD display and external monitor

> Some OSs may limit display modes.

2.7.1 Display Resolution

The default resolution and the default number of colors are set at shipment of N22A.
For display of a higher resolution, N22A can connect with an external monitor supporting the higher resolution.
The table below shows the display modes available to N22A.

Display mode	LCD display only
Resolution	Number of colors
800×600	16 bits
	32 bits
1024×768	16 bits
	32 bits

* N22A allows external monitors can have resolutions in the range from 640×480 to 1600×1200 and the number of colors of 8, 16 and/or 32 bits. However, the used external monitor limits available resolutions and the available number of colors.

Notes on color: 8 bits = 256 colors
16 bits = High Color or 65,536 (64 K) colors
32 bits = True Color 16,770,000 (16 M) colors
(16.77 million color display is accomplished by the dithering feature of the graphic accelerator.)

2.7.2 Adjusting Screen Display

To change the resolution or the number of colors of the screen, follow the procedure below:

1 **Open the setting screen.**
Click [Start] → [Control Panel] → [Appearance and Themes] → [Display]. Then the [Display Properties] dialog box appears.

2 **Select the [Settings] tab to set the resolution and/or the number of colors of the screen.**

3 **Click [Apply] then click [OK].**

> To enable the virtual screen feature, follow the procedure below:
> - On the screen displayed by selecting the [Settings] tab, click the [Advanced] button.
> - Click the [Monitor] tab.
> - Click [Hide modes that this monitor cannot display] to uncheck it.
> - Click [OK].

2.7.3 Connecting External Monitor

To get a wide display screen of a higher resolution, an external monitor can be connected to N22A through an external analog RGB monitor connector. Follow the procedure below.

1 **Confirm that the power of N22A is OFF.**

2 **Connect a proper monitor cable to the connector on the external monitor.**

3 **Turn on the monitor.**

4 **Turn on the N22A.**
If nothing appears on the monitor, press **Fn** + **F3** to select the monitor or both of the monitor and LCD display (simultaneous display).

- Some OSs may limit display modes.
- Do not remove the external monitor from N22A in the suspend (standby) mode.
- If no external monitor is connected at restart of operations in N22A, the LCD display remains blank without output.
- Some OSs or settings may limit the monitor change by hot keys **Fn** + **F3**.

Uses of N22A

2.8 BATTERY

The battery is the power supply built in N22A. The battery can be recharged by using the AC adapter, optional battery charger FC-BC01N or optional car adapter FC-VA01N.
Installing the charged battery in N22A allows it to be operated without AC power.
The available time of the battery fully charged varies depending on the environment and condition in which N22A is used. The time may be shortened if applications access to peripheral devices frequently.

> To use N22A only with the battery, you should often check the remaining battery level.

2.8.1 Notes on Batteries

- Batteries are consumables. Repeating charging and discharging a battery causes its charging ability to decrease. Batteries are not charged fully at purchase.
- Charge batteries in temperature range 5 to 40°C. Charging the battery at a higher temperature may cause it to be deteriorated or damaged.
- It takes a longer time to charge the battery fully at a low temperature than to charge it fully at a normal temperature.
- The time taken to charge the battery fully may vary depending on conditions under which N22A is used.
- At a lower temperature, N22A can operate only for a shorter period.
- Batteries should be fully charged if possible. Repeating little charge and discharge of the battery at a low battery level may cause the low remaining battery level to be erroneous.
- In use of an external power, leave the battery installed in N22A. This allows the battery to be kept in the full charge state.
- If N22A is not used for a long period (two weeks or longer), remove the battery from N22A.
- To remove the battery, do not make the battery pins contact with conductors including metals and water. Short of the pins may cause the battery to be unavailable.
- Save the battery in a low-temperature and dry place if saved. Do not leave the battery in a place where the temperature exceeds 60°C.
- Do not leave the battery for three months or longer without recharging.
- The battery driving time specified in the brochure and User's Guide of the battery is calculated based on the battery operation time measurement method (Ver. 1.0) defined by the Japan Electronics and Information Technology Industries Association.
The actual battery driving time varies depending on the operation environment, the brightness of the LCD display and the system settings.
- When a vibration or shock exceeding the installation environmental conditions is applied to the N22A with a battery installed, or a strong vibration or shock is applied to a battery itself, the battery may damaged, resulting in smoke or fire.   In this case, stop using the battery.

2.8.2 Battery Types

Batteries that can be used with the N22A are listed below.   Be sure to use a battery of the same type as the selection menu installation type for your N22A.

Battery type	Description
Standard type FC-BP01N	A lithium-ion battery provided with the FC-N22A (standard model and silicon disk model)
Wide temperature range type FC-BP01N/W	A lithium-ion battery provided with the FC-N22A (HDD wide temperature range model)
Stamina standard type FC-BP01N/L	A lithium-ion battery provided with the FC-N22A (silicon disk/stamina standard battery model)

2.8.3 Charging Battery

- The battery is not charged any more if its temperature exceeds the range of 5 to 50ºC.
- When charging the battery, do not remove the AC adapter or car adapter until the battery is fully charged. If the adapter is removed during charging, the battery will not be fully charged.

Charge the battery as shown below.

- Connect the AC adapter to N22A and a power outlet
- Connect the AC adapter to the battery charger (optional, FC-BC01N) and an outlet.
- Connect the car adapter (optional, FC-VA01N) to the N22A and a cigar lighter receptacle.
- Connect the car adapter (optional, FC-VA01N) to the battery charger (optional, FC-BC01N) and a cigar lighter receptacle.

When battery charging starts, the battery LED glows orange to indicate that the battery is being charged. It is recommended to turn off the power of N22A while the battery is charged.
After the battery is fully charged, the battery charge LED goes off.
It takes about four hours to charge the battery fully.

Battery indicator LED	Battery status
Off	Battery is not being charged or is fully charged.
Illuminating orange	Battery is being charged.
Blinking orange (at 1 sec. intervals)	Battery has stoped charging because of the ambient temperature.
Blinking orange (at 0.5 sec. intervals)	Battery error

- The battery charge level varies according to the Battery Charge Mode selection in the BIOS setting. (Normal : 100%, Longlife : 80%, Keeping : 50%, Auto(initial value) : 100% or 80%). For details, see "Battery Charge Mode" of "Power Management Configuration" in "Chapter 4 Setting BIOS".
- Just after the battery is fully charged, do not take the procedure of removing the AC adapter from N22A and reconnecting it to start charging again. Failure to follow this instruction may cause the battery to be damaged.
- If an error occurs in the battery, the battery charge LED blinks. The temperature may rise extraordinary or the battery may be defected. Move N22A to a place of good ventilation or stop using N22A to lower its temperature.
  If the battery charge LED blinks still, remove the AC adapter from N22A and stop using it. Contact your service representative.

2.8.4 Checking Remaining Battery Level

To activate the screen, wait for several minutes before the AC adapter is disconnected from N22A.
"Total time remaining" may be different from the actual operation time depending on the operation status of N22A.

■ **For Windows XP**
   1. **Click [Start] → [Control Panel] → [Performance and Maintenance] → [Power Options]. Then the [Power Options Properties] dialog box appears.**

   2. **Select the [Power Meter] tab and check [Show details for each battery.].**

   For Windows XP, the dialog box shown below appears to allow you to check the remaining battery level.

2.8.5 Replacing Battery

⚠ If a battery of an invalid type is substituted for the old one, it may explode. Always use a spare battery of an option. For used batteries, see "6 Recycling Batteries".

- Prepare a new battery valid for the N22A model to be used.
- Do not disassemble batteries.
- Batteries are consumables. Repeating charging and discharging a battery causes its charging ability to decrease.
- If the full discharging time becomes shorter, initialize the battery. If the time cannot be recovered still, replace the battery with a spare.

To replace the battery, follow the procedure below:

1 **Leave N22A in the power-off state and unplug the AC adapter.**

2 **Release the LCD display lock, and then open the LCD display panel.**
(☞ See "Opening/Closing LCD Display Panel and Setting Tablet Mode" in "Chapter 2 Uses of N22A")

3 **While pressing the battery cover button on the left side, slide the cover upward to open it.**
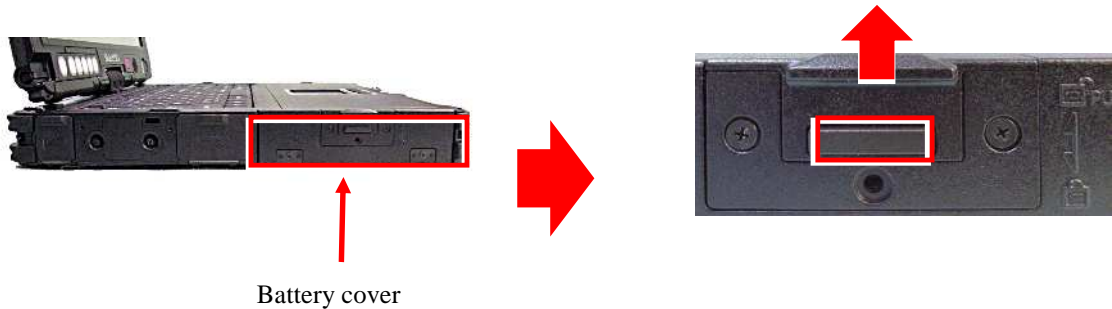
Battery cover

4 **Hold the battery removal support and then pull out the battery horizontally.**

Battery removal support
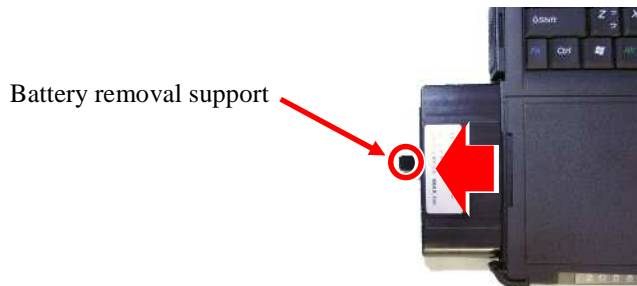
5 **Insert a new battery into the battery storage area until it is securely connected.**

6 **Close the battery cover, and then press down the part slid to the original position.**

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

■ Recycling Batteries

- A lithium ion battery is used for this product.
- Lithiumion 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   (As of May 2008)

● 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.

2.8.6 Actions Taken for Low Battery Charge Level

Decreasing in remaining battery level during battery driving

If the battery power remains only a little, the power LED on N22A illuminates in orange or red to inform that the battery should be charged
If so, perform either of the following operations depending on situations:

■ **Possible supply of AC power through AC outlet**
Connect the AC adapter to an outlet, or connect the car adapter to a cigar lighter receptacle.
Then the battery charge LED illuminates in orange and battery charge is started.

■ **When power outlet or car cigarette socket is not available**
Close applications currently in use, then turn off the power of the N22A.

In the lower battery charge level, do not access to a card such as a memory card if used. Accessing to the card may fail because the time taken for the accessing can be longer than the full discharging time. If the battery is discharged fully before data storage, the data is lost.

Setting operation of N22A at low battery level

The operation and state of N22A in a low or no battery charge level can be defined.

1 **Logon to it with a user account having the administrator authority.**

2 **Click [Start] → [Control Panel] → [Performance and Maintenance] → [Power Options].**

3 **Select the [Alarm] tab when the [Power Option Properties] window appears, then set for operation settings.**

2.8.7 Initializing Battery

Initializing the battery is intended to recover its performance decreased temporarily.
The initialization process consists of full charge, full discharge and full recharge of the battery in the order. It takes about 4.5 hours for the initialization.
Initialize the battery in the following cases:

- N22A can be operated by the battery for a shorter period than before.
  Repeating battery charging in other than the full discharge state may cause the full-chargeable level of the battery to be reduced,   which then may shorten the driving period. This is called battery's memory effect.
- Because the battery is just purchased or has not been used for a long period, its performance is reduced temporarily.
- The indicator of the remaining battery level shows some error.

1 **Turn off the power of N22A if operated.**

2 **Install the battery to be initialized.**

3 **Connect the AC adapter to N22A and the power cord to an AC outlet.**
(Connect to a cigar lighter receptacle when using a car adapter.)
If the battery charge lamp blinks, remove the battery pack from N22A once and install it again.

4 **Charge the battery fully.**
When the battery is fully charged, the battery LED goes off.

5 **Turn on the power of N22A. If the NEC logo screen appears, press F2 to display the BIOS Setup Menu.**

6 **Unplug the power cord from the AC outlet and remove the AC adapter from N22A.**
(When a car adapter is used, remove the plug from a cigar lighter receptacle and then remove the car adapter from the N22A.)

7 **Select [Battery refresh] in the Power Management menu and press Enter.**

8 **If message "Refresh your battery now?" select [Yes] and press Enter.**
The following dialog box appears.

```
                    Refresh battery program
              Press Y to start refresh, N to exit
                   <ESC> to shutdown system
```

9 **Press Y to start battery initialization.**

10 **Leave N22A until the power is fully discharged.**
The power of N22A is automatically turned off.

11 **Connect the AC adapter or car adapter to N22A to charge the battery fully.**

- While the battery is initialized, leave the LCD display panel opened.
- To suspend battery initialization, press **Ctrl** + **Alt** + **Del** to reboot N22A or press the power switch to turn off the power of N22A.

2.9 PC CARD/EXPRESS CARD

The cards listed below can be inserted into the N22A:
- One card of type I or II can be inserted into the PC card slot.
- One ExpressCard/34 or ExpressCard/54 card can be inserted into the express card slot.

2.9.1 Supporting CardBus

The PC card slot on FC-21S conforms to the CardBus specification.
The CardBus technology is intended for PC cards of 32-bit version.
This can accomplish the data transfer rate of up to 133Mbps at 33MHz.
SCSI host bus, graphics video and high-speed network cards are available to CardBus.

2.9.2 Installing PC Card in N22A

- Some PC cards require certain system resources to be added. When such PC cards are used, other system resources may have to be released.
- The front and rear sides of a PC card are defined and thus the card must be inserted to the mating slot in the defined orientation. Inserting a PC card to the mating slot in the wrong orientation forcibly may cause the connector and/or slot to be damaged.
- Some PC cards can be inserted to or removed from N22A without turning off the power. However, any PC card cannot be inserted to or removed from N22A in the suspend (standby) state.
- If N22A is in the suspend (standby) or pause state, do not install or remove a PC card in or from N22A. Changing the device configuration of N22A may cause data to be lost.
- Do not install or remove a PC card in or from N22A while one or more applications operate.
- Leave the eject button stored in other than removal of the PC card. Failure to follow this instruction may cause the card and/or slot to be defected.
- Remove a card, observing the proper procedure.   Failure to do so may cause the N22A to malfunction.

1 **Open the cover on the right side of the N22A.**
Slide the knob to the left to unlock the cover.

2 **Checking the card slots.**
Two card slots are available: the upper for an express card, the lower for a PC card.
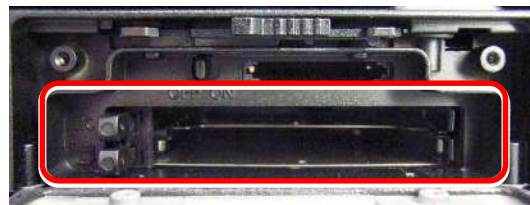
3 **Insert the PC card/Express Card into the slot.**
When a new card is inserted, the N22A detects it. Install an appropriate driver, according to the screen instructions.

2.9.3 Removing PC Card from N22A

Some PC cards may cause icon [Removing or Taking Out Hardware] to appear on the task tray at the lower right corner of the screen at the connection.

1 **Double-click the icon to display the [Safely Remove Hardware] or [Remove Hardware] dialog box.**

2 **Select a device to be removed in the dialog box and click [Stop].**

3 **"Stop a Hardware device" is indicated. Select the device to be removed and click [OK].**

4 **Click [Close] to close the [Safely Remove Hardware] or [Remove Hardware] dialog box.**

5 **When the eject button is pushed, the card will pop out a little then pull the card out entirely from the PC card slot.**

2.10 MEMORY CARD

A triple memory slot is equipped with the N22A supporting the following cards:
- SD Memory Card (Secured (with copyright protection))
- Memory Stick
- Multimedia Card
- SDHC Card (Class 6 data transfer speed at 6 MB/sec.)

These cards can be used for file storage, data exchange with a device equipped with a card slot (including digital video and digital still cameras), music data writing and substitution for password entry.

> - For details on using "SD Memory Card", "Memory Stick", and "SDHC Card", refer to the instructions of the manuals included with each card.
> - Do not use "SD Memory Card", "Memory Stick", and "SDHC Card" in locations with static electricity or electrical noise interference.
> - It is recommended to use the dedicated device to format the card.
>
> SD cards is applicable to contents delivery services such as Internet (applicable to secure (with copyright protection feature)).
>
> Always install a mini SD card on an exclusive mini SD card adapter. Insert or remove the adapter to/from the mating slot. Do not leave the adapter on the slot.
> - Memory Stick Duo and Memory Stick Pro are supported.
> - When using a Memory Stick, make sure to attach it to the dedicated adapter, and insert and remove it together with the adapter.
> - "MagicGate" (copyright protection function) of Memory Stick is not supported.
> - Do not insert xD Picture Card as N22A does not support this card. To use xD Picture Card, a separately sold adapter or USB reader/writer supporting xD Picture Card is required.
> - The SD card slot on N22A has the data transfer rate of 25MB/sec. [1]
>   If an SD card for higher data transfer rate is used, the rate is limited to 25MB/sec. [1]
>   [1] The data transfer rate is only the theoretical value to be different from the effective rate.

2.10.1 Notes on Handling and Storage of SD Card

(1) Do not take the following actions for SD card:
- Disassemble or alter SD cards.
- Give hard shocks to, bend, drop, and put water on SD cards.
- Make hands or metals contact with metallic terminals on SD cards.
- Peel off labels on SD cards or put new labels or seals on SD cards.

(2) Do not place SD card in the following places:
- Place of increase in temperature (including closed in-car area and location exposed to direct sunshine)
- Place of high temperature and/or much dust
- Place of generation of corrosive gas

2.10.2 Protecting Data

Set the write protect switch on the SD card to the "LOCK" position. Move the switch to the "LOCK" position for new recording (checkout), editing or file storage.
NEC recommends you to back up important data to other media.
NEC assumes any responsibility for direct and indirect faults including loss of data saved by customers.
NEC recommends that, if an SD card is disposed, it is destroyed physically by using such a tool as a hammer to prevent personal data from being flown out.

2.10.3 Installing or Removing SD Card in/from SD Card Slot

- When an SD card is inserted to the SD card slot, note the orientation of the card. Inserting an SD card in invalid orientation may cause a fault to occur.
- Do not insert/remove a card until the Windows login screen or desktop is displayed.
  Wait for about 30 seconds after resuming from the suspend (standby) or hibernate status before accessing the card.
- Before the SD card can be removed, the card must always be halted.
  Do not remove the SD card from the SD card slot in any of the following cases. Failure to follow this instruction may cause important data to be damaged or the SD card to be accessed improperly at the next installation.
    - N22A is in the suspend (standby) or pause state,
    - The SD card opens one or more files (first close the files before removing the SD card),
    - The SD card reads of writes data from or to N22A, or
    - Just after the SD card performs operation such as writing
- The SD card may access to N22A intermittently.

Inserting SD Card into SD Card Slot

1 **Open the cover on the right side of the N22A.**
Slide the knob to the left to unlock the cover.

2 **Insert a card from the side with cut corner, facing up the label surface.**

Removing SD Card from SD Card Slot

1 **Halt the SD card.**

    1. **Double-click the [Safely Remove Hardware] icon on the task tray at the lower right corner of the screen**
    2. **In the [Safely Remove Hardware] window, click the name of the device to be removed and then click [Stop].**
    3. **When [Stop of Hardware Device] is displayed, click [OK].**
    4. **Click [Close] to close the [Safely Remove Hardware] window.**

The procedure is not required if the SD card is removed in the power-off state.

2 **Pushing the SD card allows it to be popped up a little. Then pull out the card.**
Before the SD card can be stored, it should be saved in a case.

2.11 FINGERPRINT SENSOR (APPLIED TO FS-N22 OF FINGERPRINT SENSOR INSTALLATION MODEL ONLY)

N22A of fingerprint sensor installation model can register fingerprint information to enhance security.

N22A of no fingerprint sensor installation model cannot be equipped with the fingerprint sensor later.

The fingerprint sensor is intended to read fingerprints. You may pull the registered finger with it slipped on the sensor to allow the fingerprint to be read.

Security can be enhanced by registering fingerprint information.

See "Fingerprint Authentication Utility" in "Chapter 5 Installing OS and Applications" for details.
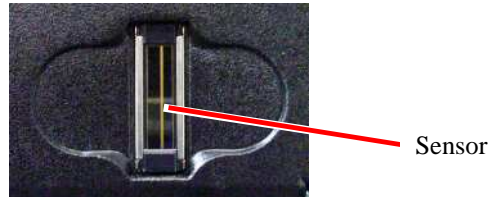
Sensor

- **Proper finger movement**
  The fingerprint sensor reads a fingerprint in the range from the top joint to the tip.

Put the registered finger on the sensor with the top joint located at this line.
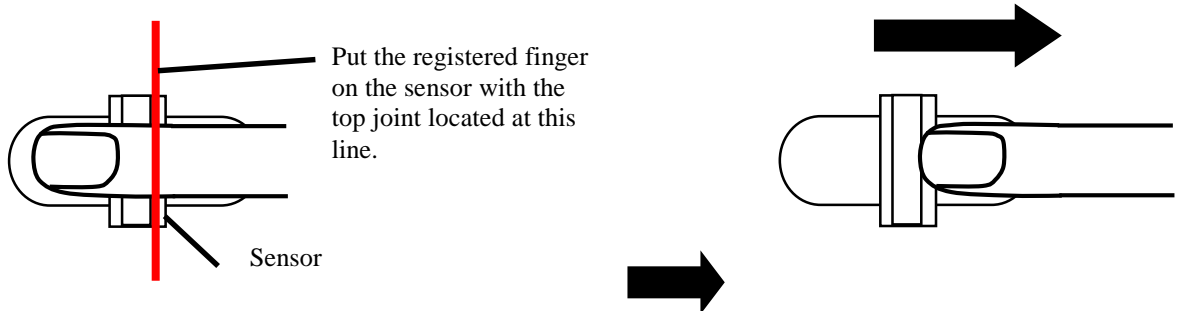
Sensor

(1) Put the registered finger on the sensor with a line just above the top joint located at the sensor. Start moving the finger after a while.

(2) Pull the finger straight and slowly in parallel with the sensor while the finger is contact with the sensor. Note that the finger may not be detached from the sensor.

- **Characteristics of fingerprint**
  It is recommended to register the fingerprints of more than one finger to be registered easily.
  It may be hard to register fingerprint in the following cases:

- Grooves of fingerprint are buried with much sweat and/or skin oil,
- Fingerprint is too small,
- Fingerprint has no whorls,
- Fingerprint is weak due to wear.

- Finger is extremely dried,
- Fingerprint is too large,
- Hand is in bad condition, or
- Fingers are much sweat and/or oily in the summer season,

- Fingers are extremely dried in the winter season,
- Fingers have changed its shape rapidly.

- Fingers are rough or injured, or

Wipe a finger of sweat and/or skin oil completely or put proper cream on a rough or dry finger, as necessary.

If your fingertips are small, register as large a finger as possible, i.e., a thumb.

A finger of difficult registration is apt to cause discrepancies in verification.

If all fingers are hard to be registered, registering a specific finger several times can reduce discrepancies in verification.

2.12 COMMUNICATION FEATURE

2.12.1 USB (USB 2.0)

USB is the prefix indicating the Universal Serial Bus. The USB has the defined shapes of connectors and allows a computer to connect with up to 127 devices.
In addition, the USB provides the plug & play feature to allow the connector of a device to be connected/disconnected without the power of N22A turned off.
Available USB devices mainly include pointing device, printers, digital cameras, mobile phones and PHSs.

- Some USB devices require driver installations and/or switch settings before or after they are connected to N22A.
- Refer to the User's Guides of USB devices to be connected to N22A before using them.
- Some USB devices cannot be directly connected to the N22A due to its shape. In such a case, use a commercially available cable.
- After disconnecting a USB device from N22A, wait for three seconds or longer before the device is connected again.
- If the connector of a USB device is connected to a USB connector on N22A quickly or obliquely, N22A may not be able to read signals properly to recognize it as an unknown device. If so, remove the connector from the USB connector once and reconnect it again.
- When a USB device is connected to N22A, note the orientation of the plug to be inserted to a USB connector.
- Unless a USB device is removed appropriately, N22A may operate improperly. Remove a USB device in the correct procedure.
- Do not connect or remove a USB device to/from N22A in the suspend (standby) state, transition to the suspend (standby) state, recovery from the suspend (standby) state, the pause state, transition to the pause state, or recovery from the pause state.
- If N22A connects with one or more USB devices, it may not be able to enter into the suspend (standby) state. Before N22A can be entered into the suspend (standby) state, the USB devices must be removed.
- Some OSs may limit the features of USB devices.

Connecting USB devices to N22A

N22A has three USB ports intended to connect with USB2.0 devices on the left side.
To connect a USB device to N22A, insert the plug of the USB cable to a USB connector on N22A.

Removing USB devices from N22A

Some USB devices may cause the icon for removing or taking out hardware to appear on the task tray at the lower right corner of the screen after the connection.

1 **Double-click the icon to display the [Safely Remove Hardware] or [Remove Hardware] dialog box.**

2 **Select a device to be removed in the dialog box and click [Stop].**

3 **"Stop a Hardware device" is indicated. Select the device to be removed and click [OK].**

4 **Click [Close] to close the [Safely Remove Hardware] or [Remove Hardware] dialog box.**

Connect/disconnect-proof enhanced connector

USB connector (1) is the connect/disconnect-proof enhanced connector enduring 10,000 combinations of connections and disconnections.

2.12.2 IEEE 1394 devices

IEEE 1394 devices, such as digital video cameras, can be connected to the N22A.

- For some devices, driver installation or switch settings may be required before or after connection.
- Refer to the operation manual for the IEEE 1394 device to be connected before using it.
- Wait at least 3 seconds between insertion or removal of an IEEE 1394 device.
- Be sure to check the plug insertion direction when connecting an IEEE 1394 device.
- Observe the proper procedure for removing an IEEE 1394 device.   Failure to do so may cause malfunction of the N22A.
- Do not insert or remove an IEEE 1394 device during the suspend (standby) status, when entering the suspend (standby) status, when resuming from the suspend (standby) status, during the hibernate status, when entering the hibernate status, or when resuming from the hibernate status.
- There may be a case where the N22A cannot enter the suspend (standby) status with an IEEE 1394 device connected.   Remove the IEEE 1394 device before entering the suspend (standby) status.
- The IEEE 1394 device function may be limited, depending on the OS to be used.

Installing an IEEE 1394 device

1 **Turn on the N22A and the IEEE 1394 device.**

2 **Open the cover on the right side, and then connect the IEEE 1394 device to the IEEE 1394 connector.**

Removing IEEE 1394 device

1 **Turn off the N22A and then remove the cable from the IEEE 1394 connector.**
Be sure to turn off the N22A before turning off the IEEE 1394 device.

2 **Turn off the IEEE 1394 device and then remove the cable.**

2.12.3 LAN

> - While N22A operates, do not remove the LAN cable from the hub. If removed, the network connection will be cut out.
> - If the LAN cable is removed during network connection, immediate re-connection may be able to recover the operation. If not, restart OS.
> - During network communication through LAN, connect the AC adapter to N22A. Only the battery can operate N22A for a rather short period.
> - The suspend (standby) or pause state disables the network feature. During network communication, do not enter N22A into the suspend (standby) or pause state.
> - To run an application using network, enter N22A into the suspend (standby) or pause state after asking a system administrator to confirm that the application may be used in suspend (standby) or pause state.
>   Some applications may cause data to be lost when N22A is recovered from the suspend (standby) or pause state.

The built-in 1000BASE-T LAN module allows N22A to connect with network. The module supports the data transfer rate of up to 1000Mbps.

Connecting N22A to network

> - To connect N22A to network, a LAN cable sold separately is required.
> - For gigabit communications, a cable supporting category 6 or 5e is required.
> - If you do not know necessary components, contact a system or network administrator.

1 **Insert one end of a LAN cable to the RJ-45 connector (LAN connector) on N22A to the depth securely.**

2 **Insert the other end of the LAN cable to the network connector to the depth securely.**

Setting LAN

1 **Click [Start] → [Control Panel] → [Network and Internet Connection] → [Network Connections].**

2 **Double-click [Local Area Connection] to display the [Local Area Connection Status] dialog box. Click [Properties].**

3 **The [Local Area Connection Properties] dialog box appears. Provide settings appropriate for the connected network.**

When the network server is accessed via an internal LAN, the N22A automatically resumes from the suspend (standby) or hibernate status.   When it is off, it is automatically turned on.

To use the power-on using LAN controller by the LAN built in N22A, the following settings are required.

■ **Settings associated with BIOS Setup Menu (common to OSs)**

1. **Press F2 on the logon screen. The setup menu is displayed.**
2. **Select [Power management] from the menu bar and then press Enter. Select "Power-on using LAN controller"→"Enabled", and then press Enter.**
3. **Select [Security] from the menu bar, and then select [Network boot setting] → [Keyboard/Mouse Lock] → [Disabled], and then press Enter.**
4. **Press F10 and then select "Yes".**

   * Without the setting, keyboard and mouse operations are disabled at remote power-on.

■ **Settings associated with network adaptor**

Perform each setting ([Details] and [Power management]) from [Control Panel] → [Network and Internet Connection] → [Network Connections] → right-click on [Local Area Connection] → [Properties] → [Configuration].

Used OS	Setting by OS		
Windows XP	[Advanced]		
	• Wake from system shutdown	[Enable]	(setting at shipment)
	• Wake On Lan Triggers	[Automatic]	(setting at shipment)
	[Power Management] • Check [Allow this device to bring the computer out of standby.].		

Uses of N22A

75

2.12.4 Wireless LAN (applied to N22A of wireless LAN installation model only)

N22A of wireless LAN installation model allows the wireless LAN feature to be used.
N22A of no wireless LAN installation model cannot be equipped with the wireless LAN feature later.

- The communication speed and distance vary depending on wireless LAN devices and ambient conditions including radio wave environment, obstacles and installation environment.
- Due to the property of radio wave, the communication speed is apt to be slower as the communication distance is longer. To allow you to use wireless LAN more comfortable, it is recommended to use wireless LAN devices within a distance as short as possible.
- To connect N22A to network, wireless LAN access points sold separately and some other devices are required.
- Using N22A in a country other than Japan may conflict relevant laws in the country. Accordingly, disable the wireless LAN feature of N22A in other than Japan.
- During network communication, do not enter N22A into the pause or suspend (standby) state.
- During network communication, connect the AC adapter to N22A. Only the battery can operate N22A for a rather short period.
- For influences on airplanes or medical devices, see "Cautions on using wireless features" in "For safety".
- Confirm that [Wireless LAN Controller] is set [Enabled] in BIOS Setting when using wireless LAN.   See "PCI Configuration Submenu" in "Chapter4 SETTING BIOS" in detail.

Notes on security in use of wireless LAN products

The wireless LAN is advantageous to allow LAN connection freely within the radio wave range because data is transmitted among wireless access points including computers through radio waves instead of using LAN cables.
On the other hand, since radio waves reach any locations over obstacles (including walls) within a certain range, the following problems may occur without security.

- Stealing communication data
  Malicious outsiders may intentionally intercept radio waves to steal communication data as follows:
    − Personal information including IDs, passwords and credit card numbers
    − Mail contents

- Invading into network illegally
  Malicious outsiders may access to personal and corporate networks without notice to take the following actions:
    − Acquiring private and confidential information (information leak)
    − Make communication as a specific person to spread illegal information (spoofing)
    − Rewrites intercepted communication data to be transmitted (falsification)
    − Spread computer virus to destroy data and/or systems (destruction)

The N22A provides security settings against the problems mentioned above, for wireless LAN cards or wireless access points. In nature, wireless LAN cards and wireless access points have proper security features to cope with these problems. Accordingly, wireless LAN products can be used with their security features to reduce occurrences of the problems.

Security settings are not be performed when the N22A is purchased.

The wireless LAN installed in N22A has the following security features.

> To provide the following security, used access points should be applicable to the settings. These settings are only intended to reduce security risks as much as possible but do not assure complete safety to avoid security risks.

1. **Preventing interception**
   Setting an encryption key by using the encryption feature allows wireless LAN data among communication devices using the specific encryption key to be encrypted. However, encryption keys may possibly be known by outsiders or decrypted by decryption technology. Accordingly, it is recommended to change encryption keys periodically.
   For encryption feature settings, see "Setting encryption feature" of "Wireless LAN" in this section.

2. **Preventing illegal accesses by setting SSIDs (network names)**
   Setting specific SSIDs (network names) for both access points and communication devices can avoid connections from communication devices without the same SSIDs. However, SSIDs can be known by using devices which have the feature of detecting SSIDs automatically.
   To avoid this, SSID hiding must be set on access points not to notify them.
   Registering MAC addresses of connected devices in each access point disables devices not registered to connect to the access point (MAC address filtering). For setting SSIDs, see "Setting encryption feature" of "Wireless LAN" in this section.

Installing the wireless LAN driver

Install the wireless LAN driver according to the following procedure.

1 **Start Windows.**

2 **Click [Start] → [Run…].**

3 **Click the [Browse] button to select Wireless_TIC_125458_v10.5.1.0_XP32.exe in the C:¥WINXP¥Drv¥WirelessLAN folder, and then click the [OK] button.**

4 **The "Important Information" screen is displayed. Check the contents and then click the [Next] button.**

5 **The "License Agreement" screen is displayed. Check the contents, select "I accept the terms in the License agreement", and then click the [Next] button.**

6 **The "Location to Save Files" screen is displayed. Check the installation destination folder and then click the [Next] button.**
   Wait until the file is expanded.

7 **The Intel PROSet/Wireless installer screen is displayed. Click the [Install software] button.**

8 **The Intel software license agreement screen is displayed. Select "I accept the terms in the license agreement", and then click the [Next] button.**

9 **The setup type selection screen is displayed. Select "Custom" and then click the [Next] button.**

> With Standard setup, some features are not installed such as that disabling wireless LAN connection before logging on to Windows, etc.

10 **The features selection screen is displayed. Select the necessary features.**
To install all sub-features, select "Install this feature and all its sub features" and then click the [Install] button.

11 **When the "Installation completed" screen is displayed, click the [OK] button.**

12 **When the "Restart" screen is displayed, click the [Yes] button.**

13 **The N22A is restarted.**

Installation of the wireless LAN driver is completed.

On/off of wireless communication

1 **Open the cover on the right side of the N22A.**
Slide the knob to the left to unlock the cover.

2 **Slide the wireless communication switch to the right to turn on/off the wireless communication device.**
The wireless communication lamp will glow blue, indicating that the function can be used.
Sliding the switch to the left will turn the wireless communication function off.

Setting wireless LAN

Perform the following operations.

■ **For Windows XP:**

1 **Click [Start] → [All Programs] → [Intel PROSet Wireless].**

2 **Press Fn + F2 to enable the wireless feature.**
If you use wireless LAN for the first time, click [Enable Intel PROSet/Wireless].

3 **Connectable wireless networks appears. Select a desired network and click [Connect]. Provide settings appropriate for the selected network.**

4 **From the menu bar, select [Tool] → [Control tools].**

5 **The "Create password" screen is displayed. Enter the password and then click the [OK] button.**

6 **The "Open administrator package" screen is displayed. Click [Create new package] and then click the [OK] button.**

7 **Click the [Profile] button.**

8 **The "Management tool – new package" screen is displayed. Click the [Add] button.**

9 **The "Create wireless profile" screen is displayed. Set the information to connect to the wireless LAN network.**

> ■ Profile name
> Enter any profile name (name of a file to which the set parameter information is stored).
> ■ Wireless network name (SSID)
> Enter the currently used wireless network name.
> * If you don't know the wireless network name (SSID), ask your network administrator.
> ■ Management profile types
> To enable wireless LAN connection before logging on to Windows, select "Before logon/common: Active during the user is logged in. This profile is shared by all users."

10 **When profile setting has completed, click [Close].**

11 When "The current package has been changed.   Save the changes?" screen is displayed, click [Yes].

12 The "Save as" screen is displayed.   Specify the save destination and file name, and then click [Save].

13 The "Converting administrator profile to XML" screen is displayed.   Click [Browse] to specify the destination, and then click [Close].

14 When saving completes, click [Finish].

15 The "Package has been saved" screen is displayed.   Click "Apply this package to this computer" and then click the [OK] button.

16 The created profile name is displayed in the " Intel PROSet Wireless" screen.   Click the profile and then click the [Connect] button.

17 Check if the created profile is connected.
("Connected" is displayed on the right of the profile name.)

- Carefully manage the password.
- If the connection for the created profile fails, consult your network administrator.

Perform the following operations.

■ **For Windows XP:**

1. **Select a connectable wireless network in the [Intel® PROSet/Wireless] dialog box and click [Connect].**
2. **Enter proper names in fields [Profile Name] and [Wireless Network Name (SSID)].**
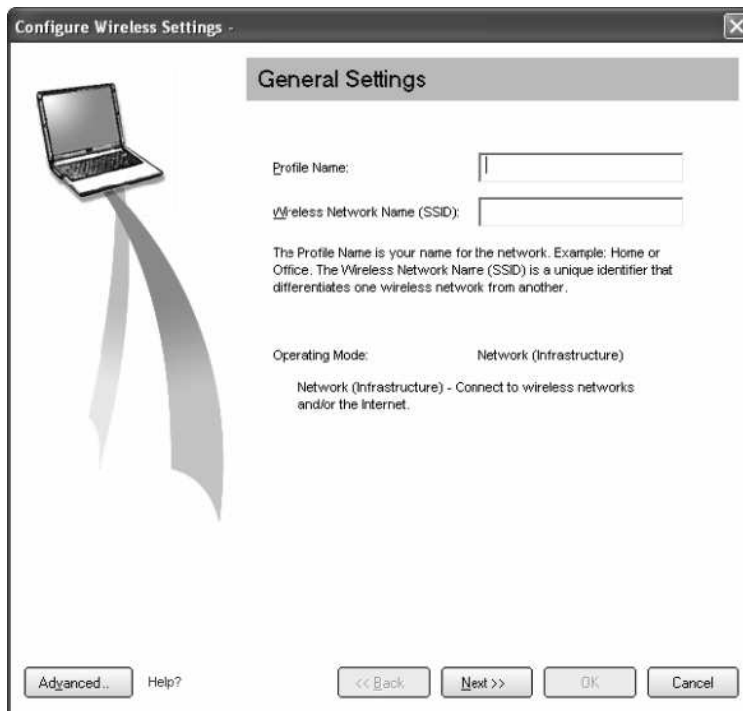
3. **Click [Next]. The [Security Settings] dialog box appears. Go to "Setting WEP feature".**

Perform the following operations.

■ **For Windows XP:**

1. **In the [Security Settings] dialog box, set the settings appropriate for the connected wireless network.**
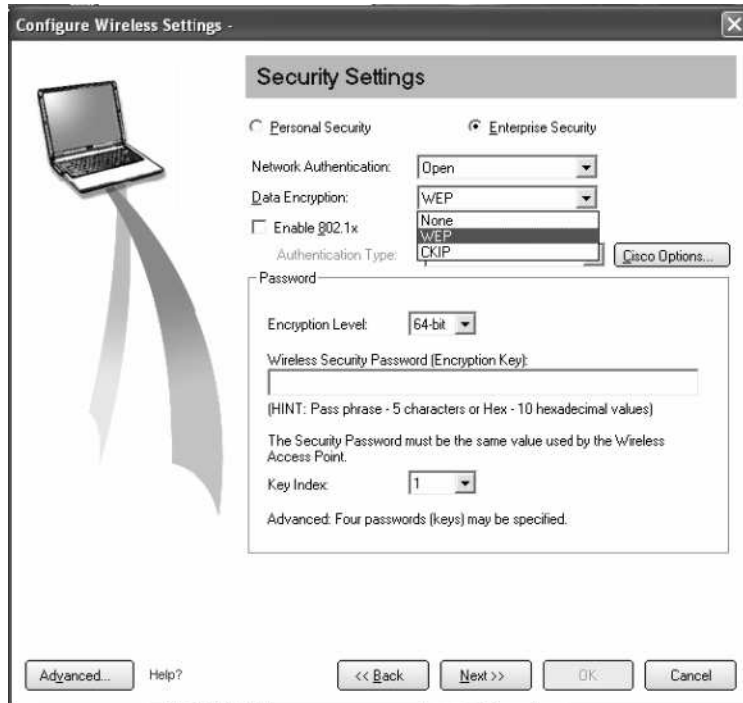
Then set the settings follow the directions shown on the display screen.

2.12.5 Bluetooth Feature (only for models with this feature installed)

This feature allows access to other Bluetooth devices via wireless connection.

- The communication speed or distance may vary depending on the target Bluetooth device or peripheral conditions, including radio wave environment, barriers, and installation environment.
- The communication speed is reduced near a microwave oven being used.
- To use the Bluetooth feature, set the Bluetooth controller to Enabled (factory default) shown in the Details menu in "Chapter 4 Setting BIOS".
- During communication, do not enter the hibernate or suspend (standby) status.
- During communication, be sure to connect an AC adapter or car adapter to the N22A.   Using it with a battery only results in shorter operating time.
- For influences on airplanes or medical devices, see "Cautions on using wireless features" in "For safety".

On/off of Bluetooth

Slide the wireless communication switch to turn on Bluetooth feature. (See "On/off of wireless communication" described previously in this chapter.)

Checking Bluetooth communication status

Put the cursor on the wireless switching icon in the task tray at lower right of the screen.

2.12.6 Serial Port

N22A has a serial port connecting with a serial device including a serial mouse or modem.
To connect a serial device to N22A, follow the procedure below:

1 **From the BIOS setup menu, select [Details] → [Peripheral devices], and then press the [Enter] key.**

2 **Select [Peripheral device submenu] to check that serial port A is enabled.
(For details, see "Chapter 4 Setting BIOS".)**

3 **Exit the BIOS setup menu, and then turn off the N22A.**

4 **Insert the cable of a serial device to the serial port on N22A.**

5 **Turn on the power of N22A.**

- N22A cannot connect with a portable modem getting power through the serial port. Use the built-in battery or a modem using external AC power.
- Some OSs may limit serial features.

2.13 HARD DISK DRIVE/SILICON DISK DRIVE

The hard disk drives/silicon disk drives shown below can be used with the N22A.

Disk type	Description
Hard disk drive (standard) (FC-HD80KN/S)	A hard disk drive provided with the N22A (standard model)
Hard disk drive (wide temperature range) (FC-HD40KN/S)	A hard disk drive provided with the N22A (wide temperature range model)
Silicon disk drive (FC-SD20KN/S)	A silicon disk drive provided with the N22A (silicon disk model)

Be sure to use a hard disk drive of the same type as that in the selection menu installation type for your N22A.

2.13.1 Installing/Removing HDD/Silicon Disks

HDDs are extremely precise equipment. Note the following if used.

- During data read/write (with the access lamp being ON), only a small shock may cause the HDD to be defected.
- If the HDD is defected, important data may be unavailable at a time and unable to be restored. It is recommended to frequently back up important data for which the same data cannot be created twice.
- Depending on models of HDDs, a region with no drive number assigned appears in the [Disk Management] dialog box. This is the re-setup region required for re-setup. Do not provide the region with such processing as deletion from targets of disk management.

Removal

1   **Turn off the power of N22A if operated.**

2   **Unplug the power cord from the AC outlet and remove the AC adapter from N22A.**
When using a car adapter, unplug it from the cigar lighter receptacle and then remove the car adapter from the N22A.

3   **Remove the battery pack from N22A.**
See "Replacing Battery" in "Chapter 2 Uses of N22A"for the removal products.

4   **Remove the anti-theft screws if they are to be used.**

5   **While pressing the button of the HDD/silicon disk cover on the right side, slide the cover upward to open it.**

6   **Hold the HDD removal support and then pull out the HDD horizontally.**

Installation

1   **Insert a hard disk/silicon disk assembly into the disk storage area until it is securely connected.**

2   **Close the cover, and then press down the part slid to the original position.**

3   **Attach the anti-theft screws if they are to be used.**

4   **Install a battery and connect an AC adapter or car adapter.**

The HDD/silicon disk cannot be inserted in the wrong direction (upside down).   Carefully check its direction.

Put the cover so that the HDD removal support may not be caught.

Chapter 3 Security

3.1 SETTING PASSWORD ON BIOS SETUP UTILITY

You can set a password intended to limit users of starting the system on the BIOS SETUP Utility.
If you set a password, any user must enter the password for the following operations. This can increase the security feature:

- Starting BIOS SETUP Utility
- Starting system

In the BIOS setup menu, the following security passwords can be set.

1. **Supervisor password**
   Users who can start the system are limited. After setting this item, the password must be entered when starting the BIOS setup menu or the system.

2. **User password**
   Users who can start the system are limited. In addition, the BIOS setup items can also be limited.
   In case users other than the administrator use the N22A, the administrator can prohibit other users from changing settings.

3. **Hard disk password**
   To prevent illegal use with any device other than the N22A, a password must be entered when using the HDD by connecting to other devices.
   There are two HDD passwords, or HDD master and HDD user passwords.
   - The HDD master password is intended to release the HDD user password.
   - The HDD user password is intended to authenticate your computer and the HDD installed in the computer.

4. **I/O LOCK FEATURE**
   The I/O lock disables the I/O feature, measures to interchange data with external devices, on the BIOS SETUP Utility.
   See "I/O Lock Feature" in "Chapter 4 Setting BIOS".

- For the setting procedure, see "Security setting" in "Chapter 4 Setting BIOS".
- Even if an HDD password has been set, entering the password is not required when booting your computer.
- To use the I/O lock feature, set supervisor and user passwords to limit accessing to the BIOS SETUP Utility.

3.2 LOGIN PASSWORD

The login password is intended to limit users of OS.
If a login password is set, the password must be entered to login to the OS.

<Setting Procedure>

1. **Click [Start] → [Control Panel].**
2. **Click [User Accounts] to open the dialog box.**
3. **Click [Change an account] and click the name of the user for which a login password is to be created.**
4. **Click [Create a password] to open the password setting screen.**
5. **Enter a password in the [Type a new password:] and [Type the new password again to confirm:] boxes and click [Create password].**

- A login password can be created only by a user having any of accounts in the local computer including guest and administrator accounts and those created for the computer.
- To create a tip for a password, anyone using computers can see the tips on the [Welcome] screen.
- A user having the administrator account of a computer can create or change passwords for all users of the computer.
  A user having a limited account can only create or change his or her own password or create a tip of the password.
- If a user having the administrator account of a computer changes a password of a user, then the user loses all the passwords stored for EFS encrypted files, personal certificate, and web site or network resources.

3.3 SECURITY CHIP

Setting the security chip allows electronic mails and files to be encrypted and prohibited from being opened without an authentication password.
In addition, N22A is equipped with a security chip called TPM (Trusted Platform Module) in its major part to store encryption keys in the security chip. Thus, if only the HDD is withdrawn, the data in the HDD will not be read.

- To use the security chip, set supervisor and user passwords to restrict accessing to the BIOS SETUP Utility.
- See "Infineon Security Platform" in "Chapter 5 . Installing OS and Applications " for details.

3.4 FINGERPRINT AUTHENTICATION PASSWORD (APPLIED TO N22A OF FINGERPRINT SENSOR INSTALLATION MODEL ONLY)

The fingerprint authentication password is intended to provide authentication by fingerprints using the built-in fingerprint sensor instead of passwords.
N22A has an attached utility to allow logon to Windows, release of screen saver lock and substitution for passwords of various applications by fingerprint authentication.

> See "Fingerprint Authentication Utility" in "Chapter 5 . Installing OS and Applications " for details.

3.5 ANTITHEFT LOCK

A commercial security cable can be used to tie N22A to a desk or so. This is effective to prevent N22A itself from being stolen.
The antitheft lock hole has the size of 3mm×7mm. Select a security cable fit to the hole.

> Take sufficient care for management and treatment of important data without overconfidence of the security cable.

3.6 ANTITHEFT HDD/Silicon Disk and BATTERY

The attached anti-theft screws are effective to prevent HDD/Silicon disk and the battery from being stolen.
The cover does not open easily, tighten the anti-theft screws to fix the HDD/Silicon disk cover and the battery cover.

Chapter 4 Setting BIOS

This chapter describes the uses of the BIOS SETUP Utility allowing you to set various environmental conditions on N22A including power management.

4.1 BIOS SETUP UTILITY

N22A has the BIOS SETUP Utility to set the environment in which N22A is used. In initial booting, the BIOS SETUP Utility is shown in English.

The BIOS SETUP Utility is intended to set an environment of N22A without starting OS. Using the BIOS Settings on BIOS SETUP UtilitySETUP Utility, you can provide various settings for security, device, power saving and other features.

4.1.1 Settings on BIOS SETUP Utility

You can perform the following operations on the BIOS SETUP Utility.

(1) Setting the current date and time
(2) Selecting language used on the BIOS SETUP Utility
(3) Checking or changing hardware environment
(4) Setting security
(5) Setting power management
(6) Setting boot of N22A

> Any settings changed on the BIOS SETUP Utility will be made effective after rebooting.
> If both supervisor and user passwords are set, you cannot make changes on some items on the BIOS SETUP Utility started with the user password.
> If some settings are provided improperly on the BIOS SETUP Utility, N22A does not reboot.
> If this occurs, restart the BIOS SETUP Utility to return them to the factory defaults.

4.1.2 Running/exiting BIOS SETUP Utility

(1) Starting
If the following message appears on the BIOS start screen appearing after the power of N22A is turned on, press **F2**.

> Press <F2> to SETUP or Press <F12> to Network boot.
>   or
> Press <F2> to Enter BIOS SETUP, <F12> to Boot on Network.

The dialog box shown below appears.

Menu bar

Parameter

Key status bar

> The factory default of the language is [English (US)].

(2) Exiting
1. Press **F10**.
2. The [Setup Confirmation] dialog box appears.
3. Select [Yes] and press **Enter**.

The setting values are saved and the BIOS SETUP Utility is exited.

Selecting [Exit] on the menu bar can exit the BIOS SETUP Utility.

(3) Exit menu
On the Exit Menu, you can exit the BIOS SETUP Utility or read or save system settings.

Option	Description
Exit Saving Changes	Saves the setting data resulting from changes and exit the BIOS SETUP Utility. (Pressing **F10** can do the same exit operation.)
Exit Discarding Changes	Exits the BIOS SETUP Utility without saving the setting values (discarding the current setting values).
Load Setup Defaults	Overwrites default values to all setting values. The default values may be different from factory defaults. (See the factory defaults.)
Discard Changes	Returns the setting values to those before changes. (The BIOS SETUP Utility remains appearing.)
Save Changes	Saves the setting values resulting from changes. (The BIOS SETUP Utility remains appearing.)

4.1.3 Loading the BIOS SETUP Defaults

The following describes the way to return the data on the BIOS SETUP Utility to their factory defaults.

1. **Turn on the power of N22A.**
2. **If message "Press <F2> to SETUP or Press <F12> to Network boot." or "Press <F2> to Enter BIOS SETUP, <F12> to Boot on Network." appears on the BIOS Start screen, press F2.**
3. **The BIOS SETUP Utility appears.**
4. **Press F9.**
    The [Setup Confirmation] dialog box appears.
5. **Select [Yes] and press Enter.**
    The system reads factory defaults.
6. **Press F10.**
7. **Select [Yes] and press Enter.**
    The system saves the setting values and exits the BIOS SETUP Utility.

Now the job is completed.

> The default values may differ from the factory setting values.

4.2 LIST OF BIOS SETUP MENUS

(1) Main Menu

Setting Item	Factory Default	Setting Item	View Only
System Time	(Current Time)	◯	
System Date	(Current Date)	◯	
Primary Master (secondary master)			◯
SMART Monitoring	Enabled		◯
Processor Settings			
CoreMulti-Processing	Enabled	◯	
CPU Speed			◯
CPU Type			◯
Cache Ram			◯
System Memory			◯
Extended Memory			◯
Language	English (US)	◯	

(2) Advanced Menu Configuration

Setting Item	Factory Default	Setting Item	View Only
PCI Configuration			
On Board PCI			
LAN Controller	Enabled	◯	
Option ROM Scan	Enabled	◯	
PCI Express Card	Enabled	◯	
Wireless LAN Controller	Enabled	◯	
On Board USB			
USB Controller	Enabled	◯	
USB 2.0 Controller	Enabled	◯	
Touch Panel	Enabled	◯	
FingerPrint Sensor	Enabled	◯	
Bluetooth Controller	Enabled	◯	
OP Controller	Enabled	◯	
Card Bus Device			
CardBus Controller	Enabled	◯	
IEEE1394 Controller	Enabled	◯	
SD Card Slot	Enabled	◯	
Memory Stick Card	Enabled	◯	
I/O Device Configuration			
Serial port A	Enabled	◯	
Base I/O address	3F8	◯	
Interrupt	IRQ 4	◯	
Keyboard	Enabled	◯	
Internal Mouse	Enabled	◯	
Sound	Enabled	◯	
Total Graphics Memory	128MB	◯	
Display Out	LCD+CRT	◯	
LCD Panel View Expansion	Enabled	◯	
LCD Brightness Control	Enabled	◯	
Illumination Sensor	Enabled	◯	
LCD Mode	Normal	◯	
Keyboard Backlight	Interlocked	◯	
Legacy USB Support	Enabled	◯	
Parallel ATA	Enabled	◯	
Serial ATA	Enabled *1	◯	
Serial ATA Mode	AHCI	◯	
SMART Device Monitoring	Enabled	◯	
Reset Configuration Data	No	◯	
Summary screen	Disabled	◯	

Setting Item	Factory Default	Setting Item	View Only
Silent Boot	Logo screen	○	
QuickBoot Mode	Enabled	○	
Fn/Left Ctrl key replacement	Disabled	○	

Setting Item	Factory Default	Setting Item	View Only
Tablet Button			
Tablet Button 1	0h	○	
Tablet Button 2	0h	○	
Tablet Button 3	0h	○	
Tablet Button 4	0h	○	
Tablet Button 5	0h	○	
[Tb] + Tablet Button 1	0h	○	
[Tb] + Tablet Button 2	0h	○	
[Tb] + Tablet Button 3	0h	○	
[Tb] + Tablet Button 4	0h	○	
[Tb] + Tablet Button 5	0h	○	
DMI Event Logging			
Event Log Capacity			○
Event Log Validity			○
View DMI Event Log			○
Clear All DMI Event Logs	No	○	
Event Logging	Enabled	○	
Mark DMI Events As Read		○	

*1: Models with a wide temperature range HDD and silicon disk installed are "Not Used."

(3) Security

Setting Item	Factory Default	Setting Item	View Only
Supervisor Password is			○
User Password is			○
Set Supervisor Password	(No value)	○	
Set User Password	(No value)	○	
User Password Protection	Disabled	○	
Password on boot	Disabled	○	
Network Boot Setting			
Keyboard/Mouse Lock	Enabled	○	
BIOS LOCK　　　　*2	Disabled	○	
HardDisk Security			
Fixed disk boot sector	Normal	○	
Assign HDD Password	(No value)	○	
Secondary Master HDD Password	Disabled	○	
Hard Disk Erase			○
No-Execute Memory Protection	Enabled	○	
Security Chip Configuration			
TPM support	Enabled	○	
Current TPM State　　　　*3			○
Change TPM State　　　　*3	No Change	○	
Password Authentication　　　　*3	Disabled	○	

*2: This option appears when the supervisor password is set and [Password on boot] is set to [Enabled].
*3: Not displayed when TPM support is set to "Disabled".

(4) Power Management Configuration

Setting Item	Factory Default	Setting Item	View Only
Power Switch Lock	Disabled	○	
Wake On LAN	Disabled	○	
Wake On PC Card	Disabled	○	
Wake On ExppressCard	Disabled	○	
Wake On Ring	Disabled	○	
Restore On AC/Power Loss	Stay Off	○	
Restore On AC/Power Loss from S4	Disabled	○	
C-States	Enabled	○	
CPU Power Level	Minimum	○	
Battery Charge Mode	Auto	○	
Battery Refresh		○	

(5) System

Setting Item	Factory Default	Setting Item	View Only
System Management			
System Part #	FC-N22A		○
System Serial #			○
BIOS Revision			○
EC FW Revision			○
Temperature Sensor	Enabled	○	
Upper Limit	75 Wide Range Temperature Support: 80	○	
Lower Limit	5 Wide Range Temperature Support: -25	○	
Voltage Sensor	Enabled	○	
POST Errors	Enabled	○	
HDD Thermal Sensor	Enabled	○	
Self-Diagnostic Program	Disabled	○	

(6) Boot Order Configuration

Setting Item	Factory Default	Setting Item	View Only

This menu lists boot devices in the preference order.
  1: USB CD-ROM
  2: USB FDC
  3: Master HDE
  4: Onboard LAN device
	(The order shown on the left)	○	

The actual dialog box appears as follows:

```
Boot priority order
  1:   USB CDROM: ------------------------------------------USB CDROM device
  2:   USB FDC: ----------------------------------------------USB FDC device
  3:   IDE HDE: FUJITSU MHW2060BH-(S1) --------------Primary Master HDE
  4:   PCI LAN: ---------------------------------------------Onboard LAN device
```

(7) Exit

Setting Item	Factory Default	Setting Item	View Only
Exit Saving Changes		○	
Exit Discarding Defaults		○	
Load Setup Defaults		○	
Discard Changes		○	
Save Changes		○	

4.3 MAIN MENU

(1) System Time
Enter the current time in format "hh:mm:ss" (hh: hour, mm: minute and ss: second)

(2) System Date
Enter the current date in format "yyyy/mm/dd" (yyyy: year, mm: month and dd: date)

(3) Primary Master (Secondary Master)
Indicates the information on devices connected to the primary master (including capacities and types).
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.
Select [Advanced] → [I/O Device Configuration] → [SMART Device Monitoring] to display the setting information.
If you change some settings, the new information resulting from the change is displayed after rebooting.

Option	Parameter	Description
SMART Monitoring	(View only)	[Enabled] or [Disabled] appears if the [SMART Monitoring] is enabled or disabled, respectively. This setting cannot be changed.

> A standard hard disk (80 GB) is displayed as "Primary master". A wide temperature range-capable hard disk (40 GB) or silicon disk (20 GB) is displayed as "Secondary master".

(4) Processor Settings
Indicates the processor information.
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.

Option	Parameter	Description	Displayed value
Multi-core mode	Disabled **Enabled**	When set to [Disabled], the CPU operates in the single core mode. When set to [Enabled], the CPU operates in the multiple core mode.	
CPU Speed	(View only)	Indicates the speed of the installed CPU (by the number of clocks)	1200MHz
CPU Type	(View only)	Indicates the type of the installed CPU.	Genuine Intel(R) CPU
Cache Ram	(View only)	Indicates the capacity of the second cache of the installed CPU.	2048KB * 1

* Shaded value: Factory-set   *1 Installation of 256MB memory

(5) System Memory
Indicates the capacity of the system memory.

(6) Extended Memory
Indicates the capacity of the extended memory.

(7) Language
Specify the language used in BIOS. You can select either Japanese or English.

> The factory default of the language is [English (US)].

4.4 ADVANCED MENU CONFIGURATION

4.4.1 Advanced Menu Configuration

(1) PCI Configuration
This option allows you to provide settings for PCI devices built in N22A.
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen. For the submenu, See "PCI Configuration Submenu" in "Chapter 4 Setting BIOS."

(2) I/O Device Configuration
This option allows you to provide settings for peripherals built in N22A.
If you move the cursor to this option and press Enter, the relevant setting submenu appears on the screen. For the submenu, See "PCI Configuration Submenu" in "Chapter 4 Setting BIOS."

(3) Setting value initialization
This option allows you to initialize the system setting values.

Option	Parameter	Description
Setting value initialization	**No** Yes	Set to [Yes] to initialize the resource information.

*Shaded value: Factory-set

(4) Summary screen
The option allows you to specify whether the system setting status is displayed on booting.

Option	Parameter	Description
Summary screen	**Disabled** Enabled	Set to [Enabled] to display the system setting status on booting.

*Shaded value: Factory-set

(5) Silent Boot
This option allows you to select the screen displayed on booting.

Option	Parameter	Description
Silent Boot	POST screen **Logo screen** Non screen	Set to [POST screen] to display the Power-On Self-Test (POST) screen without displaying the NEC logo. Set to [Logo screen] to display the NEC logo and shorten the booting time. Set to [Non screen] to display neither the POST nor NEC logo screens. (The booting time is not made shorter.)

*Shaded value: Factory-set

(6) QuickBoot Mode
This option allows you to specify whether a part of tests is skipped on booting or not.

Option	Parameter	Description
QuickBoot Mode	Disabled **Enabled**	Set to [Disabled] to execute all tests. Set to [Enabled] to skip a part of tests. This can shorten the booting time if the extended memory capacity is considerably large.

*Shaded value: Factory-set

(7) Fn/Left Ctrl key replacement
This option allows the features of **Fn** and **Left Ctrl** on the keyboard to be replaced with each other.

Option	Parameter	Description
Fn/Left Ctrl key replacement	**Disabled** Enabled	Set to [Disabled] to operate **Fn** and **Left Ctrl** as they are. Set to [Enabled] to replace the features of **Fn** and **Left Ctrl** of the keyboard to be replaced each other.

*Shaded value: Factory-set

(8) Tablet Button

This option allows you to assign features to the tablet buttons.
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.
For the submenu, see "4.3.4 Tablet Button Submenu".

(9) DMI Event Logging

This option displays the system event log occurring on booting or allows you to set the system event log.
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.

Option	Parameter	Description
Event Log Capacity	(View only)	If "Space Available" appears, the area where DMI event log information is stored has empty space. If "Full" appears, the area where DMI event log information is stored has no empty space.
Event Log Validity	(View only)	"Valid" appears normally (normal state). "Invalid" appears if the event log area becomes illegal due to power shutdown during storage of event log. If "Invalid" appears, run [Clear All DMI Event Logs] to recover the normal state.
View DMI Event Log	(View only)	Press **Enter** to display the contents in the DMI event log entirely.
Clear All DMI Event Logs	**No** Yes	Select [Yes] to clear the DMI event log entirely after rebooting.
Event Logging	Disabled **Enabled**	Set to [Disabled] not to record the DMI event log. Set to [Enabled] to record the DMI event log.
Mark DMI Events As Read	Yes **No**	Press **Enter** and select [Yes] to make the currently displayed log read already.

*Shaded value: Factory-set

> DMI (Desktop Management Interface) is a standard specification of hardware-to-software interface intended to simplify management of each computer for easy system management.

4.4.2 PCI Configuration Submenu

The PCI Configuration Submenu allows you to set features of PCI devices built in N22A.

Option		Parameter	Description
On Board LAN		Provide settings for on-board LAN devices. If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.	
	LAN Controller	Disabled **Enabled**	Enable or disable wired LAN controller.
	Option ROM Scan		
	PCI Express Card		
	Wireless LAN Controller	Disabled **Enabled**	Enable or disable wireless LAN controller.
On Board USB		Provides settings for on-board USB devices. If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.	
	USB Controller	Disabled **Enabled**	Enable or disable the USB controller. Set to [Disabled] to disable even the USB2.0 controller. USB connectors become unavailable (I/O lock).
	USB 2.0 Controller	Disabled **Enabled**	Enable or disable the USB2.0 controller. Set to [Disabled] to disable the USB2.0 controller. USB devices operate in the USB1.1 specification.
	Touch Panel		
	GPS Controller		
	FingerPrint Sensor		
	Bluetooth Controller		
Card Bus Device			
	CardBus Controller		
	IEEE1394 Controller		
	SD Card Slot		
	Memory stick Card		

*Shaded value: Factory-set

4.4.3 I/O Device Configuration Submenu

The I/O Device Configuration Submenu allows you to set features of peripherals built in N22A.

Option	Parameter	Description
Serial port A	Disabled **Enabled**	Set to [Disabled] to disable serial port A (I/O lock) and release the interrupt. Set to [Enabled] to enable serial port A.
I/O Base Address	**3F8** 2F8 3E8 2E8	Specify the I/O base address of serial port A.
Interrupt	**IRQ 4** IRQ 3	Specify the IRQ of serial port A.
Internal Mouse	Disabled **Enabled**	Set to [Disabled] to disable the touch pad. Set to [Enabled] to enable the touch pad.
Touch Panel	Disabled **Enabled**	Set to [Disabled] to disable the touch panel. Set to [Enabled] to enable the touch panel.
Sound / Modem	Disabled **Enabled**	Set to [Disabled] to disable sound (makes the audio controller disabled). Set to [Enabled] to enable sound.
Total Graphics Memory		Specify the graphic memory capacity.

Option	Parameter	Description
Display Out	CRT LCD **LCD + CRT**	Specify the monitor(s) on which screen data is displayed. Set to [CRT] to display screen data on the external monitor in booting. (Screen data is not displayed on the built-in LCD monitor.) Set to [LCD] to display screen data on the built-in LCD monitor in booting. Set to [LCD + CRT] to display screen data on both monitors in booting.
LCD Panel View Expansion	**Enabled** Disabled	Specify the LCD panel view expansion feature. If this option is set to [Disabled], a part of area is not displayed at the top and bottom sides and the left and right sides on a display screen smaller than the maximum display size of the LCD panel. (However, parameter [Disabled] is unavailable if the screen resolution is set to the maximum value in OS setting.) If this option is set to [Enabled], display image smaller than the maximum display size of the LCD panel is expanded to be displayed on the full screen.
LCD Brightness Control	**Disabled** Enabled	Specify the LCD brightness control method. Set to [Disabled] to have the LCD brightness controlled by OS or driver. (Tablet buttons 4 and 5 and hot keys **Fn** + **F7**, **Fn** + **F8** are disabled to change the LCD brightness.) Set to [Enabled] to have the LCD brightness controlled by BIOS. (Tablet buttons 4 and 5 and hot keys **Fn** + **F7**, **Fn** + **F8** are enabled to change the LCD brightness.)
Keyboard Backlight	**Connect** Disconnect	Specify the keyboard backlight brightness control method. Set to [Interlocked] to interlock with the LCD brightness. The keyboard backlight brightness is increased/decreased by pressing **Fn** + **F7**/**Fn** + **F8**. Keyboard backlight is turned on/off by pressing **Fn** + **F1**. Set to [Independent] to adjust the keyboard backlight brightness in 8 levels (dark to bright) or turn on/off it by pressing **Fn** + **F1**.
Legacy USB Support	Disabled **Enabled**	Enable or disable the legacy USB feature. Set to [Disabled] to disable the legacy USB feature. Booting from an external USB device is also disabled. Set to [Enabled] to enable the legacy USB feature.
Parallel ATA	Disabled **Enabled**	Set to [Disabled] to disable the built-in parallel ATA IDE adapter. Set to [Enabled] to enable the built-in parallel ATA IDE adapter.
Serial ATA	Disabled **Enabled**	Set to [Disabled] to disable the built-in serial ATA IDE adapter. Set to [Enabled] to enable the built-in serial ATA IDE adapter. * For the Linux model with a wide temperature range HDD, this item is set to [Disabled] at factory.
Serial ATA Mode	Disabled **Enabled**	Enable or disable the AHCI feature. Set to [Disabled] to disable the AHCI feature. Set to [Enabled] to enable the AHCI feature.
SMART Device Monitoring	Disabled **Enabled**	Set to [Disabled] not to provide S.M.A.R.T. monitoring for IDE devices. Set to [Enabled] to provide S.M.A.R.T. monitoring for IDE devices.

* Only for models featuring the function
*Shaded value: Factory-set

Option	Parameter	Description
Reset Configuration Data		
Summary Screen		
Silent Boot		
QuickBoot Mode		
Fn/Left Ctrl Key replacement		

4.4.4 Tablet Button Submenu

The Tablet Button Submenu allows you to assign features to tablet buttons.

Option	Parameter	Description
Tablet Button 1	**00h** 00h ~ FFh	Assign features to tablet buttons. Enter the key codes to be set. Key codes shown in the table below are only available If [0] is set to an option, the serigraphed standard feature is enabled for the option. If [FFFF] is set to an option, the feature of the option is disabled.
Tablet Button 2		
Tablet Button 3		
Tablet Button 4		
Tablet Button 5		
[Tb] + Tablet Button 1		
[Tb] + Tablet Button 2		
[Tb] + Tablet Button 3		
[Tb] + Tablet Button 4		
[Tb] + Tablet Button 5		

*Shaded value: Factory-set

The table below shows the correspondence between actual tablet buttons and options.

Tb   (1)   (2)   (3)   (4)   (5)
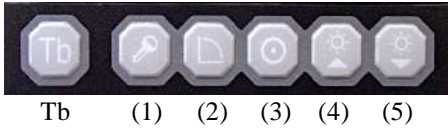
No	Option	Usual feature	Feature of [Tb] + [Tablet button]
(1)	Tablet Button 1	**Ctrl** + **Alt** + **Del**	**ESC**
(2)	Tablet Button 2	Screen rotation	**Tab**
(3)	Tablet Button 3	**Enter**	Starting screen keyboard
(4)	Tablet Button 4	LCD brightness UP	**PgUp**
(5)	Tablet Button 5	LCD brightness Down	**PgDn**

The tablet buttons can only have the features listed in the table below. Do not specify any values other than those in the table below.

Feature		Setting value
Ctrl+Alt+Del		0100 h
Screen rotation	*	E06D h
Enter		005A h
LCD brightness UP		0107 h
LCD brightness Down		0108 h
ESC		0076 h
Tab		000D h
Starting screen keyboard	*	E06A h
PgUp key		0075 h
PgDn key		0072 h
Keyboard backlight OFF		0101 h
Switching wireless LAN enabled/disabled		0102 h
Switching screen output port		0103 h
LCD backlight OFF		0104 h
FC button 1	*	E048 h
FC button 2	*	E03A h

* [Screen rotation], [Starting screen keyboard], [FC button 1] and [FC button 2] are enabled only in operation of Windows

[FC Button 1] and [FC Button 2] can run the execution command (or application starts) registered on the [FC Button Setup utility] dialog box.

4.5 SECURITY MENU

The N22A can limit the BIOS Setup Menu users by setting a supervisor password and user password, and prevent unauthorized use of the hard disk drive with other than the main unit by setting a hard disk password.

4.5.1 Security

(1) Supervisor Password

This option indicates whether a supervisor password is set or not.

Option	Parameter	Description
Supervisor Password is	(View only)	"Set" appears when a supervisor password is set. "Clear" appears when a supervisor password is not set.

(2) User Password
This option indicates whether a user password is set or not.
For the option and description on a user password, see "(1) Supervisor Password" above.

(3) Set Supervisor Password
This option allows you to set a supervisor password. If a supervisor password is set, accessing to the BIOS SETUP Utility is limited.

<Supervisor password setting procedure>
1. Select [Set Supervisor Password] and press **Enter**. The setting dialog box appears.
2. Enter a new password in field [Enter New Supervisor Password] and press **Enter**.
3. Enter the same password in field [Confirm New Supervisor Password] for confirmation and press **Enter**.
4. When message "Changes have been saved." appears, press **Enter**.
    The value in field [Supervisor Password is] is changed to [Set].

- To change a password already set, enter the current password in field [Enter Current Password] for confirmation, press **Enter** and then enter a desired password in the same way as setting a new password.
- A password can only consist of up to eight alphanumeric characters and is not case-sensitive.
- If you press **Enter** without entering anything in the new supervisor password field, both the supervisor and user passwords are cancelled.
- To cancel the user password only, cancel the supervisor password once and then set the supervisor password only.
- Re-setup of N22A cannot cancel the passwords.

Forgetting a password, you cannot cancel the password.
Accordingly, if a password is set, manage it carefully.

(4) Set User Password

This option allows you to set a user password. If a user password is set, accessing to the system on booting is limited.

> • Without supervisor password, you cannot select an item to set the user password. First set the supervisor password.
> • Entering the BIOS SETUP Utility with the supervisor password, you can check and change all setting items.
>   However, entering into it with the user password, you cannot change the following items (view only).
>   ➢ Items [System Time], [System Date] and [Language] on the [Main] menu
>   ➢ Items [Exit Saving Changes], [Exit Discarding Changes] and [Save Changes] on the [Exit] menu

<User password setting procedure>

1. Select [Set User Password] and press Enter. The setting screen appears.
2. Enter a new password in field [Enter New Password] and press Enter.
3. Enter the same password in field [Confirm New Password] for confirmation and press Enter.
4. When message "Changes have been saved." appears, press Enter.
   The value in field [User Password is] is changed to [Set].

> Forgetting a password, you cannot cancel the password.
> Accordingly, if a password is set, manage it carefully.

(5) User Password Protection

This option indicates whether the user password is protected or not.

Option	Parameter	Description
User Password Protection	**Disabled** Enabled	Set to [Enabled] not to allow you to change the user password if you enter the setup menu with the user password.

* Shaded value: Factory-set

(6) Password on boot

Option	Parameter	Description
Password	**Disabled** Enabled	et to [Disabled] not to request you to enter the user on boot passwords on booting. Set to [Enabled] to request you to enter the user password on booting.

* This option becomes selectable after a supervisor password is set.
  Shaded value: Factory-set

(7) Network Boot Setting
The option allows you to provide settings on network starting.
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.

Option	Parameter	Description
Keyboard/Mouse Lock	Disabled **Enabled**	Allows you to set the operations of the keyboard and mouse on remote (PME) booting (until OS is started). Set to [Disabled] to allow the keyboard and mouse to be used. Set to [Enabled] to lock the keyboard and mouse to be unavailable.
BIOS LOCK	**Disabled** Enabled	Allows you to set [Password on boot] on remote (PME) booting. Set to [Disabled] to boot without request of entering the user password. Set to [Enabled] to request you to enter the user password. This option appears when the supervisor password is set and [Password on boot] is set to [Enabled].

*Shaded value: Factory-set

> Remote (PME) booting means that the administrator PC remotely boots a client PC.

(8) HardDisk Security
This option allows you to set the security of the HDD.
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.
On the submenu, you can set security features of the HDD as described below.

Option	Parameter	Description
Fixed disk boot sector	**Normal** Write Protect	Set to [Write Protect] to prohibit data from being written to the boot sector in the HDD to protect the sector from virus.
Assign HDD Password	(No value)	Allows you to set an HDD password. See Supplement 1: Setting HDD password" for how to set an HDD password.
Secondary Master HDD Password	Enabled **Disabled**	Set to [Enabled] to set the HDD password in the secondary master hard disk drive.
Hard Disk Erase	(No value)	Erases data in the HDD. See "Supplement 2: Erasing HDD data" for how to clear data.

*Shaded value: Factory-set

Supplement 1:   Setting HDD password
There are two HDD passwords, or HDD master and HDD user passwords.

<HDD password setting procedure>
1. Select [Assign HDD Password] and press **Enter**.
2. Enter a supervisor password in field [Enter New Master Password.] and press **Enter**.
3. Enter the same password in field [Confirm New Master Password.] for confirmation and press **Enter**.
4. The [Assign HDD User Password] dialog box appears.
5. Enter a supervisor password in field [Enter New User Password] and press **Enter**.
6. Enter the same password in field [Confirm New User Password] for confirmation and press **Enter**.
7. Select [Primary Master HDD Password] and press **F5** or **F6** to set the option to [Enabled].

> Setting a HDD user password can prohibit the HDD from being used in another PC illegally.

Supplement 2:   Erasing HDD data

The following shows the erase HDD data procedure.

■ NSA (Random(1) → Random(2) → 00h)

Writes [random data → random data → 00] in the order in the entire HDD area.

The erase HDD procedure conforms to the method recommended by NSA.

> Erasure takes 80 to 140 minutes for a standard HDD (80 GB), 25 to 30 hours for a wide temperature range HDD (80 GB), and 5 to 6 hours for a silicon disk (20 GB).

<HDD erase procedure>

1. Select [Hard Disk Erase] and press **Enter**. The [Setup Confirmation] dialog box appears.
2. Select [Yes] to exit the BIOS SETUP Utility and transit to the erase HDD dialog box. The following dialog box appears.

```
Erase HDD program
Press Y to start erase, N to exit
<ESC> to shutdown system
```

3. Press **Y** to start erasing the HDD.

   Press **N** to cancel the erase HDD procedure and start system booting.

   Press **ESC** to shutdown the system (power-off).

> After the HDD data is erased, the data having been stored in the HDD cannot be restored.
> Before erasing the HDD, make sure that necessary data does not remain in the HDD.

> • If you enter the BIOS SETUP Utility with the user password, item [Hard Disk Erase] does not appear in the menu.
> • To boot N22A (to start Windows installed in the primary master hard disk), the HDD master and HDD user passwords being set may not be entered even if [Primary Master HDD Password] is set to [Enabled].

(9) No-Execute Memory Protection

This option allows you to specify whether the DEP (Data Execution Prevention) feature of the HDD is enabled or not.

Option	Parameter	Description
No-Execute Memory Protection	**Enabled** Disabled	Enable or disable the DEP (Data Execution Protection Prevention) feature. Set to [Enabled] to enable the DEP feature. Set to [Disabled] to disable the DEP feature.

*Shaded value: Factory-set

> DEP (Data Execution Prevention) is a feature of preventing illegal programs and data from being executed in hardware manner. DEP disables computer virus to write or run program codes illegally.

105

(10) Security Chip Configuration
This option allows you to provide settings for the security chip.
If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.

> If the security chip is set to Enabled, set supervisor and user passwords to limit accessing to the BIOS SETUP Utility.
> For details on security chips or setting procedure of the utility, see "Infineon Security Platform" in "Chapter 5 Installing OS and Applications".

On the submenu, you can set features of the security chip as described below.

Option	Parameter	Description
TPM support	Disabled **Enabled**	Enable or disable the security chip called TPM (Trusted Platform Module). Set to [Disabled] to disable the security chip (TPM). Set to [Enabled] to enable the security chip (TPM).
Current TPM State	(No setting)	Shows the setting status of the security chip (TPM). (Not displayed when TPM support is set to [Disabled].)
Change TPM State	No Change **Enable & Activate** Deactivate & Disable Clear	Enable or disable the security chip (TPM) feature. Set to [No Change] not to change the security chip (TPM) status. Set to [Enable & Activate] to enable the security chip (TPM) feature. Set to [Deactivate & Disable] to disable the security chip (TPM) feature. Set to [Clear] to return the security chip (TPM) to the factory setting. (Not displayed when TPM support is set to [Disabled].)
Password Authentication	Disabled **Enabled**	Enable or disable password lock when setting the security chip (TPM) feature. Set to [Disabled] so as not to request entering a password when setting the security chip (TPM) feature. Set to [Enabled] to request entering of a password when setting the security chip (TPM) feature.

*Shaded value: Factory-set

4.5.2 I/O Lock Feature

The I/O lock disables the I/O feature, measures to interchange data with external devices, on the BIOS SETUP Utility.
I/O lock can be enabled by setting the following in the BIOS Setup Menu.

(1) How to lock the LAN controller
[Advanced] → [PCI Setting] → [On Board LAN Device] → [LAN Controller] → [Do not use]

(2) How to lock the wireless LAN controller
[Advanced] → [PCI Setting] → [Wireless LAN Device] → [Wireless LAN Controller] → [Do not use]

(3) How to lock the USB controller
[Advanced] → [PCI Setting] → [On Board USB Device] → [USB Controller] → [Do not use]

(4) How to lock serial port A
[Advanced] → [Peripheral Setting] → [Serial Port A] → [Do not use]

(5) Locking card bus controller (PCMCIA)
[Details] → [Peripheral device settings] → [Card bus controller] → [Disabled]

(6) Locking bluetooth controller
[Details] → [Peripheral device settings] → [Bluetooth controller] → [Disabled]

(7) Locking parallel ATA
[Details] → [Peripheral device settings] → [Parallel ATA] → [Disabled]

(8) Locking serial ATA
[Details] → [Peripheral device settings] → [Serial ATA] → [Disabled]

4.5.3 Clearing BIOS Passwords

N22A can limit users of the BIOS SETUP Utility by supervisor and user passwords and prevent the HDD from being used illegally by
other computers with HDD passwords.

(1) Clearing passwords by BIOS SETUP Utility
To release passwords, start the BIOS SETUP Utility, enter the existing supervisor password in [Set Supervisor Password] in the Security Menu and press **Enter** without entry of new password.

> Forgetting a password, you cannot cancel the password.
> Accordingly, if a password is set, manage it carefully.

Setting BIOS

4.6 POWER MANAGEMENT CONFIGURATION

4.6.1 Power Management Configuration

This menu allows you to set power management features.

Option	Parameter	Description
Power Switch Lock	**Disabled** Enabled	Specify whether the power inhibit release switch is enabled or disabled. Set to [Enabled] to enable the power switch with the power inhibit release switch being pressed. (Pressing the power switch only cannot turn on/off the power.)
Wake On LAN	**Disabled** Enabled	Specify whether the power is turned on by the wake on LAN feature of the internal LAN controller or not.
Wake On PC Card		
Wake On ExppressCard		
Wake On Ring	**Disabled** Enabled	Specify whether the power of the device connected to the serial port is turned on or not.
Restore On AC/Power Loss	**Stay Off** Last State Power On	Specify the state recovered when the power of the AC adapter is interrupted and then on again. Set to [Stay Off] not to turn on the power at AC power-on of the AC adapter. Set to [Last State] to return to the state at AC power-off of the AC adapter. If AC power of the AC adapter is interrupted with the power being on, the power is turned on. If AC power of the AC adapter is interrupted with the power being off, the power is not turned on. Set to [Power On] to turn on the power at AC power-on of the AC adapter.
Restore On AC/Power Loss from S4		
Intel SpeedStep(R) technology	Disabled **Enabled**	Specify whether the Intel SpeedStep technology is enabled or disabled. Set to [Disabled] to operate N22A in the battery optimization performance. Set to [Enabled] to operate N22A in the performance optimized by the Intel SpeedStep technology. (The CPU frequency varies depending on load to CPU.)
C-States	Disabled **Enabled**	Specify the CPU power management status. Set to [Disabled] to set the CPU power management to C1 status. Set to [Enabled] to set the CPU power management to C1, C2, C3, and C4.
CPU Power Level	**Minimum** Standard Maximum	Specify the CPU power level when the CPU is entered into idling state during OS operation. Set to [Minimum] to transit the CPU to the minimum power consumption state. Set to [Standard] to transit the CPU to the normal power consumption state. Set to [Maximum] to transit the CPU to the maximum power consumption state.
Power Mode	**Disabled** Enabled	Specify the power save mode. Set to [Disabled] to operate the system in the normal mode. Set to [Enabled] to operate the system in the power save mode.

Option	Parameter	Description
Battery Charge Mode	Normal LongLife Keeping **Auto**	Specify the battery charging mode. Set to [Normal] to charge the battery fully. Set to [LongLife] to charge the battery at level of 80%. (Select this if you want to make the battery life longer.) Set to [Keeping] to charge the battery at level of 50%. (Select this if the battery is stored.) Set to [Auto] to select [Normal] in the normal state but [LongLife] if the battery temperature becomes higher.
Battery Refresh	(No setting)	Recovers the battery feature. Select [Yes] and press **Enter** to refresh the battery.

*Shaded value: Factory-set

Setting BIOS

4.7 SYSTEM MENU

The System Menu allows you to set system features as described in the table below.

Option	Parameter	Description
System Management		Indicates system information. If you move the cursor to this option and press **Enter**, the relevant setting submenu appears on the screen.
System Part #	(View only)	Indicates the product name of N22A.
System Serial #		Indicates the serial number of N22A (not used now).
BIOS Revision		Indicates the BIOS revision of N22A.
EC FW Revision		Indicates the EC-FW revision of N22A.
Temperature Sensor	Disabled **Enabled**	Specify the temperature monitoring feature. Set to [Disabled] to disable the temperature monitoring feature at system booting. Set to [Enabled] to enable the temperature monitoring feature at system booting.
Upper Limit [°C]	**75** Wide Range Temperature Support 80	Indicates the upper limit of the monitoring temperature.
Lower Limit [°C]	**5** Wide Range Temperature Support -25	Indicates the lower limit of the monitoring temperature.
Voltage Sensor	Disabled **Enabled**	Specify the voltage monitoring feature. Set to [Disabled] to disable the voltage monitoring feature at system booting. Set to [Enabled] to enable the voltage monitoring feature at system booting.
POST Errors	Disabled **Enabled**	Specify the operation when an error is found during POST. Set to [Disabled] to have the system continue booting if an error is found by the POST. Set to [Enabled] to suspend booting if an error is found by the POST and indicate the error content.
HDD Thermal Sensor *1	**Disabled** Enabled	Specify the HDD temperature monitoring feature. Set to [Disabled] to disable the HDD temperature monitoring feature at system booting. Set to [Enabled] to enable the HDD temperature monitoring feature at system booting.
Illumination sensor	Disabled **Enabled**	Set the illuminance sensor. If "Disabled" is selected, the illuminance sensor is disabled. If "enabled" is selected, the illuminance sensor is enabled.
LCD Mode	**Normal** Enhanced	Change the LCD brightness level. If "Normal" is set, the brightness is changed in the range from the lowest to level 13. If "Enhanced" is set, the brightness is changed in the range from the lowest to level 16.
Self-Diagnostic Program		

*Shaded value: Factory-set
*1: For wide temperature range HDD, "HDD Temperature Sensor" is not displayed.

> Operations when temperature sensor is set to "Use"
> Monitor system temperature (internal temperature sensor) at power on (BIOS startup), where an error message will appear, after BIOS startup is completed, if the temperature is outside the range between upper and lower limits of the setting values.
> The temperature sensor has a margin of error. In case of operating at temperatures close to the lower limit of monitoring temperature, adjust the setting value if an error message appears after BIOS startup is completed.
> Do not change "Upper Limit of Monitoring Temperature" to a greater value since the main unit internal temperature will rise after power is turned on.
> This operation is performed only on startup, and will not be performed after the operating system starts.

4.8 BOOT MENU

4.8.1 Boot Order Configuration

This menu lists boot devices in the preference order. The top device first tries to start the OS. If the device cannot start the OS due to such a reason as no existence of OS, the next device tries to start the OS.

To change the boot device, press **PgUp** or **PgDn** to move the cursor to the device to be used to start the OS.
Press **F5** or **F6** to move the cursor upward or downward in the list, respectively.
Press **x** to move the cursor in [Boot priority order] and [Excluded from boot order].

Up to eight devices can be registered in [Boot priority order].

The factory set priority is defined as follows:

    1: USB CD-ROM
    2: USB FDC
    3: Master HDE
    4: Onboard LAN device

The actual dialog box appears as follows:

```
Boot priority order
   1:    USB CDROM: -----------------------------------------------------------USB CDROM device
   2:    USB FDC:----------------------------------------------------------------USB FDC device
   3:    IDE HDE: FUJITSU MHW2060BH-(S1) -----------------------------Primary Master HDE
   4:    PCI LAN: ------------------------------------------------------------------Onboard LAN device
   5:
   6:
   7:
   8:
Excluded from boot order
   :    USB KEY:  -----------------------------------------------------------USB KEY device
   :    USB HDD:  -----------------------------------------------------------USB HDD device
```

Setting BIOS
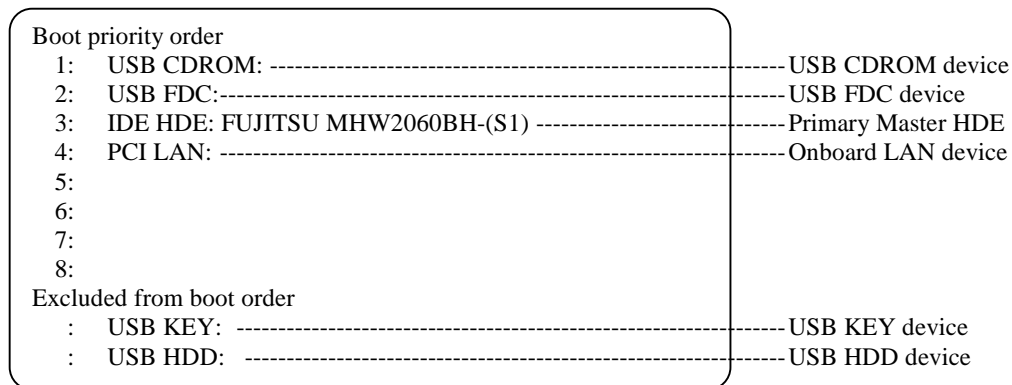
Chapter 5 Installing OS and Applications

5.1 WINDOWS XP PRE-INSTALLED MODEL

5.1.1 Configuration of Windows XP Pre-installed Model

N22A of Windows XP pre-installed model has Microsoft Windows XP Professional installed at factory shipment to be automatically booted at power-on.
The parameters are previously set to the factory defaults as shown in the table below.
Accordingly, you may not enter them on booting of N22A.

Parameter	Factory default
Owner	FC-USER
Organization	(Not set)
Computer name	FC-N22A-XXXXX

Value "XXXXX" in the computer name shows the lowest five digits of the product ID of Microsoft Windows XP Professional.
For the product ID, see the Microsoft Windows XP Professional license label pasted on the bottom of N22A.

For how to change the computer name, see "Specify computer and workgroup names" in the Online Help of Microsoft Windows XP Professional.

To change the owner or organization, see next subsection "Changing Owner and/or Organization by Modifying Registry" or provide re-setup for Windows XP. For the re-setup, see "Chapter 6 Re-setup of Windows XP in N22A of Pre-installed Model".

For the HDD installed in N22A of pre-installed model, the first and second partitions (or system and remaining areas respectively) are formatted at shipment from factory.
To change the format so as to assign the second partition (remaining area) to more than one drive, select [Start] → [Control Panel] → [Performance and Maintenance] → [Administrative Tools] → [Computer Management] → [Disk Management] after the setup is completed.

Standard HDD (80 GB) or wide temperature range HDD (40 GB):

Capacity (1st HDD)	
First partition	Second partition
20GB (NTFS)	Standard HDD: About 40GB (NTFS) Wide temperature range HDD: About 20GB (NTFS)

Silicon disk (20GB)

Capacity (1st HDD)	
First partition	Second partition

Note that Windows XP installed in N22A is not specified as an upgrading/downgrading product by Microsoft.

The following warning may be recorded in the event log at the time of log-off, this is only an indication and the operation of OS is not affected.

Event ID   : 1517
   Source   : Userenv
   Type   : Warning
   Description   : Windows saved the user's registry at log-off though the application or the service is using the registry.   The memory used by the user's registry has not been released.
      The registry will be unloaded when it is not used.
      This is due to execution of the service as a user account.
      Try to configure the service with LocalService or NetworkService.

Although the following warning/error may be recorded to the Event Viewer event log when returning from the standby state, this is only a display problem and the OS is functioning normally.

Event ID   : 256
   Source   : PlugPlayManager
   Type   : Warning
   Description   : Transmission for reporting the change of device interface to "IWMSWindow" window times out.
Event ID   : 7011
   Source   : Service Control Manager
   Type   : Error
   Description   : A timeout occurred during wait for transaction response from the WZCSVC service.

Changing Owner and/or Organization by Modifying Registry

- The registry has a variety of information required to operate Windows XP.
  Changing the registry incorrectly may cause Windows XP to be started improperly. Change the registry with sufficient care.
  If Windows XP is not started or started improperly after change of the registry, reinstall Windows XP.
- Be sure to change the registry before installing applications in N22A. If the registry is changed after some applications are installed, the changed registry may not be reflected on the versions of the applications.
  However, Windows XP can operate normally.
  Only symptoms such as shown by an example below may appear:

  Ex: When organization and/or owner are changed after Microsoft Excel is installed,
  - Selecting [Control Panel] → [Organization/owner in System] causes the organization and owner after registry change to be displayed.
  - The version information in the Help file of Excel indicates the organization and owner after registry change.
  * The operation is not affected.

113

(1) Registry change procedure

1. Start WindowsXP.
2. Click [Start] → [Run…], type "c:¥windows¥regedit.exe", and click [OK].
3. Open HKEY_LOCAL_MACHINE¥SOFTWARE¥Microsoft¥Windows NT¥CurrentVersion.
4. Click the following items and change the organization and/or owner.
   Registered Organization
   Registered Owner
5. Click [File] → [Exit] to exit the registry editor.

(2) Organization/owner check procedure

1. Start Windows XP.
2. Right-click [My Computer] and click [Property].

Microsoft Windows XP Professional License Label (COA label)

N22A of pre-installed mode has Last Known Good Configuration Microsoft Windows XP Professional license label (COA label) pasted on the bottom of N22A.
The label includes some important information including "Product ID". Take sufficient care on that label so that the label may not be damaged, broken or peeled off.

> The Microsoft Windows XP Professional license label (COA label) shall not be re-issued if it is damaged, broken or peeled off.
> Note: Because the COA label is partially transparent and not laminated, it seems to get a hole or be broken.
> However, it does not indicate that the label is damaged. The transparent part of the label may have a unique shape due to special processing to be different from others.

5.1.2 "Microsoft Windows XP Service Pack 2"

The OS installed in N22A of Windows XP pre-installed model is "Microsoft Windows XP Service Pack 2" (called Service Pack 2 below).
Service Pack 2 includes a set of update programs intended to improve or correct faults and problems found after the first supply of Windows XP.

> - Addition/deletion
>   Do not delete Service Pack 2 from N22A.
>   Some device drivers are only applicable to Service Pack 2. Thus, deleting Service Pack 2 may cause some drivers to be operated improperly.
> - The latest and other information on Windows XP is provided on the following web site. Access the site periodically.
>   http://www.microsoft.com/japan/windowsxp/downloads/

5.2 INSTALLING ATTACHED APPLICATIONS

- Be sure to log in as a user having an Administrator privilege, to add or remove applications.
- An administrator privilege is a privilege to manage the entire configuration of a computer. If you are unsure how to log in as a user with an administrator privilege, on the [Logon information] screen, enter "Administrator" in the [User name] field and, in the [Password] field, a password that you set for an administrator account when you started this machine for the first time. Select the computer name that you set when you started this machine for the first time and click the [OK] button. A domain name is shown only when a domain has been set for network installation.
- Installation software is stored in drive C (hard disk), so a CD-ROM drive unit is not required during installation.
- Applications do not come with the English version preinstalled model and the Linux preinstalled model.

5.2.1 Standby Rescue Lite

CD-ROM/DVD drive unit is not required because "Set of Installation Software" is stored on Drive C (hard disk).

This software is not included with Linux Pre-installation models.

This software cannot be used for Silicon Disk models.

(1) Overview

A full copy of the boot area (referred as Active Area hereafter) currently running is made to the "standby area" in the same volume, and the system will quickly switch to the failure-free system by restarting the system when a failure occurred.

The main features are as follows:

1. **Copying/Updating**
   Create a full backup of the Active Area in the standby area.

Since the standby area requires the same space size as the space used by Active Area, there must be unused space at the same size or larger than the currently used space in the system drive.
Drives other than the system drive cannot be backed up.

2. **Rescue start**
   When a failure occurs, the system can start with the failure-free area by quickly switching (rescue start) from the Active Area to the standby area automatically or manually.

3. **File Exclusion Feature**
   Register files not to be backed up in the standby area, such as temporary files and specific files/folders, to the exclusion list in order to reduce the standby area size.

4. **Setting Password**
   Protect "Display Option Dialog", "Copying/Updating", and "Rescue start now" execution by setting a password.

115

(2) Supported Operating Systems

- Microsoft® Windows® XP Japanese Version (SP2)
- Microsoft® Windows® XP English Version (SP2)

(3) How to Install

1. **Start Windows.**
2. **Click [Start] → [Control Panel].**
3. **Double click [Add/Remove Programs].**
4. **Click the [CD or Floppy Disk (F)] button in the [Add Program] tab.**
5. **Click the [Next] button in the [Install from Floppy Disk or CD-ROM] window.**
6. **Enter [C:¥WINXP¥SRL300¥setup.exe], then click the [Finish] button.**
7. **Follow the instructions displayed in the window to install.**
   Restart the computer.

The installation of Standby Rescue Lite is completed.

(4) How to start

Click [Start] → [Programs] → [Standby Rescue Lite] → [Standby Rescue Lite].
If copying/updating to the standby area has not been performed, a confirmation message
for standby area creation will appear.
The main window of Standby Rescue Lite will appear when copying/updating is completed.

(5) How to delete

1. **Start Windows.**
2. **Click [Start] → [Control Panel].**
3. **Double click [Add/Remove Programs].**
4. **Click the [Standby Rescue Lite], then click the [Change/Remove] button.**
5. **Click the [Yes] button when the [Confirm File Delete] window appears.**
6. **Click the [No to All] button when [Delete Shared File] appears.**
7. **Click the [OK] button when [Uninstall Complete] appears.**
   Restart the computer.

Standby Rescue Lite deletion is completed.

(6) Details

- **For details on features and operations**
  Please refer to "SRL_UserGuide.pdf" stored in C:¥WINXP¥SRL300¥Docs¥.

> Install Adobe® Reader® to view SRL_UserGuide.pdf.

- **Cautions and Restrictions**
  Refer to "Readme.txt" stored in "C:¥WINXP¥SRL300¥".

- **Latest information on "Standby Rescue Lite"**
  Visit NetJapan's Website at http://www.netjapan.co.jp/ (Japanese only).

5.2.2 Software RAS Tool

> CD-ROM/DVD drive unit is not required because the "Set of Installation Software" is stored on Drive C (hard disk).

> Windows Vista® is not supported.

(1) Overview

This tool monitors hardware status and SMART information of the hard disk, and records in log files, outputs to Windows Event Viewer, and starts specified programs when an abnormality causing failures is detected.

Main features are as follows:

1. **Hardware status monitoring feature**
   Monitors hardware status such as the internal temperature, fan, voltage, PCI parity, and mirroring interface board. Also, monitors the SMART (Self-Monitoring Analysis and Reporting Technology) information of the hard disk (hard disk built-in self-diagnosis feature).

2. **Logging/abnormality output features**
   Regularly monitors the hardware status, and saves (logging) to a file.
   Also, outputs to Event Viewer or starts specified programs when an abnormality is detected.

3. **Failure analysis feature**
   Supports failure analysis with the following features.
   - In the file saved by the logging feature, monitored time (Windows calendar time and BIOS calendar time) is also recorded.
   - Outputs error information, by converting from a memory dump file output when a Windows system error occurs, to a text file.

4. **Power switch feature**
   For Windows® XP/Server® 2003, Windows menu shutdown and power switch shutdown are the same operations; however, the power switch shutdown for Windows® 2000 does not save data.
   With this feature, the same operations as Windows menu shutdown can be performed for Windows® 2000 when shutting down with the power switch.

5. **Calendar correction feature**
   Sets the BIOS calendar time to Windows calendar time.

6. **Digital input/output feature**
   Digital data input/output can be performed with RAS library features.

> Software RAS tool is not installed at factory default.
> To use this tool, install Software RAS tool following the instructions in the PDF file stored in C:¥WINXP¥SoftRAS¥.

(2) Supported Operating Systems

- Microsoft® Windows® XP Japanese Version (SP2)
- Microsoft® Windows® XP English Version (SP2)

(3) Details

These features are available by installing the attached "Software RAS".
For using these features and details, change settings by referring to the "Software RAS" PDF file.

5.2.3 Adobe® Reader® 7.0

> CD-ROM/DVD drive unit is not required because "Set of Installation Software" is stored on Drive C (hard disk).

> This software is not included with Linux Pre-installation models.

(1) Overview

Display, view, and print electrical manuals in PDF (Portable Document Format) format.

> Adobe® Reader® 7.0 is not installed at factory default. To use, install Adobe® Reader® 7.0 by referring to "How to install" below.

- When using Adobe® Reader® 7.0 for the first time after installation, the "Software License Agreement" window will appear. Click the [I agree] button.
- When adding or removing application software, make sure to log in as a user with Administrator right.
- When adding another application after setting up again, make sure to restart Windows before adding another application.
- Read [Start] → [Programs] → [Supplemental] before adding or removing application software.

> An Administrator right is the right of administrators to mange the entire computer configuration. If you are not sure how to log in as a user with Administrator right, in the [Logon Information] window, enter "Administrator" for the username, enter the Administrator account password set when the computer started for the first time for [Password], and select the computer name set when the computer started for the first time for [Domain Name], then click the [OK] button. The domain name is displayed only when the domain was set for network installation.

(2) How to Install

1. **Start Windows.**
2. **Insert the included "Recovery DVD-ROM Media" into the CD-ROM/DVD drive.**
3. **Click [Start] → [Run].**
4. **For Japanese version: Enter "C:¥WINXP¥AdbeRdr¥JPN¥AdbeRdr70_jpn_full.exe" for [Name], then click the [OK] button.**
   For English version: Enter "C:¥WINXP¥AdbeRdr¥ENU¥AdbeRdr70_enu_full.exe" for [Name], then click the [OK] button.
5. **Click the [Next] button when the [Adobe Reader 7.0 Setup] window appears.**
6. **Click the [Next] button when the [Welcome to Adobe Reader 7.0-Japanese Setup] window appears.**
7. **Click the [Next] button when the [Destination Folder] window appears. To change the installation destination folder, click the [Change Destination Folder...] button, select the folder to install from the [Look in:] window, then click the [OK] button.**
8. **Click the [Install] button when the [Ready to Install the Program] window appears.**
9. **Click the [Finish] button when the [Setup Completed] window appears.**

The installation of Adobe® Reader® 7.0 is completed.

(3) How to start

Click [Start] → [Programs] → [Adobe Reader 7.0].
Adobe® Reader® 7.0 window appears.

(4) How to delete

1. **Start Windows.**
2. **For Windows® XP: Click [Start] → [Control Panel].**
3. **For Windows® XP: Double-click [Add/Remove Programs].**
4. **Click "Adobe Reader 7.0" then click the [Remove] button.**
5. **Click the [Yes] button when the [Confirm File Delete] window appears.**
6. **Click the [No to All] button when the message "Delete Shared File?" appears.**
7. **For Windows® XP: Click the [Yes] button to restart the computer when a window prompting to restart the computer appears.**

Adobe® Reader® 7.0 deletion is completed.

5.2.4 Fingerprint authentication utility (only models with this feature)

Fingerprint authentication is a system that authenticates a user according to fingerprint by use of a fingerprint sensor. The fingerprint authentication allows the following features to be executed:

*   To logon Windows and cancel the lock of screen saver
*   A replacement password for an application (Protection of the important files)

> *   This function does not come with Linux preinstalled models.
> *   For how to register fingerprints and how to use, refer to the following document. "Click C:¥WINXP¥Fingerprint Sensor¥autorun.exe and browse Manual.pdf."
> *   To browse the documentation file, Acrobat Reader 7.0 must be installed.

(1) Supporting OSs
*   Microsoft Windows XP, English Ver. (SP2)

(2) Installation procedure
1. **Start Windows.**
2. **Click [Start] → [Control Panel].**
3. **Double-click [Add or Remove Programs].**
4. **Click [CD or Floppy] on the [Add new Programs] tab.**
5. **If message "Install Program From Floppy Disk or CD-ROM, and then click Next." appears, click [Next].**
6. **Click [Browse…] and change the file type to [Program].**
     Specify "C:¥WINXP¥Fingerprint Sensor¥autorun.exe" and click [Open].
7. **The menu window appears. Click [Software Installation].**
8. **Follow the directions on the window. For details of installation, see "C:¥WINXP¥FingerprintSensor¥doc¥0411¥Manual.pdf".**
9. **After the installation is completed, reboot N22A.**

Now the Fingerprint Authentication Utility is completely installed.

(3) Usage
1.   **Start Windows.**
2.   **Click [Start] → [Settings] → [Control Panel].**
3.   **Double-click [Add or Remove Program].**
4.   **Click [CD or Floppy] on the [Add new Programs] tab.**
5.   **If message "Install Program From Floppy Disk or CD-ROM, and then click Next." appears, click [Next].**
6.   **Click [Browse…], specify "C:¥WINXP¥Fingerprint Sensor¥autorun.exe" and click [OK].**
7.   **The menu dialog box appears. Click [Documentation].**

Open "Manual.pdf" to check usages including the fingerprint registration procedure.

(4) Deletion procedure
1.   **Start Windows.**
2.   **Click [Start] → [Settings] → [Control Panel].**
3.   **Double-click [Add or Remove Program].**
4.   **Click [Protector Suite QL] and [Change].**
5.   **Follow the directions on the dialog box to uninstall the fingerprint authentication utility.**
6.   **After the uninstallation is completed, reboot N22A.**

Now the fingerprint authentication utility is removed completely.

> Data saved in the biometric device (chip for fingerprint sensor) is not erased even if the built-in HDD is erased.
> See "C:¥WINXP¥Fingerprint Sensor¥doc¥0411¥Manual.pdf" to uninstall the fingerprint authentication utility in the proper procedure.

5.2.5 Infineon Security Platform

Using Infineon Security Platform allows electronic mails and files to be encrypted and prohibited from being opened without authentication password.
In addition, N22A is equipped with a security chip called TPM (Trusted Platform Module) in its major part to store encryption keys in the security chip. Thus, if only the HDD is withdrawn, the data in the HDD will not be read.

> For details of the features, operations and restrictions of the Infineon Security Platform, see "C:¥WINXP¥TPM¥Readme¥JP¥Readme.txt".

(1) Supporting OSs
- Microsoft Windows XP, English Ver. (SP2)

(2) BIOS setting procedure
Set BIOS in the following procedure.

> To use the security chip, set supervisor and user passwords to restrict accessing to the BIOS SETUP Utility. See "SECURITY MENU" in "Chapter 4 Setting BIOS".

1. **After power-on of N22A, the BIOS start screen (with NEC logo displayed at the center) appears. If message "Press <F2> to SETUP or Press <F12> to Network boot." appears, press F2.**
2. **After the BIOS SETUP Utility menu appears, select [Security].**
3. **Select [Security Chip Configuration] and press Enter.**
4. **Select [Security Chip] and press Enter.**
5. **Select [Enabled] and press Enter.**
6. **Item [Security Platform] appears. Select it and press Enter.**
7. **Select [Enabled] and press Enter.**
8. **Press F10 to open the [Save configuration changes and exit now?] dialog box. Select [Yes] and press Enter. An attempt is made to restart BIOS.**
9. **After restarting, the [Physical Presence Operations] dialog box is opened.**
10. **Select [Execute] and press Enter to try to restart BIOS.**

(3) Installation procedure

    1.   Start Windows.

> Just after BIOS setting, the hardware add wizard requests driver installation. However, the driver can be installed in the following procedure. you may cancel the hardware add wizard.

    2.   Click [Start] → [Settings] → [Control Panel].
    3.   Double-click [Add or Remove Program].
    4.   Click [CD or Floppy] on the [Add new Programs] tab.
    5.   If message "Install Program From Floppy Disk or CD-ROM, and then click Next." appears, click [Next].
    6.   Click [Browse…], specify "C:¥WINXP¥TPM¥Setup.exe" and click [OK].
    7.   If [Infineon TPM Integration SDK- InstallShield Wizard] appears, click [Next].
    8.   Install the Infineon Security Platform according to the directions on the screen.
    9.   If the installation is completed and the message prompting you to reboot N22A, click [Yes] to reboot it.

Now the Infineon Security Platform is installed completely.

(4) Starting procedure
The [TPM] icon appears on the task tray at the bottom right corner of the screen. Click the icon to display its menu.

> After the installation, select [Security Platform Initialization] and [Security Platform User's Initialization] on the menu displayed by selecting the TPM icon.
> Then select [Manage Security Platform] to set security features.

(5) Deletion procedure

    1.   Start Windows.
    2.   Click [Start] → [Control Panel].
    3.   Double-click [Add or Remove Programs].
    4.   Click [Infineon TPM Professional Package] and [Change/Remove].
    5.   If the [Confirm File Deletion] dialog box appears, click [Yes].
    6.   When [Delete shared file?] appears, click [No to all].
    7.   After the uninstallation is completed, reboot N22A.

Now the Infineon Security Platform is deleted completely.

5.2.6 FC Button Setting Tool

Two sets for executing desired applications can be registered to abbreviation keys.

(1) Supporting OSs
- Microsoft Windows XP, English Ver. (SP2)

(2) Usage
The registered applications can be executed by **Fn**+**1** (FC button 1) and **Fn**+**2** (FC button 2), respectively.
The tablet buttons at the lower left corner of the LCD display can be assigned new features different from their original ones by using the BIOS SETUP Utility.
If any of the keys are assigned [FC button 1] and/or [FC button 2], the execution commands (or application starts) registered on the [FC Button Setup utility] dialog box can be run.
FC button **1** and FC button **2** must be assigned to tablet buttons via the BIOS setup menu to use the above function.

> For BIOS settings, see "Chapter 4 Tablet Button Submenu".

See C:¥WINXP¥FCBTN¥FCbtnReadme.txt for details.

(3) Start procedure
Click [Start] → [All Programs] → [FC Button Setup utility].
The [FC Button Setup utility] dialog box shown below appears. Set the buttons appropriately.
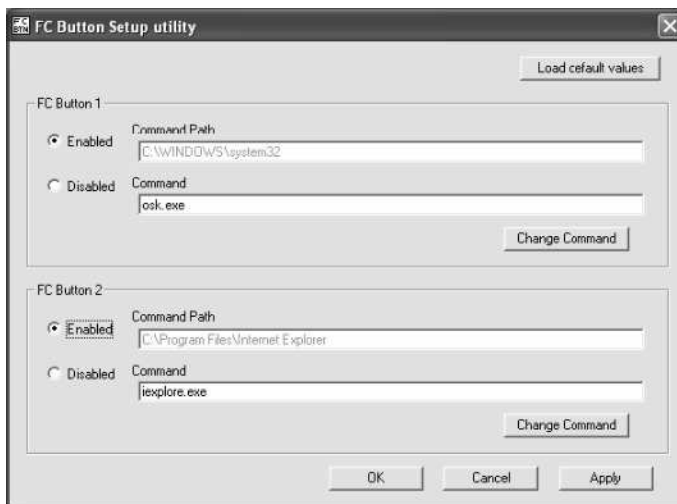
5.3 OTHER OSS AND APPLICATIONS

(1) CD-R/RW with DVD-ROM drive
Option FC-CW002U (external CD-R/RW with DVD-ROM drive) contains writing tool. A DVD video replay tool is commercially available.

(2) English version preinstalled model
The procedure for re-setup using the accompanying recovery DVD-ROMs is the same as that for the Japanese version. Refer to CHAPTER RE-SETUP of Windows® XP PREINSTALLED MODEL.

The accompanying recovery DVD-ROMs for the English version preinstalled model comes as one DVD-ROM.
(The accompanying recovery DVD-ROMs for the Japanese version preinstalled model comes as one DVD-ROM.

Among the applications accompanying this product, the following can be used with English preinstalled models.

<Applications that can be used in the English version>
- Fingerprint authentication utility
- FC button setting tool
- Adobe Reader7.0
- Standby Rescue Lite
- Infineon Security Platform
- Software RAS Tool

THIS PAGE INTENTIONALLY LEFT BLANK.

Chapter 6 Maintenance

6.1 TROUBLESHOOTING

6.1.1 Flowchart

This section describes many solutions to troubles. If a trouble occurs, see the section to find the solution to the trouble according to the procedure below.
If a trouble occurs, first refer to the guide.

If smoke, odor or noise is generated, turn off the power immediately and pull out the plug of the power cord from AC outlet. (If a car adapter is used, remove the plug from the cigar lighter receptacle and remove the car adapter from this product.)

No

Is N22A booted normally?
If the NEC Logo screen does not appear (excluding the case where BIOS is set not to display the NEC Logo screen) or message "Operating system not found" appears in N22A booting, a hardware error may occur.

Booted normally

Boot N22A in safe mode.
If N22A is not booted normally, boot it in the safe mode to check the status and/or change some settings.
For how to boot N22A in the safe mode, see next subsection "Boot N22A in safe mode".

Booted

Not booted

Search for applicable information.
No applicable Search "Troubleshooting Q&A" for the situation in which a trouble occurs.

No applicable

Check hints.
If applicable actions are not found or some measures cannot resolve the symptom, see "Actions Taken to Solve Trouble (Tips)." The section describes tips to solve troubles.

No tips found

Remove peripheral devices.
If the troubles cannot be solved still, turn off the power.
Remove added peripheral devices (including expanded board, memory and hard disk) and check if N22A operates normally.

Take actions.
Take action according to the relevant event in "Troubleshooting Q&A."

Not soluble

Check peripheral devices.
To check if a peripheral device is available to
N22A, refer to the User's Guide or ask your sales agent or manufacturer.

\<Continues on the next page\>

126

<Continued>

Return system settings to original values.
Return the system settings to the factory defaults according to the description in "Repairing System."

Not soluble

Examine applications.
To check if each application is available to the operating system or service pack you use, refer to the User's Guide or ask your sales agent or manufacturer.

Delete added applications.
Delete applications installed by you one by one to check if the trouble can be solved.

Not soluble

Reinstall OS.
Reinstall the OS according to the description in "Chapter 5 Installing OS and Applications" and check if N22A operates normally. Reinstalling OS causes applications installed by you and data created by you to be erased.

Not soluble

Contact your sales agent or NEC.

Solved

Maintenance

6.1.2 Actions Taken to Solve Trouble (Tips)

Because N22A uses combinations of various applications and peripherals, unexpected troubles can occur.
The following describes tips to solve troubles appropriately.

■ **Take proper actions calmly.**
Neither turn off the power nor click the mouse hastily.
If N22A seems to freeze, it may only take much time to process applications.
If so, wait for a while until the processes are completed.

■ **Write down message on screen if displayed.**
Put numeric and English messages on paper because such ambiguous information can often be good tips for solving troubles.

■ **Guess cause of trouble.**
Guess which device caused the trouble among N22A, a peripheral device, an application or another. The cause may not be identified. However, you can easily take proper action if identified.
If the trouble may possibly be caused by a peripheral device, remove the peripheral devices one by one and re-execute the operation in which the trouble occurred. Then you may identify the peripheral device causing the trouble.

■ **Boot N22A in safe mode**
If N22A is not booted normally, boot N22A in the safe mode to check the status and/or change settings properly.
See "Starting Windows XP in Safe Mode" in "Repairing System".

■ **Use system information**
◆ System information
You can collect the system information including the configuration of N22A and other related information can be collected to display the information.
The system information helps to search for the data required to solve system problems rapidly.
- Procedure of displaying [System Information] dialog box.
Click [Start] → [All Programs] → [Accessories] → [System Tools] → [System Information].
◆ System restoration
You can cancel improper changes of N22A to return to the default settings. See the help of Windows for details.

■ **See Windows help.**
◆ Help start procedure
Click [Start] → [Help and Support] to display the [Help and Support Center] dialog box.

• Trouble solving procedure:

- Search for tips by "Fixing a problem"
The following operation allows tips to be displayed to solve problems depending on situations of N22A.
1. Click [Fixing a problem] in the [Help and Support Center] dialog box.
Topics for solving problems appear.
2. Click the topic you want to see.
The details of the selected topic appear on the right window.
3. Click an item you want to see from the list in the window.
The causes and solutions of the trouble appear in the right window. Take actions according to the directions on the screen.

Some items may list trouble situations on the right window. In such a case, click the applicable situation to select it and click [Next] at the bottom of the window. The possible causes and resolutions of the trouble appear on the right window.

- Search for desired items by keywords
  The following procedure allows you to specify keywords of desired items to search for tips.
  1. Enter a keyword to be checked in the [Search] field of the [Help and Support Center] dialog box.
  2. Click [→] next to the [Search] field.
     Related topics appear.
  3. Select an item from the topics to click it.
     The description of the item appears on the right window.

> Clicking [Set search options] below the [Search] field allows desired information to be retrieved from other information sources.

■ **Search "Troubleshooting Q&A" for applicable trouble.**
Read the applicable item if found.

■ **See other guides, helps and README files.**
If a trouble occurs in an application, refer to the User's Guide or help of the application. README files are often provided for applications to include important information which is not descried in respective user's guides and helps.
Open the relevant README file by using a text editor such as Notepad to see the file.

■ **Recover system settings to original.**
You can return the system settings to the factory default values in the following procedure:

1. Turn on the power of N22A.
2. Press **F2** on the NEC Logo screen.
   The BIOS Setup Utility Menu screen appears.
3. Press **F9**.
   The confirmation message appears.
4. Confirm that [Yes] is selected and press **Enter**.
5. Press **F10**.
   The confirmation message appears.
6. Confirm that [Yes] is selected and press **Enter**.

For details of BIOS setup, see "Chapter 4 Setting BIOS".

■ **Restore system.**
If Windows does not start at all, see "Re-setup" in this chapter to restore the system.

■ **Contact NEC.**
For NEC inquiries, see "Maintenance Service" in this chapter.
Before inquiring, enter the failure symptoms on the "Problem Check Sheet" at the end of this manual. The warranty card includes the model number and other information useful for remedies, so have it handy for reference.
For troubles on a peripheral, memory device or application purchased separately, contact the agent of the product.
For troubles of an application attached to N22A, the agent of the application can give proper responses.

6.1.3 Troubleshooting Q&A

(1) Troubles including smoking, heat generation, noise and cable disconnection

Symptoms	Action
• Smoke and/or odors are generated from N22A. • N22A is heated too hot to make hands contact with it. • Noises are generated from N22A. • A visible trouble appears on N22A or a cable connected to N22A.	Turn off the power immediately. Unplug the AC cord from the mating AC outlet, disconnect the AC adapter from N22A and remove the battery from N22A. Contact your service representative. • If a car adapter is used, turn off the power immediately. Remove the plug from the cigar lighter receptacle and remove the car adapter from this product. Contact your service representative.
Noises are generated from the HDD.	Noises are generated from the HDD blinking of the file access lamp. This is caused by certain operations in the HDD and thus does not indicate occurrence of an error. If any abnormal noise, other than the above, is heard, unplug the adapter and battery and contact your dealer.

Nothing appears on the display screen.	• When the power lamp is OFF:
	  − If pressing the power button lightly is not replied by N22A, press the button hard.
	  − If the AC adapter is connected to N22A, disconnect the adapter once and connect it again.
	  − If the car adapter is used, disconnect it and connect it again.
	  − If battery power is used, check the remaining battery level and the installation of the battery in N22A.
	    For checking procedures, see "Checking Remaining Battery Level" and "Installing Battery".
	
	• When the power lamp illuminates in green:
	  − During operation, the power management feature may work to clear the screen automatically.
	    Try to press any key to check if the screen display appears.
	  − The brightness of the screen may be too low. Press **Fn** + **F7** to increase the brightness.
	  − Outputting display data to external monitor may be set. Press **Fn** + **F3** to alter the display setting.
	  − Reboot N22A.
	
	• A resolution which the LCD display does not support may be set. After turning off the power of N22A forcibly, start Windows in the safe mode to reset the resolution.

N22A is halted after POST(Power On Self Test).	If an error code appears on the display screen, write down the code and reboot N22A.
Message "Operating system not found" appears.	• Confirm that no floppy disk is inserted into the floppy disk drive (if the floppy disk drive is connected to N22A). If inserted, pull out the floppy disk and reboot N22A. • If the message appears during booting from the HDD, insert bootable disk into the external 3.5-in. floppy disk drive or the external CD-R/RW with DVD-ROM drive to check the HDD status. • Confirm that the HDD is set on the Boot Menu subordinate to the BIOS Setup Menu.
Message "BOOT: Couldn't find NTLDR. Please insert another disk" appears on the display screen.	• If an attempt is made to boot N22A from the floppy disk intentionally, replace the floppy disk with the bootable disk and press any key to continue booting. • If N22A is booted from the HDD, confirm that a floppy disk is not inserted in the floppy disk drive (when the floppy disk drive is connected to N22A). If inserted, remove the floppy disk and reboot the N22A.

Symptoms	Action
Pressing the power switch cannot turn on the power.	• After removing the AC adapter/car adapter and battery from the N22A once, reconnect the AC battery to N22A and reinstall the battery in N22A. For the battery removal procedure, see "Replacing Battery". If the power cannot be turned on still, N22A may be defected. Contact your service representative or NEC.

The power cannot be turned off. It is desired to turn off the power forcibly.	First follow the procedure in "Turning off power". If the power cannot be turned off still, turn off the power forcibly in the following procedure.
	  1) Press the power switch continuously for about four seconds or longer.
	    − If N22A is set to be entered into the suspend (standby) state by the power switch, the operation may lead N22A to be the suspend (standby) state.
	    In such a case, release the finger from the power switch once and re-press the switch continuously for longer than four seconds or longer to shut down N22A forcibly.
	    − If the power is turned off forcibly to shut down N22A, data not saved will be lost.
	If the power cannot be turned off still, contact your service representative.

Windows cannot start.	The BIOS Setup Menu may be set incorrectly. Return the settings of the BIOS Setup Menu to that at purchase according to "Chapter 4 Setting BIOS". Then turn on the power again.
The extended option menu of Windows appears.	The extended option menu may appear if Windows was shut down improperly last or cannot be started normally due to some start error. Restart Windows in the safe mode according to "Repairing System".
Message "Checking file system on" appears on the display screen.	In the next start of Windows after illegal termination, the HDD may be checked to be valid on the way of the starting. Without errors, Windows is started normally. If not, follow the directions shown on the display screen.

(2) Battery troubles

Symptoms	Action
The battery cannot be charged (the battery charging lamp does not illuminate in orange.)	• The battery is not charged in full charge status and may not be charged in nearly full charge status. Check the battery capacity. • • Confirm that the AC adapter is connected to N22A properly. • If the battery temperature is less than 0ºC or higher than 60ºC, charging the battery is not started. Wait until the temperature returns to be in the range from 5 to 50ºC. • Confirm that the battery is installed in N22A properly. • Check if the pins on the battery are dirt.
The battery fully charged can operate N22A only for a shorter period.	• Repeating incomplete recharge and discharge frequently may disable the battery to be charged fully. To solve the problem, initialize the battery (see "Initializing Battery" for details).
The battery operation time shown by the OS battery meter does not match the actual operation time.	The actual operation time may be different from the estimated operation time depending on how N22A is used. If the actual operation time is shorter extremely, initialize the battery ("Initializing Battery" for details).

(3) AC adopter troubles

Symptoms	Action
Power is not supplied even though the AC adapter is connected. The power lamp blinks red.	It is the voltage error if the power lamp is blinking in red and green alternately at 0.5-second intervals. Stop using the AC adapter and contact your dealer.

(4) Display troubles

Symptoms	Action
The screen is dark considerably.	Adjust the brightness by using **Fn** + **F7** or the relevant tablet button.
The resolution cannot be adjusted to the desired value.	• Confirm that the video driver is installed properly. • Check the BIOS Setup Menu to confirm that the video memory is configured properly. • If an external monitor is used, confirm that the monitor supports the desired resolution.
Nothing appears on the external monitor.	• Confirm that the power of the monitor is ON. • Confirm that the monitor signal cable is connected properly. • Change the selected monitor to the external one by pressing **Fn** + **F3** or through the Windows [Display] roperty.
The concurrent display feature does not operate.	• Turn on the power of the external monitor before turning on the power of N22A. • Select the desired display option by pressing **Fn** + **F3** or through the Windows [Display] property.
Windows cannot be started after BIOS setting is changed.	In the next start of Windows after illegal termination, the HDD may be checked to be valid on the way of the starting. Without errors, Windows is started normally. If not, follow the directions shown on the display screen.
The original screen before entering into the power saving state does not appear.	Some applications or peripheral devices may operate improperly when an attempt is made to use the suspend (standby) feature. Turn off the power of N22A once and on again. If the power cannot be turned off, press the power switch continuously for four seconds or longer to shut down N22A forcibly. To use an application or peripheral device of such type, do not enter N22A into the suspend (standby) state.
The command prompt (MS-DOS prompt) window appears on the full screen.	Press **Alt** + **Enter**.
With the command prompt (MS-DOS prompt) being active, the screen does not appear after recovery from the suspend (standby) state.	Press **Alt** + **Tab** to alter the task. Then N22A operates normally.
The LCD brightness is lowered when using the N22A in a high–temperature environment.	When using the N22A in a high-temperature environment while the LCD brightness is set to high for a long period of time, the internal temperature may rise. In such a case, the LCD brightness is automatically lowered or cannot be raised, to extend the LCD life.

(5) Troubles of hardware devices

Symptoms	Action
N22A does not recognize a device newly installed.	• The devices may be configured improperly on the BIOS Setup Menu. Confirm that the used peripheral port is set to [Enabled] on the BIOS Setup Menu. • Check if the relevant device driver should be installed. • Check if the device requires one or more jumper and/or switch settings. • For an external device, check if the connection cable such as a USB cable and the power cord are connected properly. • If the external device has its own power switch, confirm that the power is turned on.

(6) Troubles of HDD

Symptoms	Action
After power-on, N22A does not recognize the HDD.	Confirm that the type of the HDD is configured properly on the BIOS Setup Menu.
An error message on the HDD appears on the display screen.	• Insert the bootable disk to the external 3.5-in. floppy disk drive or the CD-R/RW with DVD-ROM drive to check the consistency of the HDD. • The HDD may possibly be defected. Contact your service representative.
The HDD can operate only slowly.	Data files stored in the HDD may be fragmented. Optimize the files by using such a tool as Windows defragmenter.
The indicator indicating use of the HDD does not blink but remains ON.	Data files stored in the HDD may be fragmented. Cancel the file fragmentation by using such as tool as Windows defragmenter.

The empty capacity in the HDD is not enough.	The empty capacity in the HDD can be increased in the following ways:
	− Delete all files in the Recycle Bin.
	− Reduce the maximum size of the Recycle Bin.
	  (If the maximum size of the Recycle Bin is set to 0%, deleted files are rejected without storage in the Recycle Bin.)
	− Deletes contents in the TEMP folder.
	  (Do not delete the primary working file while one or more applications are executed. Deleting the primary working file may cause applications not to operate.)
	− Delete temporary files for Internet Explorer.
	− Delete one or more installed applications.
	  (Deleting applications not used at the moment allows the empty capacity in the HDD to be increased.)
	− Click [Disk Cleanup] to delete unnecessary files in the HDD.

The empty capacity in the HDD does not increase after unnecessary files are dumped into the Recycle Bin.	Files deleted or drugged to the Recycle Bin are not deleted from the HDD immediately but stored in the Recycle Bin. To delete files stored in the Recycle Bin from the HDD, right-click the Recycle Bin icon to display the menu and click [Empty Recycle Bin] in the menu.

(7) Troubles in file storage

Symptoms	Action
Data cannot be stored in the HDD.	Check the empty HDD capacity. If not enough, increase the empty capacity according to "Empty HDD capacity is not enough" on [Hard Disk]. Any file larger than the empty disk capacity cannot be saved.
Data cannot be stored in the floppy disk.	• Check if the floppy disk is subjected to write-protect. If so, release the write-protect. • Check the empty capacity of the disk. If the empty capacity is not enough, reject unnecessary files or use another floppy disk.
Data cannot be stored in the SD card.	Check if the write-protect switch on the SD card is set to [LOCK]. If so, release it.

Maintenance

(8) Troubles of keyboard, mouse and touch pad

Symptoms	Action
The keyboard does not respond to any inputs.	Connect an external USB keyboard to N22A and check if the keyboard can operate properly. If so, the built-in keyboard cable may be defected. Contact your service representative.
The numerical keypad is disabled.	Confirm that [Num Lk] is ON (the NumLk LED illuminates 1 in green).
The external USB keyboard and/or USB mouse do not operate.	Check if the USB cables are connected properly.
The serial mouse does not operate.	• Confirm that the mouse cable is connected properly. • Connect the mouse before booting N22A. • Confirm that the serial port is enabled on the BIOS Setup Menu.
The touch pad does not operate or makes responses only slowly.	• Check if the touch pad is dirt. • If operated by excess force or other than finger cushions, the touch pad may operate improperly. • If you touch more than one point, the touch pad does not operate normally.
The touch panel does not operate or the pointer operates invalidly.	Confirm that the driver and utility software of the touch panel are installed. Calibrate the touch panel by using the utility software.

(9) Troubles of network (LAN)

Symptoms	Action
N22A cannot connect with network.	• The connection may be invalid. Contact your network administrator to check if N22A is connected to the relevant hub through a LAN cable. • The setting may be invalid. For example, the protocol or the domain work group may be set improperly or the computer account may not be put on the primary domain controller. For details, ask your network administrator.
Only the [Whole Network] icon appears in the [My Network] or [Network Computer] dialog box.	It may take a rather long time until the display appears. Wait for a while and click [Refresh] on the [View] menu. If the display status remains unchanged, the network may be connected improperly or network software may be set inappropriately. Check the connection and network software.
Only the own computer appears in the [My Network] or [Network Computer] dialog box.	It may take a rather long time until the display appears. Wait for a while and click [Refresh] on the [View] menu. If the display status remains unchanged, check if the domain or work group to be connected matches the setting domain or work group. To see the setting domain or work group, click [Start] → [Control Panel] → [Performance and Maintenance] → [System] to display the [System Properties] dialog box and select the [Computer Name] tab on the dialog box.

Symptoms	Action
Shared drives and/or folders are unavailable.	• Check if the Microsoft network share service is installed in N22A by clicking [Start] → [Connect To] → [Show all connections] to display the LAN connection icon, right-clicking the icon, clicking [Properties] and checking column "This connection uses the following items:" in the [General] tab. If not, shared drives and folders are not available. To use them, install the share service. • Check if N22A is set to access to shared drives and folders. To allow other computers connected to the network to use drives and/or folders in N22A, drives and folders to be shared should be set for share. For the purpose, right-click a drive or folder to be shared to display the menu, click [Sharing and Security ...] in the menu and check "Share this folder on the network" in the [Property] dialog box. After the setting, the drive or folder icon changes to be suit to share. • Check if certain access authorities are set for shared drives and folders. The owner of a shared drive or folder can set its access authority. • The access authority of a drive or folder defied to be shared is first set to "read only". Other users can read data from the drive or folder but cannot write data to it.
Pressing **F12** cannot make network booting.	Pressing **F12** on the NEC logo screen may not be able to run the network boot process. In this case, press **F12** on the NEC logo screen several times. If the network boot process is not executed still, change the interval at which **F12** is pressed.
N22A operates only unstably.	state during communication, N22A may operate improperly. Do not enter N22A into the suspend (standby) or pause state during communication. Release the setting that the Windows power management feature may enter N22A into the suspend (standby) state automatically if the setting is provided.

(10) Troubles of wireless LAN

Symptoms	Action
Communication is disabled.	• Check that the wireless communication switch is on. • Press **Fn** + **F2** to alter ON/OFF of the wireless LAN feature. On the [Wireless Network Connection Status] dialog box, [Disable] of the wireless LAN feature may be checked. Click [Start] → [Connect to] → [Wireless Network Connection] to check the setting. • Check if the power of devices to be connected are turned on according to the User's Guides of the devices. • Confirm that the SSID (network name) is set properly. To connect to a wireless LAN access point, set the SSID to be the same as the ID of the access point. • With data encryption, confirm that the encryption key is set correctly. Set a specific encryption key for all wireless LAN access points and computers connected to N22A. • Check if the environment is set properly. Set the environment again if necessary.
Communication is disabled intermittently or the communication speed is too late.	• The wireless LAN device to be connected may be located too far from N22A. Check the radio wave environment. In poor radio wave environment, make the wireless LAN device close to N22A. The possible distance between N22A and a wireless LAN device varies depending on device specification. • If one or more wireless devices only conforming to IEEE802.11b exist in a range where radio wave can be radiated to a connected wireless LAN access point conforming to IEEE802.11g, the communication speed for IEEE802.11g decreases. If a wireless device only conforming to IEEE802.11b connects to another access point, only reach of radio wave to the access point influences the communication speed.

Symptoms	Action
Communication is disabled intermittently or the communication speed is too late.	• If a microwave oven is used in an area where communication with 2.4 GHz wireless LAN device occurs, the communication speed and distance of the 2.4 GHz wireless LAN device may be reduced. It is recommended that microwave ovens are not used near 2.4 GHz wireless LAN devices. • Concurrent communication of 2.4 GHz wireless LAN and Bluetooth devices may decrease the communication speed and/or distance of devices of each type. It is recommended not to operate either 2.4 GHz wireless LAN or Bluetooth devices or keep them away from each other. • If more than one computer are connected to a network, increase in the number of computers connected to a single wireless LAN access point may cause the transmission speed per computer to decrease.
A remote computer does not appear in [Network Computer].	• Check computer names. A computer connected to N22A may have the same name. Give a unique name to N22A. • If a remote computer does not have the "File and Printer Sharing for Microsoft Network" service, the PC does not appear in the [Wireless Network Connection Properties] dialog box. Install the service in the remote computer. • Check if the TCP/IP protocol is installed in N22A. Set the IP address properly to be appropriate for the network connected. • The surrounding radio wave status may be bad. Shorten the distance to the remote computer connected to N22A and/or remove obstacles between N22A and the remote PC. Then connect N22A to the remote device again. • The remote computer may be just booted. After several minutes, check the connection status again.
Double-clicking the icon of a remote computer in [Network Computer] cannot indicate the information on the PC.	Check if shared folders and printers exist in remote computers. Set folders and printers to be shared on remote computers to "Sharing and Security...".
Connection with an access point is cut off without notice.	If more than one access point exist in the surrounding area, the connection is automatically switched to another access point depending on settings of access points. If another access point uses the same SSID (network name), change the SSID.
A wireless LAN cannot be used prior to log on to Windows.	Enable "Before log-on/common: active while a user is logging on. All users share this profile" of management profile type for wireless LAN setting. For how to set, refer to CHAPTER 2 USING THIS PRODUCT WIRELESS LAN.

(11) Bluetooth-related failure

Symptoms	Action
Communication is not possible.	• Make sure the wireless communication switch is on. • Check whether the Bluetooth function is disabled in the Wireless network connection. If it is disabled, enable the function.
Communication disconnects.	Connect the line again.
Disconnection of communication takes long.	It may take much time to disconnect Bluetooth devices.

(12) Troubles of PC card

Symptoms	Action
The PC card does not operate.	• Confirm that the PC card is inserted properly. • If the card requires an IRQ, confirm that at least a single IRQ is not used.
The PC card provides communication improperly.	The relevant application might be reset when N22A was entered into the suspend (standby) or pause state. Abort the application once and start it again.

(13) Troubles on power management

Symptoms	Action
N22A does not enter into the suspend (standby) or pause state automatically.	• If N22A is connected to another computer or a bi-directional printer accessing to N22A at constant intervals, N22A is not entered into the suspend (standby) or pause state automatically. • Confirm that the timeout of the suspend (standby) or pause state is enabled. • Check if one or more programs are executed. Abort all programs being executed if any. In addition, first cut the phone line if used before entering N22A into the suspend (standby) state. • Some applications may operate improperly if a peripheral device tries to use the power management feature. Turn off the power of FCN21S once and then on again. To use an application or peripheral device of such type, do not enter N22A into the suspend (standby) state.
N22A does not immediately enter into the suspend (standby) or pause state.	• In general, if N22A executes some operation, wait until the operation is terminated. • The used PC card may prohibit N22A from entering into the suspend (standby) or pause state. To enter N22A into either of the state, abort the communication program and remove or halt the card. • If a file or program stored in the disk inserted in the floppy disk or CD-ROM drive connected to N22A through USB is opened or executed, close the file or abort the program. Then the N22A can be entered into the suspend (standby) or pause state. • For memory extension, the empty capacity by the extended memory capacity is required in the HDD. Check the capacity of the HDD. • If "Enable hibernation" is not checked or it is checked but the state when portable computer is closed or power button of computer is pressed is not set to the pause state, N22A cannot be entered into the pause state. Make proper settings according to "Pause state and recovering from pause state".
N22A does not resume from the suspend (standby) or pause state.	When the battery is discharged completely, N22A automatically enters into the suspend (standby) or pause state. Take either of the following actions: − Connect the AC adapter to the N22A. − Replace the fully discharged battery with a fully charged battery.
If an attempt is made to resume N22A from the suspend (standby) or pause state, the screen is disturbed and the power is turned off.	If the LCD display panel is closed or the power is turned off during transition to or recovery from the suspend (standby) or pause state, N22A may not be able to resume. In this case, turn on the power by using the power switch. If an error message appears, follow the direction of the message.
The power cannot be turned off.	"Turning off power", an error such as application freeze may occur. Press **Ctrl** + **Alt** + **Del** to abort the application forcibly and turn off the power by the procedure described in "3.2.2.2 Turning off power".

Maintenance

137

(14) Software troubles

Symptoms	Action

An application program operates improperly.	• Confirm that the application program is installed properly.
	• If an error message appears on the display screen, refer to the documentation of the application program to search for required information.
	• If N22A is shut down clearly, reboot N22A.
	
	\<Resetting N22A\>
	If an error occurs to cause programs being used to hang, N22A may have to be reset (rebooted).
	If N22A seems to hang, wait for a while. N22A may provide data processing.
	Check the LED indicating use or no use of the HDD periodically.
	If the LED blinks irregularly, programs may access to the HDD to disable the keyboard. When N22A does not operate at all and the "Restart" feature of OS is unavailable, reset N22A.
	Follow the procedure below to reset N22A:
	  1. Press **Ctrl** + **Alt** + **Del**.
	  2. If the above step does not work well, continue to press the power button for four seconds or longer to shut down N22A. Wait for five seconds or longer and turn on the power of N22A again.
	The reset operation erases all data not stored.

(15) Sound troubles

Symptoms	Action
Sound does not replay.	• Check if the mute feature is enabled. Click [Start] → [Control Panel] → [Sounds, Speech and Audio Devices] → [Sounds and Audio Devices] to display the [Sound and Audio Devices Properties] dialog box. If the [Mute] checkbox in the [Volume] tab of the [Sound and Audio Devices Properties] dialog box is checked, uncheck the checkbox. • Confirm that the volume level is not set to too low. • The volume may often be too low. Press **Fn** + **F9** to turn up the volume. • Confirm that the sound driver is installed properly. • Confirm that N22A is not in the suspend (standby) state. • If external speakers are used, confirm that they are connected to N22A properly.
Sound is replayed but distorted.	Confirm that the volume is set to neither too high nor too low. In most cases, because the volume is set to too high, some electronic audio parts lead sound distortion.
The sound system fails in recording.	Adjust the replay or record sound level.
An external microphone or sound device does not operate.	• Confirm that a microphone is connected to the mating connector on N22A properly. • Click the speaker icon on the task bar to check the Windows volume. • Check the volume control of N22A.

(16) Troubles of optional CD-R/W with DVD-ROM drive FC-CW002U

Symptoms	Action
The CD-R/W with DVD-ROM drive does not read CD data.	• Confirm that the CD is properly put on the tray with the label facing upward. • Confirm that the CD is not dirt. If dirt, clean the CD with CD cleaning kit. You can procure CD cleaning kit from most computer shops. • Confirm that the DVD/CD-ROM driver is installed properly.
The CD or DVD cannot be pulled off.	The CD/DVD is not put on the drive properly. Take out the CD/DVD manually in the following procedure: 1. Turn off the power of N22A. 2. Insert a thin needle-shaped wire such as extended paper clip into the manual ejection hole on the drive and push the wire hard. Then the tray is ejected. 3. Pull out the tray completely and take out the CD/DVD.

(17) Troubles of optional floppy disk drive FC-FD002U

Symptoms	Action
The indicator indicating that the floppy disk drive is being used remains ON.	• Confirm that the floppy disk is not damaged physically. • Confirm that the floppy disk is inserted properly.
Writing data to the floppy disk is disabled.	• Confirm that the floppy disk has already been formatted. • Confirm that the floppy disk is not write-protected. • Confirm that a proper drive is selected for writing. • Confirm that a sufficient empty capacity remains in the floppy disk. • Confirm that the floppy disk is not damaged physically.
Reading data from the floppy disk is disabled.	• Confirm that the floppy disk has already been formatted. • Confirm that a proper drive is selected for reading.

(18) Battery charger failure (option FC-BC01N)

Symptoms	Action
The charger is broken.	Stop using the charger and contact your dealer.
The battery cannot be inserted into the battery charger.	Check the connector position of the battery for correct insertion orientation.

(19) Car adapter failure (Option FC-VA01N)

Symptoms	Action
The car adapter is broken.	Stop using the adapter and contact your dealer.
The main unit is not supplied with power, although the car adapter is connected. The car adapter LED does not glow.	Connect the cigar lighter plug again. Conduction is not possible unless the cigar lighter plug is properly connected to the cigar lighter receptacle.

(20) Wide temperature range model failure

Symptoms	Action
The system does not operate or operation is unstable although it is used in the operating temperature range (-20°C to 50°C) for wide-temperature-range operating models.	Makes sure that the device main unit, hard disk, and battery support the wide temperature range. Wide-temperature-range operation is possible only when the device main unit, hard disk, and battery support the wide temperature range.

Maintenance

139

(21) Password troubles

Symptoms	Action
After password entry, message "An invalid password is entered" appears.	• Check the password again and reenter it properly. • Check if the [Caps Lock] or [Num Lock] key lamp illuminates. If the [Caps Lock] or [Num Lock] key lamp illuminates, the password may be unable to be entered properly. If [Caps Lock] key lamp illuminates, press **Shift** + **Caps Lock** to release it. Then enter the password. If [Num Lock] key lamp illuminates, press **Fn** + **F12** to release it. Then enter the password.
The password is forgotten.	• If you forget the Windows password, there is no means to find the password directly. Take any of the following actions: − Click [?] to the right of the "type your password" field on the Windows logon screen to check the tip of the password. − Logon to N22A with another user account. − Ask a person having an administrator account of N22A to create a new password. • If you forget the supervisor password, contact your service representative.

(22) Miscellaneous

Symptoms	Action
The date and/or clock go wrong.	If the device is stored at a high or low temperature, the internal clock may deviate. In this case, reset before use. Check the clock of OS and the BIOS Setup Menu to find the system time (OS) and the RTC clock (BIOS). • When the system time goes wrong: ⇒ The operated application software may be defected. Abort the software and set the date and time again. If the system time goes wrong still, contact your service representative. • When the RTC time (BIOS) goes wrong: ⇒ The power of the calendar clock built in N22A is supplied by a battery. Accordingly, the calendar clock can continue operating if the power of N22A is turned off. If the date and/or time go wrong after resetting, the backup battery may reduce its necessary level or a hardware error may occur. Contact your service representative.
It is desired to use N22A in other than Japan.	Contact your service representative. NEC does not provide any maintenance service in countries and regions other than Japan.

6.2 RE-SETUP OF Windows XP IN N22A OF PRE-INSTALLED MODEL

6.2.1 Re-setup

Re-setup can recover the damaged system of N22A to the normal state.
However, files stored in the HDD are erased. In addition, it takes much time for re-setup. Check if re-setup is absolutely required before starting the job.

> The re-setup is to return the system in N22A to that in the same state at shipment from factory based on the data stored in the recovery CD-ROMs if the system is damaged.
> The re-setup is also required after the configuration of the HDD is changed. It is because formatting (initializing) the HDD causes the system to be erased.

Notes on re-setup
- Make a backup of data.
  Some re-setup methods may erase all or a part of data you have created. For the re-setup methods, see "Standard and Custom Re-setups".
- Write down the settings of N22A.
  Re-setup returns all settings including network settings to the factory defaults.
  To use N22A with the same settings as the current ones after re-setup, write down the current settings of N22A.
- Remove peripheral devices purchased separately from N22A.
  Provide re-setup under the condition that devices coming with FC-N21C are only connected to N22A.
  Peripheral devices purchased separately should be connected to N22A after re-setup.
- If a supervisor password is set, cancel the supervisor password or change the BIOS SETUP as follows:
  Select [Security] → [Password on boot] → [Disabled].
  For the supervisor password, see "Chapter 4 Security".
- Do not suspend re-setup.
  After starting re-setup, be sure to complete it according to the procedure described in this guide. If suspended, restart the re-setup from the beginning.

(1) Situations requiring re-setup
Provide re-setup for the system in N22A in the following situations:

1. Recovering system from trouble
   - At power-on, the power lamp goes on but Windows does not start.
   - One or more programs in the HDD do not operate.
   - System files in the HDD are erased unintentionally.
   - Repairing the system cannot solve problem.
   - Started Windows XP in the safe mode, but problem cannot be solved.
2. Changing settings of Windows
   - The settings of Windows are required to be recovered to the factory defaults.
3. Changing the settings of the HDD
   - The capacity of drive C is required to be changed.
   - The HDD is required to be configured with only a single partition.

(2) System repair procedure
The system can be repaired in either of the following two ways. The proper way is dependent on the system status. Try the simpler method first in the order shown below:

1. Repair the system by using the [Last Known Good Configuration] menu.
2. Provide the system with re-setup by using the recovery CD-ROMs.

6.2.2 Standard and Custom Re-setups

There are two re-setups, or standard and custom re-setups. The following describes four re-setup patterns.

(1) Standard re-setup
Every hard disk drive in N22A can be returned to the factory default. Beginners and users unfamiliar with HDD should always follow the procedure for re-setup.

(2) Custom re-setup
For re-setup of drive C only or change of the capacity of drive C, follow the procedure.
Select any of the following three procedures and go to Subsection "Custom Re-setup".

1. Re-setup of drive C only in the NTFS format.
    Provide only drive C in the built-in HDD with re-setup in the NTFS format.
    Drive D and the other drives are not formatted and the data in the drives is left as it is.
    * The capacity of drive C is not changed.

2. Re-setup of entire HDD area to a single partition
    Provide the entire area of the built-in HDD with re-setup to a single partition in the NTFS format. Drive C can have the maximum capacity.
    Data in the built-in HDD is erased completely. Be sure to make backup copy of the data.

3. Free re-setup of HDD area (re-setup by user setting)
    Provide the area of the built-in HDD with re-setup to a combination of partitions of 5GB or larger in 1GB freely.
    Data in the built-in HDD is erased completely. Be sure to back up the data.

> For file systems NTFS, FAT32 and FAT16, click [Start] → [Help and Support]. (Searching with keyword such as "File System", you can view the detailed information.)

6.2.3 Repairing System

The following describes the troubleshooting procedures when the system cannot be started normally due to change of system configuration.

Repairing System by Using Configuration in the Last Normal Starting

If starting Windows XP is disabled after some system change, the problem can be solved by using the configuration in the last normal starting.

- The configuration changes made after the last normal starting are all discarded.
- If the system is started normally more than once after configuration change, the configuration before the change cannot be recovered.
  To use the configuration on the last normal starting, follow the procedure below:

1. **Start Windows XP being defected.**
2. **If message "For troubleshooting and advanced startup options for Windows, press F8." appears on the screen, press F8.**
3. **If [Windows Advanced Options Menu] appears, select [Last Known Good Configuration] and press Enter.**
4. **On the operating system selection menu, press Enter.**
   The [Hardware Profile/Configuration Recovery Menu] dialog box appears.
   Any of the following options can be selected on the menu.
   - Hardware profile selection used at startup of this device
   - Switch configuration at previous normal startup
   - Reboot this device
   - System repair
5. **To restart Windows XP in the configuration before occurrence of the problem, press L. Then press Enter.**

Windows XP is started by using the configuration at the last normal starting.

Starting Windows XP in Safe Mode

The safe mode is a specific diagnostic mode intended to allow Windows to be started normally. Follow the procedure below to start Windows in the safe mode:
1. **Start Windows XP.**
2. **If message "For troubleshooting and advanced startup options for Windows, press F8." appears, press F8.**
3. **Select start option "Safe Mode" and press Enter.**
   Windows XP is started in the safe mode.

Repairing System by Using [System Restore]

If using the safe mode or the configuration on the last normal starting cannot start Windows XP normally, use [System Restore] to repair the system.
This method allows N22A to be recovered to the previous state without discarding the personal data files.
To start [Restore System], click [Start] → [All Programs] → [Accessories] → [System Tools] →

[System Restore].
For details, click [Start] → [Help and Support] to see the information. (You can search with keyword "system repair" for the detailed information to be viewed.)

Maintenance

143

6.2.4 Standard Re-setup

Repairing System by Using Recovery CD-ROMs

The Recovery CD-ROMs attached to N22A can be used to recover the information stored in the HDD to factory defaults.

> Separate "Recovery DVD-ROM Media" for Japanese and English version preinstalled models are included one copy for each.

(1) Tools to be prepared
The following tools are required for re-setup by using the recovery CD-ROMs.
Prepare the following CD-ROMs attached to N22A.
- Recovery CD-ROMs (WinXP)
- CD-R/RW with DVD-ROM drive (FC-CW002U)

In addition, the user name and computer name must be entered.
Define the names to be registered previously.

(2) Check items before re-setup
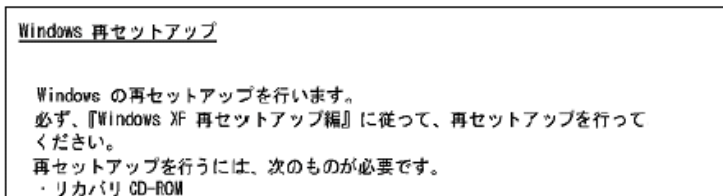Be sure to return BIOS settings to the factory defaults if changed.
For how to return BIOS settings to the factory defaults, see "Chapter 4 Loading the BIOS SETUP Defaults".
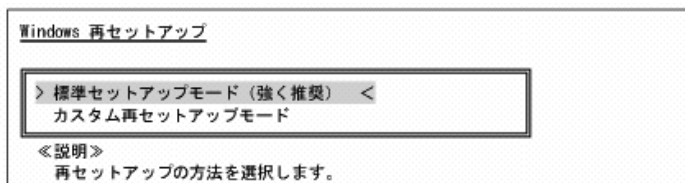
(3) Notes on re-setup
- Do not connect or add peripherals including a printer or memory devices.
  Before the re-setup is completed, any peripherals including a printer and extended memory devices should never be connected to N22A. If these peripherals are purchased concurrently with N22A, first complete the setup of Windows XP to be followed by connections and installations of the peripherals according to the user's guides coming with the peripherals.
- Be sure to connect the AC adaptor all the way of re-setup.
- Do not turn off the power on the way.
  Do not turn off the power in the middle of the setup. Setting the power switch to OFF or disconnecting the power cable in the middle of the setup may cause a fault to occur. If the screen seems to stop on the way, the setup program may operate. This does not indicate that the system is defected. Advance the operation according to the defined procedure without panic.

(4) System Restoration Procedure
1. **Turn on the power of N22A.**
2. **As soon as the power lamp goes on, insert "Recovery CD-ROM (WinXP)" into the CD-ROM drive.**
3. **If the following dialog box appears, press Enter.**

```
Windows 再セットアップ

Windows の再セットアップを行います。
必ず、『Windows XP 再セットアップ編』に従って、再セットアップを行って
ください。
再セットアップを行うには、次のものが必要です。
・リカバリ CD-ROM
```

4. **If the following dialog box appears, select [(
)] and press Enter.**

```
Windows 再セットアップ

> 標準セットアップモード（強く推奨）  <
  カスタム再セットアップモード

≪説明≫
 再セットアップの方法を選択します。
```

5. **Follow the direction on the dialog box to provide re-setup.**
   For the subsequent steps, follow the directions on the dialog box.
   Now the HDD is completely restored to the factory defaults.
   Then provide re-setup for Windows XP.

(5) Re-setup of Windows XP
If the power of N22A is turned on for the first time after system restoration by using the recovery CD-ROMs, the Windows XP setup job including entry of your name is required. It takes about 30 minutes to complete the job.

1. **Reboot N22A after the system restoration job is completed. If the [Welcome to Microsoft Windows] screen appears, click [Next].**
2. **The [The End User License Agreement] screen appears. Click the scroll button to read it thoroughly.**
3. **After reading, click [Yes, I accept]. Then click [Next].**
   Clicking [No, I don't accept] disables the setup job to be started.
4. **If the [Help protect your PC] dialog box appears, select [Not right now] and click [Next].**
5. **If the [What's your computer's name?] dialog box appears, enter any name in the name field.**
   - The factory default of [Computer name] is "FCN22A-XXXXX" (XXXXX: lowest five digits of product ID).
   - The computer name can be changed later.
   - [Computer description] is empty at shipment.
6. **Click [Next].**
7. **If the [What's your Administrator password?] dialog box appears, enter a password in the password field.**
   - The password field is empty at shipment.
   - The password is case sensitive.
   - The password can be changed later. The password entered here must be reentered in the re-setup job. Take note of the password for remembrance.
8. **Click [Next].**
9. **If message "Is this computer in a domain?" appears, select [Yes] or [No].**

145

<u>(The following describes the operation after you select [No].)</u>

    10.   **Click [Next].**
    11.   **Message "Checking your Internet connectivity" appears and then message "How will this computer connect to the Internet?" appears.**
    12.   **Click [Skip].**
    13.   **Message "Ready to register with Microsoft" appears.**
    14.   **Select "No, not at this time" here.**
    15.   **Click [Next].**
    16.   **If message "Who will use this computer" appears, enter a user name.**
- Default user name: FC-USER
- Without entering a user name, you cannot advance to the next step.
- The data in [User Name 1] is registered as the user of [System Properties].

    17.   **Click [Next].**
    18.   **Message "Thank you!" appears.**
    19.   **Click [Finish].**
    20.   **Message "Please wait…" appears. Wait until the screen changes without any operation.**
    21.   **If the [Logon to Windows] screen appears, enter the password set in step 7 and click [OK].**
    22.   **Wait until the desktop screen appears.**
        Before the desktop screen, the [Change System Settings] screen may appear.

Before the desktop screen, the [Change System Settings] screen may appear.
In this case, wait until the desktop screen appears, click [Finish] on the [Introduction to Windows XP] screen and click [Yes] on the [Change System Settings Screen] screen to restart the system.

> After re-booting, the [Welcome to the Found New Hardware Wizard] dialog box may appear.
> If this occurs, provide proper settings in the following procedure:
> 1. If [Welcome to the Found New Hardware Wizard] appears, click "No, not this time" and then click [Next].
> 2. Click "Install the software automatically" and then click [Next].
>   Message "Please wait while the wizard installs the software …" appears.
> 3. If the [Completing the Found New Hardware Wizard] dialog box appears, click [Finish].

Now the operation is completed.

> - Because WindowsXP automatically recognizes USB keyboard and mouse, specific settings are not required.
>   In use of a USB keyboard,
>   [Standard 101/102 – Key or Microsoft Natural PS/2 Keyboard] or [PS/2 Compatible Mouse] may appear when you click [Start] → [All Programs] → [Accessories] → [System Tools] → [System Information] and select [Components] → [Problem Devices] in the [System Information] dialog box.
>   This is a view-only problem. The USB keyboard can operate normally without any problems.
> - If the keyboard or mouse is reconnected, the key layout may be set improperly.
>   If so, see "(6) Notes on change to keyboard or mouse of different key layout" described below.

(6) Notes on change to keyboard or mouse of different key layout
If the current keyboard or mouse is changed to another one, the new keyboard or mouse may operate improperly. If so, change the key layout of the keyboard in the following procedure:

1. **Click [Start] → [Control Panel].**
2. **Click [Date, Time, Language, and Regional Options] and [Regional and Language Options].**
3. **Click [Details…] in [Text services and input languages] of the [Language] tab.**
    Note: If you find the desired keyboard layout in the list of installed services, go to step 7.
    Click [Add] in [Installed services].

4. **Select the language of the keyboard layout to be added from the [Input language:] list.**
5. **If [Keyboard layout/IME:] has only a single option, click the option.**
    If more than one options are available, open pull-down menu [Keyboard layout/IME:] and select the desired option from the list.
6. **Click [OK].**
7. **Click the language of the used keyboard layout from the [Default input language] list.**
8. **Click [OK].**
9. **Click [OK].**

Installing Attached Applications

Install attached applications with re-setup.
For the re-setup procedure, see "Chapter 5 Installing Attached Applications".

Providing Settings Made after Purchase Again

Any settings made after purchase are discarded by re-setup. Provide the settings again.
Reconnect peripherals purchased separately if any and provide settings for the peripherals again. Also make network setting.
In addition, reinstall applications purchased separately and having been installed if any.

Maintenance

6.2.5 Custom Re-setup

The HDD can be restored to specified status by using the attached Recovery CD-ROMs.

Checking Items

(1) Tools to be prepared
The following tools are required for re-setup by using the recovery CD-ROMs.
Prepare the following CD-ROMs attached to N22A.
- Recovery CD-ROM (WinXP)
- CD-R/RW with DVD-ROM drive (FC-CW002U)

In addition, the user name and the computer name must be entered.
Define the names to be registered previously.

(2) Check items before re-setup
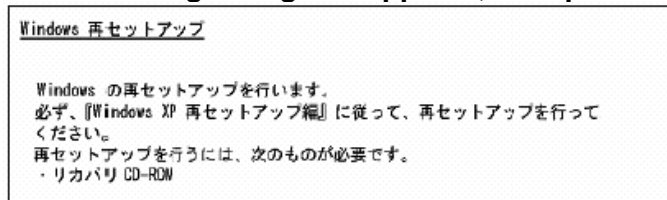Be sure to return BIOS settings to the factory defaults if changed.
For how to return BIOS settings to the factory defaults, see "Chapter 4 Loading the BIOS SETUP Defaults".
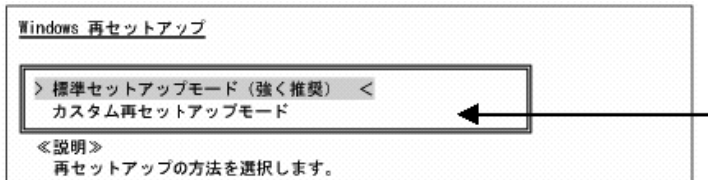
(3) Notes on re-setup
- Do not connect or add peripherals including a printer or memory devices.
  Before the re-setup is completed, any peripherals including a printer and extended memory devices should never be connected to N22A. If these peripherals are purchased concurrently with N22A, first complete the setup of Windows XP to be followed by connections and installations of the peripherals according to the user's guides coming with the peripherals.

- Do not turn off the power on the way.
  Do not turn off the power in the middle of the setup. Setting the power switch to OFF or disconnecting the power cable in the middle of the setup may cause a fault to occur. If the screen seems to stop on the way, the setup program may operate. This does not indicate that the system is defected. Advance the operation according to the defined procedure without panic.
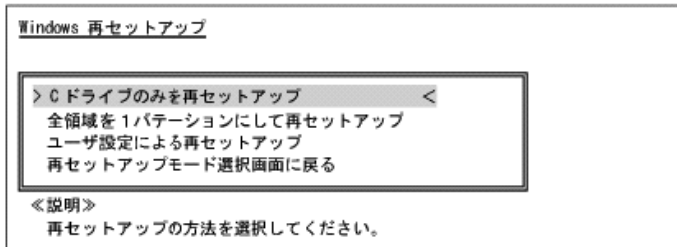
System Restoration Procedure

1. **Turn on the power of N22A.**
2. **If the power lamp goes on, insert the first Recovery CD-ROM disk (WinXP) in the CD-ROM drive.**
3. **If the following dialog box appears, then press Enter.**

```
Windows 再セットアップ

Windows の再セットアップを行います。
必ず、『Windows XP 再セットアップ編』に従って、再セットアップを行って
ください。
再セットアップを行うには、次のものが必要です。
・リカバリ CD-ROM
```

4. If the following dialog box appears, select [ ] and press Enter.

```
Windows 再セットアップ

> 標準セットアップモード（強く推奨）  <
  カスタム再セットアップモード

≪説明≫
  再セットアップの方法を選択します。
```

5. The following dialog box appears.
Select one of the following three procedures.

```
Windows 再セットアップ

> C ドライブのみを再セットアップ        <
  全領域を１パテーションにして再セットアップ
  ユーザ設定による再セットアップ
  再セットアップモード選択画面に戻る

≪説明≫
  再セットアップの方法を選択してください。
```

(1) [C   ]
(2) [1   ]
(3) [   ]

(1) Re-setup of drive C only (NTFS)

If the HDD to be subject to re-setup has an unassigned area larger than drive C, re-setup of drive C only may be disabled.
If so, retain the unassigned area as a partition before selecting [C   ].

1. If the following dialog box appears, select [C   ] and press Enter.
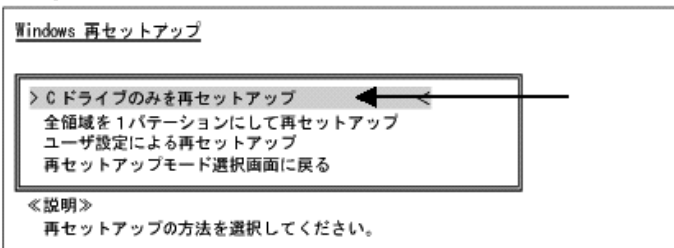
```
Windows 再セットアップ

> C ドライブのみを再セットアップ    <
  全領域を１パテーションにして再セットアップ
  ユーザ設定による再セットアップ
  再セットアップモード選択画面に戻る

≪説明≫
  再セットアップの方法を選択してください。
```

2. If message "C   Windows XP
" appears on the dialog box, select [Yes] and press Enter.

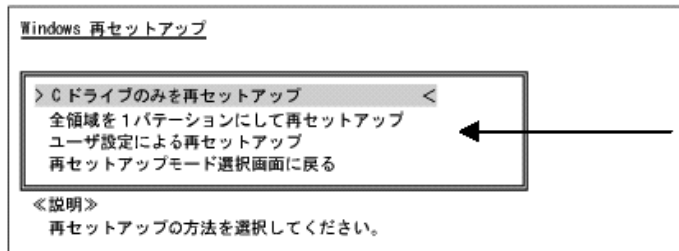For the subsequent steps, follow the directions on the dialog box.
If the [Windows XP Setup Wizard] dialog box appears after restarting, then the following operation is the same as that for the standard re-setup.
Perform the operation according to the description in "Repairing System by Using Recovery CD-ROMs".

(2) Re-setup by combining entire area into a single partition (NTFS)

Select [1   ] on the [WindowsXP
                ] dialog box and press **Enter**.

**1. If the following dialog box appears, select [1
                    ] and press Enter.**

```
Windows 再セットアップ

 ＞ C ドライブのみを再セットアップ        ＜
   全領域を１パテーションにして再セットアップ
   ユーザ設定による再セットアップ
   再セットアップモード選択画面に戻る

 《説明》
   再セットアップの方法を選択してください。
```

**2. If message "   Windows XP
                    " appears on the dialog box, select [Yes] and**

press Enter.

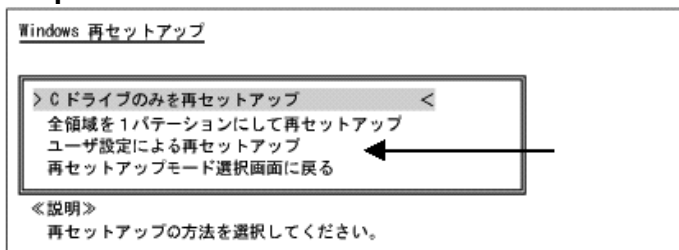For the subsequent steps, follow the directions on the dialog box.
If the [Welcome to Microsoft Windows] dialog box appears after restarting, then the
following operation is the same as that for the standard re-setup.
Perform the operation according to the description in "Repairing System by Using
Recovery CD-ROMs".

(3) Re-setup with free setting of HDD area (NFTS)

Select [   ] on the [WindowsXP   ] dialog
box and press **Enter**.

**1. If the following dialog box appears, select [   ]
    and press Enter.**

```
Windows 再セットアップ

 ＞ C ドライブのみを再セットアップ        ＜
   全領域を１パテーションにして再セットアップ
   ユーザ設定による再セットアップ
   再セットアップモード選択画面に戻る

 《説明》
   再セットアップの方法を選択してください。
```

**2. If message "   GB   " appears, enter the
    desired capacity of drive C by using the numeric keypad. The range from 5GB
    to 82GB can be specified. However, you cannot specify any capacity larger
    than the capacity of the HDD.**

**3. If message "   F8   " appears, make
    sure that the specified value is displayed and press F8.**

For the subsequent steps, follow the directions on the dialog box.
If the [Welcome to Microsoft Windows] dialog box appears after restarting, then the
following operation is the same as that for the standard re-setup.
Perform the operation according to the description in "Repairing System by Using
Recovery CD-ROMs".

6.3 MAINTENANCE SERVICE

If the FC-NOTE Series ShieldPRO (FC-N22A) fails, two ways are available for transferring it to and from the repair center: either a courier assigned by NEC can collect the device and return it after the repair (pick-up repair) or the customer can take the failed device to our repair center for repair and collect the repaired device from the repair center (delivery repair). On-site repair is also available.

Contact for pick-up repair:

Delivery address for delivery repair:

Contact for on-site repair:

Charge-free warranty period
The main unit, standard built-in hard disk drive, and AC adapter are guaranteed for three years if a three-year charge-free warranty has been registered within one month after purchase. (Otherwise, the warranty period is one year.)
The batteries and built-in wide temperature range hard disk drive are guaranteed for one year, and optional products are guaranteed for six months.

Charged repair
If the warranty period has expired or, based on NEC's criteria, the life of the failed component is considered to have ended, the product will be repaired for a fee.
The repair fee comprises charges for labor, components, and, for on-site repair only, travel expenses.

Flow of repair
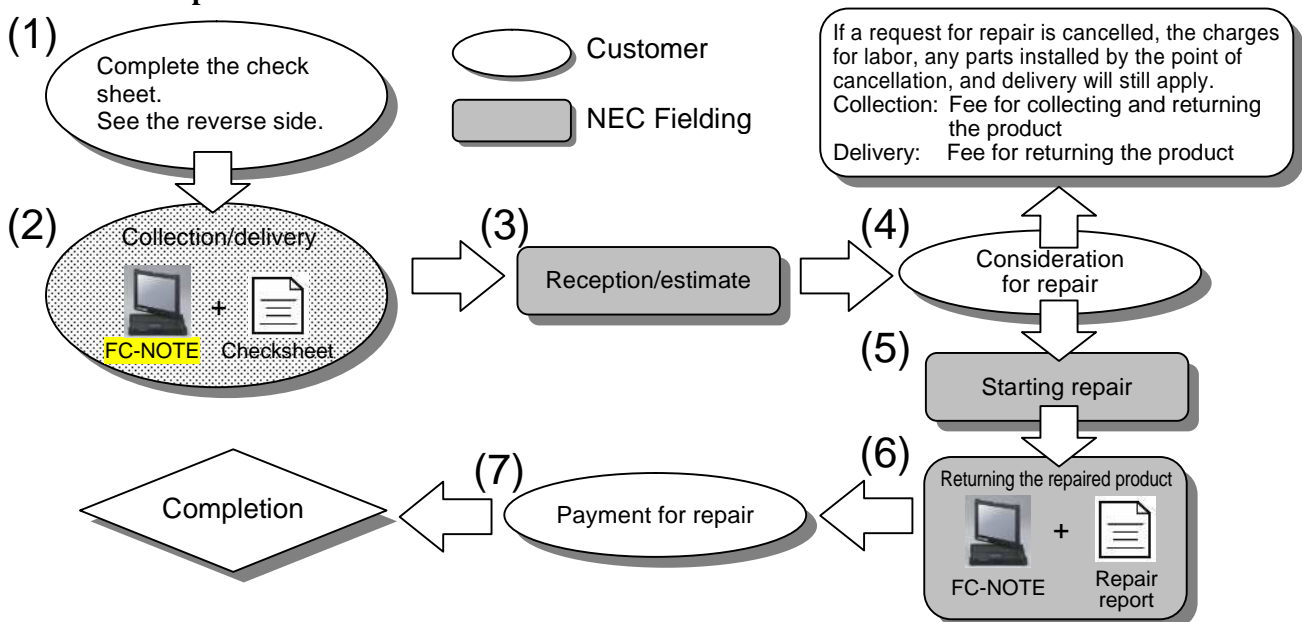
Caution when sending a product for repair
Pack the product so that it will not be damaged during transport. (For example, cover it with bubble wrap or pack it with cushioning materials.) Some couriers offer transport services for precision devices. We recommend using such a special service.

151

6.3.1 Consumables and End-of-Life Products

The following components are considered to be consumables, with their rate of consumption depending on their frequency of use and aging, so they must be replaced periodically. We recommend periodically replacing these components. Before requesting repair of a hard disk, backup important data stored in the hard disk. For replacement of components, contact your dealer.

> The following data pertain to the replacement intervals recommended by NEC. The values were calculated at standard conditions with an ambient temperature of 25ºC. Note that the values are not guaranteed.

(1) Consumables
Rate of consumption varies depending on use frequency and use amount.   Consumables are replaced for a fee even if the warranty period of the main unit has not expired.

( )	1	FC-BP01N
( )	1	FC-BP01N/W
(Stamina standard type)	1	FC-BP01N/L
	7 ( )	*
		FC-KC01N/JP

* NEC

(2) End-of-Life Products
Abrasion and degrading of end-of-life products vary greatly, depending on the products' frequency of use, aging and usage environment, so they cannot be repaired.
Charges may apply for replacing these components, even if the warranty period has not expired.

HDD	3 20,000POH( )	FC-HD80KN-S
HDD	3 20,000POH( ) 1 1 8 250	FC-HD40KN-S
Silicon disk drive	Within 10 years or 100 thousand rewrites, whichever comes first	FC-SD20KN-S
LCD	10,000h	
	100	
	100	
	500	
	100	
3.5	4	FC-FD002U
CD-R/W with DVD-ROM	4	FC-CW002U
AC	50,000h	FC-AA01N
	40,000h	FC-BC01N
	50,000h	FC-VA01N

* NEC

Note 1: In order to extend the rewrite life, rewrite processing is averaged to prevent specific blocks from being repeatedly rewritten.
A rewrite life (reference value) can be calculated from the following formula according to conditions of actual customer use (memory size, rewrite file size, rewrite frequency).

· Silicon disk size   : $Cp = 8,000,000$ [KB]
· Write target area size   : Da [Byte] $= 8,000,000$ [KB]
· Write target block   : DaB [block] $= 16,000$ [blocks]
· Rewrite data size   : X [KB]
· Rewrite frequency per hour : Z [no. of times/hour]
· Operating time per day   : H [hours]
· Operating days per year   : D [days]
· Number of blocks used for 1 rewrite of data size X:
$A = \text{ROUNDUP}(X / 512 \text{ [KB]}) \times 4 = [\text{No. where decimal point of } X / 512 \text{ [KB] is rounded up}] \times 4$

     * Rewrite life [Years] (reference value) $= (100,000 \text{ times} \times DaB) / (Z \times A \times H \times D)$.

6.3.2 Service Menu

The following FC98-NX Series Support Pack maintenance pack is offered. Three service types can be selected.

1) On-site repair service
   A service engineer visits the installation site and repairs the system when a problem occurs.

2) Pick-up repair service
   A company assigned by NEC picks up the device and delivers the repaired one.

3) Delivery repair service
   The customer sends the device with a failure to our repair center for repair.

Maintenance

6.4 FAILURE OR ABNORMALITY

6.4.1 If a failure is suspected

If you suspect that the device has a failure, follow these procedures:

1. Make sure that the AC adapter or car adapter, power cable, and cables connecting other devices are securely connected.
2. See "Chapter 8 Troubleshooting". When a corresponding symptom is shown, take appropriate measures according to the instructions.
3. Make sure that software required for operating the main unit is correctly installed.
4. Use a commercially available virus detection program to check the product.

If a failure still persists after the above measures have been taken, do not try to operate the device, but contact your dealer or nearest maintenance service company instead. Before requesting service, record the lamp conditions of the main unit and alarm display on the screen, which may be helpful for deciding causes. When requesting repair of a product still under warranty, also submit the warranty card.

[Information to be provided when making inquiries]
When inquiring about the factory computer or a peripheral device which failed, information such as the usage environment and specific symptoms of the failure will be required. Before inquiring with the support center, enter the factory computer type, failure details, and other information into the problem check sheet at the end of this document.

Operating environment
1. Hardware environment
   Main unit model name, serial number (warranty number), and available hard disk space; as well as types, model names, and product names (manufacturer names) of your peripheral devices (external monitor, printer, expansion hard disk drive, card devices, etc.)
2. Software environment
   OS and its version and manufacturer, application running when a failure occurs; specific symptoms, such as how the device was operating, display, frequency of failures; any other matters you noticed.

The FC User Lounge accepts customers' inquiries. This is a service providing the latest technical information (general information), Q&As, and information for checking third parties' products. Registration (free of charge) is required to use this service.

6.4.2 Before Requesting Repair

Prepare the following when requesting repair.

1. Warranty card
2. Notes of message on the display device
3. Failure information (Problem check sheet at the end of this document)

* NEC shall not be held responsible for the data stored in the hard disk. Make a backup copy of data stored in the hard disk.
* Once the device has been repaired, any information set by the customer (such as revisions in the BIOS setup menu and registered fingerprint information and other security settings) will be lost. Such information must be re-set.

6.5 CARE

(1) Preparation before care

If N22A is dirt only a little, prepare dry and clean clothes made of soft materials.
If N22A 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 N22A.
>   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 N22A directly. Failure to follow this instruction may cause N22A to be damaged or defected.
> - Do not use a sharp object such as a ballpoint pen.

> 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, AC adapter, and Car adapter
If N22A 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 N22A 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.

6.6 RECYCLING BATTERIES

- A lithium ion battery is used for N22A.
- 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.

6.7 CARRIAGE AND STORAGE OF N22A

Follow the procedure below if N22A will be carried or stored.

- Back up important data stored in the hard disk.
- Close all the covers during transportation.

1 **Turn off the power of N22A.**

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 N22A.**

4 **Remove the battery.**

5 **Package N22A securely so that it may neither damaged nor subjected to shocks and vibrations.**

- Storage of N22A
  Remove the battery from N22A 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.

6.8 DISPOSAL OF DEVICES

For the disposal of N22A, hard disk drives and options, contact your service representative.
See "Recycling Batteries" in "Chapter 6 Maintenance" 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.
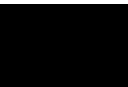
THIS PAGE INTENTIONALLY LEFT BLANK.

Chapter 7 Appendices

7.1 I/O INTERFACES

(1) PCMCIA interface

Connector: 68-pin card slot

Pin number	Signal name	Pin alignment
1	GND	
2	CADATA<3>	
3	CADATA<4>	
4	CADATA<5>	
5	CADATA<6>	
6	CADATA<7>	
7	CE1#	
8	CADR<10>	
9	OE#	
10	CADR<11>	
11	CADR<9>	
12	CADR<8>	
13	CADR<13>	
14	CADR<14>	
15	WE#	
16	IREQ#	
17	CAVCC	
18	CAVPP	
19	CADR<16>	
20	CADR<15>	
21	CADR<12>	
22	CADR<7>	
23	CADR<6>	
24	CADR<5>	
25	CADR<4>	
26	CADR<3>	
27	CADR<2>	
28	CADR<1>	
29	CADR<0>	
30	CADATA<0>	
31	CADATA<1>	
32	CADATA<2>	
33	IOIS16#	
34	GND	
35	GND	
36	CD1#	
37	CADATA<11>	
38	CADATA<12>	
39	CADATA<13>	
40	CADATA<14>	
41	CADATA<15>	
42	CE2#	
43	VS1	
44	IORD#	
45	IOWR#	
46	CADR<17>	
47	CADR<18>	
48	CADR<19>	
49	CADR<20>	
50	CADR<21>	
51	CAVCC	
52	CAVPP	
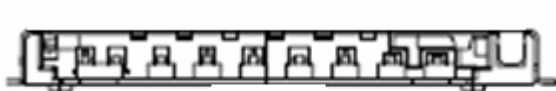
Pin number	Signal name	Pin alignment
53	CADR<22>	
54	CADR<23>	
55	CADR<24>	
56	CADR<25>	
57	VS2	
58	RESET	
59	WAIT#	
60	INPACK#	
61	REG#	
62	SPKR#	
63	CHSTS#	
64	CADATA<8>	
65	CADATA<9>	
66	CADATA<10>	
67	CD2#	
68	GND	

(2) Express card interface

Pin number	Signal name	Pin alignment
1	GND	
2	USBD-	
3	USBD+	
4	CPUSB#	
5	RESERVED	
6	RESERVED	
7	SMBCLK	
8	SMBDATA	
9	+1.5V	
10	+1.5V	
11	WAKE#	
12	+3.3VAUX	
13	PERST#	
14	+3.3V	
15	+3.3V	
16	CLKREQ#	
17	CPPE#	
18	REFCLK-	
19	REFCLK+	
20	GND	
21	PERn0	
22	PERp0	
23	GND	
24	PETn0	
25	PETp0	
26	GND	
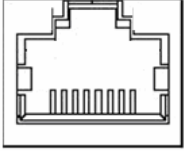
(3) SD interface
Connector: SD-slot 12-pin connector (female)

Pin number	Signal name	Pin alignment
1	CD/DATA3	
2	CMD	
3	GND	
4	MEDIA_3V	
5	CLK	
6	GND	
7	DATA0	
8	DATA1	
9	DATA2	
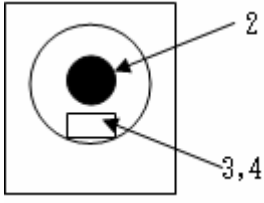
(4) LAN interface (1000BASE-T)
Connector: RJ45

Pin number	Signal name	Pin alignment
1	LA_TRD0+	
2	LA_TRD0-	
3	LA_TRD1+	
4	LA_TRD2+	
5	LA_TRD2-	
6	LA_TRD1-	
7	LA_TRD3+	8 ••• 1
8	LA_TRD3-	

(5) DC plug jack
Connector: RJ11

Pin number	Signal name	Pin alignment
-	-	
2	ADP-IN	2
3	AC-GND	
4	AC-GND	3,4

(6) Headphone output interface

Pin number	Signal name	Pin alignment
1	AGND	
2	LEFT	
3	RIGHT	
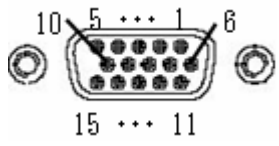
(7) Microphone input interface
Connector: Mini jack (female)

Pin number	Signal name	Pin alignment
1	AGND	
2	LEFT	
3	RIGHT	
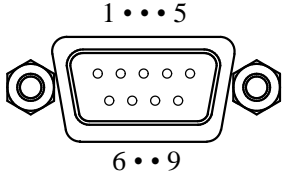
(8) Analog RGB interface
Connector: SD-sub 15-pin connector (female)
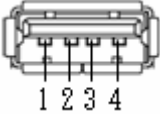
Pin number	Signal name	Pin alignment
1	RED	
2	GREEN	
3	BLUE	
4	NC	
5	GND	
6	GND	
7	GND	10 5 ••• 1 6
8	GND	
9	VP50	
10	GND	15 ••• 11
11	NC	
12	DDCA	
13	HSYNC	
14	VSYNC	
15	DDCL	

(9) Serial interface (COM1)

Connector: D-sub 9-pin connector (male)

Pin number	Signal name	Pin alignment
1	DCD	
2	RXD	
3	TXD	
4	DTR	
5	GND	
6	DSR	
7	RTS	
8	CTS	
9	RI	

(10) USB interface (USB 1/2/3)

Pin number	Signal name	Pin alignment
1	+5V	
2	D-	
3	D+	
4	GND	

(11) IEEE1394 interface

Pin number	Signal name	Pin alignment
1	TPB-	
2	TPB+	
3	TPA-	
4	TPA+	

Appendices

7.2 INTERRUPT LEVELS

The table below lists interrupt levels. Interrupt levels 0 to 23 are assigned. A smaller interrupt level has a higher priority.

● List of assignment levels

Interrupt level	Setting at shipment from factory
IRQ00	Counter/timer
IRQ01	Keyboard (PS/2)
IRQ02	Interrupt controller
IRQ03	COM 2
IRQ04	COM 1 (serial port)
IRQ05	(Not used)
IRQ06	(Not used)
IRQ07	(Not used)
IRQ08	System CMOS/realtime clock
IRQ09	Microsoft ACPI-Compliant System
IRQ10	SMBus controller
IRQ11	(Not used)
IRQ12	Touch pad
IRQ13	Math coprocessor
IRQ14	Primary IDE
IRQ15	Secondary IDE
IRQ16	Express Card/PC card bus controller/USB UHCI4 Internal GA, PCI Express Root Port 2
IRQ17	Wireless LAN/IEEE1394 PCI Express Root Port1
IRQ18	EHCI2/USB UHCI2/SD card
IRQ19	USB UHCI1/SATAAHCI controller
IRQ20	Internal LAN
IRQ21	USB UHCI5
IRQ22	HDA Sound
IRQ23	USB UHCI0/USB EHCI

Assignment may vary depending on whether the device is used or not by the peripheral device setting of BIOS.

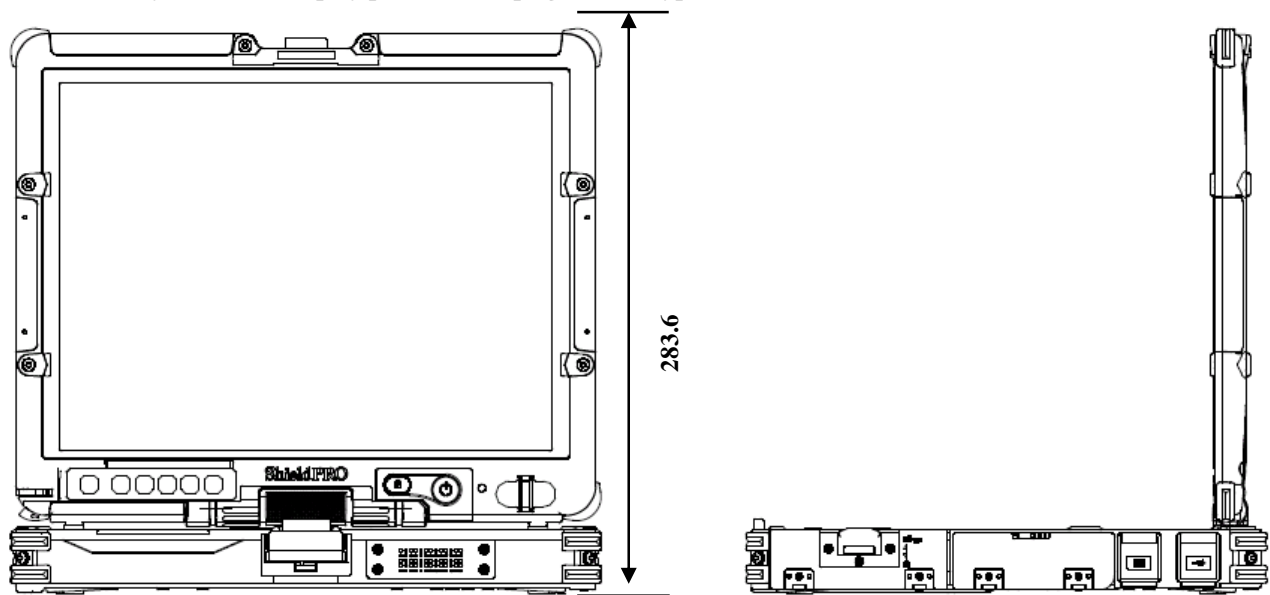# 7.3 OUTSIDE DIMENSION

7.3.1 N22A

(1) Body

260.4

(245.5 excluding projections and bumper)

298.6

(295.4 excluding projections and bumper)
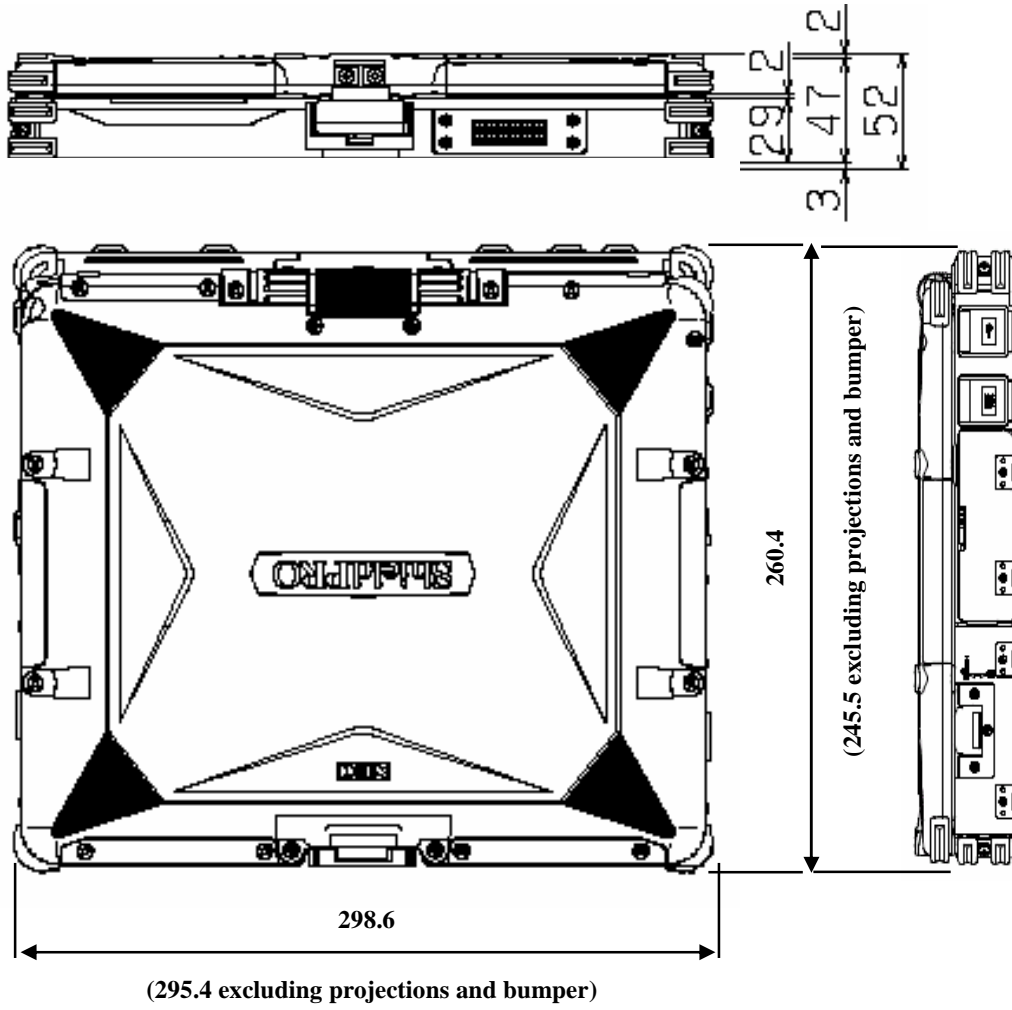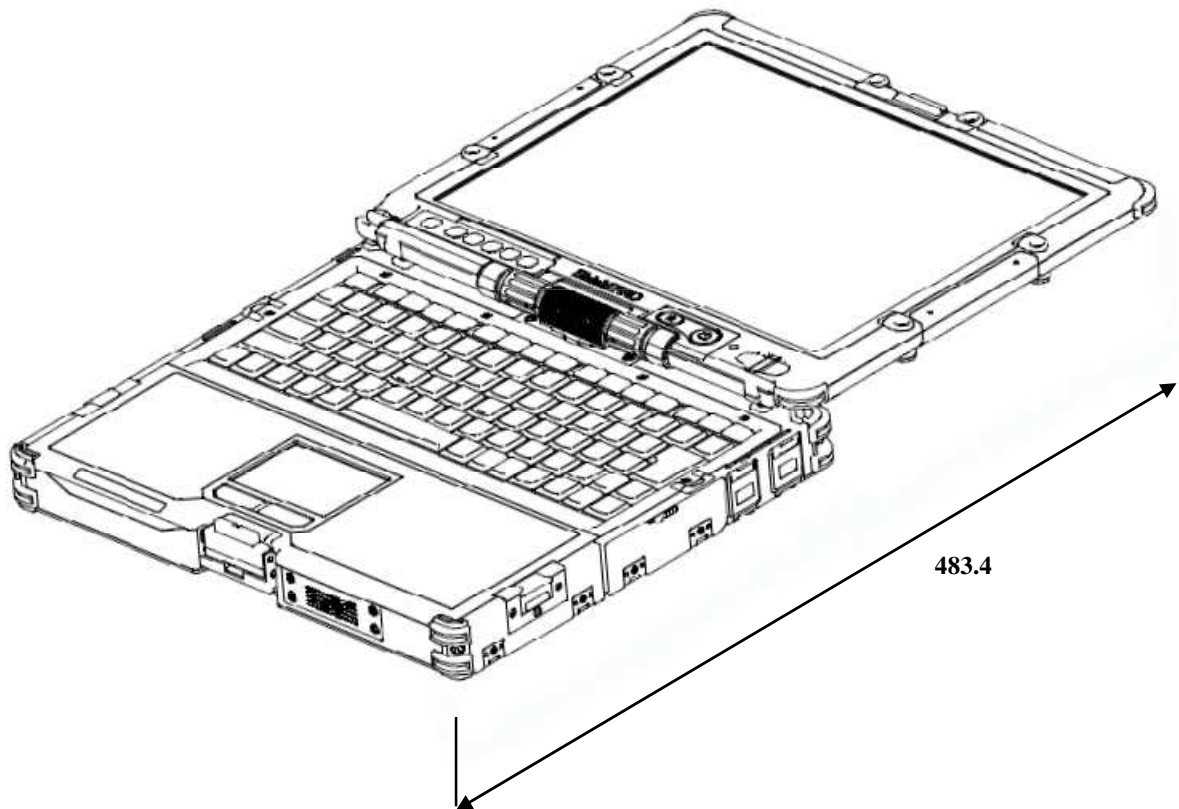
[Rotation of LCD display panel]

389.8
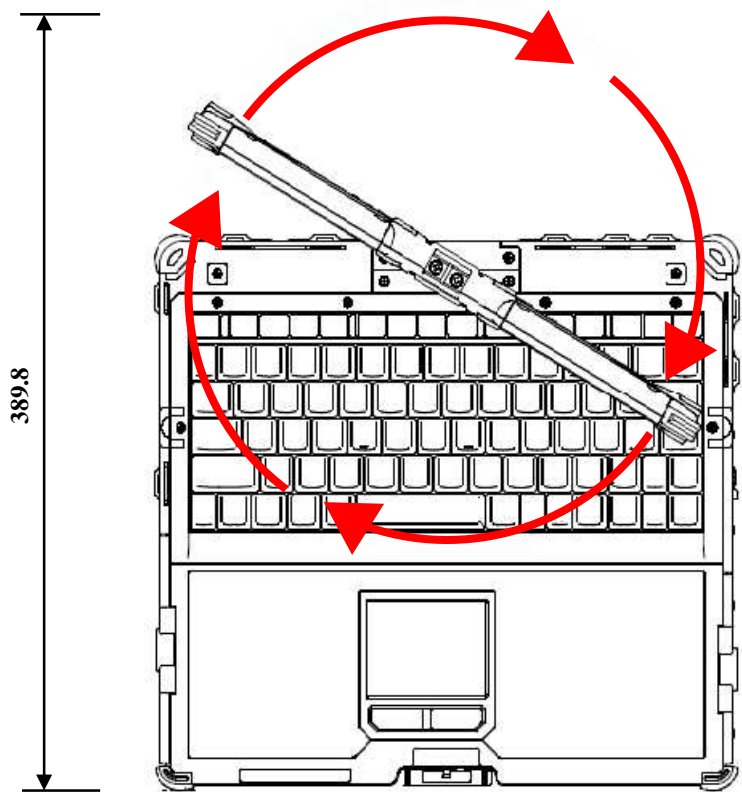
* Excluding projections (including rubber feet and protect rubbers at 4 corners)

Unit: mm

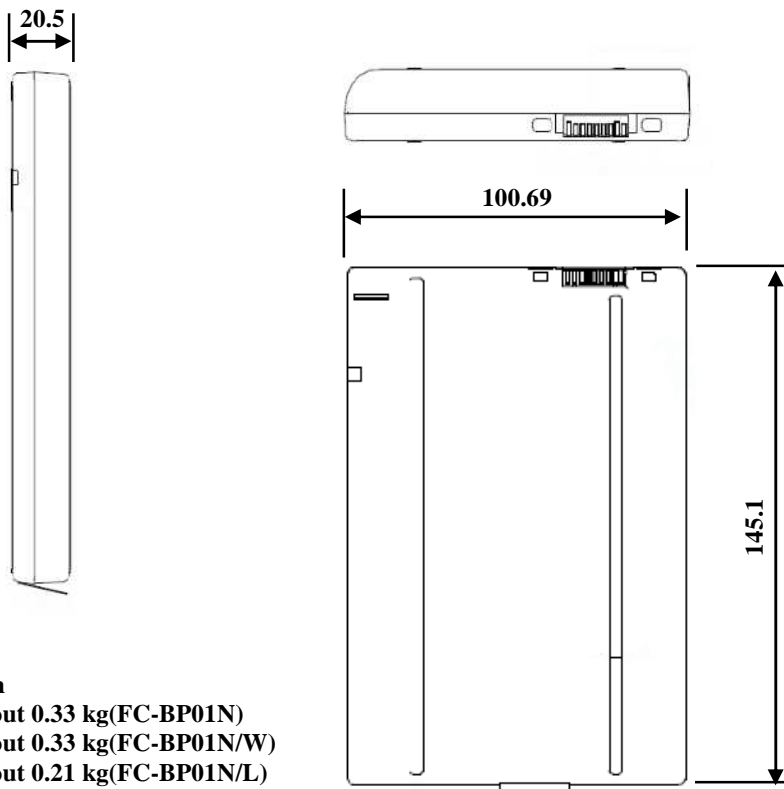**[Body with LCD display panel made upright (node type)]**

283.6

[Body with LCD display panel taken down]

483.4

* Excluding projections (including rubber feet and protect rubbers at 4 corners)   **Unit: mm**

7.3.2 Spare Battery (FC-BP01N, FC-BP01N/W, FC-BP01N/L)

20.5

100.69

145.1

Unit: mm
Weight: about 0.33 kg(FC-BP01N)
        about 0.33 kg(FC-BP01N/W)
        about 0.21 kg(FC-BP01N/L)

7.3.3 AC Adapter (FC-AA01N)

* Excluding projections

140 ±0.5

2,000±100

63 ±0.5

30.5 ±0.5

AC Power cord length : About 1.8 m
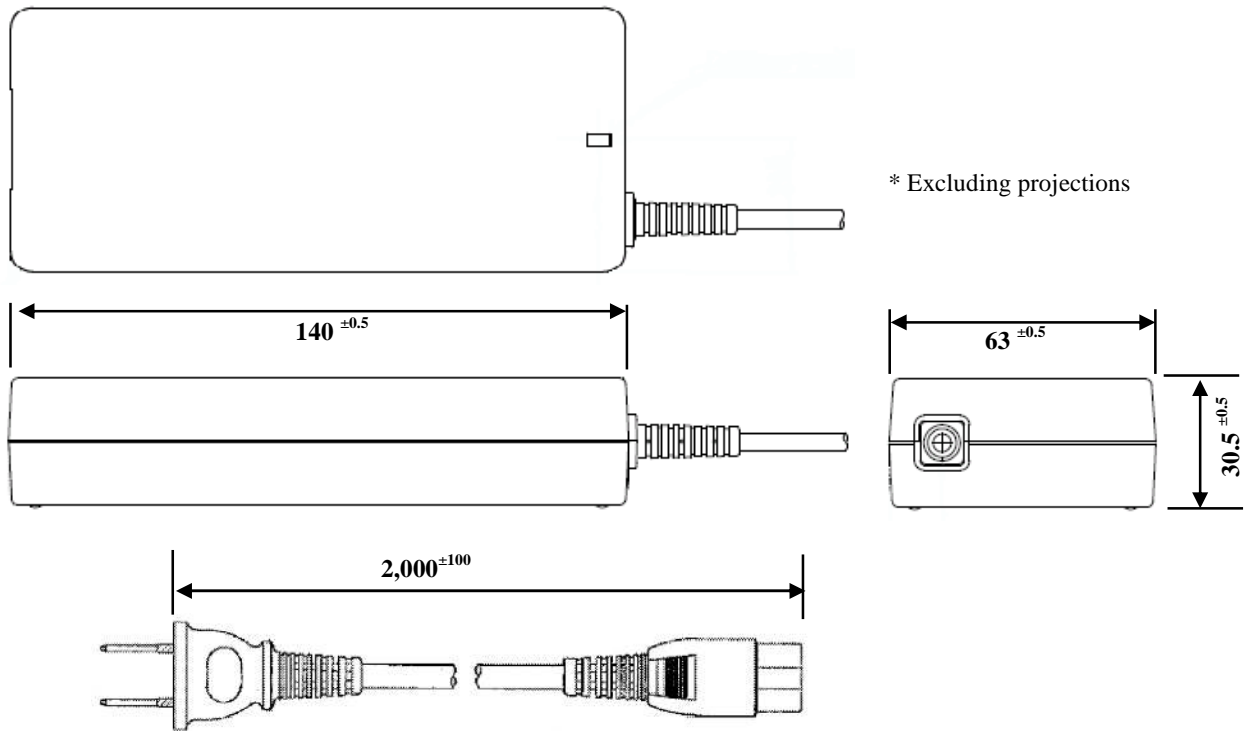
Unit: mm
Weight: about 0.46 kg

7.3.4 Hard Disk Drive (Standard HDD:FC-HD80KN-S,
Wide Temperature HDD:FC-HD40KN-S)/
Silicon Disk Drive (FC-SD20KN-S)

128.3

82.2

20.5
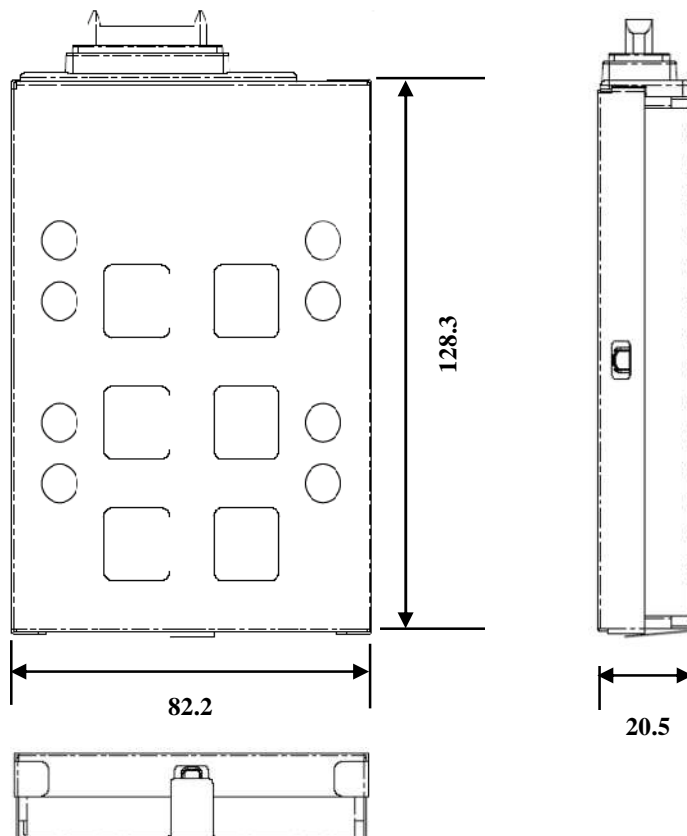
Unit: mm
Weight: about 0.12Kg
(FC-HD80KN-S)
about 0.12Kg
(FC-HD40KN-S)
about 0.12Kg
(FC-SD20KN-S)

Problem check sheet

When making an inquiry, you will be asked the configuration of the product in use and specific conditions of the problem.
Before inquiring, complete each item of this sheet, which will lead to a prompt and appropriate response. We recommend using this sheet.

● Problem Check Sheet 1   Configuration of device

■ Hardware

Main unit	
Model number (shown on the warranty)	FC-N22A/
Serial number (warranty number)	S
Memory capacity	MB (MegaByte)
Hard disk capacity	GB (GigaByte)
Available hard disk space	GB (GigaByte) MB (MegaByte) To check the hard disk capacity and available space, click [My computer] and right-click the hard disk icon followed by [Properties] in the menu shown. The capacity and space will be shown.
Peripheral devices	**Product name and model name (manufacture name)**
Expansion memory	
Display	
Printer	
Expanded hard disk drive	
Network board	
PC card	
Other peripheral device(s)	

■ Software

Version of OS
Windows XP Professional (ServicePack   )

Application(s) running while the failure occurred

● Problem Check Sheet 2   Specific failure details

● What failed?   Describe the failure.

● Did any error messages or numbers appear on the screen? If any appeared, write the message(s) or the number(s).

● When does the failure occur? Describe the situation when the failure occurred, such as the names of all applications running and the operation status.
At every start-up. Every time the application is started. When a specific operation is performed. For the first time.

● Decribe what you noticed, if anything. Describe when you noticed the failure and whether anything unusual happened then.

● Problem Check Sheet 3   Configuration of device

168

NEC will confirm the following when receiving your repair request.
To eliminate any problem related to repair, complete all of the following items.

● **If the configuration of peripheral devices for repair is different from that written in Problem Check Sheet 1, enter the following.**

Peripheral devices	Product name and model name (manufacture name)
Expansion memory	
Display	
Printer	
Expanded hard disk drive	
Network board	
PC card	
Other peripheral device(s)	

● **Software may be initialized (including replacement of the hard disk) during repair. Do you agree with software initialization?**
If you do not agree with initialization, the device may not be repaired.
Be sure to backup the data you created in the hard disk before requesting a repair, regardless of whether you agree with initialization.   (For how to backup, see Windows Help.)

   Agree with initialization

   Do not agree with initialization

● **If the system setting (BIOS setting) has been changed, describe what was changed.**
After repair, the BIOS setting will be returned to the factory setting.
If you have changed the BIOS setting, be sure to record your changes.

Appendices

INDEX

Appendices

User's Manual

NEC Factory Computer
FC-NOTE Series

N22A

Ver. 1   May 2008

AM1-000859-001