Service Manual

Simplified

Notebook Computer

Model No. **CF-52EKMxDxM**

TOUGHBOOK

This is the Service Manual for
the following areas.
M ...for U.S.A. and Canada

Model No. CF-52EKM *1* D *2* M

1: Option Slot
    B: No Option
    H: Smart Card Reader, Finger Print Reader Configurated

2: Operation System
    A: Microsoft® Windows® XP Professional SP2 Downgrade
    J: Microsoft® Windows® VISTA Business SP1

Panasonic®

WARNING

For U.K.

This apparatus must be earthed for your safety.

To ensure safe operation the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe.

For your safety, if you have any doubt about the effective earthing of the power point, consult a qualified electrician.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 3 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 3 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark ◇ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced. If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

Warning: THIS APPLIANCE MUST BE EARTHED.

Important

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow: Earth
Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured RED.

The mains plug on this equipment must be used to disconnect the mains power.

Please ensure that a socket outlet is available near the equipment and shall be easily accessible.

■ How to replace the fuse

Open the fuse compartment with a screw-driver and replace the fuse.
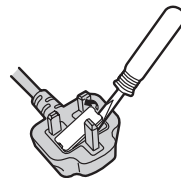
Warnings

● This equipment is not designed for connection to an IT power system.
   (An IT system is a system having no direct connections between live parts and Earth; the exposed-conducive-parts of the electrical installation are earthed.
   An IT system is not permitted where the computer is directly connected to public supply systems in the U.K.)

● Disconnect the mains plug from the supply socket when the computer is not in use.

This equipment is produced to BS800/1983.

LASER SAFETY INFORMATION

For U.S.A.

Class 1 LASER-Product

This product is certified to comply with DHHS Rules 21 CFR Subchapter J.
This product complies with European Standard EN60825 (or IEC Publication 825)

For all areas
This equipment is classified as a class 1 level LASER product and there is no hazardous LASER radiation.

> Caution:
> (1) Use of controls or adjustments or performance of procedures other than those specified herein
>   may result in hazardous radiation exposure.
> (2) The drive is designed to be incorporated into a computer-based system or unit which has
>   an enclosing cover. It should never be used as a stand alone drive.

> Danger:
> The serviceman should not remove the cover of drive unit and should not service because
> the drive unit is a nonserviceable part.
> Please check DANGER label on PD-drive unit.

• Unplug the AC power cord to the equipment before opening the top cover of the drive.
  When the power switch it on, do not place your eyes close to the front panel door to look into the interior
  of the unit.

LASER Specification

Class 1 level LASER Product
Wave Length: DVD 658±8 nm
                 CD   775~815 nm

Laser safety information is appropriate only when drive with laser is installed.

SAFETY PRECAUTIONS

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacture's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.

Important Safety Instructions

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak. vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

SAVE THESE INSTRUCTIONS

LITHIUM BATTERY

This computer contains a lithium battery to enable the date, time, and other data to be stored. The battery should only be exchanged by authorized service personel.
Warning! A risk of explosion from incorrect installation or misapplication may possibly occur.

LITHIUM BATTERY ⚠

• **CAUTION**
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

LITHIUMBATTERIES ⚠

Vorsicht!
Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben order einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

PILE AU LITHIUM ⚠

ATTENTION: IL Y A DANGER D'EXPLOSION S' IL Y A REMPLACEMENT INCORRECT DE LA PILE. REMPLACER UNIQUEMENT AVEC UNE PILE DU MÈME TYPE OU D'UN TYPE RECOMMANDÉ PAR LE CONSTRUCTEUR. METTRE AU RÉBUT LES PILES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.

Precautions (Battery Pack)

Do Not Use with Any Other Product
The battery pack is rechargeable and was intended for the specified product. If it is used with a product other than the one for which it was designed, electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Charge the Battery Using Methods Other Than Those Specified
If the battery is not charged using one of the specified methods, electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Throw the Battery Pack into a Fire or Expose It to Excessive Heat
Generation of heat, ignition or rupture may result.

Avoid Extreme Heat (Near the Fire, in Direct Sunlight, for Example)
Electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Insert Sharp Objects into the Battery Pack, Expose It to Bumps or Shocks, Disassemble, or Modify It
Electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Short the Positive (+) and Negative (-) Contacts
Generation of heat, ignition or rupture may result. Do not place the battery pack together with articles such as necklaces or hairpins when carrying or storing.

Do Not Use This Product with a Battery Pack Other Than the One Specified
Use only the specified battery pack with your product. Use of battery packs other than those manufactured and supplied by Panasonic may present a safety hazard (generation of heat, ignition or rupture).

A lithium ion battery that is recyclable powers the product you have purchased.
Please call 1-800-8-BATTERY for information on how to recycle this battery.

L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion.
Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- Do not expose the battery pack to water, or allow it to become wet.
- If the battery pack will not be used for a long period of time (a month or more), charge or discharge (use) the battery pack until the remaining battery level becomes 30% to 40% and store it in a cool, dry place.
- This computer prevents overcharging of the battery by recharging only when the remaining power is less than approx. 95% (when Economy Mode (ECO) is enabled: 75%) of capacity.
- The battery pack is not charged when the computer is first purchased. Be sure to charge it before using it for the first time. When the AC adaptor is connected to the computer, charging begins automatically.
- Should the battery leak and the fluid get into your eyes, do not rub your eyes. Immediately flush your eyes with clear water and see a doctor for medical treatment as soon as possible.

NOTE

- The battery pack may become warm during recharging or normal use. This is completely normal.
- Recharging will not commence if internal temperature of the battery pack is outside of the allowable temperature range (0 °C to 55 °C {32 °F to 131 °F}). (➔ 📖 *Reference Manual* "Battery Power") Once the allowable range requirement is satisfied, charging begins automatically. Note that the recharging time varies based on the usage conditions. (Recharging takes longer than usual when the temperature is 10 °C {50 °F} or below.)
- If the temperature is low, the operating time is shortened. Only use the computer within the allowable temperature range.
- The battery pack is a consumable item. If the amount of time the computer can be run by using a particular battery pack becomes dramatically shorter and repeated recharging does not restore its performance, the battery pack should be replaced with a new one.
- When transporting a spare battery inside a package, briefcase, etc., it is recommended that it be placed in a plastic bag so that its contacts are protected.
- Always power off the computer when it is not in use. Leaving the computer on when the AC adaptor is not connected will exhaust the remaining battery capacity.

CONTENTS

1. Specifications

This page provides the specifications for the basic model. The model number is different according to the unit configuration.

To check the model number:
Check the bottom of the computer or the box the computer came in at the time of purchase.
To check CPU speed, memory size and the hard disk drive (HDD) size:
Run the Setup Utility (📖 *Reference Manual* "Setup Utility") and select [Information] menu.
[CPU Speed]: CPU speed, [System Memory]: Memory size, [Hard Disk]: Hard disk drive size

Main Specifications

Model No.		CF-52EKMBDAM / CF-52FKMBZAM / CF-52EKMHDAM / CF-52EKMHDJM	CF-52GCMBXAM / CF-52GCMBEAM / CF-52HCMBZAM / CF-52GCMHEAM / CF-52GCMHEJM / CF-52GCMBVAM
CPU/Secondary cache memory		Intel® Core™2 Duo Processor Penryn P8600 (2.4 GHz, 3 MB[*1] L2 cache, 1066 MHz FSB)	Intel® Core™ 2 Duo Processor Penryn P8400 (2.26 GHz, 3 MB[*1] L2 cache, 1066 MHz FSB)
Chip Set		Mobile Intel® PM45 Express Chip set	Mobile Intel® GM45 Express Chip set
Main Memory[*2]		1 GB[*1], DDR2 SDRAM (4 GB[*1] Max.)	
Video Memory		**Windows Vista** 512 MB[*1] dedicated (1903 MB[*1] Max.)[*3] **Windows XP** 512 MB[*1] dedicated (1024 MB[*1] Max.)[*3]	**Windows Vista** UMA (1423 MB[*1] Max. / 358 MB[*1] Max. with expanded memory)[*3] **Windows XP** UMA (1024 MB[*1] Max.)[*3]
Hard Disk Drive		160 GB[*4] (Serial ATA) **Windows Vista** : Approx. 2 GB[*4] is used as a partition with recovery tools. (Users cannot use this partition.)	
CD/DVD drive		DVD MULTI Drive built-in, Buffer underrun error prevention function: Supported	
Continuous Data Transfer Speed[*5*6]	Reading[*7]	DVD-RAM[*8]: 24X (4.7 GB[*4]) DVD-R[*9]: 8X (Max.) DVD-R DL: 4X (Max.) DVD-RW: 4X (Max.) DVD-ROM: 8X (Max.) CD-ROM: 24X (Max.) CD-R: 24X (Max.) CD-RW: 24X (Max.) +R: 8X (Max.) +R DL: 4X (Max.) +RW: 4X (Max.)	
	Writing[*10]	DVD-RAM[*8]: 2X/3X/3-5X (4.7 GB[*4]) DVD-R: 1X/2X/2-4X/2-6X/2-8X DVD-R DL: 2X/2-4X DVD-RW: 1X/2X/2-4X/2-6X +R: 2.4X/2.4-4X/2.4-6X/2.4-8X +R DL: 2.4X/2.4-4X +RW: 2.4X/2.4-4X High-Speed +RW: 3.3X/3.3-6X/3.3-8X CD-R: 4X/10X/10-16X/10-20X/10-24X CD-RW: 4X High-Speed CD-RW: 4X/10X Ultra-Speed CD-RW: 10X/10-16X/10-20X/10-24X	
Supported Discs/ Format	Reading	DVD-ROM (Single Layer, Dual Layer) DVD-Video DVD-R[*9] (1.4 GB, 3.95 GB, 4.7 GB)[*4] DVD-R DL (8.5 GB)[*4] DVD-RW (Ver.1.1/1.2 1.4 GB, 2.8 GB, 4.7 GB, 9.4 GB)[*4] DVD-RAM[*8] (1.4 GB, 2.8 GB, 4.7 GB, 9.4 GB)[*4] +R (4.7 GB)[*4] +R DL (8.5 GB)[*4] +RW (4.7 GB)[*4] CD-Audio CD-ROM (XA compatible) CD-R Photo CD (multiple session compatible) Video CD CD-EXTRA CD-RW CD-TEXT	
	Writing	DVD-RAM[*8] (1.4 GB, 2.8 GB, 4.7 GB, 9.4 GB)[*4] DVD-R (1.4 GB, 4.7 GB for General)[*4] DVD-R DL (8.5 GB)[*4] DVD-RW (Ver.1.1/1.2 1.4 GB, 2.8 GB, 4.7 GB, 9.4 GB)[*4] +R (4.7 GB)[*4] +R DL (8.5 GB)[*4] +RW (4.7 GB)[*4] CD-R CD-RW	
Display Method		15.4 WUXGA type (TFT) (1920 × 1200 dots)	15.4 WXGA type (TFT) (1280 × 800 dots)
Internal LCD		65,536/16,777,216 colors (800 × 600 dots / 1024 × 768 dots / 1280 × 768 dots / 1440 × 900 dots / 1600 × 1200 dots / 1680 × 1050 dots / 1920 × 1080 dots / 1920 × 1200 dots)[*11]	65,536/16,777,216 colors (800 × 600 dots / 1024 × 768 dots / 1280 × 768 dots / 1280 × 800 dots)[*11]
External Display[*12]		65,536 / 16,777,216 colors (800 × 600 dots / 1024 × 768 dots / 1280 × 768 dots / 1600 × 1200 dots / 1920 × 1080 dots / 1920 × 1200 dots)	
Wireless LAN[*13]		Intel® WiFi Link 5100	
Bluetooth[*14]			
LAN		IEEE 802.3 10Base-T / IEEE 802.3u 100BASE-TX / IEEE 802.3ab 1000BASE-T	
Modem		Data: 56 kbps (V.92) FAX: 14.4 kbps	

Main Specifications

Model No.			CF-52EKMBDAM / CF-52FKMBZAM / CF-52EKMHDAM / CF-52EKMHDJM	CF-52GCMBXAM / CF-52GCMBEAM / CF-52HCMBZAM / CF-52GCMHEAM / CF-52GCMHEJM / CF-52GCMBVAM
Sound			WAVE and MIDI playback, Intel® High Definition Audio subsystem support	
Security Chip			TPM (TCG V1.2 compliant)[*15]	
Card Slots	PC Card Slot		x 1, Type I or Type II, Allowable current 3.3 V: 400 mA, 5 V: 400 mA	x 2, Type I or Type II, Allowable current 3.3 V: 400 mA, 5 V: 400 mA
	ExpressCard Slot		x 1, ExpressCard/34 or ExpressCard/54	—
	SD Memory Card Slot[*16]		x 1	
	Smart Card Slot[*17]		x 1	
RAM Module Slot			x 2, DDR2 SDRAM, 200-pin, 1.8 V, SO-DIMM, PC2-6400 Compliant	
Interface			USB Ports x 4 (4-pin, USB 2.0)[*18]/ Serial Port (Dsub 9-pin male) / Modem Port (RJ-11) / LAN Port (RJ-45) / External Display Port (Mini Dsub 15-pin female) / IEEE1394a Interface Connector (4-pin) / Microphone Jack (Miniature jack, 3.5 DIA) / Headphone Jack (Miniature jack, 3.5 DIA, Impedance 32 Ω, Output Power 4 mW × 2, Stereo) / Expansion Bus Connector (Dedicated 100-pin female),	
Keyboard / Pointing Device			87 keys / Touch Pad	
Fingerprint Reader[*19]			Array Size : 248 x 4 pixels, Image Size : 248 x 360 pixels, Image Resolution : 508 DPI	
Power Supply			AC adaptor or Battery pack	
AC Adaptor[*20]			IInput: 100 V - 240 V AC, 50 Hz/60 Hz, Output: 15.6 V DC, 8 A	
Battery Pack			Li-ion 11.1 V, 7.8 Ah	
Operating Time[*21]			Approx. 4 hours	Approx. 7 hours
Charging Time[*22]			Approx. 4 hours	
Power Consumption[*23]			Approx. 60 W[*24]/ Approx. 100 W (maximum when recharging in the ON state)	Approx. 45 W[*24]/ Approx. 100 W (maximum when recharging in the ON state)
Physical Dimensions (W × D × H) (including the carrying handle)			355.7 mm × 286.3 mm × 50.7 - 51.9 mm {14.0" × 11.3" × 2.0 "}	
Weight (including the carrying handle)			Approx. 3.4 kg {Approx. 7.5 lb.}	
Environment	Operating	Temperature	5 °C to 35 °C {5 °F to 95 °F}	
		Humidity	30% to 80% RH (No condensation)	
	Storage	Temperature	-20 °C to 60 °C {-4 °F to 140 °F}	
		Humidity	30% to 90% RH (No condensation)	

Software

Model No.	CF-52EKMHDJM / CF-52GCMHEJM	CF-52EKMBDAM / CF-52FKMBZAM / CF-52EKMHDAM / CF-52GCMBXAM / CF-52GCMBEAM / CF-52HCMHZAM / CF-52GCMHEAM / CF-52GCMBVAM
OS[*25]	Windows Vista® Business Service Pack 1	Microsoft® Windows® XP Professional Service Pack 2 with Advanced Security Technologies (NTFS File System)
Pre-installed Software	Adobe Reader, PC Information Viewer, Loupe Utility, B's Recorder GOLD9 BASIC[*26], B's CLiP 7[*26], Intel® PROSet / Wireless Software[*13], Bluetooth™ Stack for Windows® by TOSHIBA[*14], Wireless Switch Utility, Wireless Connection Disable Utility[*26], Hotkey Settings, Battery Recalibration Utility, Infineon TPM Professional Package[*26], Protector Suite QL[*19 *26], Setup Utility, Hard Disk Data Erase Utility[*27], PC-Diagnostic Utility	
	WinDVD™ 8 (OEM Version)	MediaPlayer10, Icon Enlarger, WinDVD™ 5 (OEM Version)

Wireless LAN

Data Transfer Rates	IEEE802.11a : 54/48/36/24/18/12/9/6 Mbps (automatically switched)[28] IEEE802.11b : 11/5.5/2/1 Mbps (automatically switched)[28] IEEE802.11g : 54/48/36/24/18/12/9/6 Mbps (automatically switched)[28] IEEE802.11n : (HT20) 144.4/130/117/115.6/104/86.7/78/65/58.5/57.8/52/43.3/39/28.926/19.5/ 14.4/13/6.5 Mbps (automatically switched)[28] (HT40) 300/270/243/240/216/180/162/130/120/117/108/104/90/81/78/60/54/52/ 39/30/27/26/13 Mbps (automatically switched)[28]
Standards Supported	IEEE802.11a / IEEE802.11b / IEEE802.11g / IEEE802.11n(Draft 2.0)
Transmission Method	OFDM system, DS-SS system
Wireless Channels Used	IEEE802.11a : Channels 36/40/44/48/52/56/60/64/100/104/108/112/116/132/136/140/149/153/ 157/161/165 IEEE802.11b/IEEE802.11g : Channels 1 to 11 IEEE802.11n : Channels 1-11/36/40/44/48/52/56/60/64/100/104/108/112/116/132/136/140/149/ 153/157/161/165
RF Frequency Band	IEEE802.11a : 5.18 GHz - 5.32 GHz, 5.5 GHz - 5.58 GHz, 5.66 GHz - 5.7 GHz, 5.745 GHz - 5.825 GHz IEEE802.11b/IEEE802.11g : 2.412 GHz - 2.462 GHz IEEE802.11n : 2.412 GHz - 2.462 GHz, 5.15 GHz - 5.35 GHz, 5.5 GHz - 5.58 GHz, 5.66 GHz - 5.7 GHz, 5.745 GHz - 5.85 GHz

Bluetooth™ <Only for model with Bluetooth>

Bluetooth Version	2.0 + EDR
Transmission Method	FHSS system
Wireless Channels Used	Channels 1 to 79
RF Frequency Band	2.402 GHz - 2.48 GHz

[1] 1 MB = 1,048,576 bytes / 1 GB = 1,073,741,824 bytes

[2] You can physically expand the memory up to 4 GB, but the total amount of usable memory available will be less depending on the actual system configuration.

[3] A segment of the main memory is allotted automatically depending on the computer's operating status. The size of the Video Memory cannot be set by the user. The size of Video memory is allotted depending on the operating system.

[4] 1 GB = 1,000,000,000 bytes. Your operating system or some application software will report as fewer GB.

[5] Data transfer speeds indicate values measured by Matsushita Electric Industrial Co., Ltd. The data transfer rate of DVD per 1X speed is 1,350 KB/s. The data transfer rate of CD per 1X speed is 150 KB/s.

[6] Performance of CD-R, CD-RW, DVD-RAM, DVD-R, DVD-R DL, DVD-RW, +R, +R DL, and +RW cannot be guaranteed depending on writing status and recording format. Also, some data cannot be played back depending on the disc, settings, and environment being used. Does not support writing to DVD-R DL/+R DL (dual layer discs) and Ultra-Speed CD-RW.

[7] If an unbalanced disc (e.g., a disc with which the balance has been displaced from the center) is inserted, the speed may become slower if there are large vibrations while the disc is rotating.

[8] Only non-cartridge type or removable cartridge type can be used.

[9] DVD-R is compatible with 4.7 GB (for General) playback. DVD-R (for Authoring) playback is compatible with discs recorded using Disc-at-Once recording.

[10] Depending on the disc, the writing speed may become slower.

[11] A 16,777,216 color display is achieved by using the dithering function.

[12] Display may be impossible using some connected external displays.

[13] Only for model with wireless LAN.

[14] Only for model with Bluetooth.

[15] For information on TPM, refer to the Installation Manual of "TrustedPlatform Module (TPM)" by the following procedure.

Windows Vista

Click (Start) and input "c:\util\drivers\tpm\README.pdf" in [Start Search] and press **Enter**.

Windows XP

Click [start] - [Run] and input "c:\util\drivers\tpm\README.pdf" and press Enter.

[16] This slot is compatible with High-Speed Mode. Operation has been tested and confirmed using Panasonic SD/SDHC Memory Cards with a capacity of up to 8 GB. Operation on other SD equipment is not guaranteed.

[17] Only for model with Smart Card slot.

[18] Does not guarantee operation of all USB-compatible peripherals.

[19] Only for model with Fingerprint reader.

[20] <Only for North America>
The AC adaptor is compatible with power sources up to 240 V AC adaptor. This computer is supplied with a 125 V AC compatible AC cord. 20-M-2-1

[21] Measured at (LCD brightness : 60 cd/m^2
Varies depending on the usage conditions, or when an optional device is attached.

[22] Varies depending on the usage conditions, CPU speed, etc.

[23] Approx. 0.9 W when the battery pack is fully charged (or not being charged) and the computer is off.

[24] Rated power consumption. 23-E-1

[25] Operations of this computer are not guaranteed except for the pre-installed OS and the OS which is installed by using the Product Recovery DVD-ROM provided by Panasonic.

[26] Must be installed before use.

[27] The Product Recovery DVD-ROM is required.

[28] These are speeds specified in IEEE802.11a+b+g+n standards. Actual speeds may differ.

2. Names and Functions of Parts
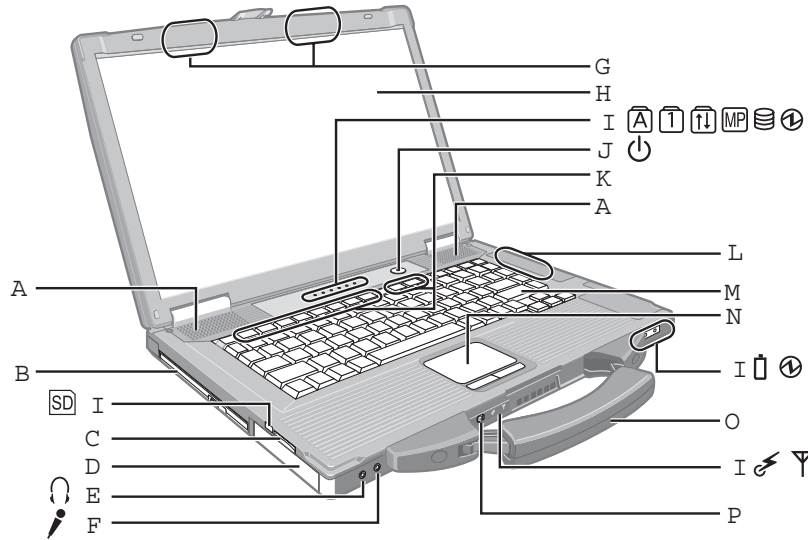
A : Speaker

📖 *Reference Manual* "Key Combinations"

B : Multimedia pocket

📖 *Reference Manual* "Multimedia Pocket"

C : SD Memory Card slot

📖 *Reference Manual* "SD Memory Card"

D : Battery pack[*1]
Specified Battery pack: CF-VZSU29ASU

E : Headphone jack
You can connect headphones or amplified speakers.
When they are connected, audio from the internal
speakers is not heard.

F : Microphone jack
A condenser microphone can be used. If other types
of microphones are used, audio input may not be pos-
sible, or malfunctions may occur as a result.
• When recording in stereo using a stereo microphone:

Windows Vista

Click 🔲 (Start) - [Control Panel] - [Hardware and
Sound] - [Sound] - [Recording] - [Microphone] -
[Properties], and then add a check mark for [No Fil-
tering] in [Microphone Enhancements].

Windows XP
Click [start] - [All Programs] - [SoundMAX] - [Control
Panel] and select [Microphone], and then add a check
mark for [No Filtering] in [Microphone Enhancements].
• When using a monaural microphone with a 2-terminal plug:

Windows Vista

Click 🔲 (Start) - [Control Panel] - [Hardware and
Sound] - [Sound] - [Recording] - [Microphone] -
[Properties], and then add a check mark for [Voice
Recording] in [Microphone Enhancements].
Otherwise, only audio on the left track will be recorded.

Windows XP
Click [start] - [All Programs] - [SoundMAX] - [Control Panel]
and select [Microphone], and then add a check mark for
[Voice Recording] in [Microphone Enhancements].
Otherwise, only audio on the left track will be recorded.

G : Wireless LAN/Wireless WAN antenna
<Only for model with wireless LAN/wireless WAN>

📖 *Reference Manual* "Wireless LAN"

H : LCD

I : LED indicator

Ⓐ Caps lock

🔟 Numeric key (NumLk)

Scroll lock (ScrLk)

MP Multimedia pocket device status

📖 *Reference Manual* "Multimedia Pocket"

🖴 Hard disk drive status

🔋 Battery status

📖 *Reference Manual* "Battery Power"

Power status
(Off: Power off/Hibernation, Green: Power on, Blink-
ing green: **Windows Vista** Sleep/ **Windows XP**
Standby, Blinking green rapidly: Cannot power on or
resume due to low temperature.)

SD SD Memory Card status
(Blinking: During access or a password is requested)

📖 *Reference Manual* "SD Memory Card"

Wireless ready
This indicator lights when Wireless LAN, Blue-
tooth, and/or Wireless WAN are connected and
ready. It does not necessarily indicate the On/Off
condition of the wireless connection.

📖 *Reference Manual* "Disabling/Enabling
Wireless Communication" "Wireless LAN"
"Bluetooth"

Ⲩ Wireless WAN status

J : Power switch

K : Function key

📖 *Reference Manual* "Key Combinations"

L : Bluetooth antenna
<Only for model with Bluetooth>

📖 *Reference Manual* "Bluetooth"

M : Keyboard

N : Touch pad

O : Carrying handle

P : Wireless switch

📖 *Reference Manual* "Disabling/Enabling Wire-
less Communication" "Wireless LAN" "Bluetooth"

[*1] The battery pack is a consumable item. If you continue to
use a battery pack after it has degraded, problems may
occur. Be sure to replace the degraded battery pack with a
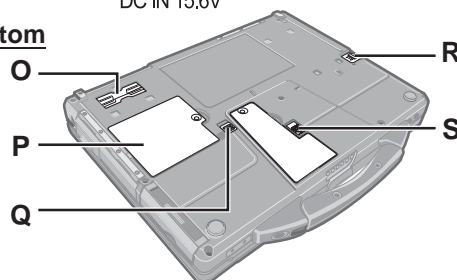new battery pack of the specified type.

Right side

A B C D
EX PC

G E F
1394
DC IN 15.6V

Rear side

K

F H I J L M N
LOCK

Bottom

O
P
Q

R
S
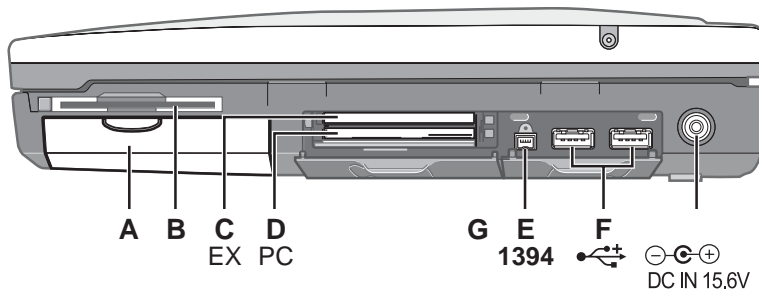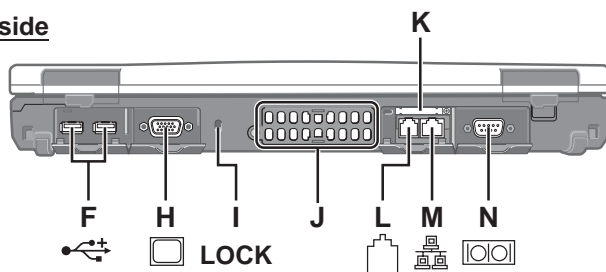
A : Hard disk drive

　Reference Manual "Hard Disk Drive"

B : Smart Card slot
　<Only for model with Smart Card slot>

　Reference Manual "Smart Card"

C : ExpressCard slot

　Reference Manual "PC Card / ExpressCard"

D : PC Card slot

　Reference Manual "PC Card / ExpressCard"

E : IEEE 1394 interface connector

　Reference Manual "IEEE 1394 Devices"

F : USB port

　Reference Manual "USB Devices"

G : DC-IN jack

H : External display port

　Reference Manual "External Display"

I : Security lock
　A Kensington cable can be connected.
　For further information, read the manual that comes
　with the cable.

J : Ventilation hole

K : SIM Card slot
　<For Wireless WAN model>
　When the SIM Card is necessary, remove the screw of
　the cover and then remove the cover to insert/remove
　the SIM Card.

L : Modem port

　Reference Manual "Modem"

M : LAN port

　Reference Manual "LAN"

N : Serial port

O : Expansion bus connector

　Reference Manual "Port Replicator"

P : RAM module slot

　Reference Manual "RAM Module"

Q : Hard disk drive latch

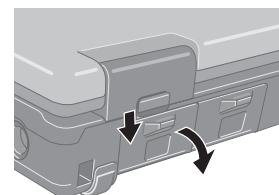　*Reference Manual* "Hard Disk Drive"

R : Multimedia pocket release button

　Reference Manual "Multimedia Pocket"
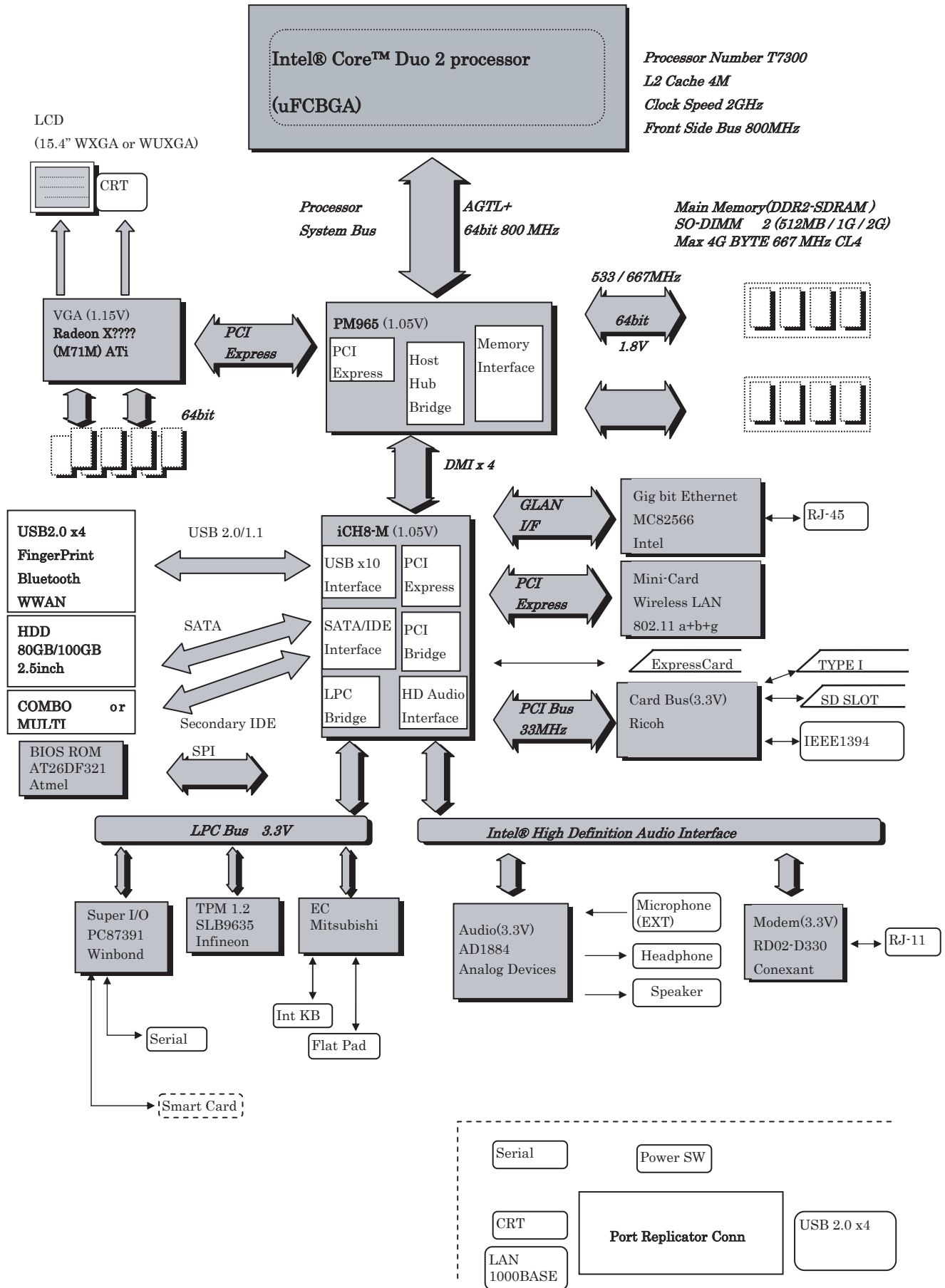
S : Battery latch

NOTE

When you open the covers (Example: USB port cover)
of ExpressCard slot, PC
card slot, IEEE 1394
interface connector, USB
port, External display port,
Modem port, LAN port and
Serial port, push down and
pull the covers.

This computer contains a
magnet and magnetic
products at the locations
circled in the illustration
at right. Avoid leaving
metallic object or mag-
netic media in contact
with these areas.

3 Block Diagram

Intel® Core™ Duo 2 processor

(uFCBGA)

Processor Number T7300
L2 Cache 4M
Clock Speed 2GHz
Front Side Bus 800MHz

LCD
(15.4" WXGA or WUXGA)

CRT

Processor
System Bus

AGTL+
64bit 800 MHz

Main Memory(DDR2-SDRAM)
SO-DIMM   2 (512MB / 1G / 2G)
Max 4G BYTE 667 MHz CL4

VGA (1.15V)
Radeon X????
(M71M) ATi

PCI
Express

PM965 (1.05V)

PCI
Express

Host
Hub
Bridge

Memory
Interface

533 / 667MHz

64bit

1.8V

64bit

DMI x 4

GLAN
I/F

Gig bit Ethernet
MC82566
Intel

RJ-45

USB2.0 x4
FingerPrint
Bluetooth
WWAN

USB 2.0/1.1

iCH8-M (1.05V)

USB x10
Interface

PCI
Express

SATA/IDE
Interface

PCI
Bridge

LPC
Bridge

HD Audio
Interface

PCI
Express

Mini-Card
Wireless LAN
802.11 a+b+g

HDD
80GB/100GB
2.5inch

SATA

ExpressCard

TYPE I

SD SLOT

PCI Bus
33MHz

Card Bus(3.3V)
Ricoh

IEEE1394

COMBO   or
MULTI

Secondary IDE

BIOS ROM
AT26DF321
Atmel

SPI

LPC Bus   3.3V

Intel® High Definition Audio Interface

Super I/O
PC87391
Winbond

TPM 1.2
SLB9635
Infineon

EC
Mitsubishi

Audio(3.3V)
AD1884
Analog Devices

Microphone
(EXT)

Headphone

Speaker

Modem(3.3V)
RD02-D330
Conexant

RJ-11

Int KB

Flat Pad

Serial

Smart Card

Serial

Power SW

CRT

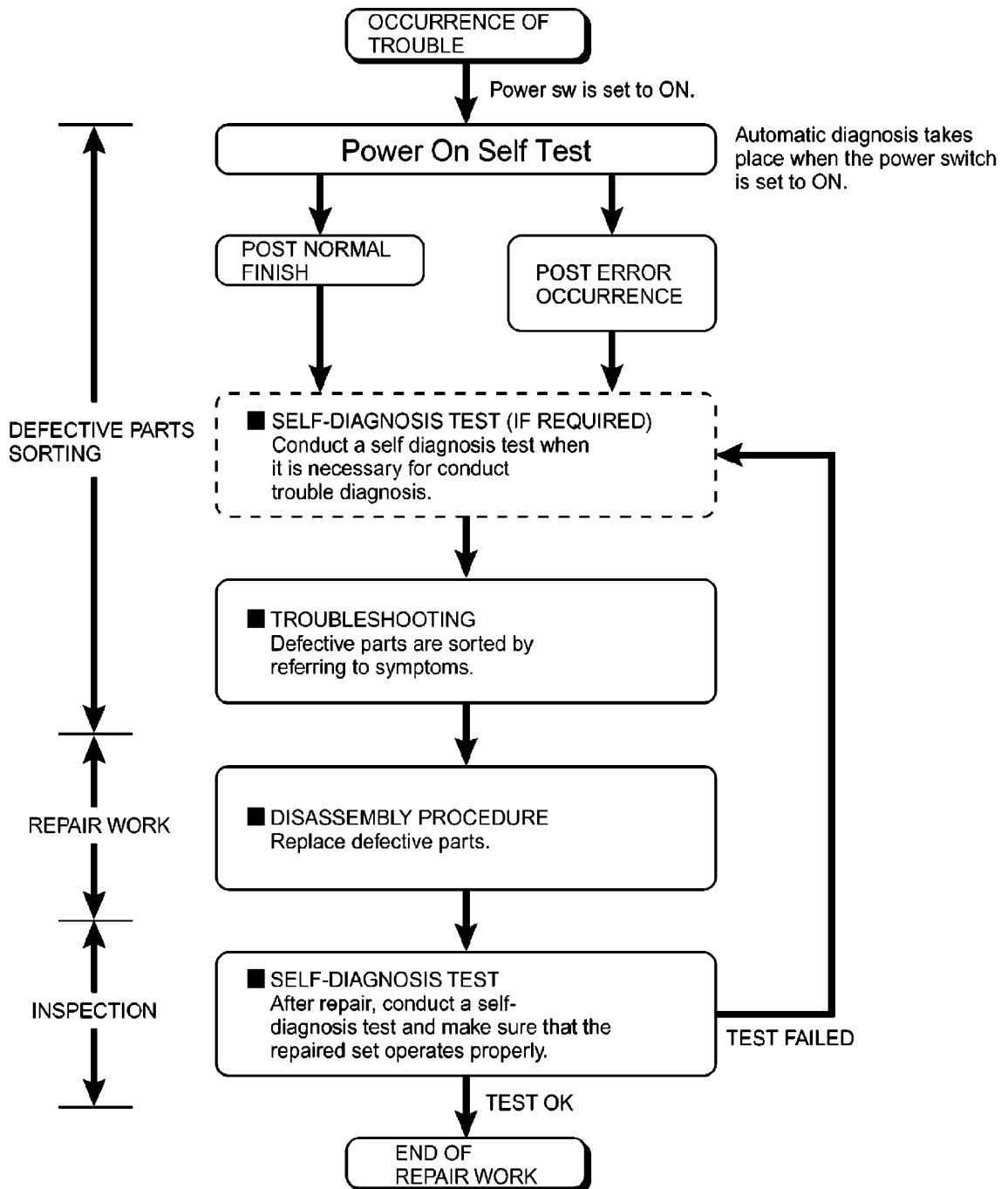Port Replicator Conn

USB 2.0 x4

LAN
1000BASE

4 Diagnosis Procedure

4.1. Basic Procedures

The basic procedures for diagnosis, disassembly, and test of defective parts of a set to be repaired are summarized below. For details, refer to relevant pages in the Service Manual.
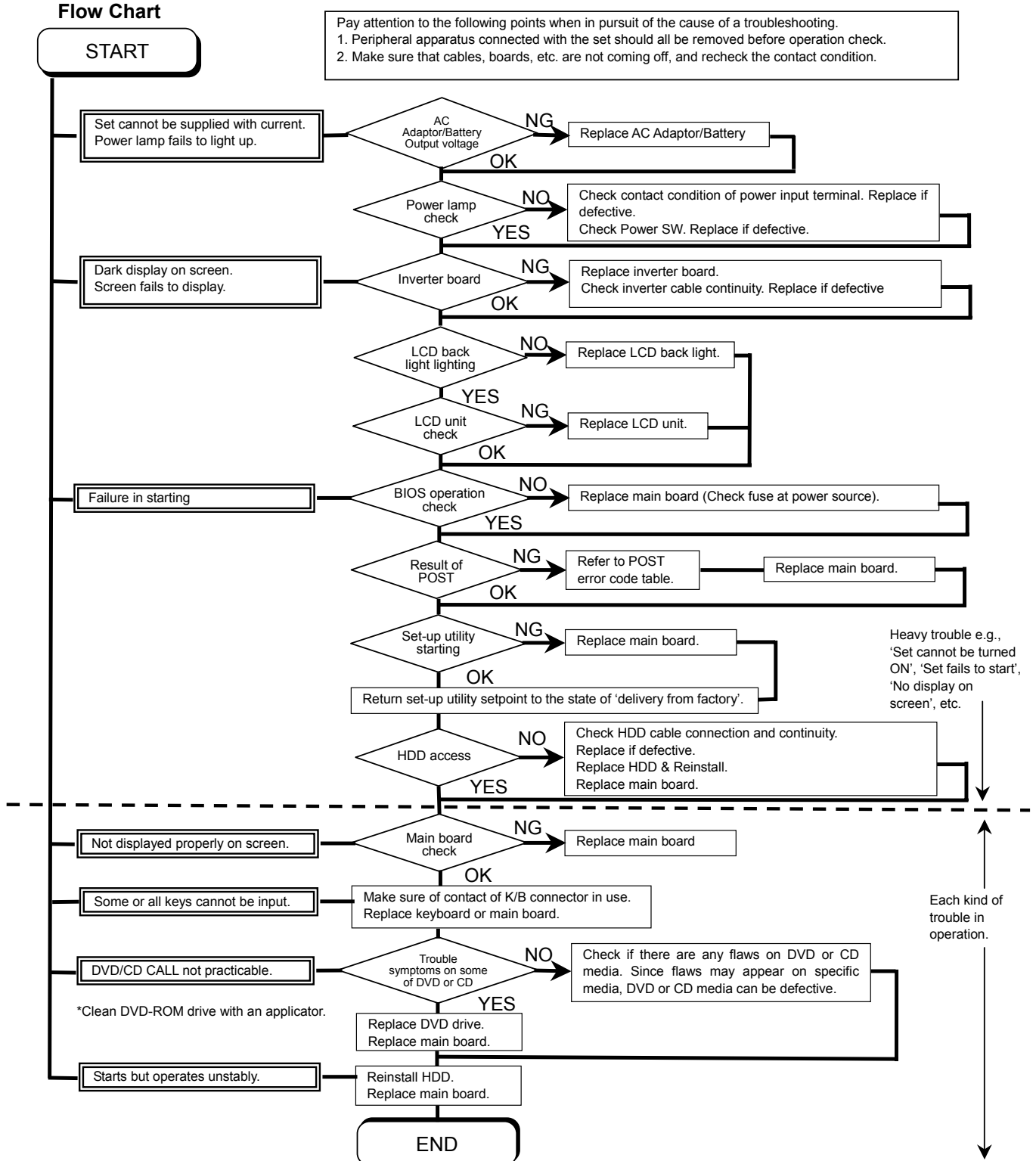
● **Flow Chart**

```
                    ┌──────────────────┐
                    │ OCCURRENCE OF    │
                    │ TROUBLE          │
                    └──────────────────┘
                             │  Power sw is set to ON.
                             ▼
                    ┌──────────────────────────┐      Automatic diagnosis takes
                    │    Power On Self Test     │      place when the power switch
                    └──────────────────────────┘      is set to ON.
                     │                        │
                     ▼                        ▼
            ┌──────────────┐          ┌──────────────┐
            │ POST NORMAL  │          │ POST ERROR   │
            │ FINISH       │          │ OCCURRENCE   │
            └──────────────┘          └──────────────┘
                     │                        │
                     ▼                        ▼
DEFECTIVE PARTS   ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
SORTING           │ ■ SELF-DIAGNOSIS TEST (IF REQUIRED) │
                  │   Conduct a self diagnosis test when │◄──
                  │   it is necessary for conduct        │
                  │   trouble diagnosis.                 │
                  └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                             │
                             ▼
                  ┌──────────────────────────┐
                  │ ■ TROUBLESHOOTING        │
                  │   Defective parts are sorted by │
                  │   referring to symptoms. │
                  └──────────────────────────┘
                             │
REPAIR WORK                  ▼
                  ┌──────────────────────────┐
                  │ ■ DISASSEMBLY PROCEDURE  │
                  │   Replace defective parts. │
                  └──────────────────────────┘
                             │
INSPECTION                   ▼
                  ┌──────────────────────────┐
                  │ ■ SELF-DIAGNOSIS TEST    │
                  │   After repair, conduct a self- │
                  │   diagnosis test and make sure that the │
                  │   repaired set operates properly. │  TEST FAILED
                  └──────────────────────────┘
                             │  TEST OK
                             ▼
                    ┌──────────────────┐
                    │ END OF           │
                    │ REPAIR WORK      │
                    └──────────────────┘
```

4.2. Troubleshooting

Please take note of the following two points with regard to troubleshooting:
1. Know-how of diagnosis upon occurrence of heavy troubles, e.g. 'Set cannot be turned ON', 'Set fails to start', 'No display on screen', etc.
2. Explanation of each trouble, mainly symptom of trouble in operation.

Flow Chart

START

Pay attention to the following points when in pursuit of the cause of a troubleshooting.
1. Peripheral apparatus connected with the set should all be removed before operation check.
2. Make sure that cables, boards, etc. are not coming off, and recheck the contact condition.

Set cannot be supplied with current.
Power lamp fails to light up.

AC Adaptor/Battery Output voltage — NG → Replace AC Adaptor/Battery

OK

Power lamp check — NO → Check contact condition of power input terminal. Replace if defective.
Check Power SW. Replace if defective.

YES

Dark display on screen.
Screen fails to display.

Inverter board — NG → Replace inverter board.
Check inverter cable continuity. Replace if defective

OK

LCD back light lighting — NO → Replace LCD back light.

YES

LCD unit check — NG → Replace LCD unit.

OK

Failure in starting

BIOS operation check — NO → Replace main board (Check fuse at power source).

YES

Result of POST — NG → Refer to POST error code table. → Replace main board.

OK

Set-up utility starting — NG → Replace main board.

OK

Return set-up utility setpoint to the state of 'delivery from factory'.

HDD access — NO → Check HDD cable connection and continuity.
Replace if defective.
Replace HDD & Reinstall.
Replace main board.

YES

Heavy trouble e.g.,
'Set cannot be turned ON', 'Set fails to start', 'No display on screen', etc.

Not displayed properly on screen.

Main board check — NG → Replace main board

OK

Some or all keys cannot be input.

Make sure of contact of K/B connector in use.
Replace keyboard or main board.

DVD/CD CALL not practicable.

*Clean DVD-ROM drive with an applicator.

Trouble symptoms on some of DVD or CD — NO → Check if there are any flaws on DVD or CD media. Since flaws may appear on specific media, DVD or CD media can be defective.

YES

Replace DVD drive.
Replace main board.

Each kind of trouble in operation.

Starts but operates unstably.

Reinstall HDD.
Replace main board.

END

5 Power-On Self Test (Boot Check)

Outline of POST

The set has a boot check function called POST (Power-On Self Test) in it. The condition of the main body is diagnosed by checking beep sound or error code.

- Start ....Test begins automatically when power switch is set to ON.
- Normal finish .....After memory checking, a beep sound is issued once and the set is placed into automatic stop.

Note: If no error occurs, nothing is displayed. (No display of OK, etc.)

Error Diagnosis by Checking Beep Signal Sound

The beep sound is as follows:

■■ ■ ■ ■ ■ ■ ■ ■ ■ ■ (1 (long sound) -2-3-4)

(Length of bar shows length of sound.)

■ = long sound (about 0.4 sec.),   ■ = short sound (about 0.2 sec.), Length between sounds is about 0.1 sec.

● **Table of errors classified by beep sounds**

Diagnosis	Beep signal sound	Error message
Main board	1(long sound)-2	BIOS ROM error
	1-2-2-3	BIOS ROM error
	1-3-1-1	RAM error
	1-3-1-3	Keyboard controller error
	1-3-4-1	RAM error
	1-3-4-3	RAM error
	1-4-1-1	RAM error
	2-1-2-3	BIOS ROM error
	2-2-3-1	Occurrence of unexpected offering

(Note) A beep sound is also issued in case of other I/O trouble.

6 List of Error Codes <Only when the port replicator is connected>

The following is a list of the messages that BIOS can display. Most of them occur during POST. Some of them display information about a hardware device, e.g., the amount of memory installed. Others may indicate a problem with a device, such as the way it has been configured. Following the list are explanations of the messages and remedies for reported problems.

If your system displays one of except the messages marked below with an asterisk (*), write down the message and contact Panasonic Technical Support. If your system fails after you make changes in the Setup menus, reset the computer, enter Setup and install Setup defaults or correct the error.

0200 Failure Fixed Disk

Fixed disk in not working or not configured properly. Check to see if fixed disk is attached properly. Run Setup. Find out if the fixed-disk type is correctly identified.

0210 Stuck key

Stuck key on keyboard.

0211 Keyboard error

Keyboard not working.

0212 Keyboard Controller Failed

Keyboard controller failed test. May require replacing keyboard controller.

0213 Keyboard locked - Unlock key switch

Unlock the system to proceed.

0230 System RAM Failed at offset : *nnnn*

System RAM failed at offset *nnnn* of in the 64k block at which the error was detected.

0231 Shadow RAM Failed at offset : *nnnn*

Shadow RAM failed at offset *nnnn* of the 64k block at which the error was detected.

0232 Extended RAM Failed at offset : *nnnn*

Extended memory not working or not configured properly at offset *nnnn*.

0250 System battery is dead - Replace and run SETUP

The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.

*0251 System CMOS checksum bad - Default configuration used

System CMOS has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS. The BIOS installed Default SETUP Values. If you do not want these values, enter Setup and enter your own values. If the error persists, check the system battery or contact Panasonic Technical Support.

0260 System timer error

The timer test failed. Requires repair of system board.

0270 Real time clock error

Real-time clock fails BIOS test. May require board repair.

*0280 Previous boot incomplete - Default configuration used

Previous POST did not complete successfully. POST loads default values and offers to run Setup. If the failure was caused by incorrect values and they are not corrected, the next boot will likely fail. On systems with control of **wait states**, improper Setup settings can also terminate POST and cause this error on the next boot. Run Setup and verify that the wait-state configuration is correct. This error is cleared the next time the system is booted.

0281 Memory Size found by POST differed from EISA CMOS

Memory size found by POST differed from EISA CMOS.

02D0 System cache error - Cache disabled

Contact Panasonic Technical Support.

02F0: CPU ID:

CPU socket number for Multi-Processor error.

02F4: EISA CMOS not writable

ServerBIOS2 test error: Cannot write to EISA CMOS.

02F5: DMA Test Failed

ServerBIOS2 test error: Cannot write to extended DMA (Direct Memory Access) registers.

02F6: Software NMI Failed

ServerBIOS2 test error: Cannot generate software NMI (Non-Maskable Interrupt).

02F7: Fail - Safe Timer NMI Failed

ServerBIOS2 test error: Fail-Safe Timer takes too long.

***device* address Conflict**

Address conflict for specified *device*.

Allocation Error for: *device*

Run ISA or EISA Configuration Utility to resolve resource conflict for the specified *device*.

Failing Bits : *nnnn*

The hex number *nnnn* is a map of the bits at the RAM address which failed the memory test. Each 1 (one) in the map indicates a failed bit. See error 230,231 or 232 for offset address of the failure in System, Extended or Shadow memory.

Invalid System Configuration Data

Problem with NVRAM (CMOS) data.

I/O device IRQ conflict

I/O device IRQ conflict error.

Operating System not found

Operating system cannot be located on either drive A: or drive C:. Enter Setup and see if fixed disk and drive A: are properly identified.

Parity Check 1 *nnnn*

Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????. Parity is a method for checking errors in binary data. A parity error indicates that some data has been corrupted.

Parity Check 2 *nnnn*

Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????.

Press <F1> to resume, <F2> to Setup

Displayed after any recoverable error message. Press <F1> to start the boot process or <F2> to enter a Setup and change the settings. Write down and follow the information shown on the screen.

7 Self Diagnosis Test

As for the self-diagnosis test(PC-Diagnostic utility) to use this model, a standard test and the enhancing test by the module of the main body building in are possible.

> Notes   To skip BIOS password
> > Use <Ctrl>+<F10> key to skip BIOS password or authentication of fingerprint.
> > This key is only for entering DIAG mode. Not available to boot the computer.
> > If customer set "HDD Lock", the DIAG program cannot perform HDD test.
> > *This key is for service purpose only. Do not disclose this information to unrelated others.

1. Beginning of self-diagnosis test
1-1. Setting of content of setup

1. The power supply of the computer is turned on.
2. " F2 " is pushed on the screen of "Panasonic" while " press <F2 to enter Setup> " is displayed.
3. The setup utility starts and then takes notes of the content of the BIOS setup of present set.
4. " F9 " is pushed, " Yes" is selected on the screen of " Is the default value loaded? ", and " Enter" is pushed.
5. " F10 " is pushed.
6. " Yes" is selected on the screen of the setup confirmation, and " Enter" is pushed.
7. The computer starts automatically.

> Attention
> > If the device which can be set is set to "Invalidity" by "Advanced" or "Security" menu, becomes an error by "PC-Diagnostic utility".
> > (It is judged that the device which can be set to "Invalidity" by "Main" menu such as "Flat pad" is normal if the controller operates normally though sets to "Invalidity" by the setup.)
> > In the model with built-in DVD of the USB connection, even if DVD is normal, becomes an error if legacy USB is set to "Invalidity"

1-2. When you execute an automatic test

1. "Ctrl" + "F7" is pushed while the "Panasonic" start screen is displayed after the computer is started.
2. The test of all devices begins automatically by "PC-Diagnostic utility" 's starting.

> Attention
> > It is a test which the customer who bought PC can execute. (As for HDD, the enhancing test is also possible.)
> > A flat pad does not work for a while after starting "PC-Diagnostic utility".
> > The movement of a flat pad might become abnormal If after RAM begins from the CPU/System test, a flat pad will be operated in about 30 seconds. In that case,restarts pushing"Alt" + "Ctrl" + "Del" key. Or, please start "PC-Diagnostic utility" again after doing the power supply switch in the slide, and turning off the power supply.

1-3. When you execute the enhancing test

1. Please let me discontinue diagnosing clicking ▢ to end an automatic test.
2. Please click on the character of "D" "PC-Diagnostic utility" on the screen while pushing both of right "Shift" and left "Shift" keys.

3. All devices which can select the enhancing test make the setting of the enhancing test possible.
4. The district device is made"FULL" display (enhancing test).
5. The test begins clicking ▶ .

*Please refer to item 4 for the error result of each test and the division of the breakdown part.

2. Operation of PC-Diagnostic Utility

-Only the device which can be inspected on the entire screen is displayed.
-The item does not appear when the device of wireless LAN etc. is not physically connected.
-The movement of the item must use an arrow key or a flat pad.

-As for the device under the diagnosis, blue and yellow are alternately displayed at the left of the icon.
- The diagnosis result of the device greens at the left of the icon when it is normal, and becomes red when abnormal.
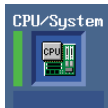
-When the test of all devices ends, the test result is displayed under the right of the screen.

-Please click ⬜ while diagnosing when being stop on the way by the time the test of all devices ends.
-Please click ▷ when you restart "PC-Diagnostic utility".
*Each device is tested from the beginning, and it is not possible to restart on the way.
-When the test of all devices ends, the test result is displayed under the right of the screen.

2-1. Selection of tested device

 -To test only a specific device, "Test" and "Do not test" of each device can be selected.
 -The device which can select the enhancing test changes in order of "The standard is tested" and "Do not test" whenever the device icon is clicked.

 Start the standard test   Do not test

Please begin testing clicking if the selection of the tested device ends.

2-2. "PC-Diagnostic utility" End method

When of "Close" on the right of the screen is clicked, the computer reactivates automatically. Or, the power supply switch is done in the slide and the power supply is turned off.

2-3. The content of the setup is returned to the setting of the user

1. Turned on the computer.
2. "F2" is pushed on the screen while "Press<F2>to enter Setup" is displayed of "Panasonic".
3. Push "F10", and on the screen of "Is the change in the setting preserved and do end?"and then "Yes" is selected, and "Enter" is pushed.
4. The computer reactivates automatically.
5. The end option is chosen by the start menu, and the power supply of the computer is turned off.

    Standard at test time
    All devices other than RAM and HDD ---------- about 1 minute
    RAM standard test --------------------------------- 1 - 2 minutes
    HDD standard test --------------------------------- 2 - 3 minutes
    HDD enhancing test (60GB) ---------------------- about 40 minutes

 Ex.The standard when the standard <all device> is tested becomes 1+2+3=6 minutes.

   There is greatly a difference from RAM test when the memory is increased according to the performance of the memory occasionally.
   Moreover, when the main body of PC under the test is a high temperature, it occasionally takes time.
   There is greatly a difference from HDD according to the performance of the drive occasionally.

3. Test Item and Division of trouble

Test item	Stanard	Enhan-cing	Content of standard test	Content of enhancing test	Place with possibility of breakdown
CPU / SYSTEM	◯	—	CPU is shifted to protected mode, and "Violation of the paging", "Operation of the violation of a privileged instruction", and DMA, INT, TIMER, and the RTC operation are confirmed.	—	CPU / Main board
RAM	◯	—	All memory space is tested in a special memory access pattern based on "R.S.T . technology".	—	Memory / Mainboard
HDD	◯	◯	The record area frequently accessed with Microsoft Windows XP to test in about two minutes regardless of points of HDD is emphatically tested.	All record area is tested.	HDD / Mainboard / Cable / Connector
MODEM	◯	—	It is confirmed not to find abnormality in the AC97 modem controller.	—	MODEM/ Mainboard
Wireless LAN	◯	—	It is confirmed not to find abnormality in the Wireless LAN modem controller.	—	Wireless LAN board / Connector / Mainboard
Sound *5	◯	—			
USB	◯	◯ *1	It is confirmed not to find abnormality in the USB controller.	It is confirmed not to find abnormalityin the wiring between the USB controller and the connector by confirming the connection of the USB equipment connected with the USB connector.	Mainboard / Connector
LAN	◯	◯ *2	It is confirmed not to find abnormality in the LAN controller.	It is confirmed not to find abnormalityin the wiring between the controller and the connector by connecting to HUB with LAN cable.	Mainboard / Connector
PC Card	◯	—	It is confirmed not to find abnormality in the CardBus controller.	—	Mainboard
SD	◯	—	It is confirmed not to find abnormality in the SD controller.	—	Mainboard
Keyboard	◯	◯ *3	It is confirmed not to find abnormality in keyboard controller's keyboard interface.	The key is actually input, and the operation is displayed on the screen.	Mainboard / Keyboard
Touch Pad	◯	◯ *4	Whether keyboard controller's mouse interface operates normally is confirmed.	The operation is actually displayed on the screen by operating the touch pad.	Mainboard / Touch Pad
DVD-ROM	◯	◯ *6	The drive is normally reset, and it is accessible is confirmed.	It is confirmed to be able to read media normally.	Mainboard / DVD Drive / DVD Cable / DVD Connector

Test Item	Standard	Enhanced	Content of Standard Test	Content of Extend Test	The place with possibility of breakdown
Touch Screen	○	○	It is confirmed not to find abnormality in the USB connection of Touch Screen. This test cannot find abnormality of Touch Screen.	Perform Touch Screen functionality practically. Operator has to judge PASS/FAIL with test result.	Main board/ Touch Screen
Bluetooth	○		It is confirmed not to find abnormality in the connection of Main board and Bluetooth module.	—	Bluetooth cable
Wireless WAN	○	—	It is confirmed not to find abnormality in the connection of Main board and Wireless WAN module.	—	WWAN cable
Floppy	○	—	It is confirmed not to find abnormality in the legacy FD drive. This test cannot find abnormality of mechanical breakdown. (e.g.. Head, Motor)	—	FD Drive/ Main board (Super I/O)/ FDD cable FDD connector
Video	○	—	It is confirmed not to find abnormality in access to VRAM with VESA. The PC which uses main memory as VRAM may fail with main memory failure.	—	Main board (Chipset, Graphic Controller)/ Memory
GPS	○	—	It is confirmed not to find abnormality in the connection of Main board and GPS	—	GPS cable
IEEE1394	○	—	It is confirmed not to find abnormality in the IEEE1394 controller.	—	Main board (IEEE1394 Controller)
Express Card	—	○	—	It is confirmed not to find abnormality in the wiring between Chipset and Express Card.	Main board (Chipset)/ Express Card Connector
Smart Card	○	—	It is confirmed not to find abnormality in the Smart Card controller.	—	Main board (Smart Card Controller)
Serial Port	○	○ *7	It is confirmed not to find abnormality of Super I/O UART function. This test cannot find lack of wiring between Super I/O and Serial Connector.	It is confirmed not to find abnormality in the wiring between Super I/O and Serial Connector. This test cannot find failure of cable characteristic and device problems.	Main board (Super I/O)/ Serial Connector
Parallel Port	○	○ *8	It is confirmed not to find abnormality of Super I/O parallel function. This test cannot find lack of wiring between Super I/O and Parallel Connector.	It is confirmed not to find abnormality in the wiring between Super I/O and Parallel Connector. This test cannot find failure of cable characteristic and device problems.	Main board (Super I/O)/ Parallel Connector

*1 Please connect the USB device with the port (USB connector) which wants to test before the tests.
*2 Please connect LAN port with LAN HUB with LAN cable before the tests.
*3 The operator actually inputs the key, and the operator judges PASS/FAIL of the test.
*4 The operator actually operates the mouse, and the operator judges PASS/FAIL of the test.
*5 It is not abnormal though the sound is emitted from the speaker while testing.
　　※ When the test result is PASS, trouble is thought by not hearing of the sound under the test from the speaker and the headphone by the wiring of the audio output system.
*6 Please set DVD/CD media in the drive before the tests.
*7 Please set a Special Loop Back Connector Tool at serial connector for Enhanced Test.
　　(This Connector Tool is same as the one used before.)
*8 Please set a Special Loop Back Connector Tool at parallel connector for Enhanced Test.
　　(This Connector Tools is same as the one used before.)

8 Wiring Connection Diagram

SPEAKER (R)

SPEAKER (L)

SERIAL PCB

CN4000   CN4001

SERIAL PORT

SW LED MDC PCB

CN4201

CN4203

CN4200

CN4202

LCD

INVERTER

EX/PC CARD
EJECTOR

EXTERNAL
DISPLAY

USB   USB

EXPANTION
BUS

Connector by Cable

Direct connection by Connectors

Parts on Bottom Side

MODEM

CN36

CN28

CN30   CN29

JK1000

DC-IN

CN5

CN31

CN35

FAN

CN18

MAIN PCB

CN16   USB

CN7

CN15   USB

CN5000

CN9   IEEE1394

BT PCB

DVD DRIVE

CN33

CN19

CN10

DIMM MEMORY CARD

CN2   CN3

LITHIUM
BATTERY

CN4

CN34

ANTENNA
PWB L

CN22

KEYBOARD

KBD FPC

ANTENNA
PWB R

CN21

CN13

HDD

SD PCB

CN1000

CN7002

CN25

CN14

CN27

CN23

JK7001   JK7003

JK7002   JK7004

WWAN PCB

SC RELAY PCB

CN6503

BATT FPC

CN9000

BIOS PCB

SD PCB

CN4300

SD

CN3401

TOUCH PAD PCB

CN4100

CN4101

WIRELESS
LAN MODULE

PWR BATT
LED PCB

CN4400

PAD

AUDIO PCB

JK3004 JK3003

CN3000

Microphone

Headphone

9 Disassembly/Reassembly

Note:

Power off the computer. Do not shut down to the Suspend or hibernation mode.

Do not add peripherals while the computer is in the Suspend or hibernation mode; abnormal operation may result.

9.1. Disassembly Instructions

9.1.1. Disassembly Flowchart

The chart below shows the various parts which should be removed in order to remove the parts that are to be replaced.

Parts can be replaced efficiently be following the disassembly   steps in the chart.

```
┌──────────────────────┐   ┌──────────────────────┐        ┌──────────────────────┐
│ 9.1.3.1. Battery Pack│   │9.1.3.2. HDD Mounting │────────│9.1.3.3. DVD Multi    │
│                      │   │Kit                   │        │Drive                 │
└──────────────────────┘   └──────────────────────┘        └──────────────────────┘
                                      ┌─────────────────┐
                                      │  9.1.4. HDD     │
                                      └─────────────────┘

┌──────────────────────┐   ┌──────────────────────┐   ┌──────────────────────────┐
│9.1.5. Tilt Panel Ass'y│  │9.1.6. DIMM Memory Card│  │9.1.7. ROBSON Cover,      │
│                      │   │                      │   │Wireless LAN Module and   │
└──────────────────────┘   └──────────────────────┘   │BIOS PCB                  │
                                                       └──────────────────────────┘

┌──────────────────────┐   ┌──────────────────────┐   ┌──────────────────────────┐
│9.1.8. Display Unit   │───│9.1.9. LCD Unit,      │   │9.1.10. Handle Ass'y      │
│                      │   │Inverter Ass'y, and   │   │                          │
└──────────────────────┘   │ANTENNA PWB L, R      │   └──────────────────────────┘
                           └──────────────────────┘

┌──────────────────────┐
│9.1.11. Modem         │
└──────────────────────┘

┌──────────────────────┐   ┌──────────────────────┐
│9.1.12. SW LED MDC    │   │9.1.13. Keyboard      │
│PCB, Speaker L and R  │   │                      │
└──────────────────────┘   └──────────────────────┘

┌──────────────────────┐
│9.1.14. Top Cover     │
└──────────────────────┘

┌──────────────────────┐   ┌──────────────────────┐   ┌──────────────────────────┐
│9.1.15. Pad and TOUCH │   │9.1.16. SD PCB        │   │9.1.17. WWAN PCB          │
│PAD PCB               │   │                      │   │                          │
└──────────────────────┘   └──────────────────────┘   └──────────────────────────┘

┌──────────────────────┐   ┌──────────────────────┐   ┌──────────────────────────┐
│9.1.20. KBD Earth     │   │9.1.19. PWR BATTERY   │   │9.1.18. AUDIO PCB         │
│Plate                 │   │LED PCB               │   │                          │
└──────────────────────┘   └──────────────────────┘   └──────────────────────────┘

┌──────────────────────┐                              ┌──────────────────────────┐
│9.1.21. Hinge Support R│                             │9.1.22. Fan Ass'y         │
└──────────────────────┘                              └──────────────────────────┘

┌──────────────────────┐   ┌──────────────────────┐   ┌──────────────┐   ┌──────────────────────┐
│9.1.24. Battery       │   │9.1.25. SC RELAY PCB  │   │9.1.26. Heat  │   │9.1.23. Hinge support │
│Connector Ass'y       │   │and HDD Hold Plate    │   │Sink Ass'y    │   │L and MP Hold Plate   │
└──────────────────────┘   └──────────────────────┘   └──────────────┘   └──────────────────────┘

┌──────────────────────┐                                                 ┌──────────────────────┐
│9.1.28. MAIN HIGH PCB │                                                 │9.1.27. SERIAL PCB    │
└──────────────────────┘                                                 └──────────────────────┘
```

9.1.2. Preparation

Before disassembling, be sure to make the following preparations.

- Shut down Windows and turn off the power.
- Disconnect the AC adaptor.
- Remove the optional DIMM memory card and PCMCIA card if they are connected.
- Remove other devices if they are connected.

Attention:

- Please execute writing BIOS ID when you exchange the Main Board.
- You cannot reuse the Conductive Clothes and the heat dissipating parts such as Sheet and Rubber. Use new parts.

9.1.3. Removing the Battery Pack, HDD Mounting Kit and DVD Multi Drive

9.1.3.1. Battery Pack

1. Remove the Cover Battery.
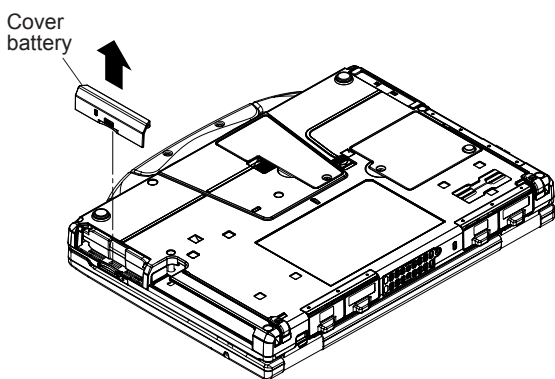
2. Pull out the Battery Pack with sliding the Battery Latch Knob.
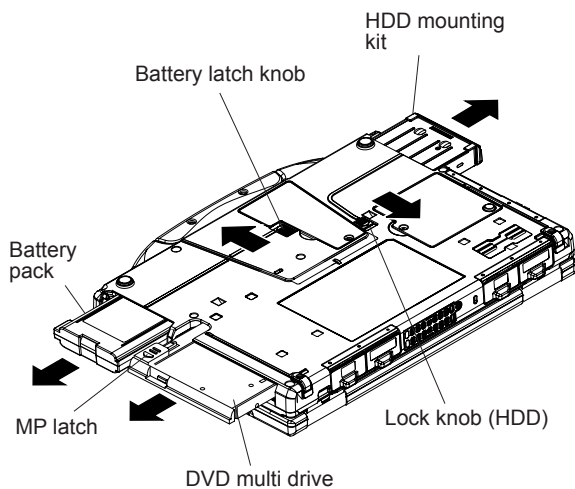
9.1.3.2. HDD Mounting Kit

1. Pull out the HDD Mounting Kit with sliding the Lock Knob (HDD).

9.1.3.3. DVD Multi Drive

1. Pull out the DVD Multi Drive with pushing the MP Latch.

9.1.4. Removing the HDD

1. Remove the six Hooks, and remove the HDD Case Upper , HDD case and HDD Insulation Sheet.
2. Remove the HDD from the HDD Dumper.
3. Disconnect the HDD FPC Ass'y from the HDD.
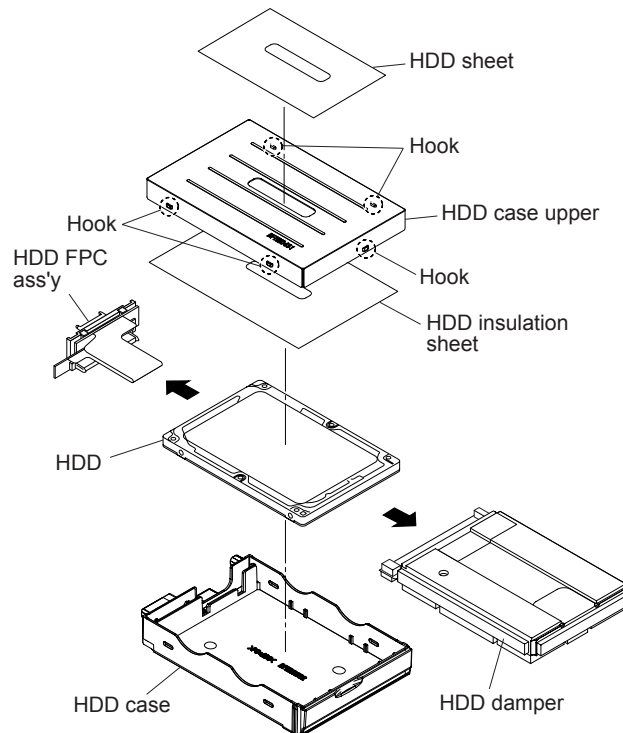
9.1.5. Removing the Tilt Panl Ass'y

1. Turn the Cover down and pull the Tilt Panel in the direction of arrows.

Tilt panel
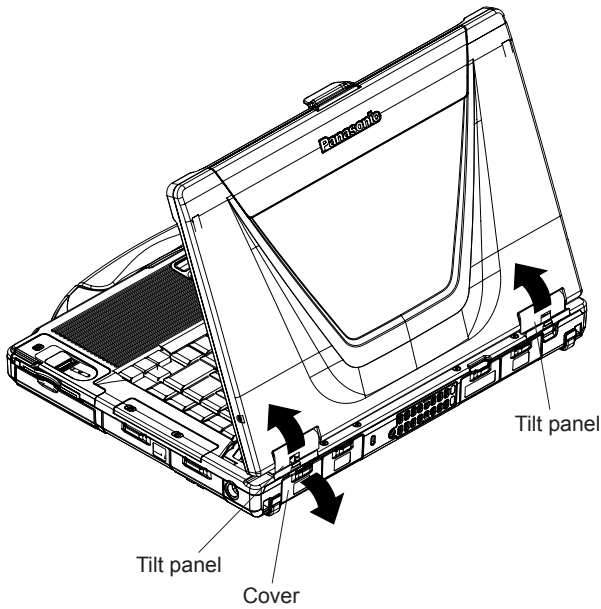
Tilt panel

Cover

2. Remove the five Screws <N202>, and remove the Tilt Panel Ass'y.

<N202>

<N202>

<N202>

Tilt panel ass'y
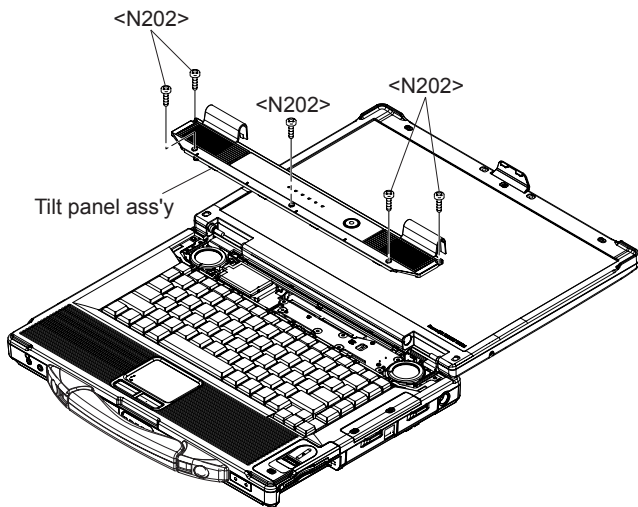
Screws <N202> : DRSB2+4FKLT

9.1.6. Removing the DIMM Memory Card

1. Remove the Screw <N10>, and remove the DIMM Cover.

<N10>

DIMM cover
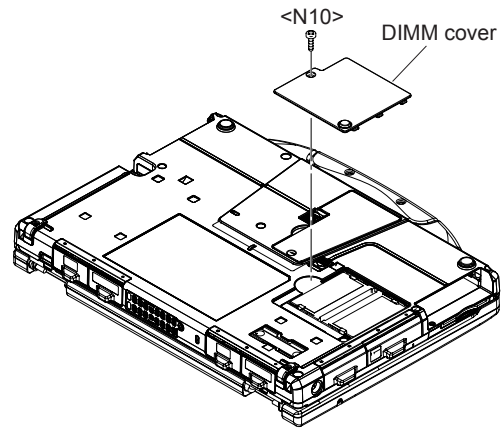
2. Open the right and left Hooks of the DIMM Memory Card outward, and remove the DIMM Memory Card.

DIMM memory card

DIMM memory connector

Hook
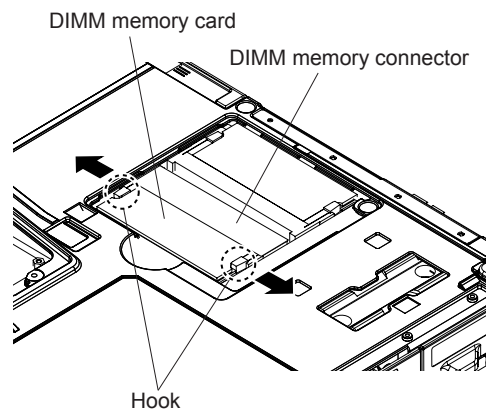
Screws <N10>: DRSB2+3FKLT

9.1.7. Removing the ROBSON Cover, Wireless LAN Module and BIOS PCB

1. Remove the Screw <N3>, and remove the ROBSON Cover.

ROBSON cover

<N3>

<N2>

BIOS PCB

<N2>

Wireless LAN module

Cables (Gray and blue)
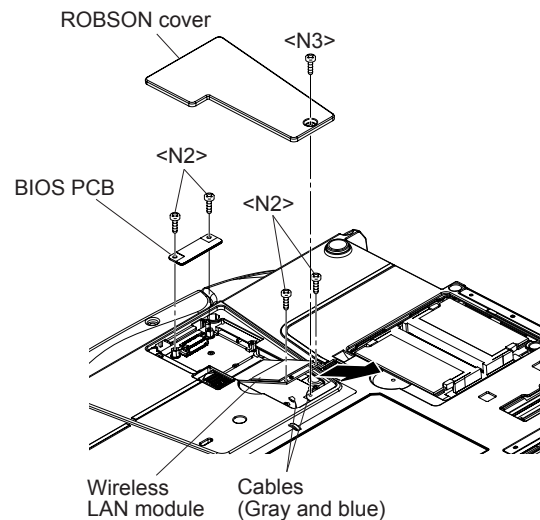
9.1.7.1. Wireless LAN Module

1. Remove the two Screws <N2> and two Cables(Gray and Blue).
2. Pull out the Wireless LAN Module in the direction of arrows.

9.1.7.2. BIOS PCB

1. Remove the two Screws <N2>, and remove the BIOS PCB.

Screws <N2> : DFHE5122YA

Screws <N3> : DRHM0065ZA

9.1.8. Removing the Display unit

1. Remove the six Screws <N2>, and turn over the SW LED MDC PCB.

SW LED MDC PCB
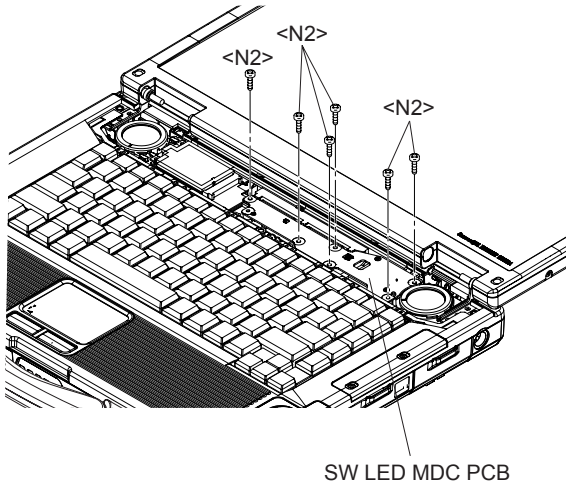
2. Disconnect the two Cables from the Connectors (CN5 and CN35).

Cables

CN5   CN35
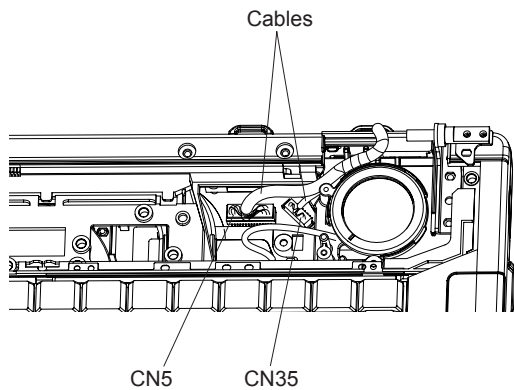
3. Remove the Speaker Holder L and four Cables (black,

white, blue and grey).
Remove the two Screws <N2>, and BIOS HIGH PCB.

Speaker holder

<N2>

Cable (black)

Cable (white)   BIOS HIGH PCB
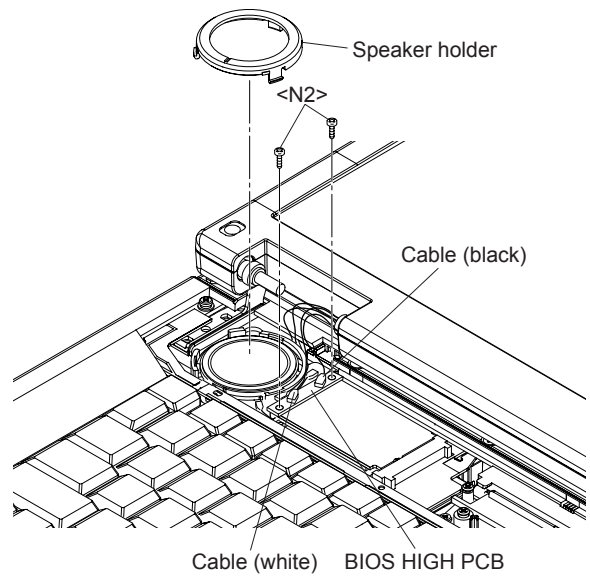
4. Remove the four Screws <N4>, and remove the Display unit.

<N4>

Display unit

<N4>
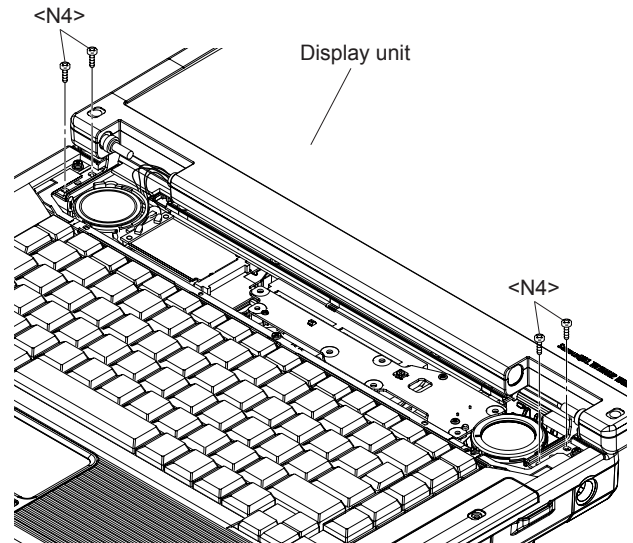
Screws <N2> : DFHE5122YA
Screws <N4> : DRHM0093ZA

9.1.9. Removing the LCD unit, Inverter Ass'y and ANTENNA PWB L,R

1. Remove the two LCD Rubbers and five LCD Sheets.
2. Remove the five Screws <N4> and two Screws <N15>.
3. Release the twenty-one Hooks fixing the LCD Front to the LCD unit, remove the LCD Front.
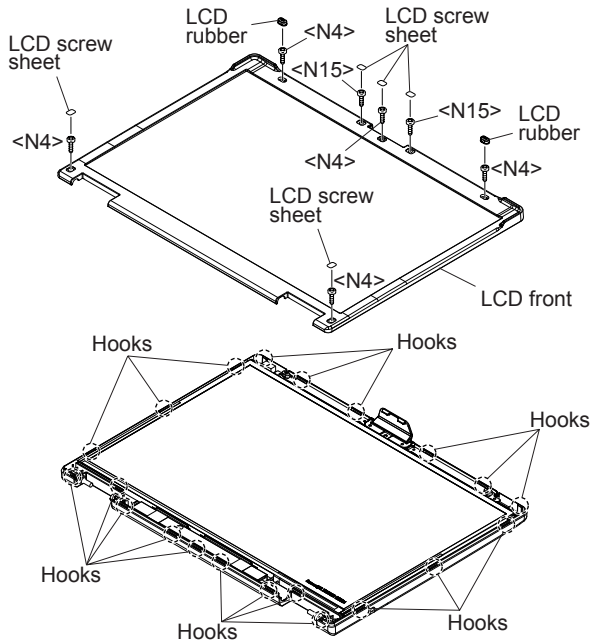
4. Remove the Screw <N12> and Tape, and remove the LCD unit.
5. Disconnect the two Cables, and remove the Inverter Ass'y.
6. Remove the eleven Tapes and two Screws <N2>, and remove the ANTENNA PWB L, R.
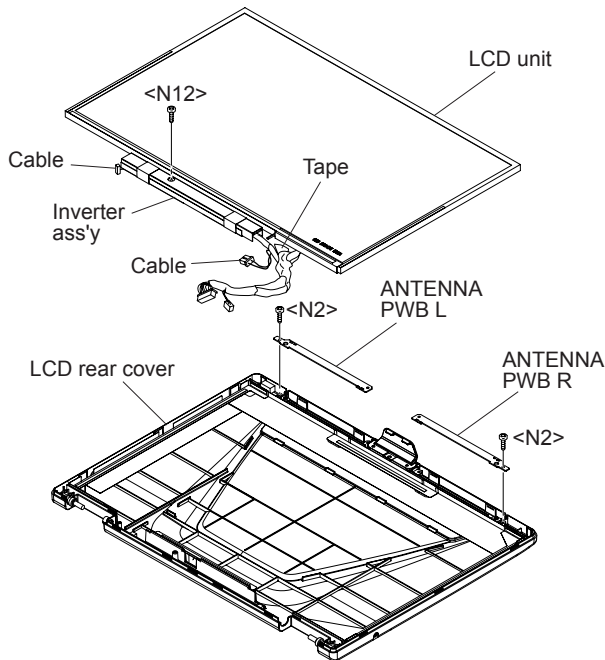
Screws <N2> : DFHE5122YA
Screws <N4> : DRHM0093ZA
Screws <N12> : DXSB2+4FNLT
Screws <N15> : XQN17+BJ6FJ

9.1.10. Removing the Handle Ass'y

1. Remove the two Handle Sheets and two Screws <K172>, remove the Handle Ass'y.
2. Remove the two Screws <K92-5>, and disassemble the Handle Ass'y (Grip Upper, Grip Lower, Handle Base L, Handle Base R, Handle Ring and Handle Pom) .
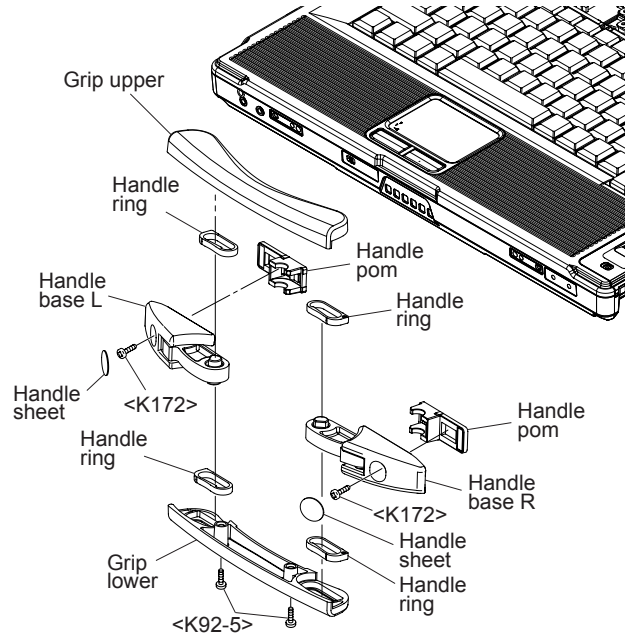
Screws <K92-5>: DRSB3+8FKLT
Screws <K172>: DRYN4+J12KLT

9.1.11. Removing the Modem

1. Disconnect the Cable from the Connecor(CN4200).
2. Remove the two Screws <N2>, and remove the Modem.
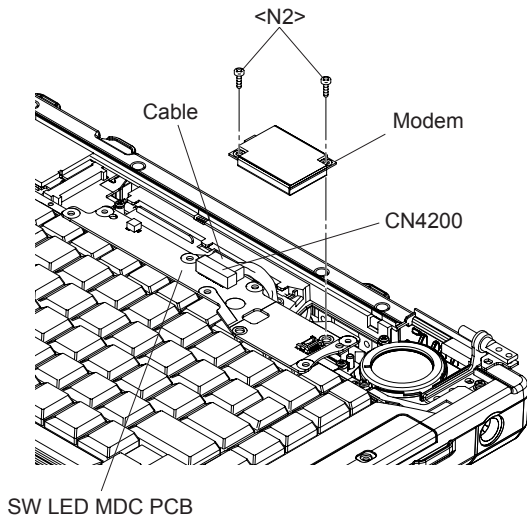
3. Remove the Tape1, Conductive tape-modem and Tape2, disconnect the Cable from Modem
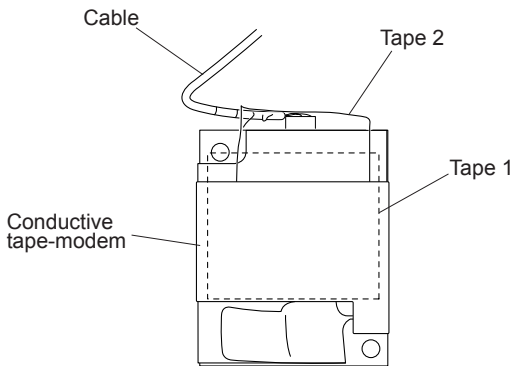
Screws <N2> : DFHE5122YA

9.1.12. Removing the SW LED MDC PCB and Speakers

9.1.12.1. SW LED MDC PCB

1. Disconnect the Cables from the Connectors(CN4202 and CN4203), and remove SW LED MDC PCB.
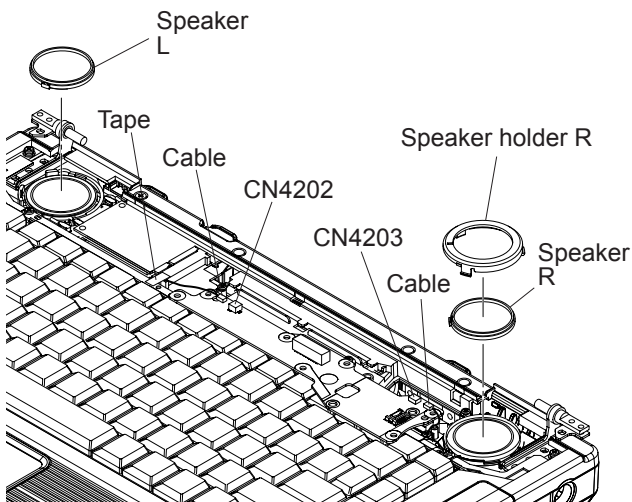
9.1.12.2. Speaker R

1. Remove the Speaker Holder R, and remove the Speaker R

9.1.12.3. Speaker L

1. Remove the Tape, and remove the Speaker L.

9.1.13. Removing the Keyboard

1. Remove the two Tapes.
2. Lift the upper part of the Keyboard and draw it backward, and then turn the Keyboard over forward.
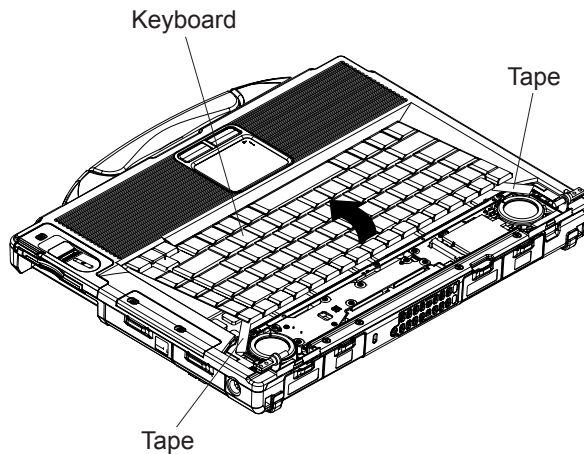
Note:
Take extreme care when peeling off the tape as it is strongly sticked.

3. Remove the four Screws <N2>, and remove the Keyboard Lid Plate.
4. Disconnect the two FPC from the two Connectors (KBD FPC).
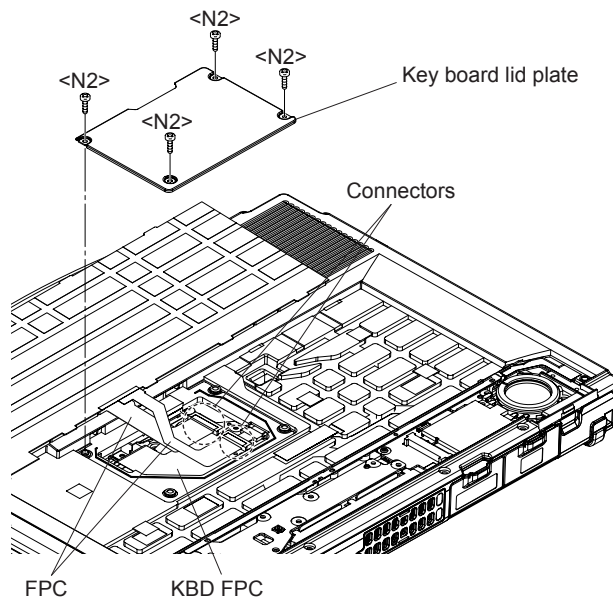
5. Remove the Keyboard.

Screws <N2> : DFHE5122YA

9.1.14. Removing the Top Cover

1. Remove the Gasket.
2. Remove the Screws <N2>, <N4>, <N9> and ten Screws <N14>
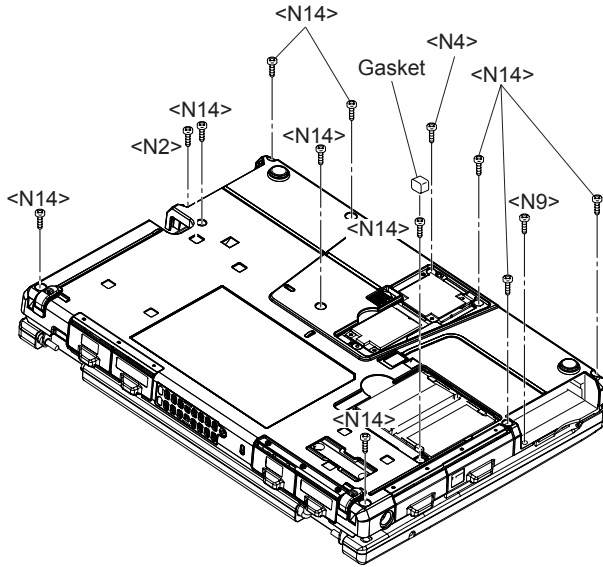
3. Turn the unit to the face, remove the Screw <N12> and five Screws <N8>.
4. Remove the WP Sheet and Tape, and remove the Screw <N12>.
5. Remove the two Screw Sheets.
   Remove the two Screws <N9>, and remove the Cover BT.
   Remove the Screw <N2> and disconnect the Cable from the BT UNIT PCB, and remove it.
6. Disconnect the FFC and KBD FPC from the Connectors(CN23 and CN22), and lift up the Top Cover Ass'y and remove it.
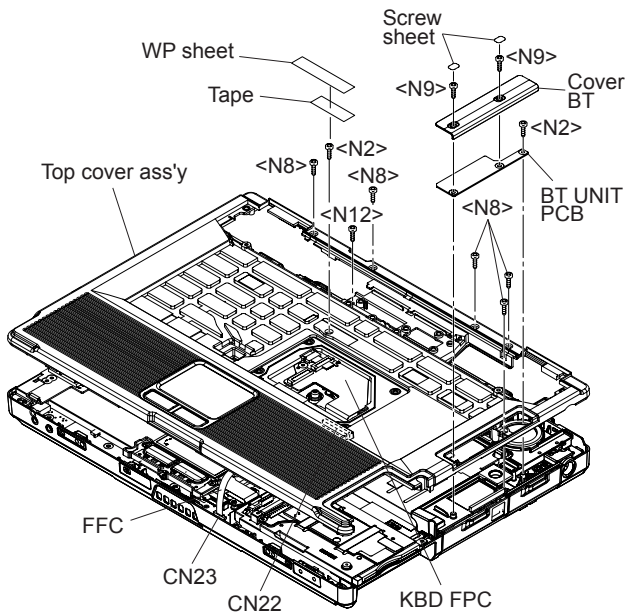
Screws <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA
Screws <N8> : DRHM5054XAT
Screws <N9> : DRHM5104ZAT

Screws <N12> : DXSB2+4FNLT
Screws <N14> : XTB26+10GJKT

9.1.15. Removing the Pad and TOUCH PAD PCB

1. Remove the six Screws <N12>.
2. Remove the Top Relay Plate and Pad Holder.
3. Remove the Pad and TOUCH PAD PCB.
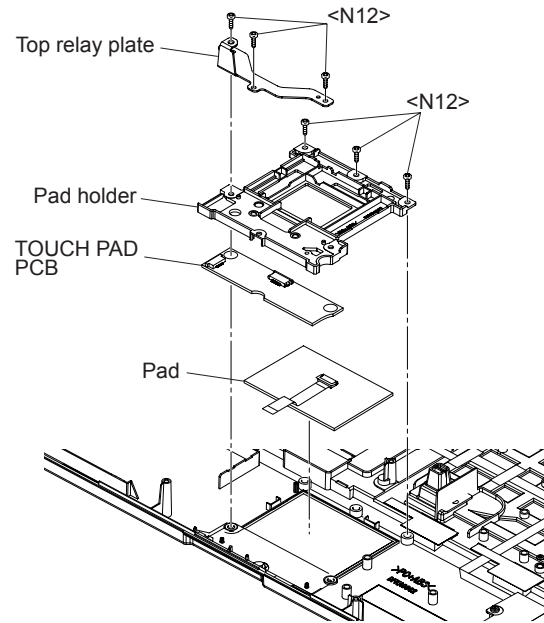
Screws <N12> : DXSB2+4FNLT

9.1.16. Removing the SD PCB

1. Remove the two Screws <N12>.
2. Disconnect the FFC from the Connector(CN4300), and remove the SD PCB.
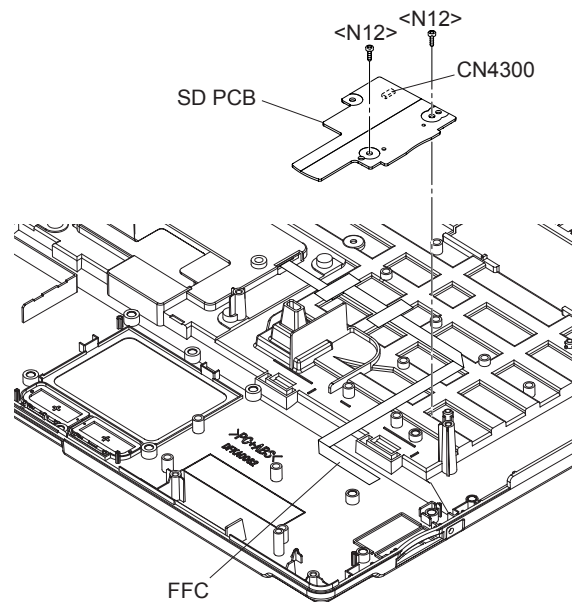
Screws <N12> : DXSB2+4FNLT

9.1.17. Removing the WWAN PCB

1. Disconnect the Cables(Gray and Blue) from the WWAN PCB.
2. Remove the two Screws <N2> and the Screw <N9>.
3. Disconnect the FPC from the Connector(CN7002), and remove the SD PCB.
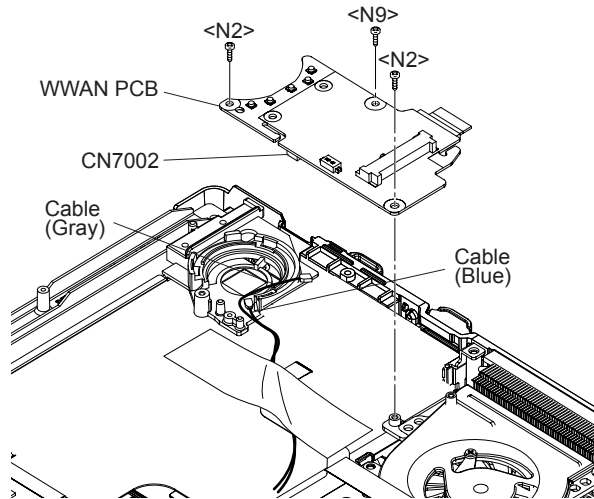
Screws <N2> : DFHE5122YA
Screw <N9> : DRHM5104ZAT

9.1.18. Removing the AUDIO PCB

1. Remove the two Screws <N4>.
2. Disconnect the Cable from the Connector(CN3000), and remove the AUDIO PCB.
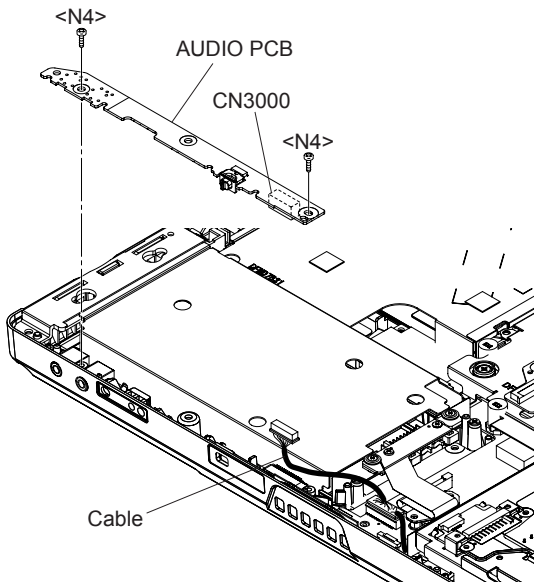
Screw <N4> : DRHM0093ZA

9.1.19. Removing the PWR BATTERY LED PCB

1. Remove the PWR BATTERY LED PCB, and disconnect the Cable from the Connector(CN4400).
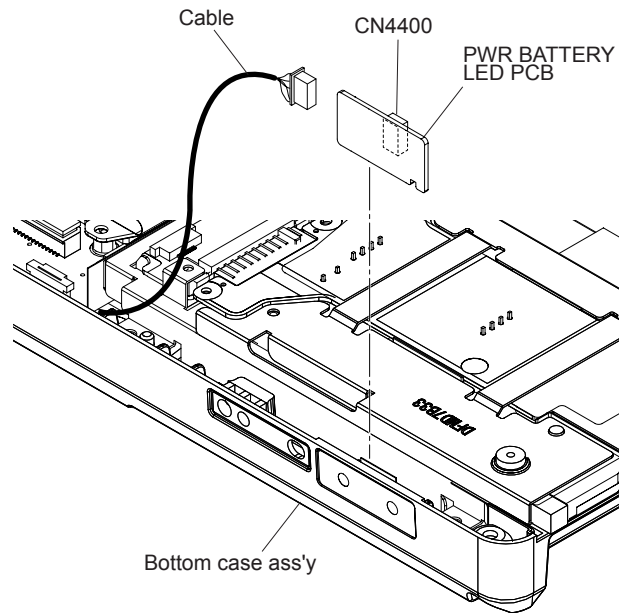
9.1.20. Removing the KBD Earth Plate

1. Remove the Tape in the direction of arrow.
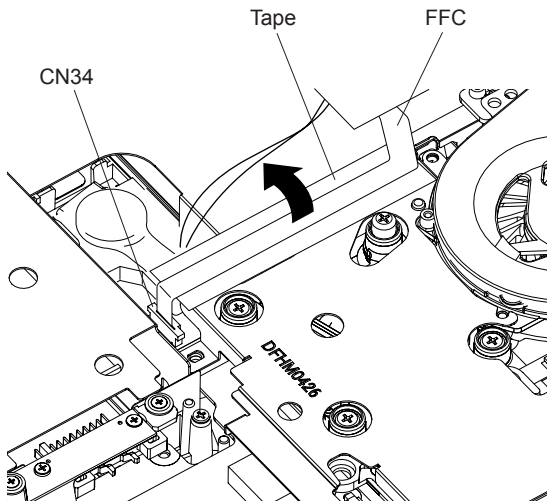
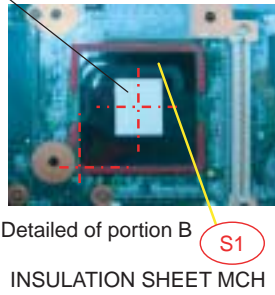2. Remove the four Screws <N4> and two Screws <N13>, and remove the KBD Earth Plate.
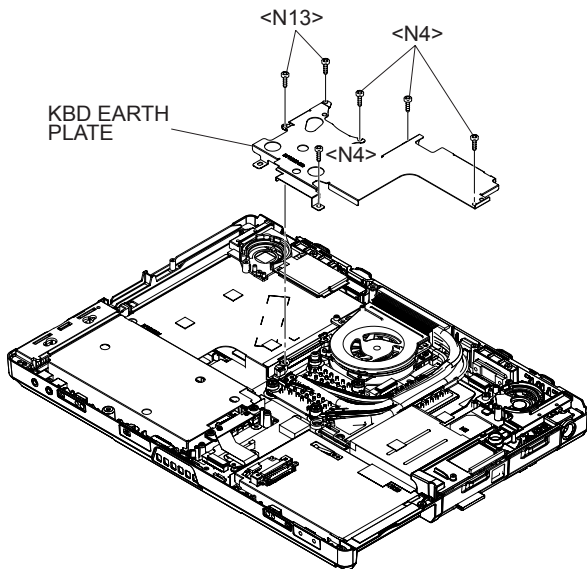
Screw <N4> : DRHM0093ZA
Screw <N13> : DXYN2+F12FNL

9.1.21. Removing the Hinge Support R

1. Peel off the Tape and remove the Screw <N4>.
2. Disconnect the Cable from the Connector (CN7).
3. Turn the Cover PC Card down in the direction of arrow, and remove the Hinge Support R.
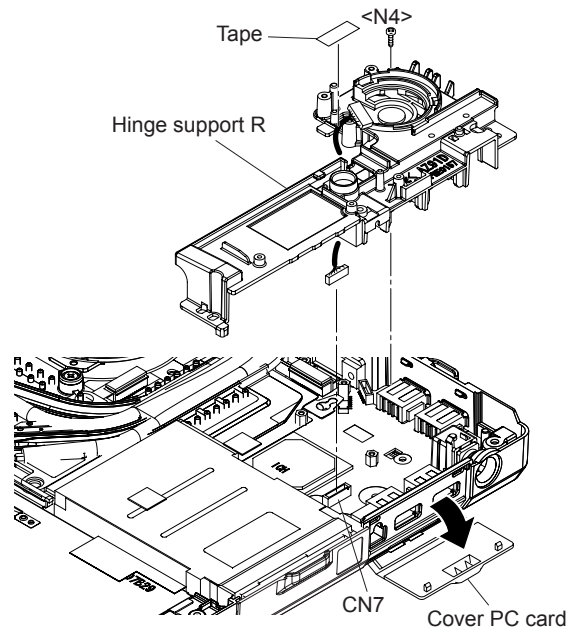
Screw <N4> : DRHM0093ZA

9.1.22. Removing the Fan Ass'y

1. Disconnect the Cable from the Connector(CN18).
2. Remove the two Screws <N4>, and remove the Fan Ass'y.
3. Remove the three Screws <N12>, and remove the Fan.
4. Remove the three Screws <N2>, and remove the Fan Case Plate.
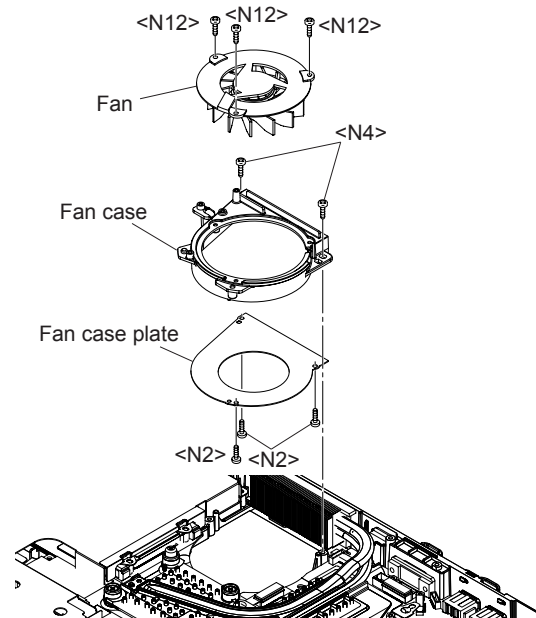
Screw <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA
Screw <N12> : DXSB2+4FNLT

9.1.23. Removing the Hinge Support L and MP Hold Plate

1. Peel off the three Tapes and remove the two Cables(Gray and Blue).
2. Remove the six Screws <N4>, remove the Hinge Support L and MP Hold Plate.
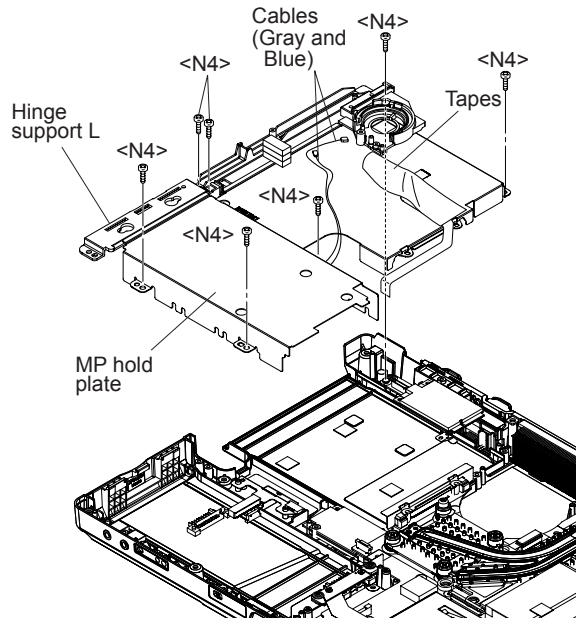
Screw <N4> : DRHM0093ZA

9.1.24. Removing the Battery Connector Ass'y

1. Remove the two Screws <N2> and <N4>, and remove the Battery Connector Ass'y.
2. Remove the two Screws <N6>, and remove the Batt FPC Plate.
3. Remove the two Screws <N5>, and remove the Batt Con Holder from the FPC Batt.
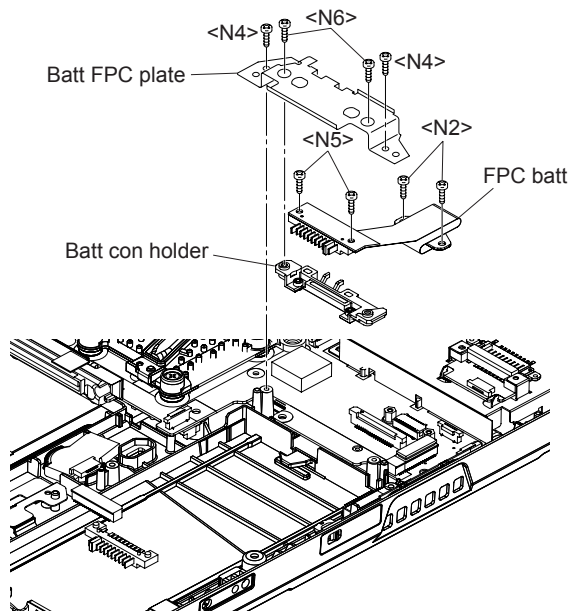
Screw <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA

Screw <N5> : DRHM0112ZA
Screw <N6> : DRHM0115ZA

9.1.25. Removing the SC RELAY PCB and HDD Hold Plate

1. Disconnect the FFC from the Connector(CN6503).
2. Remove the two Screws <N2>, and remove the SC RELAY PCB.
3. Remove the two Screws <N4>, and remove the HDD Hold Plate.
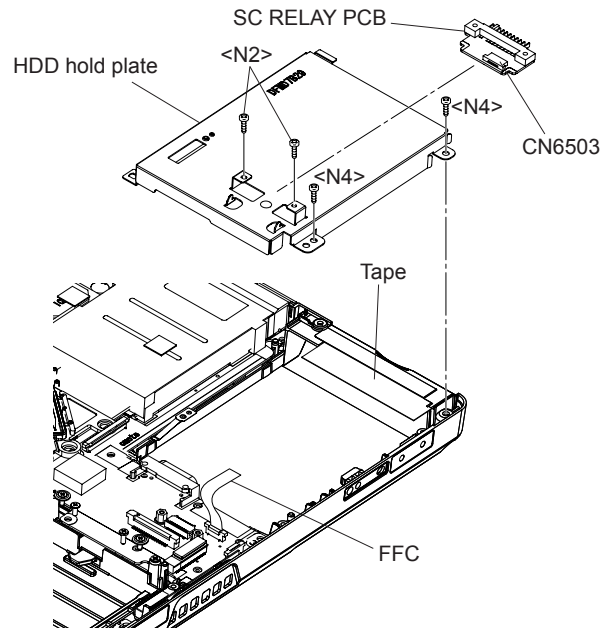
Screw <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA

9.1.26. Removing the Heat Sink Ass'y

1. Remove the Fan Duct.
2. Remove the four Screws <K138>, and remove the Heat Sink Ass'y.
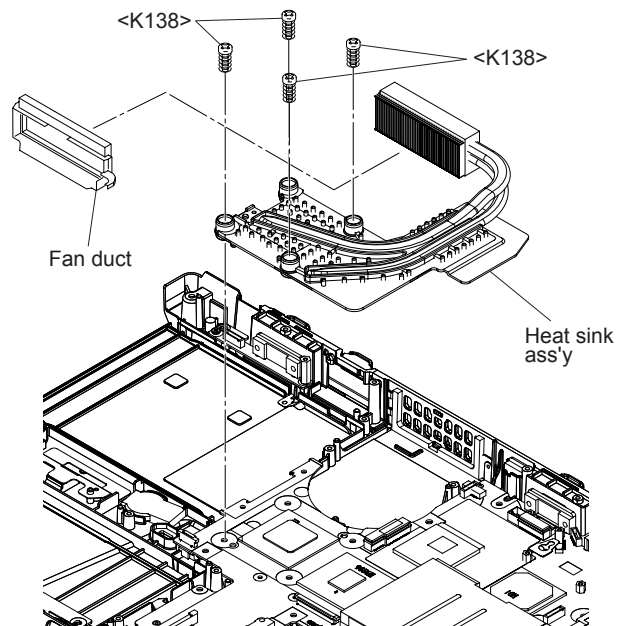
Screw <K138> : DRHM0119ZAT

9.1.27.   Removing the SERIAL PCB

1. Remove the two Screws <N1> and Hex Spacer.
2. Remove the SERIAL PCB.
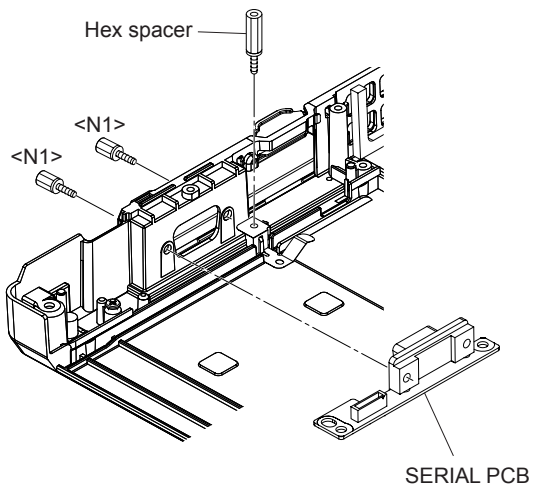
Screw <N1> : DFHE5035ZB

9.1.28.   Removing the MAIN HIGH PCB

1. Remove the two Screws <N1>, four Screws <N4> and two Screws <N13>.
2. Disconnect the Battery Cable from the Connector(CN4).
3. Remove the MAIN HIGH PCB.
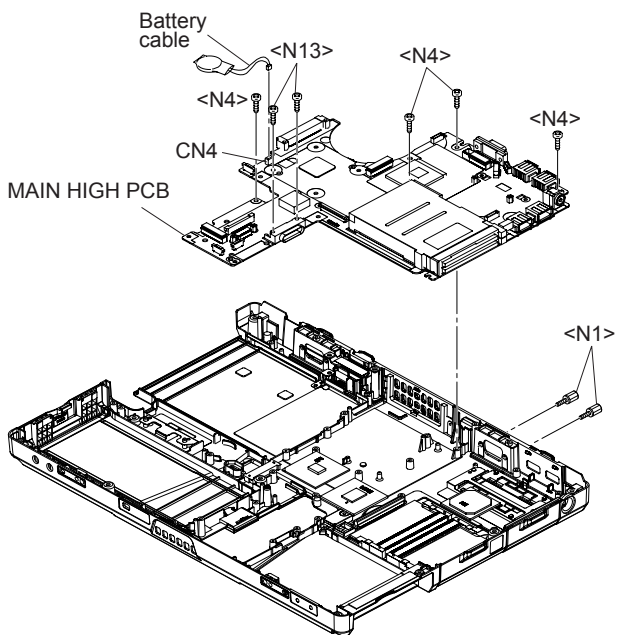
Screw <N1> : DFHE5035ZB
Screw <N4> : DRHM0093ZA
Screw <N13> : DXYN2+F12FNL

9.2. Reassembly Instructions

9.2.1. Attention when CF-52 series is repaired

 • Please execute writing BIOS ID when you exchange the Main Board.
 • You cannot reuse the Conductive Clothes and the heat dissipating parts such as Sheet and Rubber. Use new parts.

9.2.2. Setting the MAIN HIGH PCB

Note:
 After replacing the Main Board, rewrite the BIOS ID.
 1. Set the MAIN HIGH PCB to the computer.
 2. Fix the MAIN HIGH PCB using the two Screws <N1>. No.1, No.2
 3. Fix the MAIN HIGH PCB using the two Screws <N4>. No.3 to No.6
 4. Fix the MAIN HIGH PCB using the two Screws <N13>.
 5. Connect the Battery Cable to the Connector (CN42).
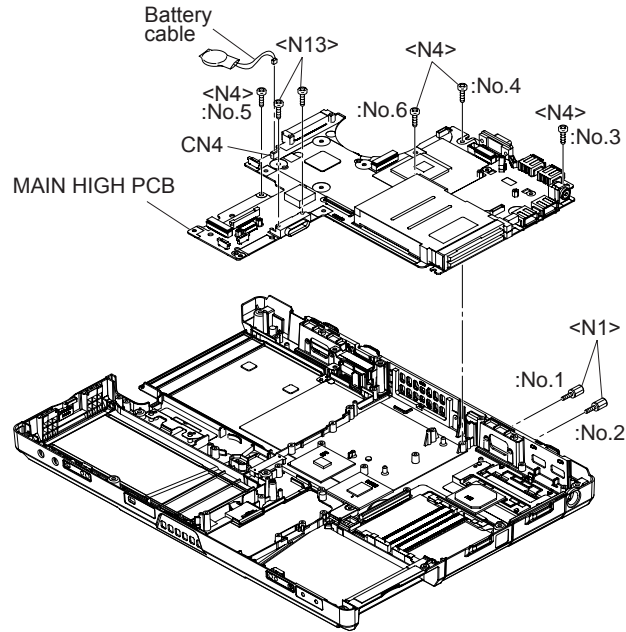
Screw <N1> : DFHE5035ZB
Screw <N4> : DRHM0093ZA
Screw <N13> : DXYN2+F12FNL
Screws <N9>: DFHE5025XA

■ Setting of Main PCB before assembling.

CAUTION	S1:Insulation S2:Bitten S3:Sharp Edge S4:Part No. Check S5:Other

TAPE

SPACER

Detailed of portion D

TAPE

Detailed of portion A

THERMAL SHEET

(S1)

INSULATION FPC

THERMAL SHEET

MAIN PCB

1

Detailed of portion E

HDD GUIDE ASS'Y

Remove the release coated paper.

Detailed of portion C

Detailed of portion B

(S1)

INSULATION SHEET MCH
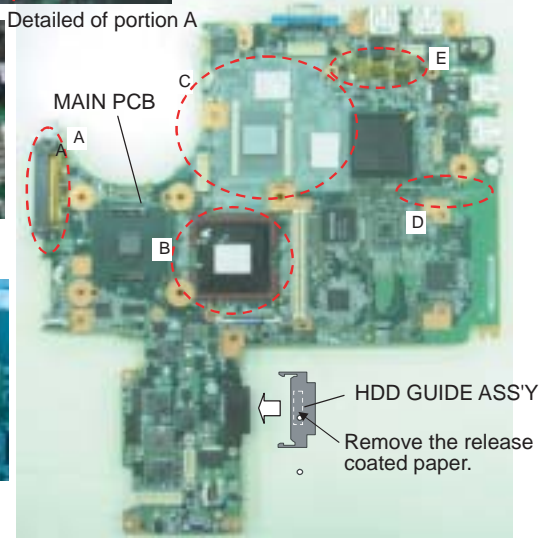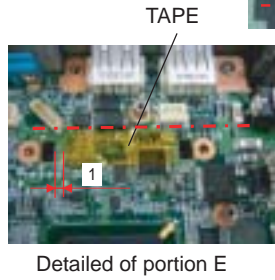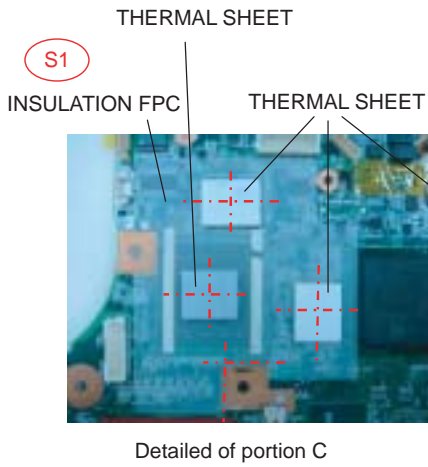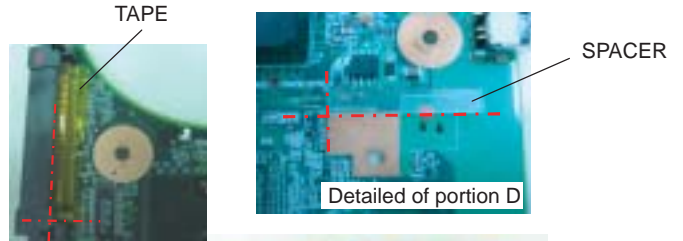
Torque of tightening screw :0.18± 0.02N m(1.8± 0.2kgf cm)

CAUTION	S1:Insulation S2:Bitten S3:Sharp Edge S4:Part No. Check S5:Other

THERMAL SHEET

SCREW

THERMAL SHEET

PWB SPACER

Detailed of portion A

HEX SPACER

A

SCREW

MAIN PCB

SCREW

B

SHEET HDD HOLDER

S1

SCREW

PWB SPACER

Chip end face

Chip foot front end.

TAPE

S1

Detailed of portion B
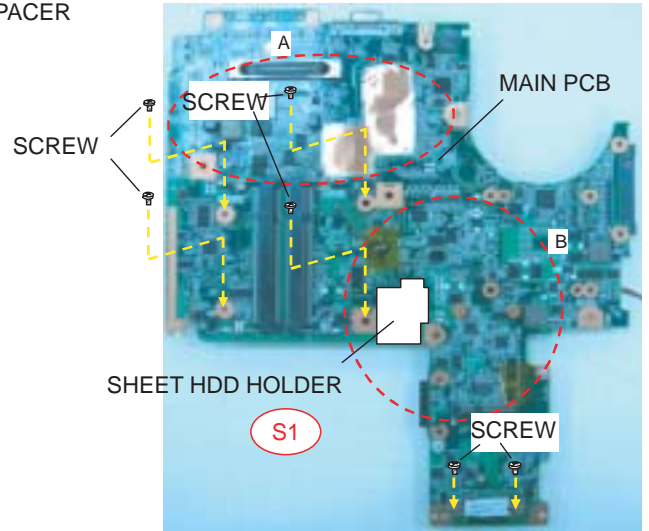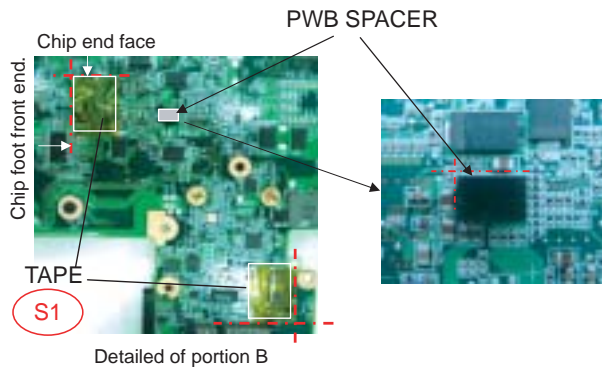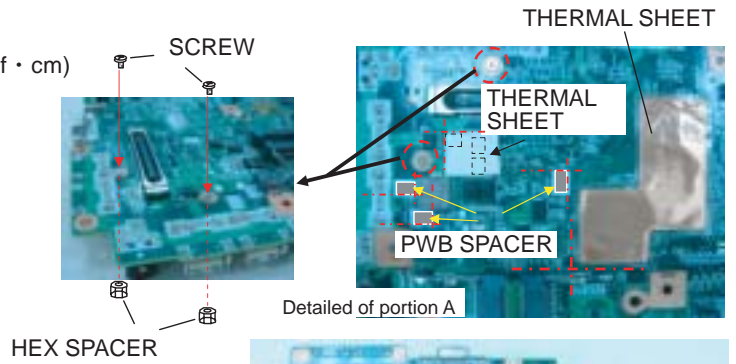
9.2.3. Setting the SERIAL PCB

1. Set the SERIAL PCB to the computer.
2. Fix the SERIAL PCB using the two Screws <N1>. No1, No.2
3. Tighten the Hex Spacer to the SERIAL PCB. No.3

Hex spacer :No.3
<N1> :No.2
<N1> :No.1
SERIAL PCB
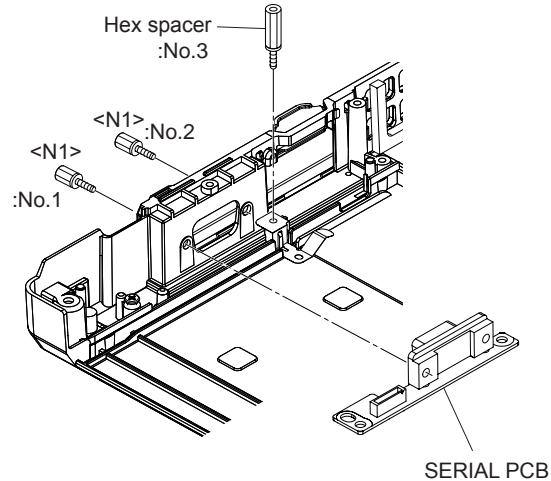
Screw <N1> : DFHE5035ZB

9.2.4. Setting the Heat Sink Ass'y

1. Set the Fan Duct to the Heat Sink Ass'y.
2. Fix the Heat Sink Ass'y to the MAIN PCB using the four Screws <K138>. No.1 to No.4

:No.3
<K138> :No.1
:No.2 <K138>
:No.4
Fan duct
Heat sink ass'y
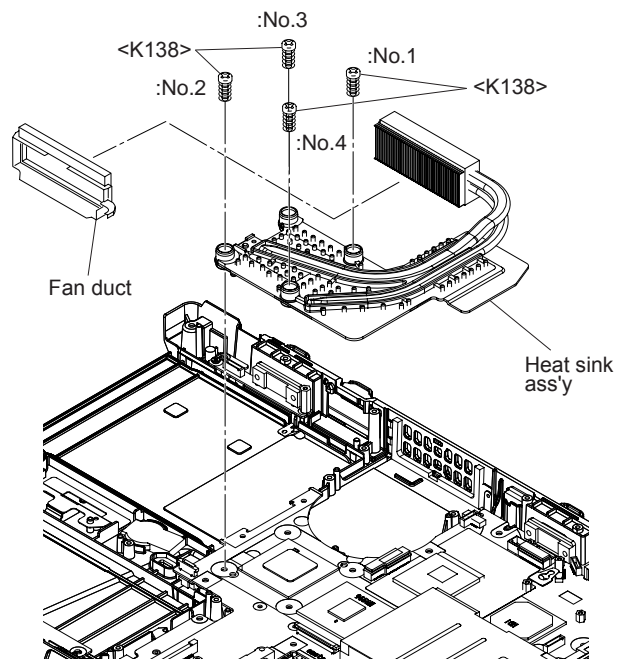
Screw <K138> : DRHM0119ZAT

9.2.5. Setting the Fan Ass'y

1. Fix the Fan Case Plate to the Fan Case using the three Screws <N2>.
2. Fix the Fan to the Fan Case using the three Screws <N12>.
3. Set the Fan Ass'y to the computer, and fix it using two Screws <N4>. No.1, No.2
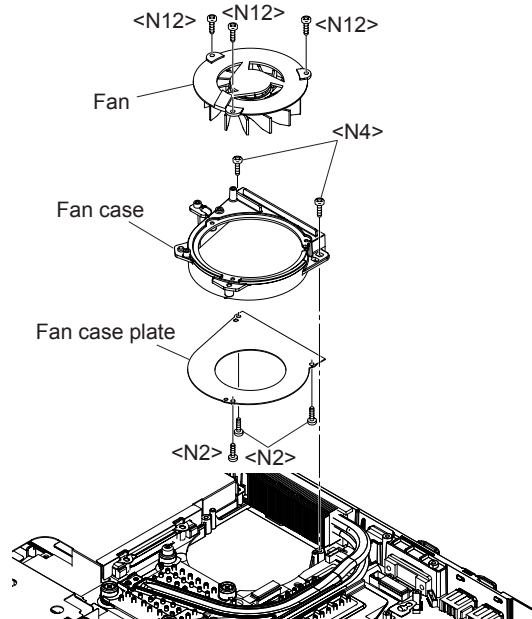
Screw <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA
Screw <N12> : DXSB2+4FNLT

■**How to assemble the Heat Sink Ass'y and Fan Ass'y.**

Note: After inserting, please check the assembly and mark it

GASKET

Detailed drawing for Position X

Section

GASKET

Wind a circle

S2

Detailed drawing for Position Y

HEAT SINK ASS'Y
FAN DUCT
FAN
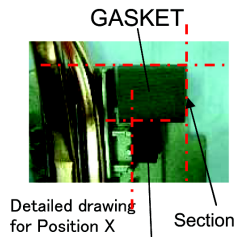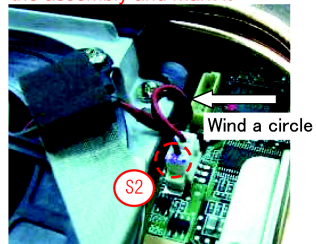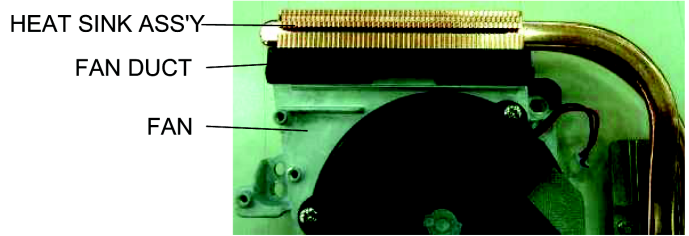
Actual assembly status

Safety Working

CAUTION	S1:Insulation S2:Pinching Cables S3:Sharp Edge S4:Part No. Check S5:Others

Using JIG
H 0.08 g

Using JIG
H 0.12 g
L 0.09 g

SCREW
SCREW
HEAT SINK
SPRING
BOTTOM CASE ASS'Y
HEAT SINK ASS'Y
Ragiator Paste

FAN
FAN DUCT
x
y
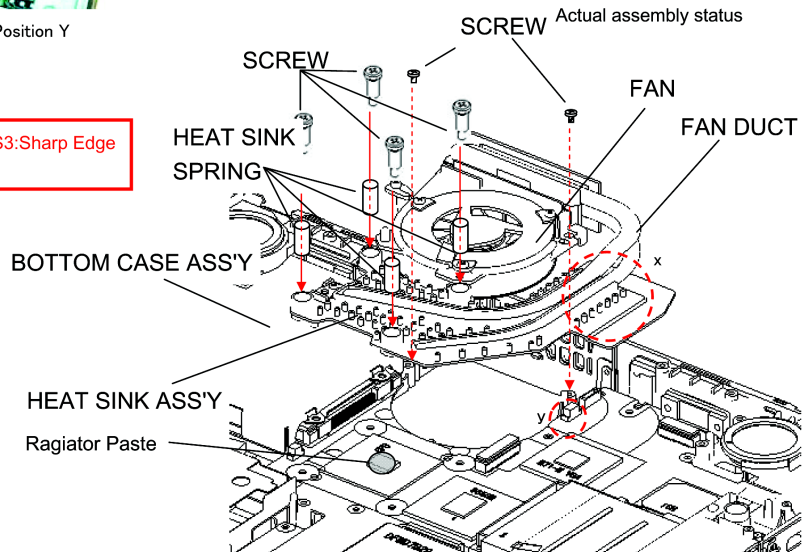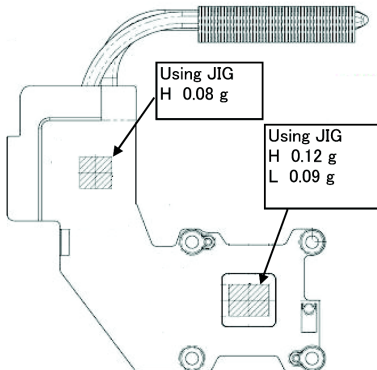
9.2.6. Setting the SC RELAY PCB and HDD Hold Plate

1. Set the SC REALY PCB to the HDD Hold Plate, and fix it using two Screws <N2>. No.1, No.2
2. Fix the HDD Hold Plate to the MAIN HIGH PCB using the two Screws <N4>. No.3, No.4
3. Connect the FFC to the Connector(CN6503) and paste the Tape.
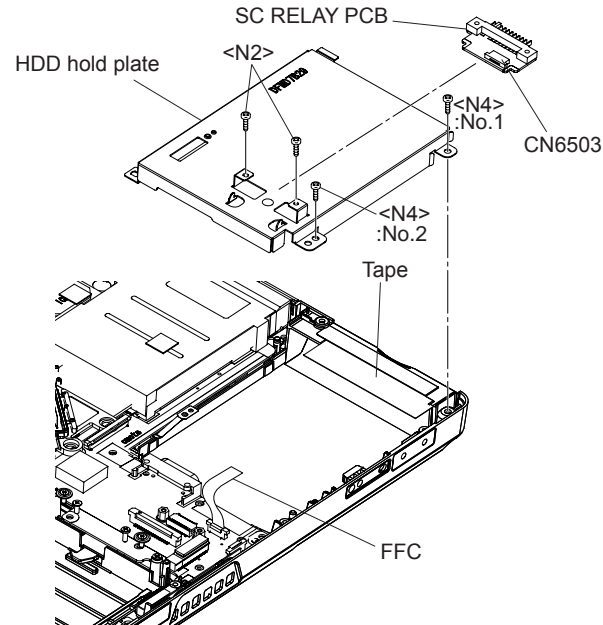
Screws <N2> : DFHE5122YA
Screws <N4> : DRHM0093ZA

HDD HOLD PLATE ASS'Y

BOTTOM CASE ASS'Y

SCREW

Torque of tightening screw :0.44± 0.02N m(4.5± 0.2kgf cm)

Long enhanced plate

FFC SC FS

Short enhanced plate

Detailed of portion C

HDD SHEET A

Detailed of portion D

The electric cable is near the lower cover.

The electric cable is pressed into the slot.

The electric cable is under the plate.

S2
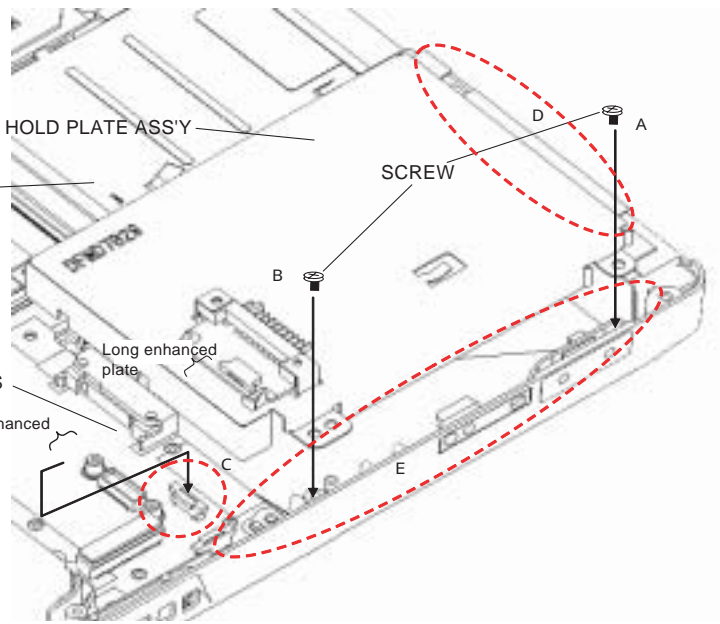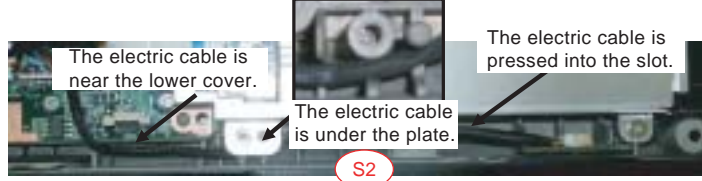
Detailed of portion E

9.2.7. Setting the Battery Connector Ass'y

1. Fix the Batt Con Holder to the FPC Batt using the two Screws <N5>.
2. Fix the Batt Con Holder to the Batt FPC Plate using the two Screws <N6>.
3. Fix the Batt FPC Plate to the computer using the two Screws <N4>. No.1, No.2
4. Connect the FPC Batt's connector to the connector(CN1000), and fix the FPC Batt to the MAIN HIGH PCB using the two Screws <N2>. No.1, No.2
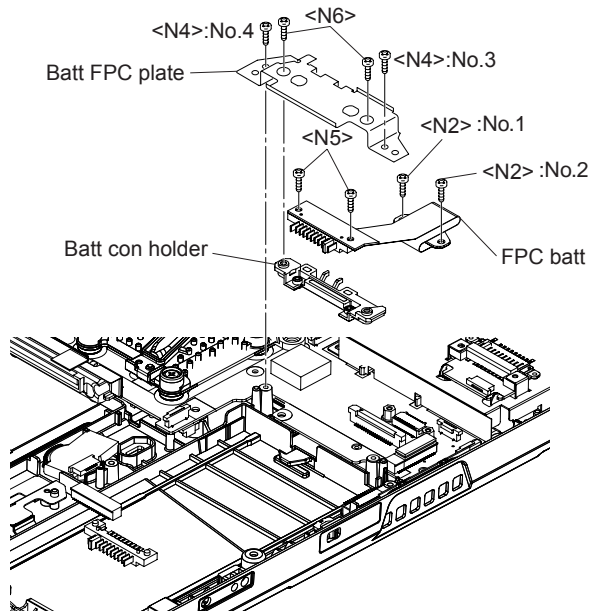
Screw <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA
Screw <N5> : DRHM0112ZA
Screw <N6> : DRHM0115ZA

9.2.8. Setting the Hinge Support L and MP Hold Plate

1. Set the Hinge Support L and MP Hold Plate to the computer.
2. Fix the Hinge Support L and MP Hold Plate using the six Screws <N4>. No.1 to No.6
3. Paste the Tapes.
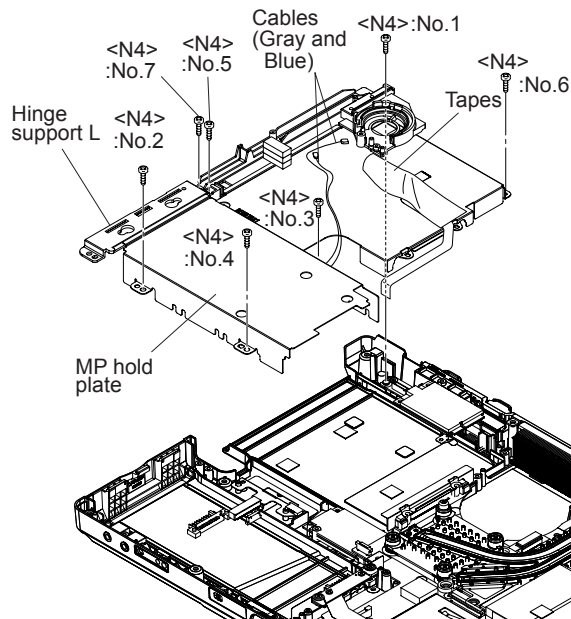
Screw <N4> : DRHM0093ZA

9.2.9. Setting the Hinge Cover R

1. Place the Cable through the rectangled hole of Hinge Support R and connect the Cable to the Connector (CN7).
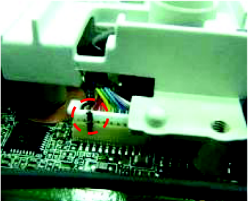2. Fix the Hinge Support R to the computer using the Screw <N4>.
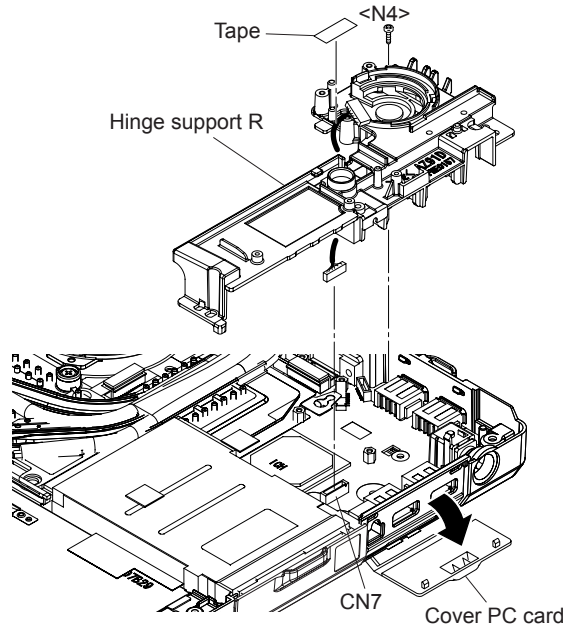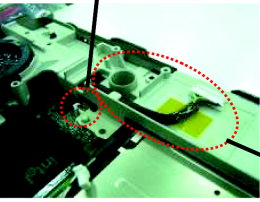

Screw <N4> : DRHM0093ZA

■How to place the Cable

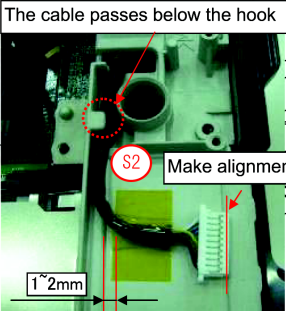Hook surely connect HINGE SUPPORT R

CABLE BT

TAPE
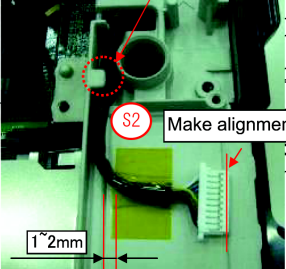
Note: After inserting, please check the assembly and mark it

SCREW

CABLE BT

HINGE SUPPORT R

A

The cable passes below the hook

Detailed drawing for Position A

S2   Make alignment
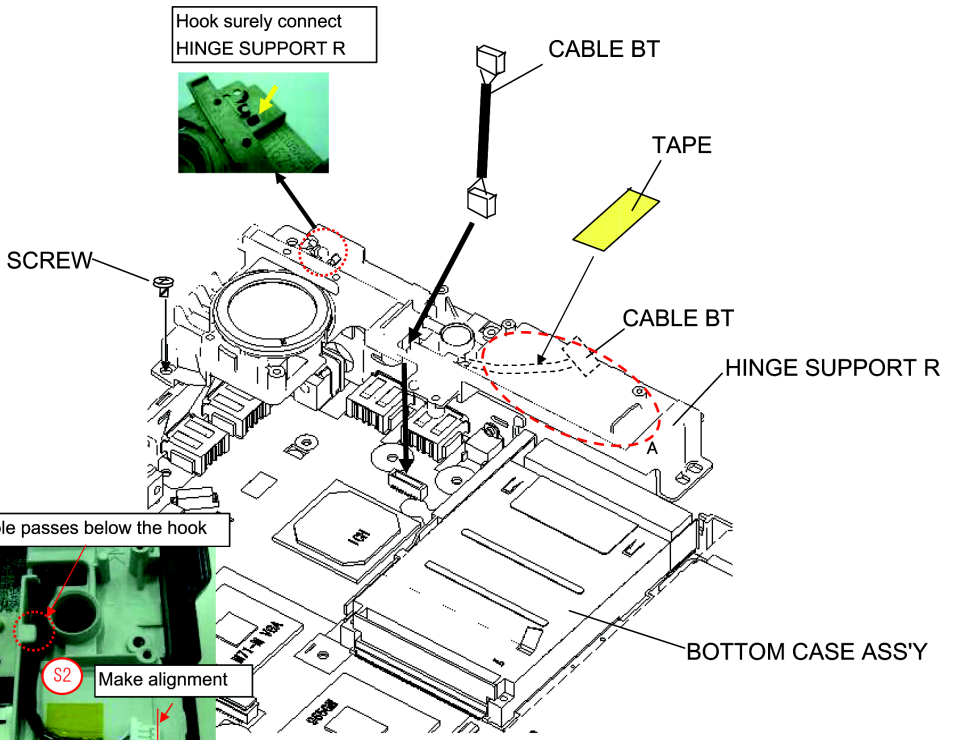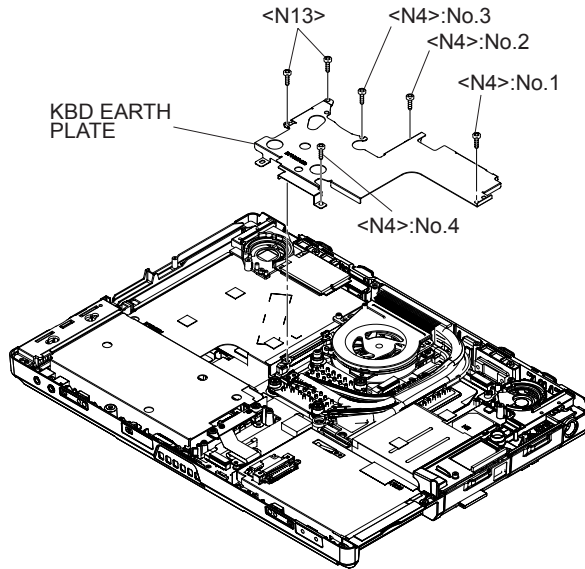
BOTTOM CASE ASS'Y

1~2mm

Safety Working

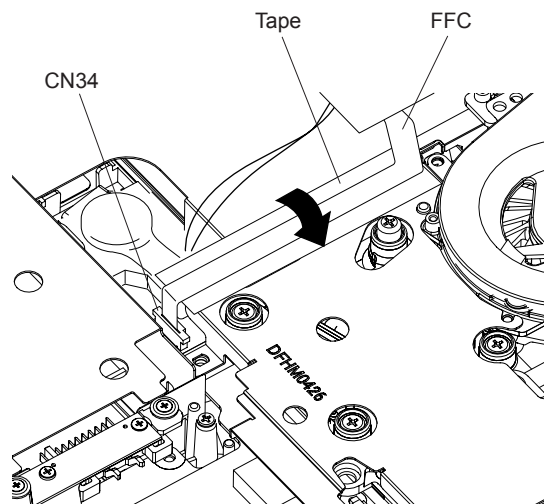| CAUTION	S1:Insulation S2:Pinching Cables S3:Sharp Edge S4:Part No. Check S5:Others

9.2.10. Setting the KBD Earth Plate

1. Set the KBD Earth Plate to the computer.
2. Fix the KBD Earth Plate using the four Screws <N4>. No.1 to No.4
3. Fix the KBD Earth Plate using the two Screws<N13>.
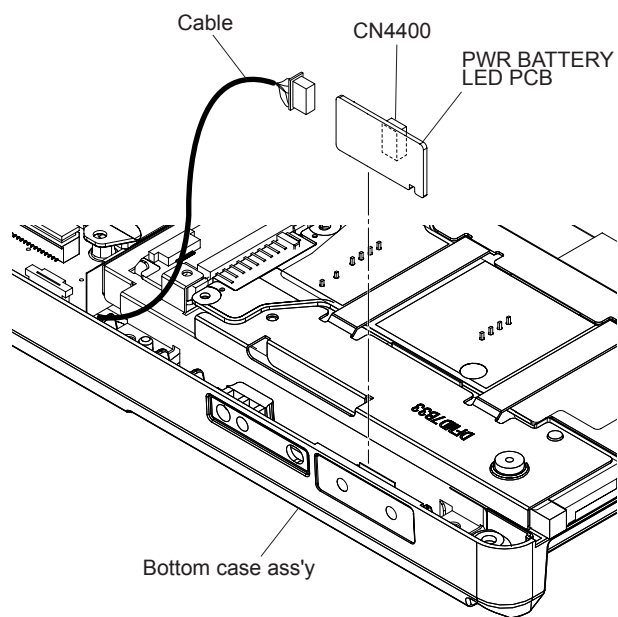

4. Paste the tape, and connect the FPC to the Connector(CN34).

Screw <N4> : DRHM0093ZA
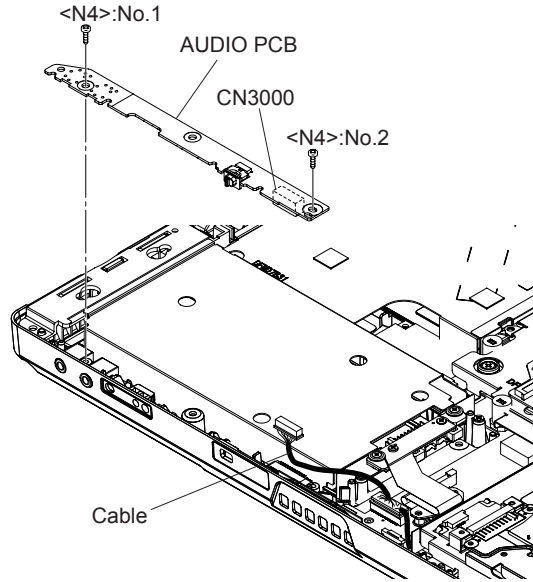Screw <N13> : DXYN2+F12FNL

9.2.11. Setting the PWR BATTERY LED PCB

1. Connect the Cabel to the Connector(CN4400), and insert it to the computer.

9.2.12. Setting the AUDIO PCB

1. Connect the Cable to the Connector(CN3000).
2. Set the AUDIO PCB to the computer, and fix it using the two Screws <N4>. No.1, No.2

<N4>:No.1
AUDIO PCB
CN3000
<N4>:No.2
Cable

Screw <N4> : DRHM0093ZA

■**Arranging the Cable and setting the WL button.**

Safety Working

CAUTION	S1:Insulation S2:Pinching Cables S3:Sharp Edge S4:Part No. Check S5:Others

BOTTOM CASE ASS'Y
SCREW
PWB AUDIO
WL BUTTON

Place the SW at the OFF position
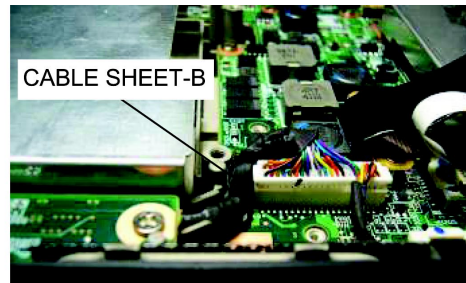
CABLE SHEET-B

First, stick CABLE SHEET-B on the electric cable,then place the electric cable between BOSS and the connector

CABLE SHEET-B

S2

After cable setting, lock with the screws
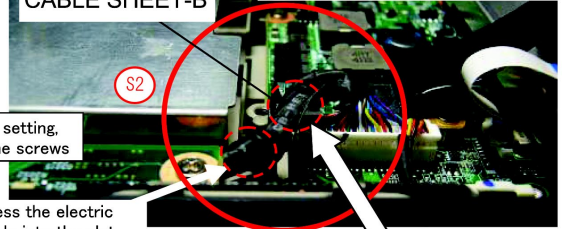
Press the electric cable into the slot

Cable setting diagram for Position A

CABLE SHEET-B   CABLE

9.2.13. Setting the WWAN PCB

1. Connect the FPC to the Connector(CN7002).
2. Set the WWAN PCB, and fix it using two Screws <N2> and the Screw <N9>. No.1 to No.3
3. Connect the Cable(Gray) to JK7002 and Cable(Blue) to JK7004.
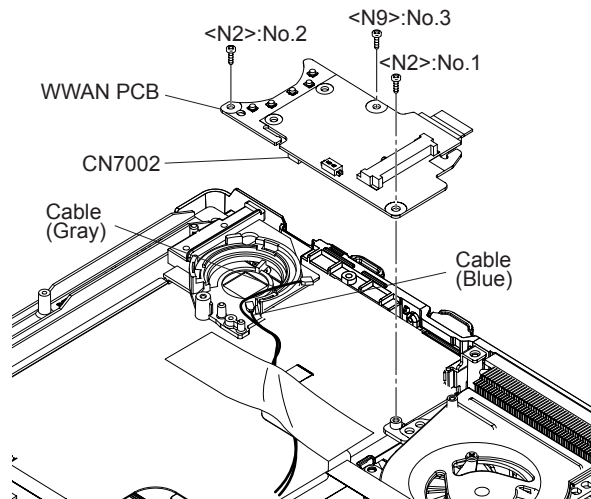
Screw <N2> : DFHE5122YA
Screw <N9> : DRHM5104ZAT

■**Arranging the Cables and Tapes**

Detailed drawing for position A

grey
blue

B

C

E

Detailed drawing for position B

Press the cable into the slot
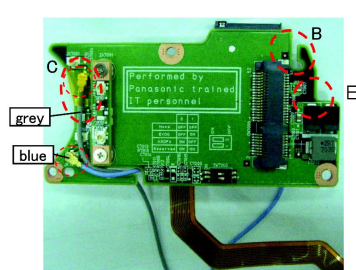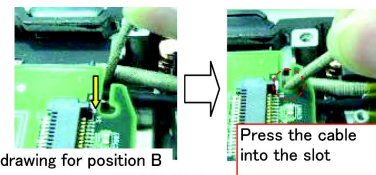
Tape shall not cover the terminal

TAPE

Detailed drawing for position C

Safety Working

CAUTION | S1:Insulation S2:Pinching Cables S3:Sharp Edge
S4:Part No. Check S5:Others

W-WAN DUMMY

SCREW

SCREW

SCREW

PWB EVDO

BOTTOM CASE ASS'Y

INSULATION FPC 2

S3

Note: After inserting, please check the assembly and mark

FFC insertion

D

GASKET

Cut and align the edge
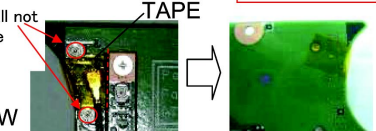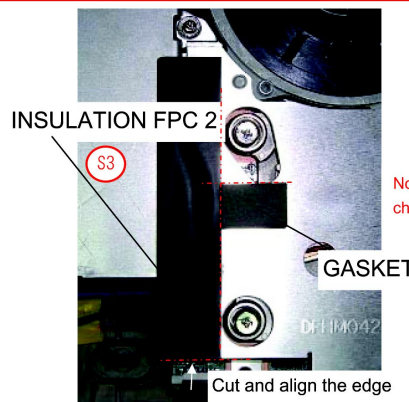
Detailed drawing for Position D

Details for inserting FFC

FFC
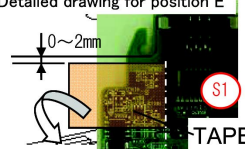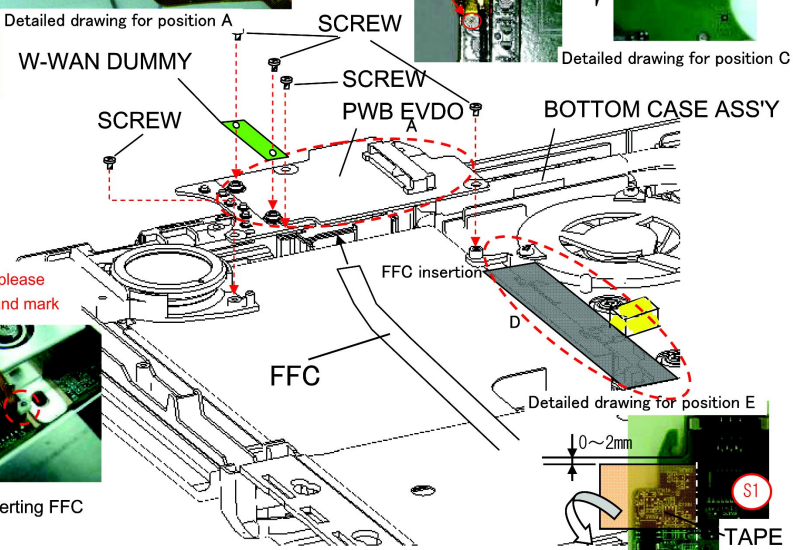
Detailed drawing for position E

0～2mm

S1

TAPE

9.2.14. Setting the SD PCB

1. Connect the FFC to the Connector(CN4300).
2. Set the SD PCB to the Top Cover, and fix it to using the two Screws <N12>. No.1, No.2
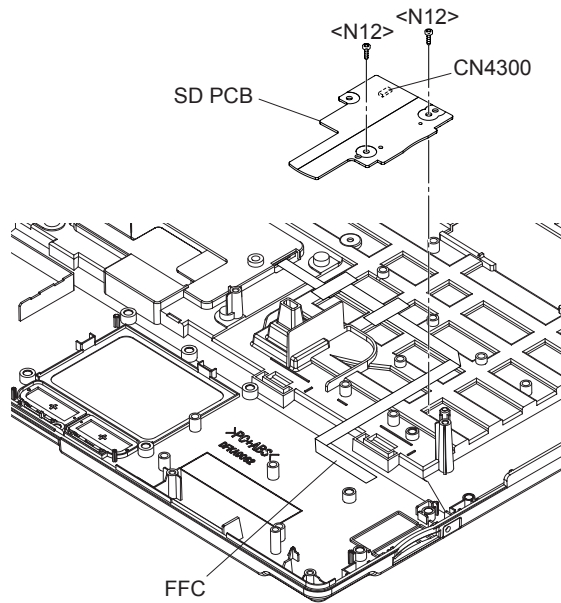
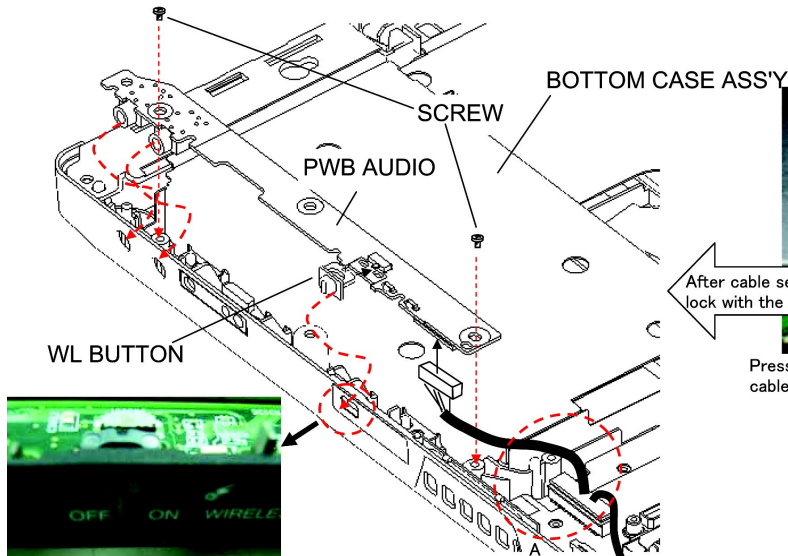Screw <N12> : DXSB2+4FNLT

9.2.15. Setting the Pad and TOUCH PAD PCB

1. Paste the Pad and set the TOUCH PAD PCB to the Top Cover.
2. Set the Pad Holder and Top Relay Plate, and fix them using the six Screws <N12>. No.1 to No.6
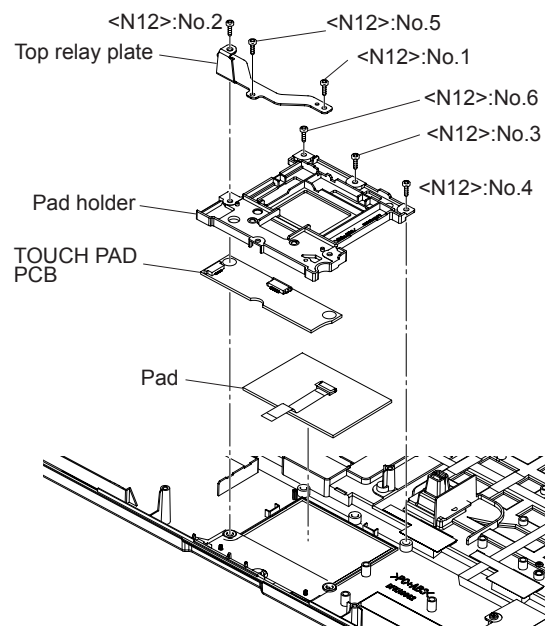
Screw <N12> : DXSB2+4FNLT

9.2.16. Setting the Top Cover

1. Connect the KBD FPC and FFC to the Connectors(CN22 and CN23), and place the Top Cover on the computer.
2. Fix the Top Cover using the five Screws <N8>. No.1 to No.5
3. Fix the Top Cover using the Screw <N12>.
4. Fix the BT UNIT PCB to the Top Cover using the Screw <N2> and connect the Cable to the connector.
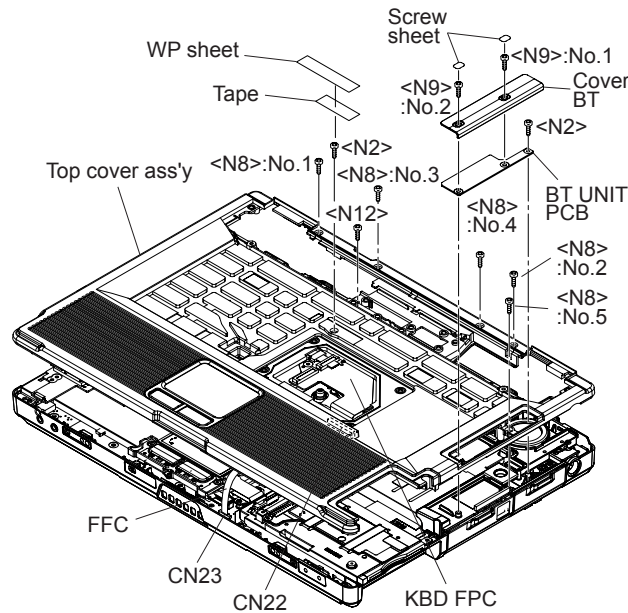
5. Fix the Top Cover using the Screw <N2>, and paste the Tape and WP Sheet on it.
6. Fix the Cover BT to the Top Cover using the two Screws <N9> No.1, No.2, and paste the Screw Sheet on the Screws.
7. Fix the Bottom Case to the Top Cover using the Screw <N2>, <N4> and ten Screws <N14>. No.1 to No.12
8. Fix the Bottom Case using the Screw <N9>.
9. Paste the Gasket on the Screw <N14>.
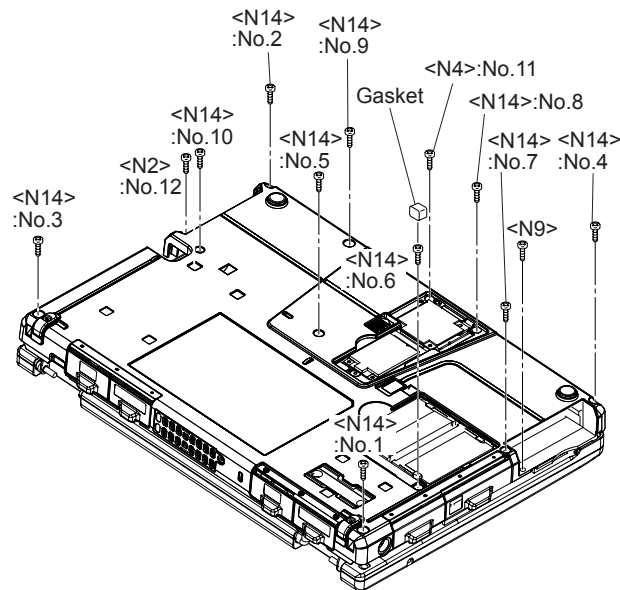
Screws <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA
Screws <N8> : DRHM5054XAT
Screws <N9> : DRHM5104ZAT
Screws <N12> : DXSB2+4FNLT
Screws <N14> : XTB26+10GJKT

9.2.17. Setting the Keyboard

1. Connect the FPCs to the Connector on the KBD FPC.
2. Place the Keyboard Lid Plate on the Top Cover, and fix it using the four Screws <N2>. No.1 to No.4
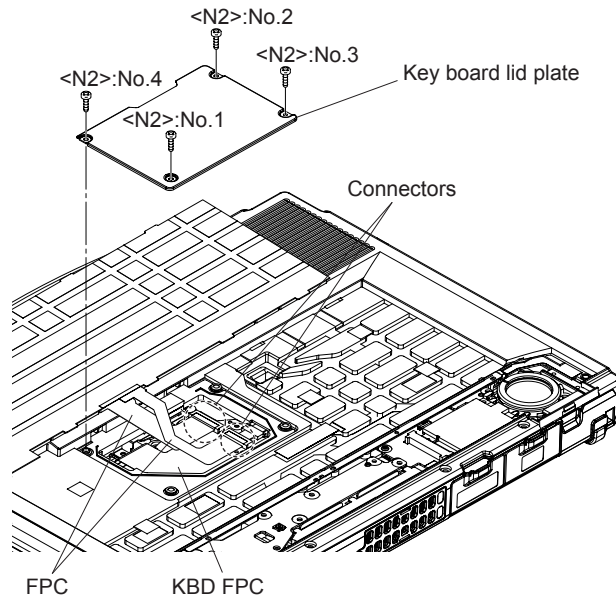
3. Place the Keyboard on the Top Cover and paste the Tapes.
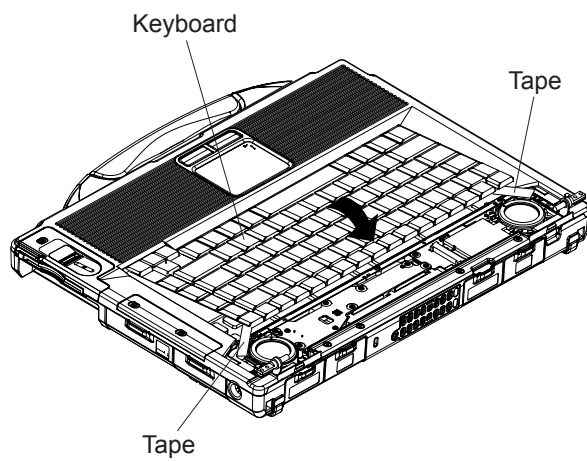
Screws <N2> : DFHE5122YA

■Caution for when assembling the Keyboard.

Push the Tape places（2~3kg/c㎡）

Be careful not to transform KBD.
Trying to paste of the keyboard is prohibited.

Insert the hooks.

Insert KBD

OK

NG

Insert it not to break the base of FFC.

○

Doesn't break it

×
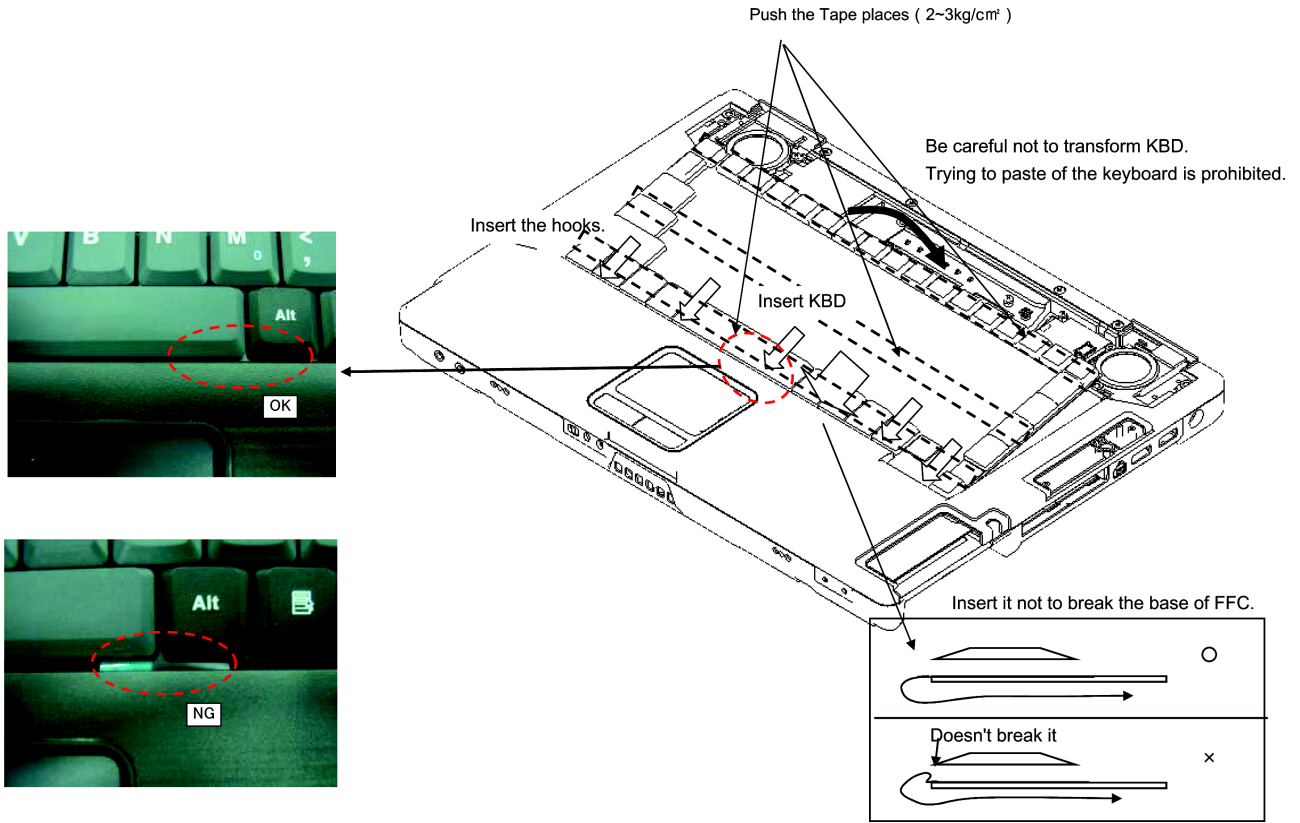
9.2.18. Setting the Speakers

1. Place the Speakers on the computer.
2. Connect the Cables to the Connector(CN4202 and CN4203).
3. Paste the Tape on the Cable.
4. Attach the Speaker Holder R to the computer.
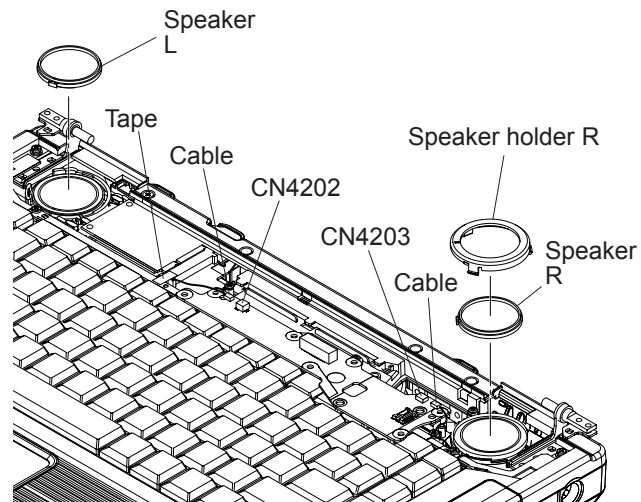
Note:
Do not attach the Speaker Holder L to the computer yet.

9.2.19. Setting the Modem

1. Connect the Cable to the Connector.
2. Paste the Tape2, Conductive Tape-Modem and Tape1.
3. Fix the Modem to the SW LED MDC PCB using the two Screws <N2>.
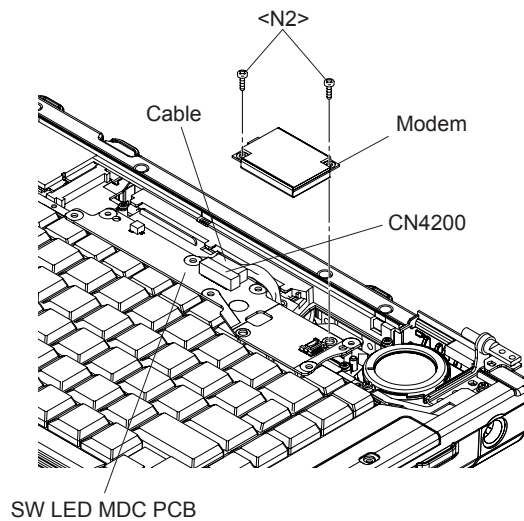
Screws <N2> : DFHE5122YA

■How to paste the Tape
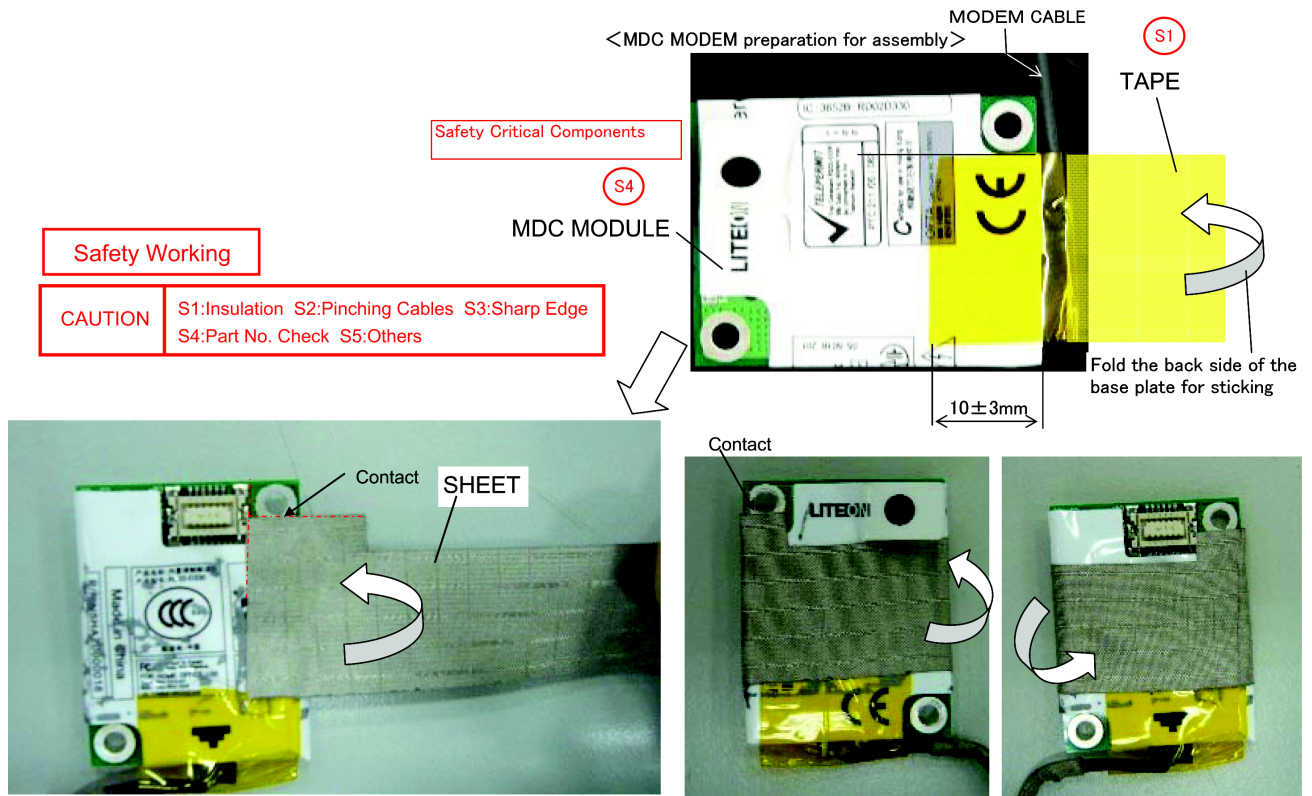
＜MDC MODEM preparation for assembly＞

S1

Safety Critical Components

TAPE

S4

MDC MODULE

Safety Working

CAUTION	S1:Insulation S2:Pinching Cables S3:Sharp Edge S4:Part No. Check S5:Others

Fold the back side of the base plate for sticking

10±3mm

Contact   SHEET

Contact

Safety Working

CAUTION	S1:Insulation S2:Pinching Cables S3:Sharp Edge S4:Part No. Check S5:Others

MDC MODULE

S1

TAPE
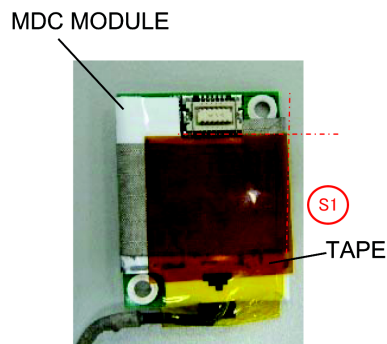
9.2.20.   Setting the Handle Ass'y

1. Assemle the Handle Ass'y (Grip Upper, Grip Lower, Handle Base L, Handle Base R, Handle Ring and Handle Pom), and fix them using the two Screws <K92-5>.
2. Fix the Handle Base Ass'y to the computer using the two Screws <K172>.

Paste the Handle Sheet on the Screws <K172>.
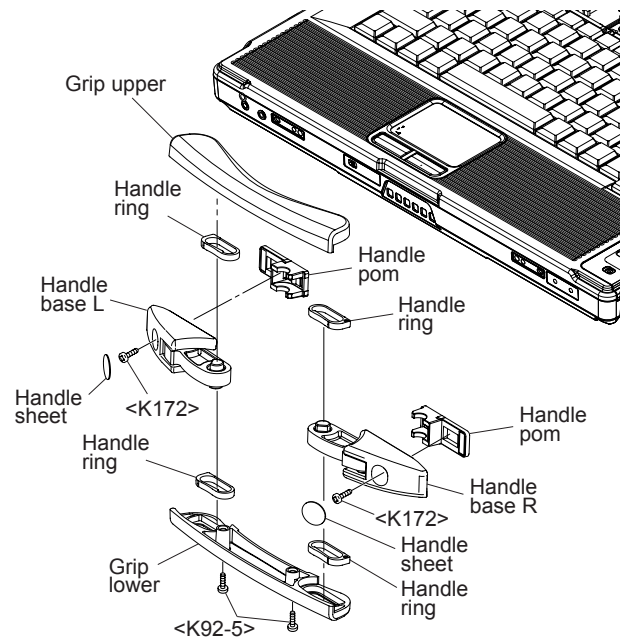
Screws <K92-5>: DRSB3+8FKLT
Screws <K172>: DRYN4+J12KLT

9.2.21. Setting the LCD Unit, Inverter Ass'y and Antenna PWB L, R

1. Set the LCD Unit to the LCD Rear Cover
2. Fix the Inverter Ass'y using the Screw <N12>.
3. Fix the Anttena PWB L and R using the Screws <N2>.
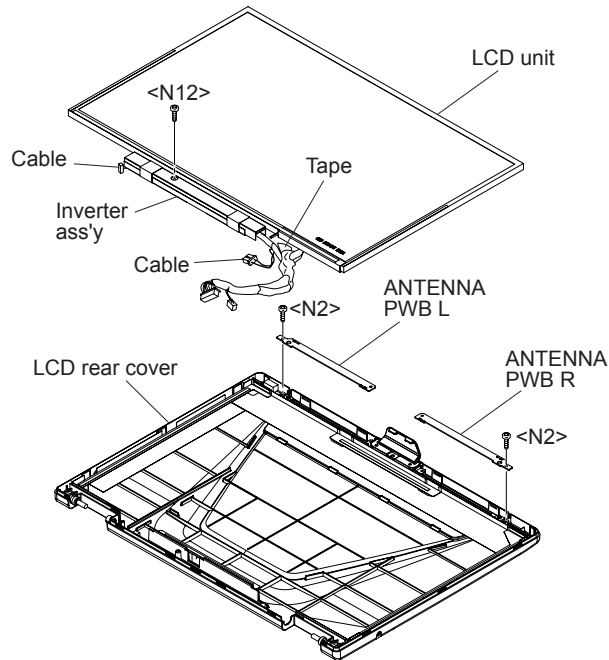
4. Place the LCD Front on the LCD Rear Case.
Confirm that the twenty-one Hooks are fixed perfectly.
5. Fix the LCD Front using the five Screws <N4> and two Screws <N15>.
6. Paste the LCD Screw Sheet and LCD Rubber.
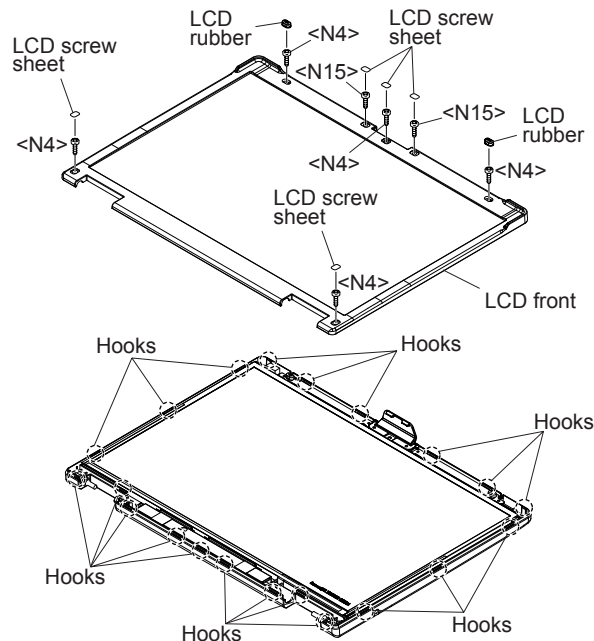
Screws <N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA
Screws <N12> : DXSB2+4FNLT
Screws <N15> : XQN17+BJ6FJ

■Setting of LCD unit ass'y

LCD DAMPER D

LCD

LCD DAMPER A

Using JIG

LCD DAMPER B

Gasket

LCD

Gap within 0.5mm

LCD DAMPER C

Using JIG
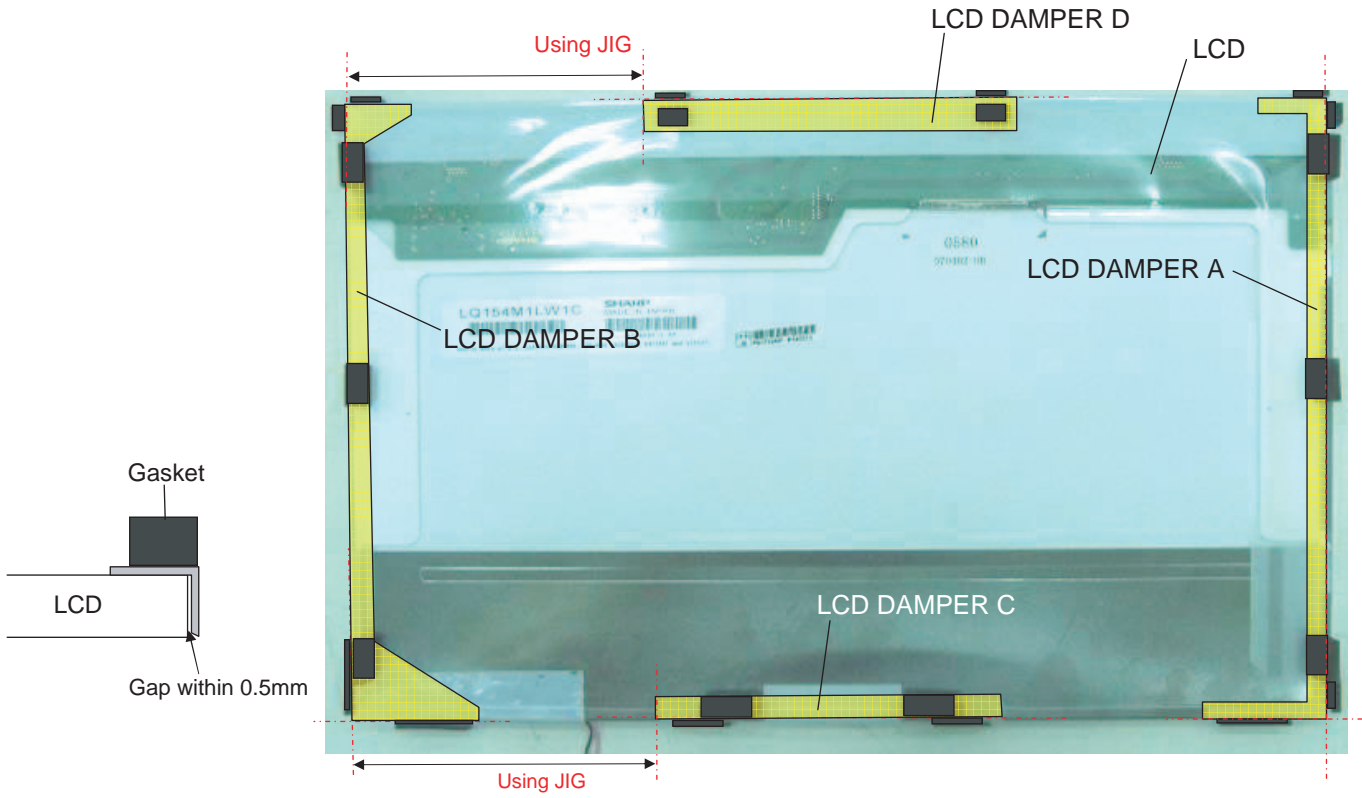
Alminium (silvery) paster is stuck on the gasket.

Gasket

Paster

LCD

Schematic for sticking at Point A

Pressurizing range

SHIELD SHEET A LCD

A

SHEET

Insert LCD CABLE surely

SHIELD SHEET B

A

LCD CABLE

Range of
pressurizing

Bending

LCD SHEET

70mm

A
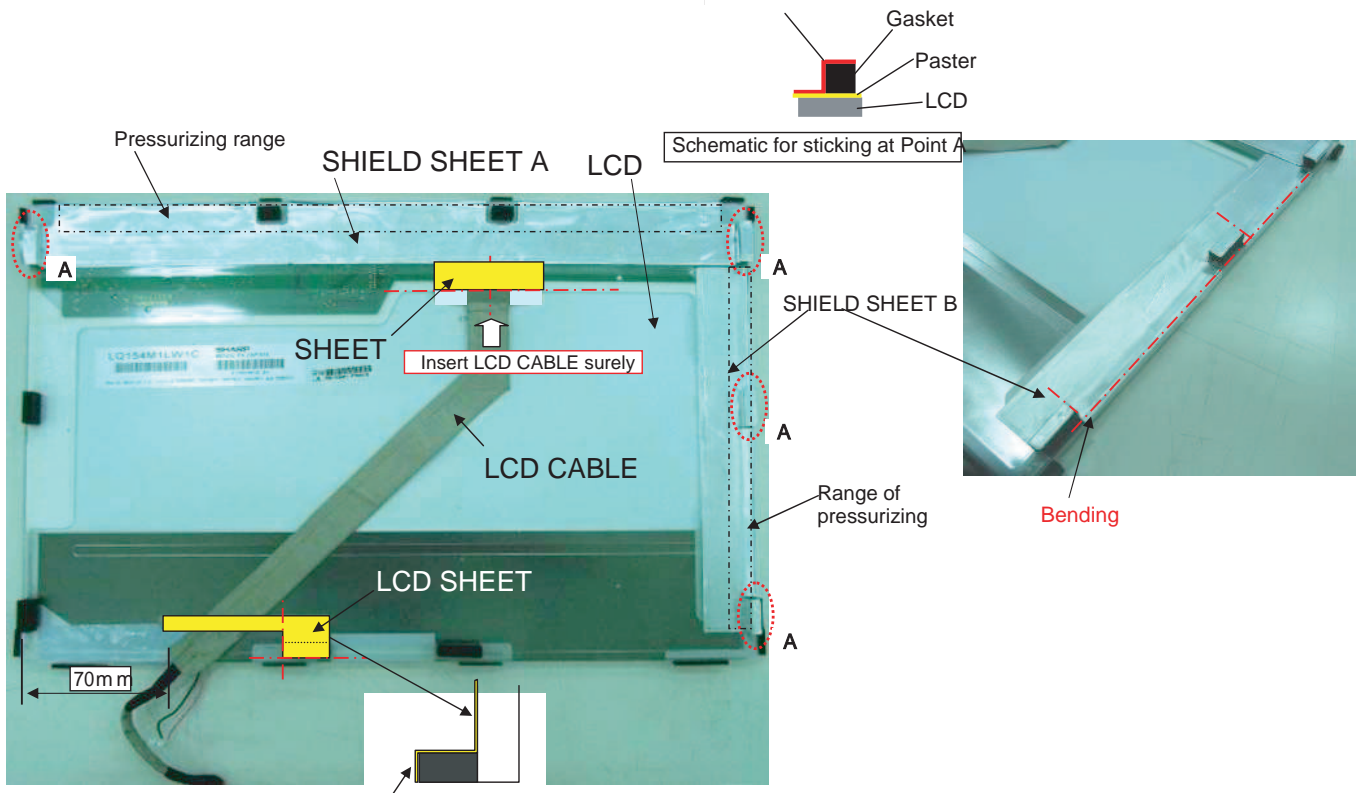
The cloth conductor shall be stuck along the gasket.

The Cable is under
the base plate
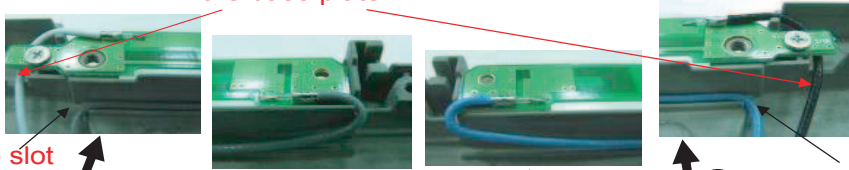
Along the slot

SCREW   PWB ANT L   PWB ANT R

Along the slot

SCREW

Tape shall not cover the round hole

Tape shall not cover the round hole

TAPE

S5

LCD REAR COVER

20mm

20mm

LCD DAMPER E

SCREW

SCREW

HINGE L

TAPE

S5

LCD DAMPER E

HINGE R

Attention: The heat-resistant adhesive tape
shall be stuck onto the part surely.

SHEET
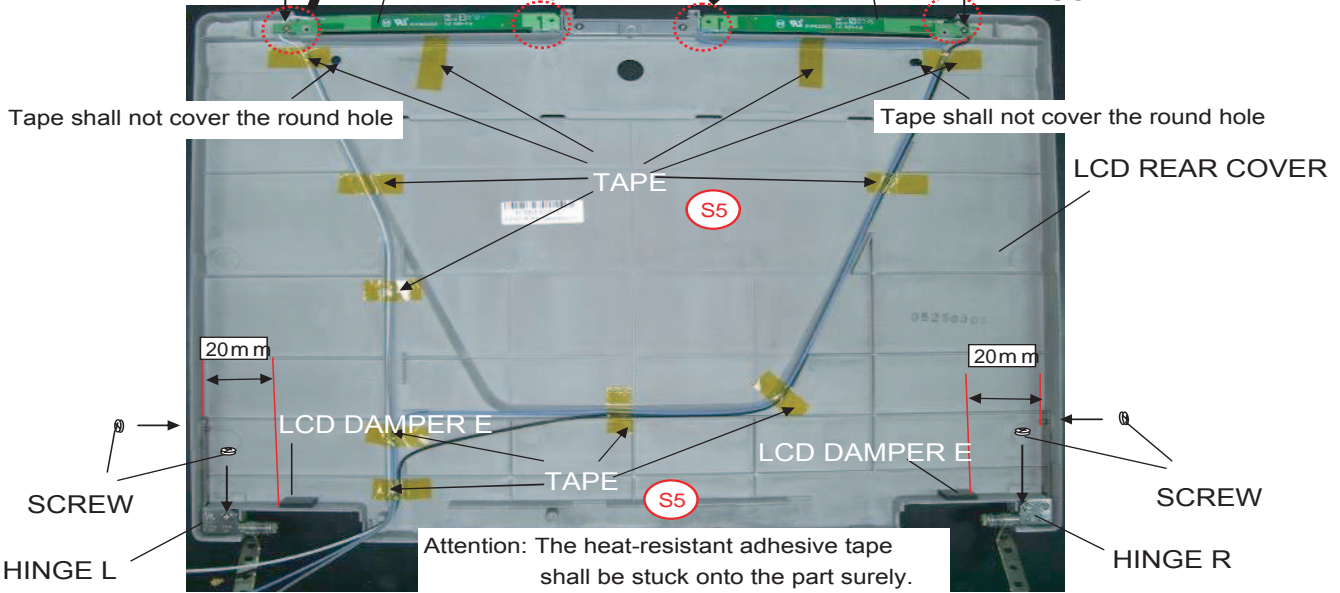
Note: Paster shall be firmly stuck and does not float.
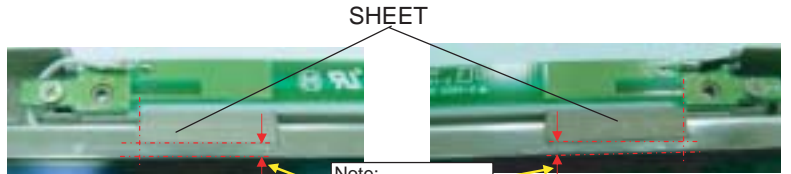
Note:
Do not exceed the edge of the metal frame

LCD ASS'Y

OK

NG
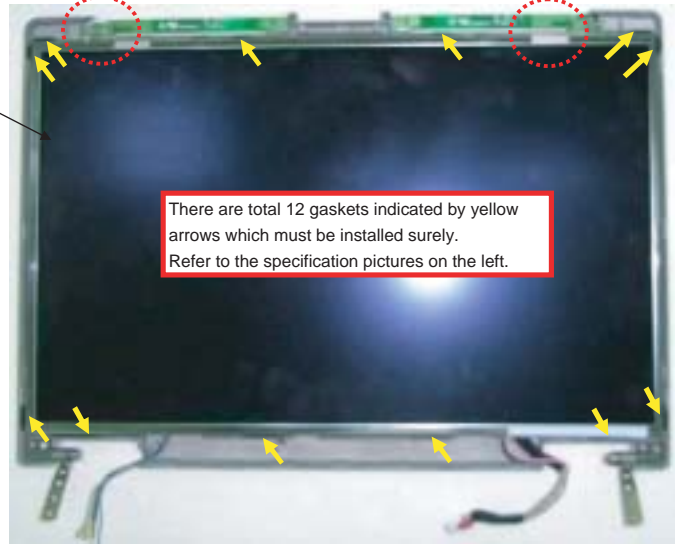
There are total 12 gaskets indicated by yellow arrows which must be installed surely.
Refer to the specification pictures on the left.

Direction of the word

CAUTION LABEL
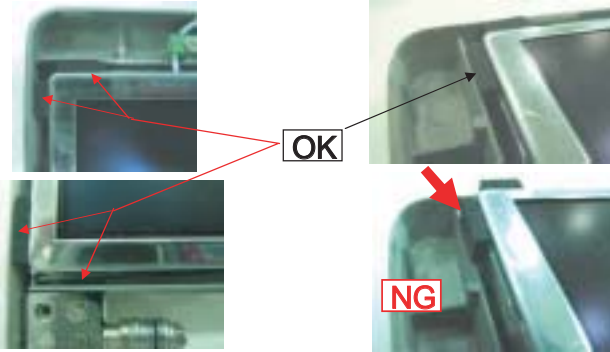
SCREW

CAUTION	S1:Insulation S2:Bitten S3:Sharp Edge S4:Part No. Check S5:Other

Torque of tightening screw :0.2± 0.02N　m(　2.0± 0.2kgf　cm)

Safety Critical Components

S4

INVERTER

LCD ASS'Y
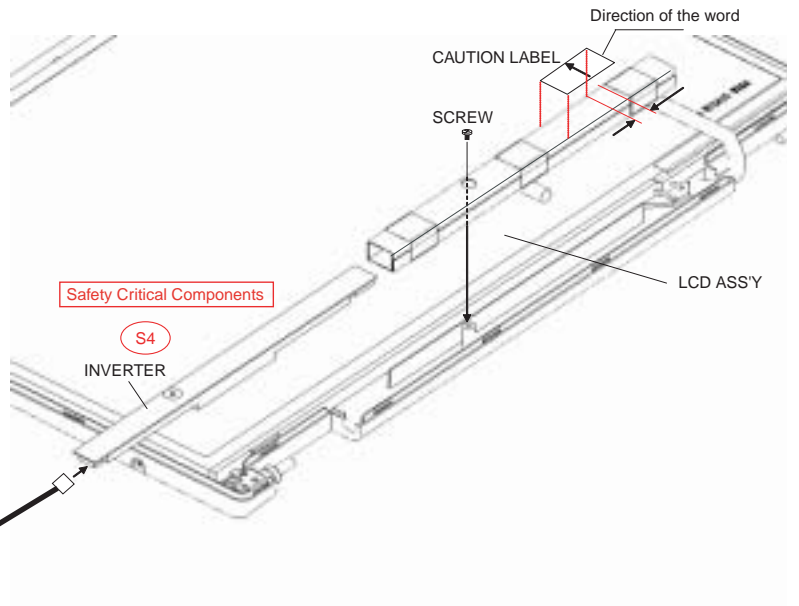
Avoid running over the electrical parts.

Pasting range
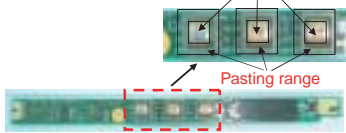
Paste sheets firmly:2-3kg/cm^2
Using JIG

TAPE

Paste along this line.

INV CASE LOWER

INVERTER CABLE

INVERTER
INV CASE UPPER

SHEET
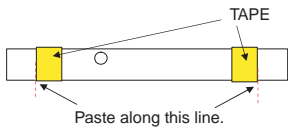
Insert the pik cable of the LCD body from the upper direction. After inserted, confirm the assembly and mark it.
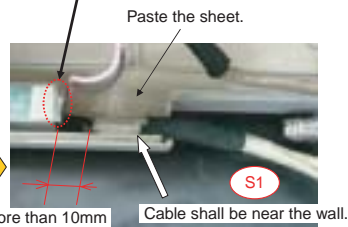
Paste the sheet.

More than 10mm

Cable shall be near the wall.

S1

Four Antenna Cables cross the part tube

Install them here

Tube
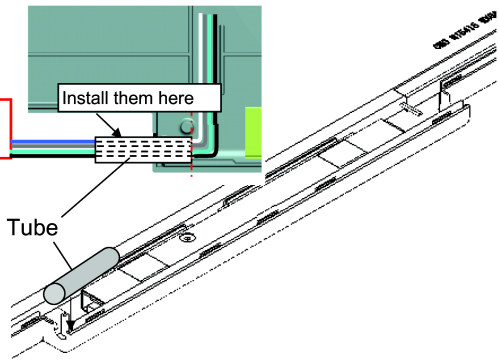
Insert the pink cable of the LCD body from the upper direction. After it is inserted, confirm the assembly and mark it.

S2
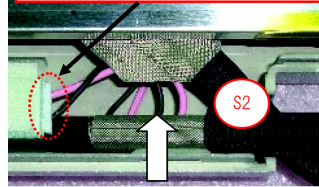
Cable setting diagram or Position

INV CABLE is under LCD CABLE

Cable setting diagram

A

LCD ASS'Y

S2
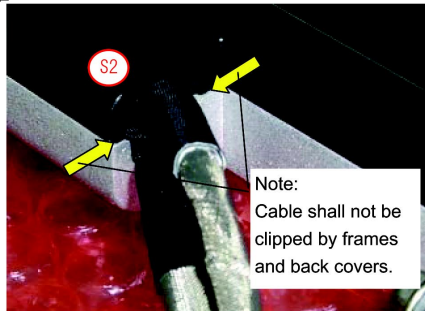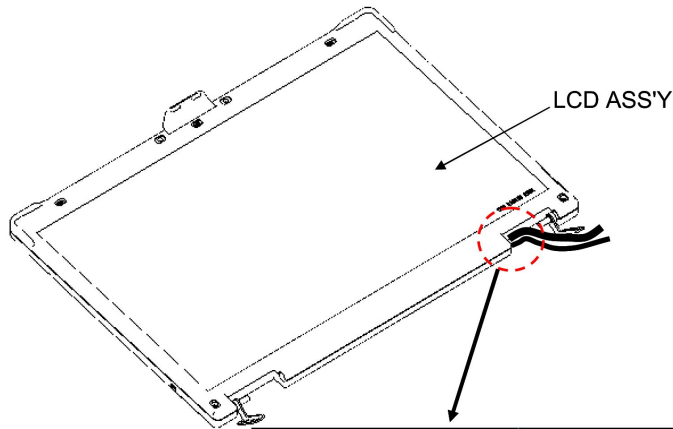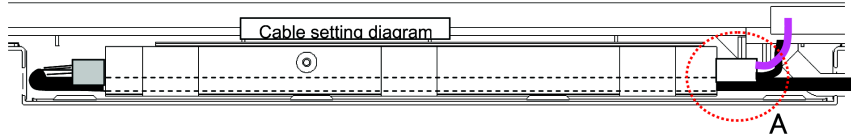
Note:
Cable shall not be clipped by frames and back covers.

Safety Working

CAUTION
S1:Insulation S2:Pinching Cables S3:Sharp Edge
S4:Part No. Check S5:Others

9.2.22. Setting the Display Unit, BIOS HIGH PCB and SW LED MDC PCB

1. Set the Display Unit to the computer, and fix it using the four Screws <N4>. No.1 to No.4
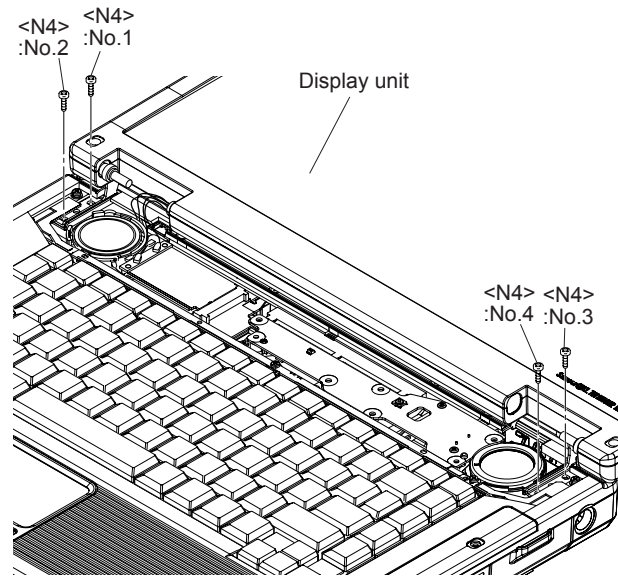
2. Connect the Cable(gray) to JK7001 and the Cable(blue) to JK7003 on WWAN PCB.
3. Set the BIOS HIGH PCB, and fix it using the two Screws<N2>. No.1, No.2
4. Connect the Cable(black) to JK6103 and the Cable(white) to JK6102 on BIOS HIGH PCB.
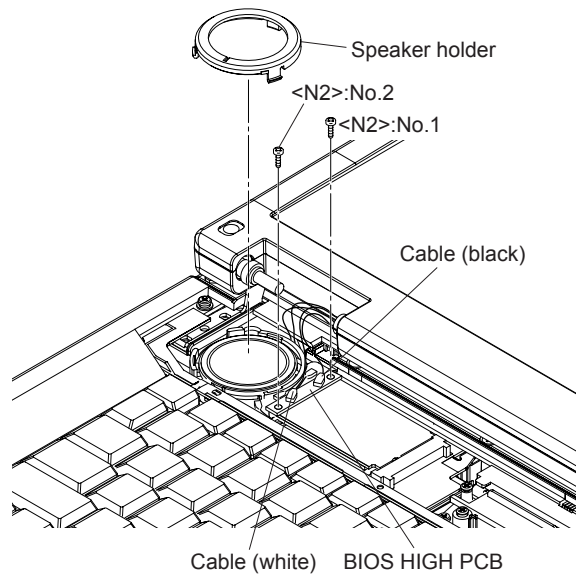
5. Connect the two Cables to the Connector(CN5 and CN35).
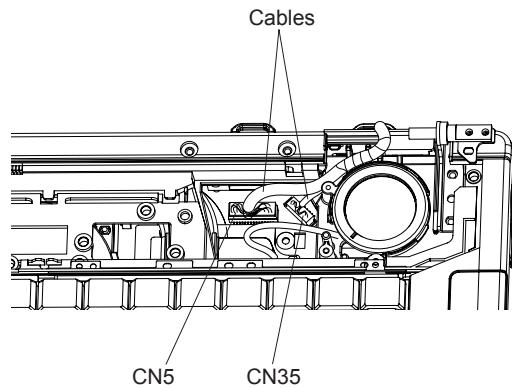
6. Fix the SW LED MDC PCB using the six Screws <N2>. No.1 to No.6

<N2>
:No.6
<N2>
:No.3
<N2>
:No.2
<N2>
:No.5
<N2>
:No.4
<N2>
:No.1

SW LED MDC PCB
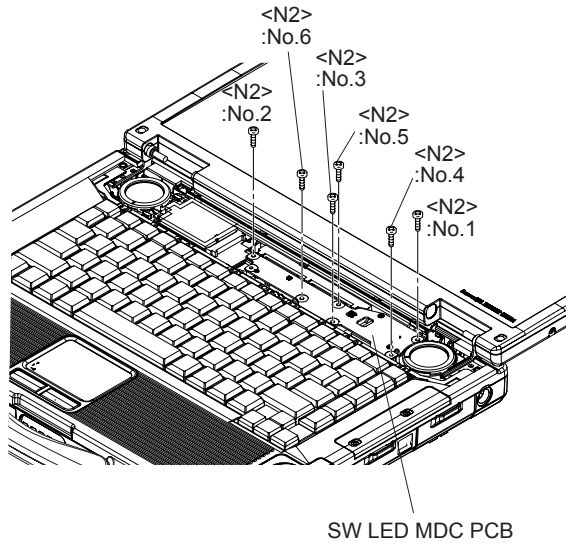
Screw<N2> : DFHE5122YA
Screw <N4> : DRHM0093ZA

■**Arranging the Cables when assembling the LCD Unit.**
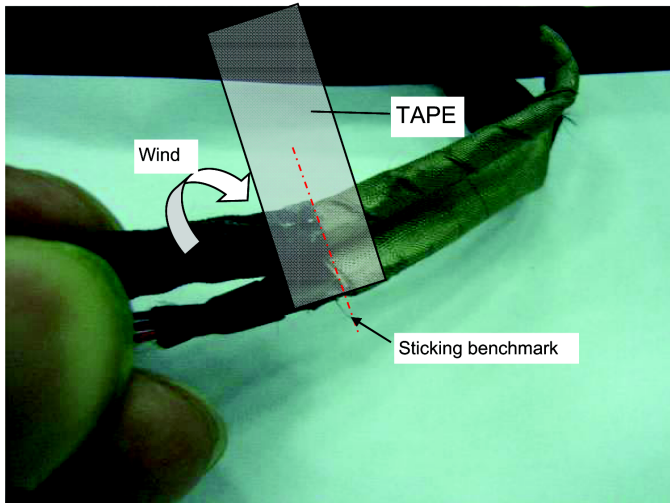
TAPE

Wind

Sticking benchmark

Safety Working

CAUTION	S1:Insulation S2:Pinching Cables S3:Sharp Edge S4:Part No. Check S5:Others

S2

Cable contacts Gasket

Using jig to

S2

Edge of the acetic acid
adhesive tape

Note: After inserting, please check the assembly

9-38
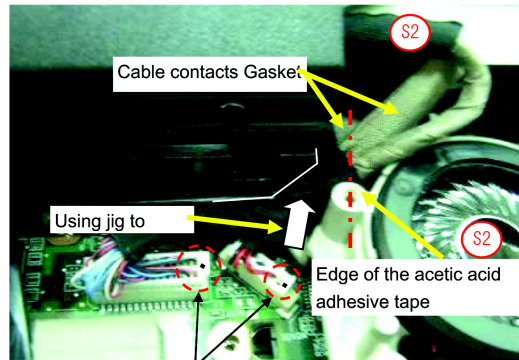
Note: Use jig to insert and take out the cable
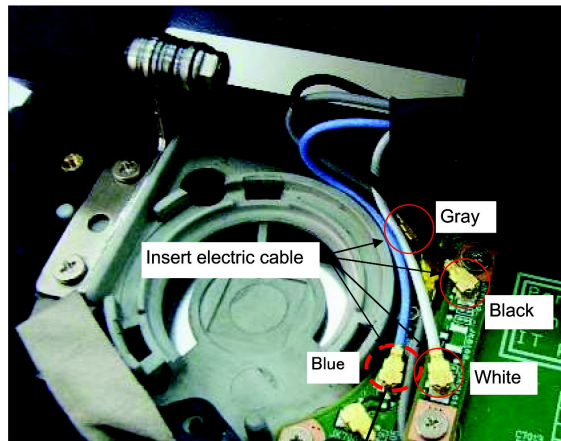
Insert electric cable

Gray

Black

Blue

White

S3

Cables shall not be dameged by the terminal

Note: When assembling SPEAKER HOLDER check whether the three points of the hook surely hook Hinge Support or not.

Push the terminal shrinkage sleeve to the bottom

S2

A

Cable snapping notice

Scratch faces downward
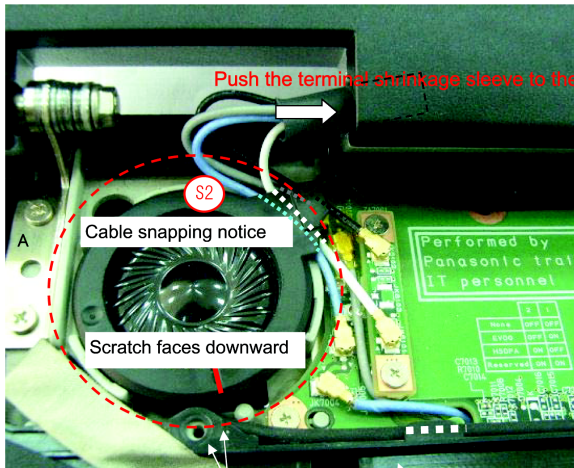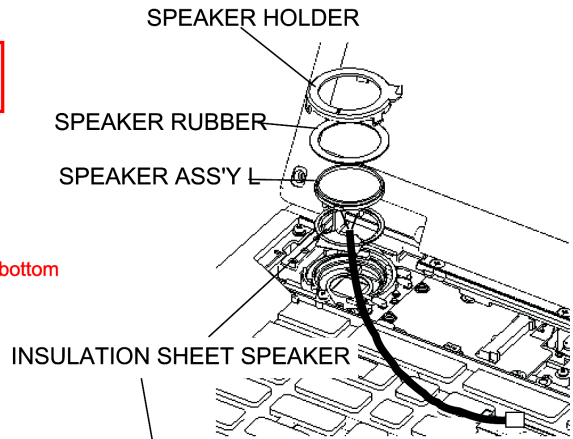
SP CABLE is at the left side of the post

SP CABLE is under the plastics

SPEAKER HOLDER

SPEAKER RUBBER

SPEAKER ASS'Y L

INSULATION SHEET SPEAKER

Detailed Drawing for Position A

■**Arranging the Speaker Cables when assembling the SW LED MDC PCB.**

CAUTION	S1:Insulation S2:Bitten S3:Sharp Edge S4:Part No. Check S5:Other
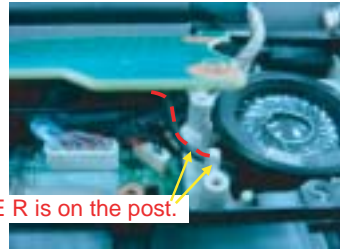
SP CABLE R is on the post.

Detailed of portion A

Torque of tightening screw:0.2± 0.02N　m(　2.0± 0.2kgf　cm)

SCREW

PWB SW

S2
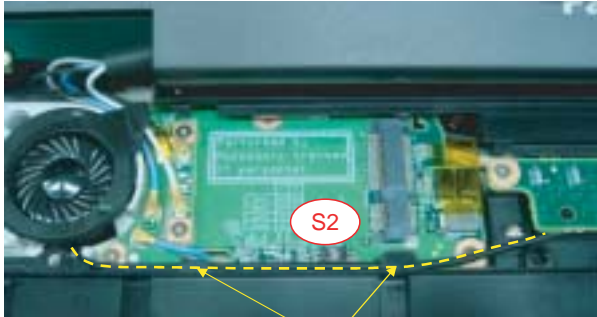
Detailed of portion B

SP CABLE is under of PWB.
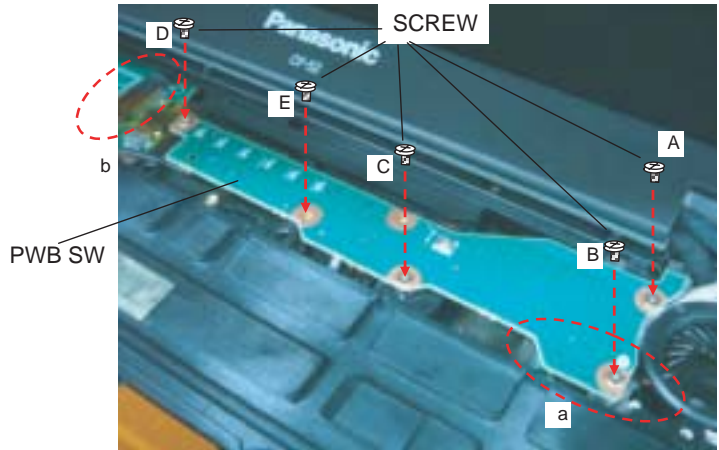
9.2.23.　Setting the Wireless LAN Module, BIOS PCB and ROBSON Cover

1. Put the Wireless LAN Module into the connector at an angle of fourty-five degrees.
2. Attach the BIOS PCB to the MAIN HIGH PCB, fix it using the two Screws <N2>.
3. Set the ROBSON Cover, and fix it using the Screw <N3>.

ROBSON cover

<N3>

<N2>

BIOS PCB

<N2>

Wireless
LAN module

Cables
(Gray and blue)
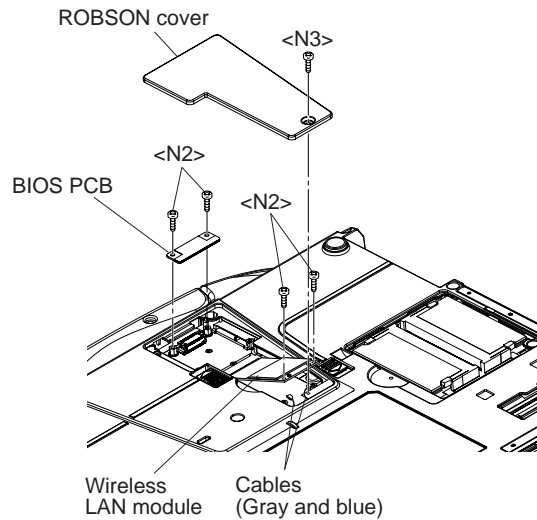
Screw <N2> : DFHE5122YA
Screw <N3> : DRHM0065ZA

9.2.24. Setting the DIMM Memory Card and DIMM Cover

1. Put the DIMM Memory Card into the connector.
2. Close the right and left Hooks, and paste the Tape.

DIMM memory card

DIMM memory connector

Hook
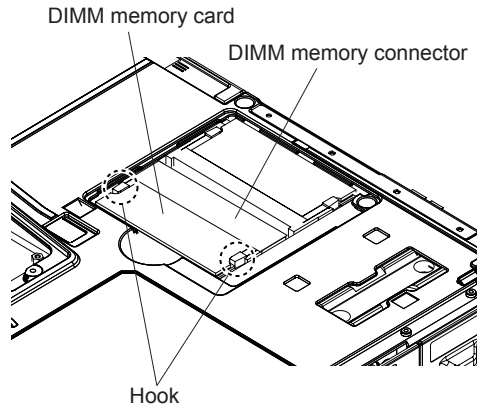
3. Set the DIMM Memory Card, and fix it using the Screw <N10>.

<N10>

DIMM cover
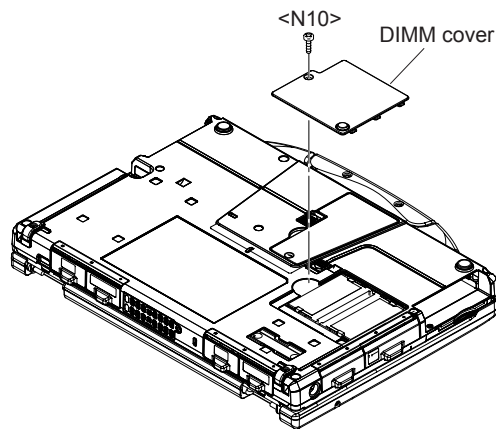
Screw <N10> : DRSB2+3FKLT

9.2.25. Setting the Tilt Panel Ass'y

1. Set the Tilt Panel Ass'y to the computer, and fix it using the five Screws <N202>.

<N202>

<N202>

<N202>

<N202>
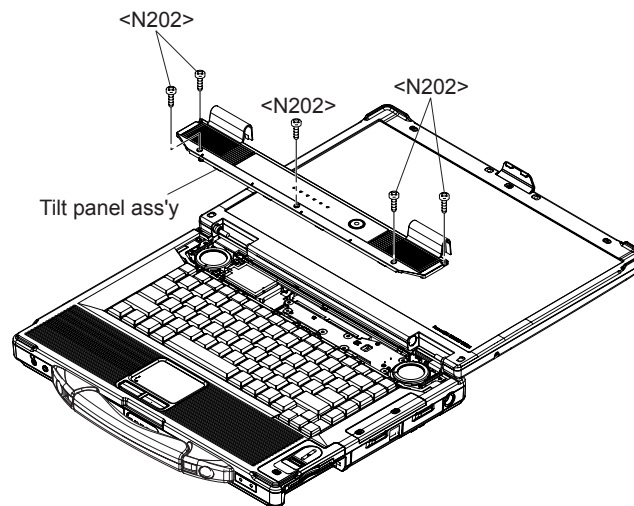
Tilt panel ass'y

2. Open the Cover, push the Tilt Panel Ass'y into the computer until it clicks.

Tilt panel

Tilt panel

Cover
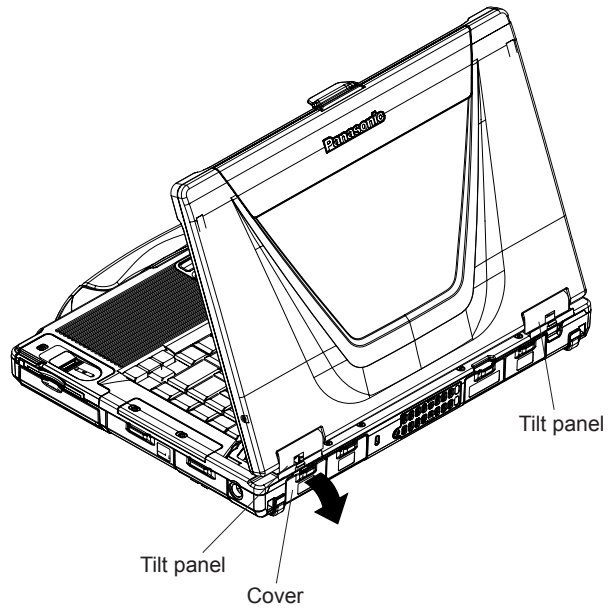
Screw <N202> : DRSB2+4FKLT

■**Caution for when assembling the Tilt Panel Ass'y**

Safety Working	CAUTION	S1:Insulation S2:Pinching Cables S3:Sharp Edge S4:Part No. Check S5:Others

S2

Caution pinching cables.

OK

Be free of overhang.

Be free of overhang.

NG

Overhang

NG

Overhang

SCREW

TILT PANEL ASS'Y

POWER BUTTON

S2
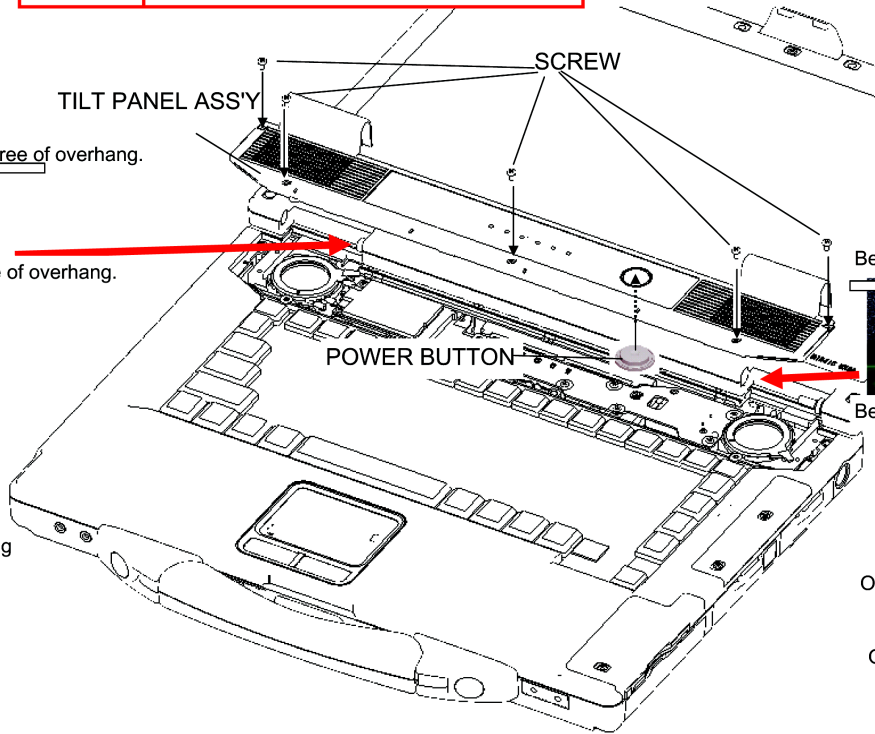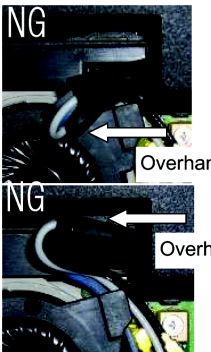
Caution pinching cables.
Be free of overhang.

OK

Be free of overhang.

NG

Overhang

NG

Overhang

9.2.26. Setting the HDD

1. Connect the HDD FPC Ass'y to the HDD.
2. Insert the HDD Ass'y into the HDD Damper.
3. Set the HDD Ass'y into the HDD Case Upper.
4. Attach the HDD Case into the HDD Case Upper Ass'y

10 Exploded View

Screw tightening torque

Ⓑ	0.18 ± 0.02 N.m (1.8 ± 0.2 kgf.cm)	Ⓕ	0.18 ± 0.01 N.m (0.8 ± 0.1 kgf.cm)
Ⓔ	0.2 ± 0.02 N.m (2.0 ± 0.2 kgf.cm)	Ⓗ	0.44 ± 0.02 N.m (4.4 ± 0.2 kgf.cm)

CF-52EKMxDxM
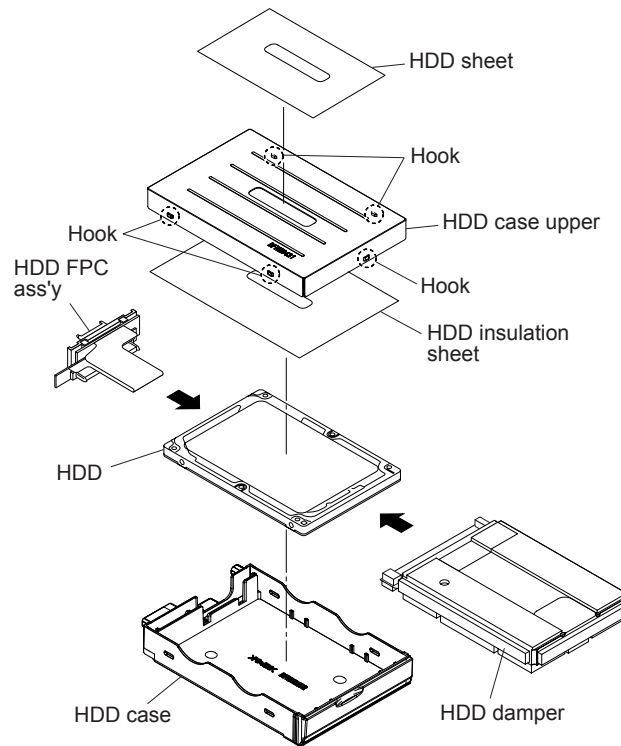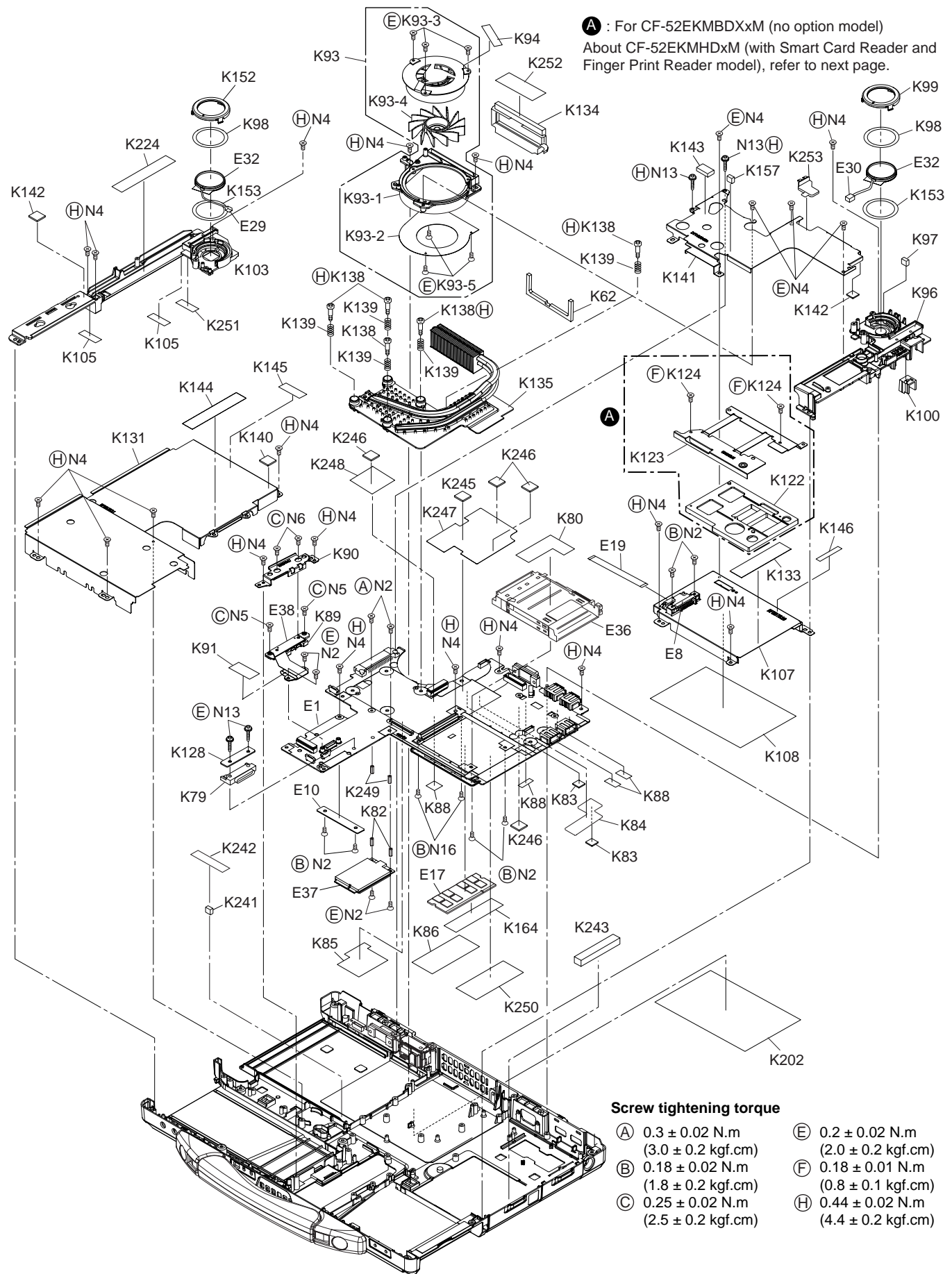
A : For CF-52EKMBDXxM (no option model)
About CF-52EKMHDxM (with Smart Card Reader and Finger Print Reader model), refer to next page.

Screw tightening torque

A	0.3 ± 0.02 N.m (3.0 ± 0.2 kgf.cm)	E	0.2 ± 0.02 N.m (2.0 ± 0.2 kgf.cm)
B	0.18 ± 0.02 N.m (1.8 ± 0.2 kgf.cm)	F	0.18 ± 0.01 N.m (0.8 ± 0.1 kgf.cm)
C	0.25 ± 0.02 N.m (2.5 ± 0.2 kgf.cm)	H	0.44 ± 0.02 N.m (4.4 ± 0.2 kgf.cm)

CF-52EKMxDxM

CF-52EKMHDxM (with Smart Card Reader and
Finger Print Reader) only

SF2

Ⓐ SF7

SF3

Ⓐ SF8

Ⓐ SF8

SF6

SF4

SF5

SF1
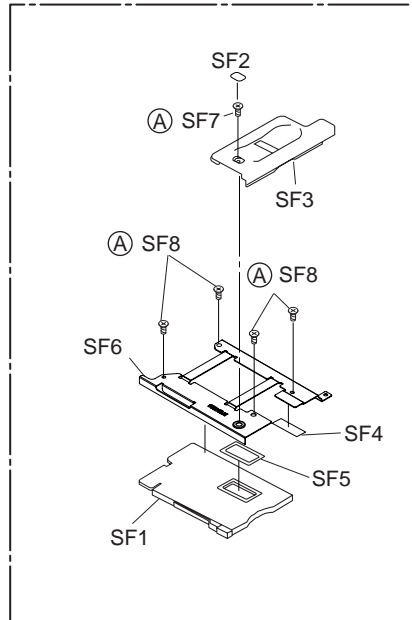
Screw tightening torque

Ⓐ 0.18 ± 0.02 N.m
   (1.8 ± 0.2 kgf.cm)

Ⓑ 0.18 ± 0.01 N.m
   (1.8 ± 0.1 kgf.cm)
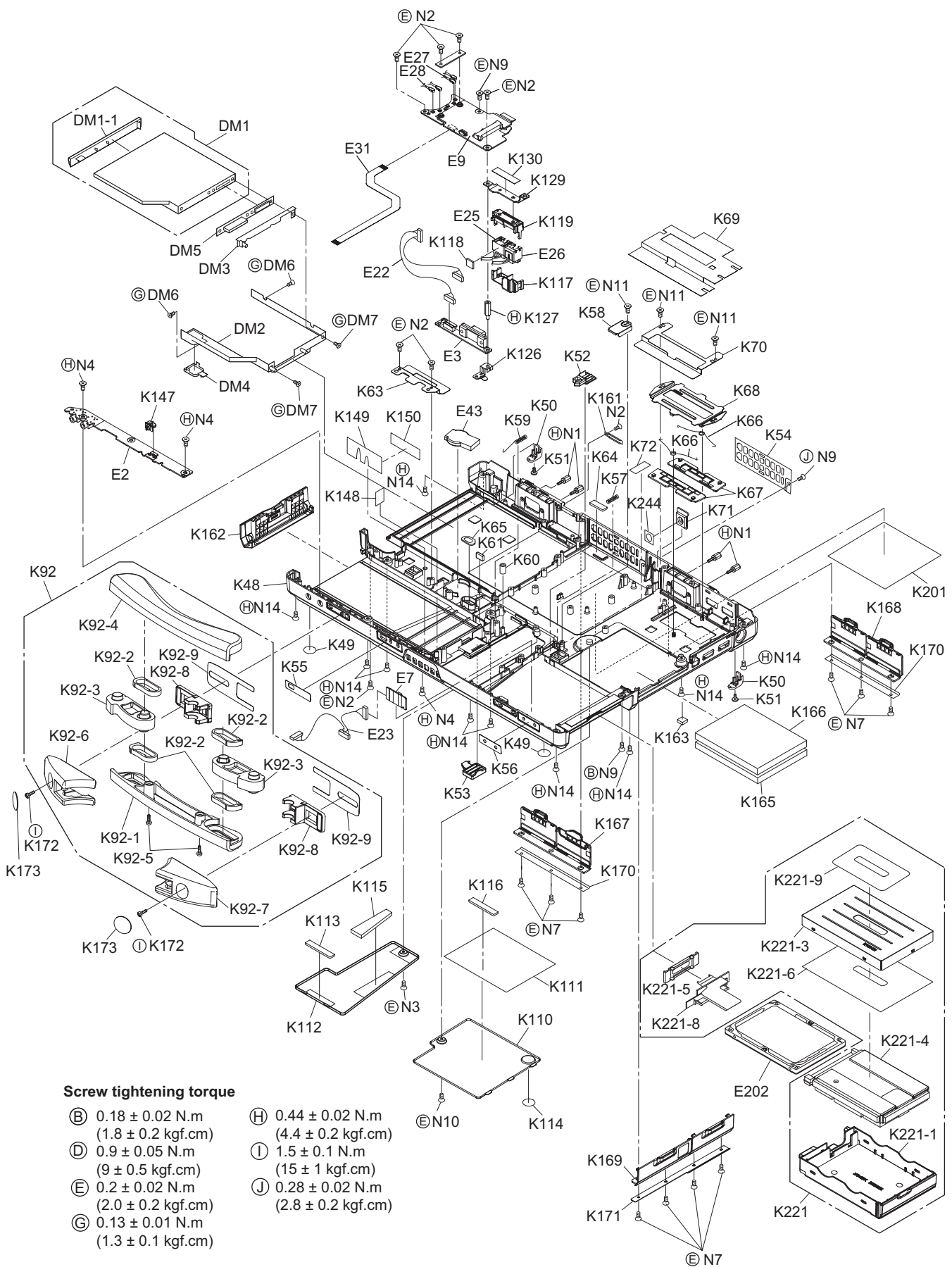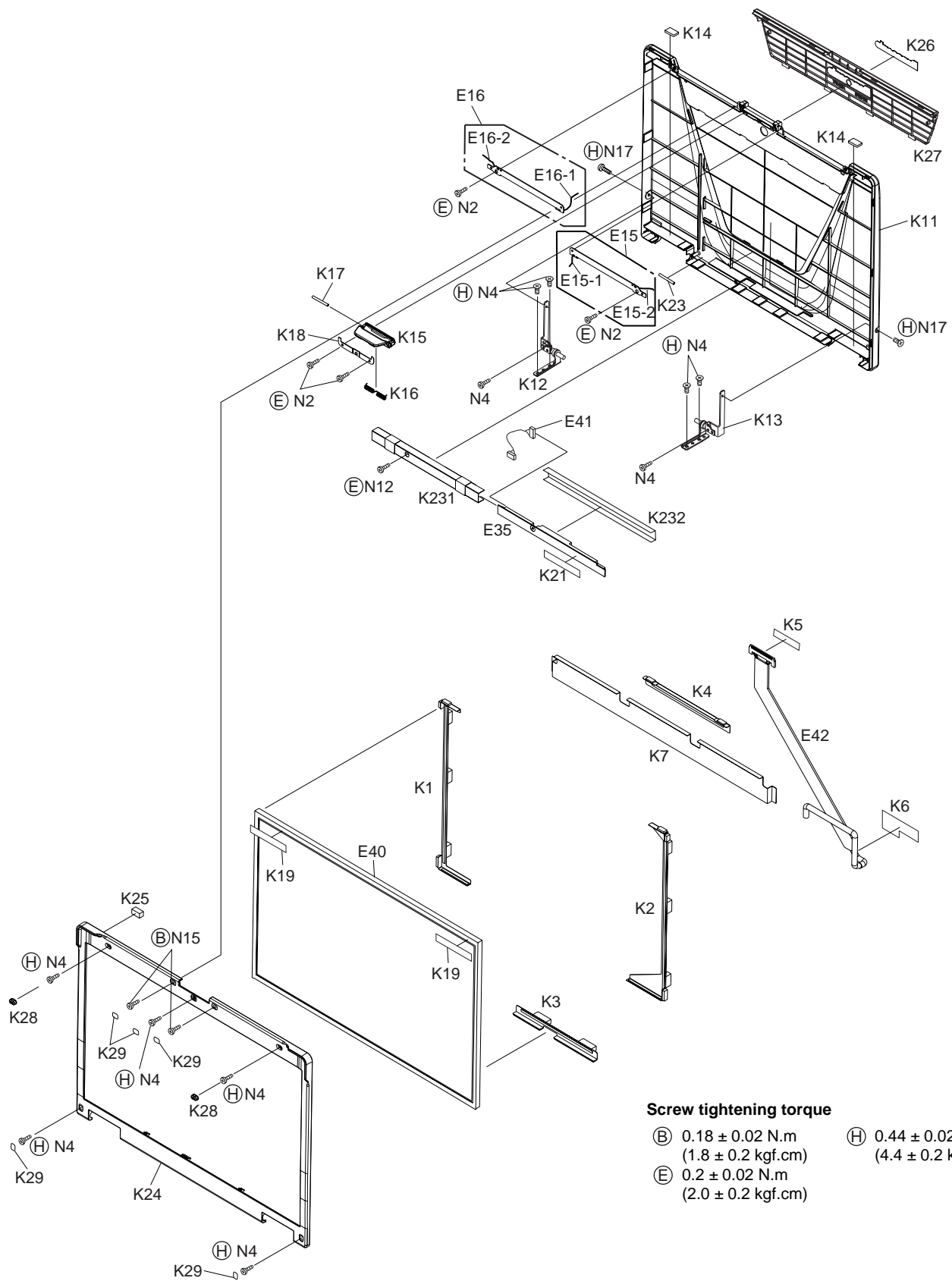
Screw tightening torque

Ⓑ 0.18 ± 0.02 N.m
 (1.8 ± 0.2 kgf.cm)
Ⓓ 0.9 ± 0.05 N.m
 (9 ± 0.5 kgf.cm)
Ⓔ 0.2 ± 0.02 N.m
 (2.0 ± 0.2 kgf.cm)
Ⓖ 0.13 ± 0.01 N.m
 (1.3 ± 0.1 kgf.cm)
Ⓗ 0.44 ± 0.02 N.m
 (4.4 ± 0.2 kgf.cm)
Ⓘ 1.5 ± 0.1 N.m
 (15 ± 1 kgf.cm)
Ⓙ 0.28 ± 0.02 N.m
 (2.8 ± 0.2 kgf.cm)

CF-52EKMxDxM

Screw tightening torque

Ⓑ 0.18 ± 0.02 N.m
(1.8 ± 0.2 kgf.cm)

Ⓔ 0.2 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)

Ⓗ 0.44 ± 0.02 N.m
(4.4 ± 0.2 kgf.cm)

CF-52EKMxDxM

Replacement Parts List

Note : Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

CF-52EKMxDxM

NRP: Non Reusable Parts

REF. NO and AREA		PART NO.	DESCRIPTION		Q'TY
Main Block Unit					
E1		DL3U11692ABA	PCB, MAIN HIGH	RTL	1
E2		DL3U21692ABA	PCB, AUDIO	RTL	1
E3		DL3U31692ABA	PCB, SERIAL	RTL	1
E4		DL3U41692ABA	PCB, TOUCH PAD	RTL	1
E5		DL3U51692ABA	PCB, SWLED	RTL	1
E6		DL3U61692ABA	PCB, SD	RTL	1
E7		DL3U71692ABA	PCB, PWR BATTERY LED	RTL	1
E8		DL3U81692ABA	PCB, SC RELAY	RTL	1
E9		DL3U91692ABA	PCB, WWAN	RTL	1
E10		DL3UA1692ABA	PCB, BIOS H	RTL	1
E11		DL3UP1621AAA	PCB, BT UNIT	RTL	1
E15		DL3U11710ABA	PCB, ANTENNA PWB R	RTL	1
E15-1		DFJS1098ZB	WLAN ANTENNA CABLE R		1
E15-2		DFJS1100YA	WWAN ANTENNA CABLE R		1
E16		DL3U21710ABA	PCB, ANTENNA PWB L	RTL	1
E16-1		DFJS1097ZB	WLAN ANTENNA CABLE L		1
E16-2		DFJS1099YA	WWAN ANTENNA CABLE L		1
E17		N5ZZ00000162	1GB DDR2-667 SO-DIMM		1
E18		DFJK9012YA	FFC, PAD		1
E19		DFJK9014YA	FFC, SC FS		1
E20		DFJK9024ZB	FFC, CLICK		1
E21		DFJK9025ZA	FFC SD		1
E22		DFJS1145ZA	SWLED I/O CABLE		1
E23		DFJS1079ZA	AUDIO LED SWCABLE		1
E24		DFJS1080ZA	BLUETOOTH CABLE		1
E25		DFJS1081ZB	LAN CABLE		1
E26		DFJS1147ZA	MODEM CABLE		1
E27		DFJS1095ZB	CABLE ANT RELAY WLAN L		1
E28		DFJS1096ZC	RELAY WLAN ANTENNA CABLE R		1
E29		DFJS1111ZB	SPEAKER CABLE-L		1
E30		DFJS1112ZC	SPEAKER CABLE-R		1
E31		DFUP1641YA	FPC		1
E32		L0AA02A00080	SPEAKER		2
E33		N2EAYYY00003	PAD		1
E34	⚠	N5HAZ0000016	MODEM		1
E35	⚠	N0GF1J000011	INVERTER	NRP	1
E36		K1NB94B00002	EX/PC CARD EJECTOR		1
E37	⚠	N5HZC0000038	WIRELESS LAN MODULE		1
E38		DFWP0146ZA	BATTERY FPC ASS'Y		1
E39		DFWP0147ZB	KBD SD RELAY FPC ASS'Y		1
E40		L5EDDYY00060	LCD HIGH		1
E41		DFJS1144ZA	INVERTER CABLE		1
E42		DFJS1128ZA	LCD CABLE		1
E43	⚠	CR2032/S5Z	BATTERY		1
E201		N2ABZY000035	KEYBOARD VISTA, U.S.		1
E202	⚠	N3CAYYY00040	HDD SATA, 160GB		1
Accessories					
A1	⚠	DFQW5163ZAT	MANUAL(CF-52MK2)		1
A2	⚠	K2CG3DR00004	AC CORD		1
A3	⚠	CF-AA5803AM1	AC ADAPTOR		1
A4	⚠	N4HUNTA00004	LITHIUM ION BATTERY PACK		1
A5		DFJS954ZA	MODEM CABLE		1
A6		DFQM8419MAU	RECOVERY DVD, VISTA		1

Packing Material

P1	DFPN0851YAT	CUSHION T		2
P2	DFPN0852ZAT	CUSHION B		2
P4	DFPE0901ZAT	MANUAL HOLDER		1
P5	DFPE0875ZCT	ACCESSORY HOLDER		1
P6	DFPK1252ZAT	PACKING CASE		1
P7	DFPH0077ZAT	PROTECTION SHEET		1
P8	DFPP0136ZAT	PROTECTION BAG		1

Mechanical Parts

K1	DFHR3G84ZB	LCD DAMPER A	NRP	1
K2	DFHR3G85ZC	LCD DAMPER B	NRP	1
K3	DFHR3G86ZC	LCD DAMPER C	NRP	1
K4	DFHR3G87ZA	LCD DAMPER D	NRP	1
K5	DFMC0770ZA	CONDUCTIVE TAPE	NRP	1
K6	DFHE1071ZB	CONDUCTIVE TAPE	NRP	1
K7	DFMC0889ZA	SHIELD SHEET A	NRP	1
K8	DFMC0890ZA	SHIELD SHEET B	NRP	1
K11 ⚠	DFKF0281WA-0	LCD REAR COVER		1
K12	DFBH1184ZB	HINGE L		1
K13	DFBH1185ZB	HINGE R		1
K14	DFHR3J72ZA	LCD DAMPER E	NRP	2
K15 ⚠	DFKE0900ZA-0	LCD LATCH		1
K16	DFUN0086ZA	LCD LATCH SPRING		1
K17	DFDF5026ZA	LCD LATCH SHAFT		1
K18	DFMD7B37ZA	LATCH HOLD PLATE		1
K19	DFHE1068ZB	CONDUCTIVE TAPE-20X20	NRP	2
K21	DFQT6077YAT	CAUTION LABEL(INVERTER)	NRP	1
K23	DFHR6358ZA	TUBE		1
K24 ⚠	DFKM0535YB-0	LCD FRONT		1
K25	DFHE0893ZA	LID MAGNET	NRP	1
K26	DFGB0131YA-0	PANASONIC BADGE	NRP	1
K27	DFGX0482XA-0	ANTENNA COVER		1
K28	DFHG2009ZA-0	LCD RUBBER	NRP	2
K29	DFGX0283ZA-1	LCD SCREW SHEET	NRP	5
K30 ⚠	DFKA0062YC-0	TOP CASE		1
K31	DFHR3G01ZA	KB WATER PROOF B	NRP	1
K32	DFHR3G79ZB	WATER PROOF SC	NRP	1
K33	DFHR3G80ZB	WATER PROOF BT	NRP	1
K34	DFHR3H76ZA	PAD WP SHEET	NRP	1
K35	DFBC0324ZA-0	CLICK BUTTON L		1
K36	DFBC0325ZA-0	CLICK BUTTON R		1
K37	DFHR3H74ZA	PAD BUTTON WP SHEET		2
K38	DFMC0797ZA	EARTH PLATE		1
K39	DFHR6327ZA	PAD HLDER		1
K40	DFMD7B36ZA	TOP RELAY PLATE		1
K41	DFHR3H38ZA	KBD WATER PROOF SHEET A	NRP	3
K43	DFHR3H50ZA	FIN DUCT B	NRP	1
K44	DFHR6324ZA	SD LED LENZ		1
K45	DFMC0852ZA	SD EARTH PLATE		1
K48 ⚠	DFKM0534YC-0	BOTOTM CASE		1
K49	DFHG2035ZA-0	FOOT RUBBER	NRP	2
K50	DFHG1976ZB-0	LEG		2
K51	DRHM0130ZAT	SCREW		2
K52	DFBD0178ZA-0	LOCK KNOB(HDD)		1
K53	DFBD0196ZA-0	BATTERY LATCH KNOB		1
K54	DFHR6331ZD	FIN COVER		1
K55	DFHR3H19ZC	WL SHEET	NRP	1
K56	DFHR3H20ZC	LED SHEET	NRP	1
K57	DFUQ0105ZA	LOCK SPRING HDD		1
K58	DFMD7B45ZA	HDD LOCK COVER PLATE		1
K59	DFUD0043ZC	BATTERY LATCH SPRING		1
K60	DFHG2033ZA	SPACER CUSHION		1
K61	DFHE1064ZA	GASKET-3X3X10	NRP	1

K62	DFHR3G78ZA	FIN DUCT	NRP	1
K63	DFMC0895ZA	EARTH PLATE PORTRE		1
K64	DFHE1061ZA	GASKET-6-6-20	NRP	1
K65	DFHR3G83ZA	BOTTOM WP CUSHION	NRP	1
K66	DFUN0056ZA	PORT RE COVER SPRING		2
K67 ⚠	DFKE0555YA-0	PORTRE COVER		2
K68	DFME0138ZA	SHUTTER HOLD PLATE		1
K69	DFMX1294ZC	INSULATION SHEET POTORE	NRP	1
K70	DFMC0903ZA	EARTH PLATE PORTRE L		1
K71	DFMD9098ZC	KENGSINTONG PLATE ASS'Y		1
K72	DFHR3J14ZA	PORTRE SHEET	NRP	1
K79	DFHR9122ZA	HDD GUIDE ASS'Y		1
K80	DFHR3K04ZA	SPACER	NRP	1
K82	DFHD04H006ZA	HEX SPACER 46		2
K83	DFMY0468ZA	LAN THERMAL RUBBER		2
K84	DFMY3248ZA	VRAM THERMAL SHEET	NRP	1
K85	DFMX1316ZA	INSULATION SHEET HDD HOLDER	NRP	1
K86	DFHR3E46ZA	PROTECTION SHEET	NRP	1
K88	DFHR3H85ZA	PWB SPACER	NRP	4
K89	DFHR6370ZA	BATTERY CON HOLDER		1
K90	DFMD7B27ZB	BATT FPC PLATE		1
K91	DFMX1308ZC	INSULATION SHEET FPC	NRP	1
K92 ⚠	DFKE9094ZA-0	HANDLE ASS'Y		1
K92-1 ⚠	DFKE0829ZA-0	GRIP LOWER		1
K92-2	DFHR6223ZA	HANDLE RING		4
K92-3 ⚠	DFKE0899ZA-0	HANDLE JOINT		2
K92-4 ⚠	DFKE0828ZA-0	GRIP UPPER		1
K92-5	DRSB3+8FKLT	SCREW		2
K92-6 ⚠	DFKE0904ZA-0	HANDLE BASE L		1
K92-7 ⚠	DFKE0905ZA-0	HANDLE BASE R		1
K92-8	DFHR6330ZA	HANDLE POM		2
K92-9	DFHR3J00ZA	HANDLE SPACER	NRP	2
K93	DFMY9035ZB	FAN CASE ASS'Y		1
K93-1	DFMY3244ZC	FAN CASE		1
K93-2	DFMY3245ZA	FAN CASE PLATE		1
K93-3	DXSB2+4FNLT	SCREW		3
K93-4	UDQF2ZH38	FAN		1
K93-5	DFHE5122YA	SCREW		3
K94	DFHE1067ZA	CONDUCTIVE TAPE-10X30	NRP	1
K96	DFME0157XB	HINGE SUPPORT R		1
K97	DFHE1054ZB	GASKET-65TSV6-6-12	NRP	1
K98	DFHG1978ZA	SPEAKER RUBBER		2
K99	DFHR6319ZB	SPEAKER HOLDER		1
K100	DFKW0001ZB	DC JACK COVER		1
K103	DFME0156YA	HINGE SUPPROT L		1
K105	DFHR3J66ZC	MP SPACER	NRP	2
K107	DFMD7B29YA	HDD HOLD PLATE		1
K108	DFHR3H88ZA	HDD SHEET B	NRP	1
K110	DFMD7B28ZC-0	DIMM COVER		1
K111	DFMX1288ZB	INSULATION SHEET DIMM	NRP	1
K112	DFMD7B32ZC-0	ROBSON COVER		1
K113	DFHE1053ZA	GASKET-65TSV3-3-20	NRP	1
K114	DFHG2034ZB-0	FOOT RUBBER	NRP	1
K115	DFHE1089ZA	GASKET-3-3-65	NRP	1
K116	DFHE1088ZA	GASKET-65TSV2.5-1.5-20	NRP	1
K117	DFHR6342ZB	MODELAN HOLDER-1		1
K118	DFMX1311ZA	INSULATION SHEET LAN	NRP	1
K119	DFHR6343ZB	MODELAN HOLDER-2		1
K120	DFHM0439ZA	KBD LID PLATE		1
K121	DFHR3G76ZB	KBD LID SHEET	NRP	1
K122	DFHR6344ZB	SC EJECTER DUMMY		1
K123	DFMD7B33YA	SMART CARD HOLDER		1
K124	DXHM0040ZA	SCREW		2

K125	DFGX0487ZD-0	COVER DUMMY		1
K126	DFMC0884ZA	EARTH PLATE MP		1
K127	DFHD14H001ZA	HEX SPACER 13.6)		1
K128	DFHG6034ZB	MP GUIDE		1
K129	DFMD7B57ZA	MODEM PLATE		1
K130	DFMX1297ZA	INSULATION SHEET SIM	NRP	1
K131	DFMD7B31ZC	MP HOLD PLATE		1
K133	DFHR3H87ZB	HDD SHEET A	NRP	1
K134	DFHR6318ZA	FAN DUCT		1
K135	DFMY5043YA	HEAT SINK ASS'Y		1
K138	DRHM0119ZAT	SCREW		5
K139	DFUQ0117ZA	HEAT SINK SPRING		5
K140	DFHE0284YAT	GASKET-10-4-10	NRP	2
K141	DFHM0426YA	KBD EARTH PLATE		1
K142	DFHE1062ZA	GASKET-10X1X10	NRP	2
K143	DFHE1063ZA	GASKET-10X5X15	NRP	1
K144	DFMX1309ZC	INSULATION SHEET FPC2	NRP	1
K145	DFHE1076ZA	CONDUCTIVE TAPE-30X80	NRP	1
K146	DFHE1078ZA	CONDUCTIVE TAPE HDD	NRP	1
K147	DFHR6328ZA-0	WL BUTTON		1
K148	DFMX1139ZA	PROTECTION SHEET	NRP	1
K149	DFGM0011ZA	BOTTOM MESH PLATE		1
K150	DFHE1057ZB	CONDUCTIVE TAPE-7X35	NRP	1
K151	DFHR3H62ZB	TOP WATERPROOF SHEET	NRP	1
K152	DFHR6357ZB	SPEAKER HOLDER L		1
K153	DFMX1298ZA	INSULATION SHEET SPEAKER	NRP	2
K157	DFMC0766YBT	GASKET-6-8-8	NRP	1
K159	DFGX0484ZD-0	COVER BT		1
K160	DFGX0283ZA-1	LCD SCREW SHEET	NRP	3
K161	DFMD7B60ZA	SIM COVER PLATE		1
K162	DFGX0483ZE-0	COVER BATTERY		1
K163	DFHE1077ZA	GASKET 6-6-6	NRP	1
K164	DFMX1334ZA	DIMM SHEET	NRP	1
K165	DFHR6340ZA-0	DUMMY PC CARD		1
K166	DFHR6339ZA-0	DUMMY EXPRESS CARD		1
K167	DFGX0486ZC-0	COVER IO-L		1
K168	DFGX0497ZC-0	COVER IO-R		1
K169	DFGX0488ZD-0	COVER PC CARD		1
K170	DFHM0424ZB-0	IO COVER PLATE		2
K171	DFHM0427ZC-0	PC COVER PLATE		1
K172	DRYN4+J12KLT	SCREW		2
K173	DFHR3H45ZA	HANDLE SHEET		2
K174	DFQT0075ZA	CENTRINO 2 DUO LABEL		1
K175	DFQT0066ZA	VISTA BASIC LABEL		1
K176	DFQT0045ZA	ENERGY STAR LABEL	NRP	1
K201 ⚠	DFGT1291ZA	NAMEPLATES (US)		1
K202	DFQT0055XA	COA SERIAL LAMINATE		1
K211	DFBC0323ZA-0	POWER SW BUTTON		1
K212	DFGE0132ZB-0	CENTER COVER NET		2
K213	DFGX0493YA-0	TILT PANEL		1
K214	DFGK0138ZA-0	TILT PANEL SHEET		1
K215	DFHR3H77ZC	TILT PANEL WP SHEET		1
K216	DFHR3H78ZB	TILT PANEL WP SHEET B		1
K217	DFHR3H79ZB	TILT PANEL WP SHEET C		1
K218	DFHR3K26ZA	KBD TAPE		6
K219	DFHR3L01ZA	KBD SPACER		1
K221	DFWW99A0128	HDD MOUNTING KIT		1
K221-1	DFGX0492ZD-0	HDD CASE		1
K221-3	DFHM0431YA	HDD CASE UPPER		1
K221-4	DFHR3K31ZA	HDD DAMPER		1
K221-5	DFHR6203ZA	HOLDER HDD CN		1
K221-6	DFMX1305ZA	INSULATION SHEET HDD		1
K221-8	DFWP0148ZA	HDD FPC ASS'Y		1

K221-9	DFHR3K17ZB	HDD SHEET	NRP	1
K224	DFHE1098ZA	CONDUCTIVE TAPE-15X90		1
K231	DFMX1340ZC	INVERTER CASE UPPER		1
K232	DFMX1341ZA	INV CASE LOWER		1
K241	DFHE0326XAT	GASKET 10-4-15	NRP	1
K242	DFMC0703ZAT	CONDUCTIVE TAPE 15X40	NRP	1
K243	DFHE1116ZA	GASKET(65TSV6-6-50)		1
K244	DFHR3M08ZA	KENSINGTON SHEET	NRP	1
K245	DFMY0496ZA	THERMAL SHEET 13X15X1.3		1
K246	DFMY0499ZA	THERMAL SHEET 13X16X1	NRP	4
K247	DFMX1348ZA	INSULATION SHEET VGA	NRP	1
K248	DFMX1349ZA	INSULATION SHEET MCH		1
K249	DFHD05H007ZA	HEX NUT SPACER		2
K250	DFMX1363ZA	PROTECTION SHEET	NRP	1
K251	DFMC0729ZAT	SHIELD CLOTH	NRP	1
K252	DFHR3L07ZB	CABLE SHEET	NRP	1
K253	DFHR6399ZA	CABLE HOLDER		1
K254	DFHR3L11ZA	SPACER		1
N1	DFHE5035ZB	SCREW		4
N2	DFHE5122YA	SCREW		38
N3	DRHM0144ZA	SCREW		1
N4	DRHM0093ZA	SCREW		38
N5	XTB2+6GFN	SCREW		2
N6	DRHM0115ZA	SCREW		2
N7	DRHM5025YAT	SCREW		10
N8	DRHM5054XAT	SCREW		4
N9	DRHM5104ZAT	SCREW		5
N10	DRSB2+3FKLT	SCREW		1
N11	DXQT2+F3FNLT	SCREW		3
N12	DXSB2+4FNLT	SCREW		10
N13	DXYN2+F12FNL	SCREW		4
N14	XTB26+10GJKT	SCREW		10
N15	XQN17+BJ6FJ	SCREW		2
N16	DRQT2+E8FKLT	SCREW		2
N202	DRSB2+5FKLT	SCREW		5

DVD MULTI DRIVE

DM1	⚠ DFWW78A0267	DVD MULTI DRIVE ASS'Y		1
DM1-1	DFHR9131ZA	BEZEL ASS'Y		1
DM2	⚠ DFKE0709YA-0	MP BOTTOM		1
DM3	⚠ DFKE0710ZA-0	MP CABINET TOP		1
DM4	DFHR6085ZA-0	MP LATCH		1
DM5	DFWP0142YA	MP FPC		1
DM6	DRHM5067YA	SCREW		2
DM7	DRQT2+E8FKLT	SCREW		2

CF-52EKMHDxM   Smart Card Reader, Finger Print Reader

SF1	DL3UP1698ABA	SC FPR PWB UNIT (WSC FPR)		1
SF2	DFGX0283ZA-1	LCD SCREWSHEET	NRP	1
SF3	DFGX0489ZD-0	COVER SC FS		1
SF4	DFHE1057ZB	CONDUCTIVE TAPE-7X35	NRP	1
SF5	DFHR3F98ZA	FP WATERPROOF	NRP	1
SF6	DFMD7B33YA	SMART CARD HOLDER		1
SF7	DFHE5122YA	SCREW		1
SF8	DXQT2+D25FNL	SCREW		4
SF9	DFHR3C92ZB	FP POOL SHEET		1

Replacement Parts List

Note: Important Safety Notice
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components use only manufacturer's specified parts.

CF-52EKMxDxM

REF. NO and AREA		PART NO.	DESCRIPTION	Q'TY
MAIN PCB HIGH				
C 1, 2, 3, 5, 6, 7, 10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 23, 24, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 109, 110, 111, 112, 118, 119, 123, 128, 132, 173, 176, 189, 192, 243, 244, 245, 254, 275, 276, 287, 289, 290, 352, 358, 360, 364, 365, 367, 372, 376, 377, 378, 379, 381, 387, 435, 464, 465, 475, 476, 478, 482, 487, 489, 500, 501, 511, 536, 543, 544, 553, 692, 693, 694, 695, 713, 714, 728, 729, 733, 737, 747, 751, 761, 765, 775, 779, 1027, 1028, 1046, 1087, 1096, 1130		F1J0J106A016	CAPACITOR, 6.3V, 10µF	106
C 4, 113, 125, 137, 164, 240, 241, 1035, 1052, 1055, 1196		EEFCX0D221R	CAPACITOR, 2V, 220µF	11
C 8, 9, 13, 17, 21, 25, 44, 45, 46, 47, 98, 106, 117, 124, 130, 133, 135, 136, 142, 155, 156, 159, 167, 168, 169, 170, 183, 184, 185, 186, 233, 234, 235, 236, 237, 238, 239, 246, 249, 250, 251, 252, 253, 255, 256, 257, 259, 260, 261, 263, 266, 267, 269, 270, 271, 272, 273, 274, 277, 300, 303, 336, 337, 338, 339, 345, 351, 396, 408, 409, 428, 429, 434, 436, 437, 438, 448, 449, 472, 473, 474, 477, 480, 481, 483, 485, 488, 491, 492,		F1G1C104A042	CAPACITOR, 16V, 0.1µF	204

502, 503, 506, 508, 510, 512, 513, 514, 515, 516, 522, 523, 524, 525, 528, 529, 530, 531, 532, 533, 534, 535, 538, 542, 546, 549, 550, 554, 555, 556, 557, 558, 563, 564, 565, 566, 567, 574, 575, 576, 608, 618, 623, 630, 631, 654, 657, 658, 663, 668, 669, 670, 677, 686, 696, 697, 698, 700, 701, 702, 705, 716, 717, 718, 720, 723, 730, 731, 732, 734, 735, 736, 740, 741, 744, 745, 746, 748, 749, 750, 754, 755, 758, 759, 760, 762, 763, 764, 768, 769, 772, 773, 774, 776, 777, 778, 782, 783, 791, 794, 795, 796, 816, 817, 819, 820, 825, 826, 829, 831, 1098, 1156, 1157, 1158, 1172				
C 41, 278, 283		F1G1H100A544	CAPACITOR, 50V, 10pF	3
C 43, 537, 539, 540, 624, 667, 673, 675, 676, 678, 679, 680, 681, 682, 823, 1041, 1043, 1048, 1068, 1069, 1070, 1071, 1073, 1080, 1082, 1089, 1104, 1112, 1134, 1137, 1141		F1G1H102A496	CAPACITOR, 50V, 1000pF	31
C 48, 49, 50, 51, 52, 53, 54, 55, 64, 65, 66, 67, 68, 69, 70, 71, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 179, 181, 195, 197, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 441, 442, 445, 446, 447, 498, 499, 568, 626, 627, 628, 703, 704, 719		F1G1A104A014	CAPACITOR, 10V, 0.1µF	92
C 96, 97, 114, 122, 127, 158, 172, 175, 178, 180, 188, 191, 194, 196, 206, 207, 208, 209, 248, 294, 295, 526, 707		F1J0J226A051	CAPACITOR, 6.3V, 22µF	23
C 99, 107, 138, 140, 141, 150		F1G0J474A001	CAPACITOR, 6.3V, 0.47µF	6

C 100, 102, 120, 121, 126, 146, 148, 165, 242, 258, 262, 268, 284, 285, 298, 347, 350, 353, 354, 355, 359, 361, 362, 363, 366, 368, 369, 370, 371, 373, 374, 375, 380, 382, 383, 384, 385, 386, 388, 389, 390, 392, 393, 394, 397, 398, 399, 400, 401, 402, 403, 486, 490, 545, 1007, 1093, 1161	F1G0J105A001	CAPACITOR, 6.3V, 1µF	57
C 104, 105, 152, 153, 157, 163	F1G0J224A001	CAPACITOR, 6.3V, 0.22µF	6
C 108, 286, 460, 461, 462, 463, 541, 671, 710, 711, 712, 721, 742, 756, 770, 784, 790, 822, 834, 1015, 1016, 1060, 1062, 1177	F1H1A1050015	CAPACITOR, 10V, 1µF	24
C 174, 177, 190, 193, 200, 202, 203, 204, 205, 210, 211, 212, 213, 247, 279, 280, 281, 282, 291, 412, 443, 454, 468, 471, 494, 497, 609, 610, 672, 738, 739, 752, 753, 766, 767, 780, 781, 818, 836, 1025, 1026, 1090, 1102, 1111, 1150, 1151, 1154, 1155, 1165, 1167, 1206, 1209	F1G1E103A062	CAPACITOR, 25V, 0.01µF	52
C 201, 1125, 1126, 1127	EEFCX0J101R	CAPACITOR, 6.3V, 100µF	4
C 217, 218, 708	F1G1H270A542	CAPACITOR, 50V, 27pF	3
C 264, 265	F1G1C223A004	CAPACITOR, 16V, 0.022µF	2
C 296, 297, 299, 301, 302, 340, 341, 342, 343, 344, 346	F1H0J1050022	CAPACITOR, 6.3V, 1µF	11
C 348, 349, 356, 357, 430, 569, 570, 615, 659, 685, 726, 727, 838	F1J0J4750019	CAPACITOR, 6.3V, 4.7µF	13
C 427, 495, 496, 504, 505, 1008, 1084, 1085, 1136	F1G1H471A496	CAPACITOR, 50V, 470pF	9
C 431, 466, 467, 469, 470, 611, 612, 613, 614, 617, 620, 621, 622, 646, 648, 1066, 1072, 1138	F1G1H221A496	CAPACITOR, 50V, 220pF	18
C 451	F1J1E334A081	CAPACITOR, 25V, 0.33µF	1
C 455, 1005	F1G1H271A495	CAPACITOR, 50V, 270pF	2
C 507, 509, 709, 1132	F1G1H330A542	CAPACITOR, 50V, 33pF	4
C 517, 518, 519, 521	F1H2A103A020	CAPACITOR, 100V, 0.01µF	4
C 520	F1L3D102A003	CAPACITOR, 2000V, 1000pF	1
C 527, 1002, 1042, 1045, 1086, 1135, 1143, 1195	F1G1H1010005	CAPACITOR, 50V, 100pF	8
C 547, 548, 640, 643	EEFUD0J151ER	CAPACITOR, 6.3V, 150µF	4
C 559, 560, 561, 562	F1J1E105A080	CAPACITOR, 25V, 1µF	4
C 572, 573, 625, 1064, 1083	F1G1H470A542	CAPACITOR, 50V, 47pF	5
C 674	F1G1A683A014	CAPACITOR, 10V, 0.068µF	1
C 725, 1147	F1G1C473A004	CAPACITOR, 16V, 0.047µF	2
C 789, 797, 798	F1J0J475A009	CAPACITOR, 6.3V, 4.7µF	3
C 792, 793, 827, 828	F1G1H220A542	CAPACITOR, 50V, 22pF	4
C 824	F1J0J106A013	CAPACITOR, 6.3V, 10µF	1
C 1000, 1006, 1009, 1011, 1012, 1067	F1H1H1830001	CAPACITOR, 50V, 0.018µF	6
C 1003	F1H1H562A748	CAPACITOR, 50V, 5600pF	1
C 1004	F1G1H121A495	CAPACITOR, 50V, 120pF	1

C 1010		F1G1H181A495	CAPACITOR, 50V, 180pF	1
C 1013		F1G1H390A542	CAPACITOR, 50V, 39pF	1
C 1014, 1063, 1208		F1G1H222A496	CAPACITOR, 50V, 2200pF	3
C 1017, 1018, 1059		F1J1E224A081	CAPACITOR, 25V, 0.22μF	3
C 1019, 1020, 1022, 1023, 1036, 1051, 1057, 1076, 1101, 1105, 1107, 1108, 1129, 1144, 1180, 1184, 1185, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1210, 1211, 1212		F1K1E1060001	CAPACITOR, 25V, 10μF	28
C 1029, 1031, 1032, 1034, 1075, 1099, 1100, 1103		EEFSX0D331ER	CAPACITOR, 2V, 330μF	8
C 1038, 1079, 1088, 1130, 1140		F1H1C224A074	CAPACITOR, 16V, 0.22μF	5
C 1039, 1091		F1H1H182A748	CAPACITOR, 50V, 1800pF	2
C 1040, 1047, 1049, 1061, 1081, 1131, 1133, 1142, 1159, 1162, 1163, 1174, 1176, 1178, 1179		F1H1H104A748	CAPACITOR, 50V, 0.1μF	15
C 1044		F1G1H561A496	CAPACITOR, 50V, 560pF	1
C 1074		F1G1H391A496	CAPACITOR, 50V, 390pF	1
C 1097		EEFCD0D101ER	CAPACITOR, 2V, 100μF	1
C 1145		EEFCX0G151R	CAPACITOR, 2V, 150μF	1
C 1166		F1L1E106A017	CAPACITOR, 25V, 10μF	1
C 1168		F1J1E105A009	CAPACITOR, 25V, 1μF	1
C 1175		F1G1H152A496	CAPACITOR, 50V, 1500pF	1
C 1181, 1182, 1183		F1L1C106A008	CAPACITOR, 16V, 10μF	3
CF 1, 2, 3		D4CC11030026	THERMAL SENSOR	3
CN 2		K1MML0B00005	CONNECTOR	1
CN 3		K1MML0B00006	CONNECTOR	1
CN 4		K1KA02AA0329	CONNECTOR	1
CN 5, 19		K1KA30AA0184	CONNECTOR	2
CN 7		K1KA10AA0033	CONNECTOR	1
CN 9		K2HZ104B0014	CONNECTOR	1
CN 10		K1NAF0D00003	CONNECTOR	1
CN 13		K1MY52B00003	CONNECTOR	1
CN 14		K1KB30B00021	CONNECTOR	1
CN 15, 16, 29, 30		K1FY104BA024	CONNECTOR, USB	4
CN 18		K1KA03AA0329	CONNECTOR	1
CN 21		K1KY42B00001	CONNECTOR	1
CN 22		K1MY45AA0040	CONNECTOR	1
CN 23, 25		K1MY10AA0040	CONNECTOR	2
CN 27		K1KA40AA0330	CONNECTOR	1
CN 28		K1FB115BA014	CONNECTOR	1
CN 31		K1KAA0AA0244	CONNECTOR	1
CN 33		K1KA62B00003	CONNECTOR	1
CN 34		K1MY14AA0040	CONNECTOR	1
CN 35, 36		K1KA08AA0266	CONNECTOR	2
CN 38		K1KB12A00099	CONNECTOR	1
CN 1000		K1KB40AA0217	CONNECTOR	1
D 1, 3, 4, 13, 14, 15		MA2J72900L	DIODE	6
D 5, 1039		MA3J741E0L	DIODE	2
D 10, 11, 17, 18, 19, 20, 31, 32		B0KB00000044	DIODE	8
D 16, 22, 23, 24, 25, 26, 27, 28, 29, 30		B0BD5R6A0005	DIODE	10
D 21, 1027, 1029		MA2S11100L	DIODE	3
D 1002, 1003		B0JCPD000023	DIODE	2
D 1004, 1006, 1007, 1008, 1010, 1014, 1016, 1038		B0JCMD000014	DIODE	8
D 1005, 1009, 1015		B0JDAE000004	DIODE	3

D 1019, 1021, 1022, 1023, 1024, 1025, 1026, 1043		MAZ80620ML	DIODE	8
D 1028		B2ABAM000002	DIODE	1
D 1030, 1031, 1032		B0ADDH000004	DIODE	3
D 1034, 1037		B0JDSD000025	DIODE	2
D 1035		MAZ81200ML	DIODE	1
D 1036		MAZ81800ML	DIODE	1
F 2, 4, 5, 7, 8	⚠	K5H202Z00005	FUSE, 2A, 32V	5
F 3, 6, 9	⚠	K5H402Z00003	FUSE, 4A, 32V	3
F 1000	⚠	K5H153A00001	FUSE, 15A, 65V	1
F 1001, 1002	⚠	K5H123Y00001	FUSE, 12A, 65V	2
FL 1, 19, 21, 27		F1J0J4750019	CAPACITOR, 6.3V, 4.7µF	4
FL 2, 3, 8, 9, 10, 11, 14, 15, 16, 17, 18, 22, 23, 24, 25, 26, 28, 29, 30, 41, 42, 43		F1H0J1050022	CAPACITOR, 6.3V, 1µF	22
FL 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		J0HAAC000061	EMI FILTER	10
IC 1		C2GBD0000047	CPU	1
IC 2		C1CB00003032	LSI	1
IC 10		C1CB00003034	LSI	1
IC 3, 6		C0DBZYY00271	IC	2
IC 4		C0CBCBC00137	IC, REGULATOR	1
IC 5		C1CB00002980	LSI	1
IC 11		C1CB00003002	THERMAL SENSOR	1
IC 15		C1CB00003007	LSI	1
IC 18		C3EBDC000073	IC, EEPROM	1
IC 19		C0DBZYY00265	POWER MANAGEMENT SWTICH	1
IC 20, 37, 115, 116		C0JBAZ002422	IC, FET SWITCH	4
IC 21		C0DBAJE00005	IC, LOGIC	1
IC 22		C1CB00003035	LSI	1
IC 23		C0JBAZ002420	IC, LAN SW	1
IC 25, 29		C0DBZYY00026	IC, USB POWER SW	2
IC 26		C0ZBZ0000978	IC	1
IC 27		C1CB00002790	IC, SECURITY CHIP	1
IC 30		C0JBAR000500	IC, SWITCH	1
IC 31, 32, 33		C0EBE0000459	IC	3
IC 34, 1024		C0EBY0000420	VOLTAGE DETECTOR	2
IC 35		C0EBY0000419	VOLTAGE DETECTOR	1
IC 39		C1CB00003000	PCI EXPRESS TO PATA HOST BUS ADAPTER	1
IC 42		C0DBEFE00003	IC	1
IC 45		C1CB00002723	CARDBUS CONTOLLER	1
IC 47		C0JBAB000624	IC	1
IC 49, 84, 119, 1025		C0JBAA000362	IC, LOGIC	4
IC 51		C0JBAA000511	IC	1
IC 52		C0JBAA000254	IC, GATE LOGIC	1
IC 85, 1026		C0JBAE000321	IC, LOGIC	2
IC 94		C1CB00002981	LSI	1
IC 99, 100, 101, 102		C3ABTY000013	MEMORY	4
IC 103, 111, 1012, 1013		C0JBAZ002195	IC	4
IC 104		C1CB00002210	USB HUB CONTROLLER	1
IC 106		C2CBYY000639	MICRO COMPUTER	1
IC 107, 109, 117		C0JBAZ002192	IC	3
IC 108, 114, 118, 120		C0JBAA000381	IC, LOGIC	4
IC 112		C0DBFYY00042	VOLTAGE REGULATOR	1
IC 1000, 1001, 1003		C0DBALH00003	IC	3
IC 1004		C0DBAYY00281	DC/DC CONTROLLER FOR CPU	1
IC 1005		C0DBAYY00282	DC/DC CONTROLLER FOR GMCH	1
IC 1006		C0DBEFH00002	IC, REGULATOR	1
IC 1008		C0EBE0000333	IC	1
IC 1009		C0ABZA000047	IC, AMP	1

IC 1010		C0DBDJH00009	IC, LINER	1
IC 1014		C0ABBA000093	IC, OP AMP	1
IC 1018		C0JBAD000195	IC	1
JK 1000	⚠	K2EEYB000001	JACK	1
L 3, 5, 7, 11		J0JHC0000078	DC POWER LINE BEADS	4
L 6, 26		G1C1R0MA0289	DC POWER LINE INDUCTOR	2
L 13		D0GBR00J0004	RESISTOR, 1/10W, 0O	1
L 14, 15, 16, 17, 48		G1C470MA0330	DC POWER LINE INDUCTOR	5
L 18, 19, 20, 21, 22		J0JYC0000098	DC POWER LINE BEADS	5
L 23		G1C1R0MA0380	DC POWER LINE INDUCTOR	1
L 24		J0JJC0000022	DC POWER LINE BEADS	1
L 25		G1C100MA0380	DC POWER LINE INDUCTOR	1
L 28		G1C4R7MA0077	INDUCTOR	1
L 29, 30, 31, 33		J0JGC0000038	CHIP BEADS	4
L 32, 47, 64, 65		J0JJC0000021	INDUCTOR	4
L 34, 35, 37, 39		J0ZZB0000080	IDUCTOR, COMMON MODE FILTER	4
L 40, 55, 56		J0JDC0000105	CHIP BEADS	3
L 41, 51, 52, 57, 58		J0JHC0000074	INDUCTOR	5
L 45		G1BYYYY00009	INDUCTOR	1
L 46, 49, 50, 53, 54, 59, 60, 61, 62, 100, 101,		J0MAB0000200	INDUCTOR	13
L 63		J0MAB0000116	INDUCTOR	1
L 66		G1C100Z00013	INDUCTOR	1
L 67, 68, 69, 70, 71, 72, 73, 74		J0JCC0000396	RESISTOR, 1/16W, 120O	8
L 85, 87, 89, 91, 93		J0MAB0000220	COMMON MODE FILTER	5
L 95, 96		J0JCC0000078	INDUCTOR	2
L 99		D0GA470JA023	RESISTOR, 1/16W, 47O	1
L 1000, 1001		G1CR56ZA0140	INDUCTOR	2
L 1002, 1006		G1C2R8MA0240	COIL	2
L 1003, 1010		G1C4R7MA0240	CHOK COIL	2
L 1004		G1CR82M00006	COIL	1
L 1005		G1CR88ZA0140	INDUCTOR, COIL	1
L 1009		G1A4R7PA0001	CHOKE COIL	1
L 1011, 1012		J0JKC0000007	INDUCTOR	2
L 1013		G1A160HA0032	COIL	1
PA 1	⚠	D4FB1R100015	OVER CURRENT PROTECTOR	1
Q 1, 2, 3, 43, 45, 48, 50, 52, 1010, 1014, 1019, 1022, 1037, 1040, 1092, 1111, 1112, 1119, 1128, 1129		B1CFGD000023	TRANSISTOR	20
Q 5, 13, 28, 34, 53, 1009, 1025, 1046, 1047, 1076, 1077, 1078, 1079, 1082, 1091, 1099, 1100, 1101, 1107, 1114, 1118, 1120, 1130, 1131		B1GBCFJN0037	TRANSISTOR	24
Q 6, 14, 17, 31, 47, 1043, 1044, 1075, 1113, 1117		B1GDCFNN0031	TRANSISTOR	10
Q 7, 9, 11, 29, 40, 54		B1MBDCA00004	TRANSISTOR	6
Q 8		XP0421300L	TRANSISTOR	1
Q 12, 33, 35, 1036, 1060, 1062, 1065, 1067, 1068, 1069, 1070, 1072, 1080, 1081, 1083, 1102, 1122, 1123, 1124, 1125, 1126, 1127, 1132, 1133		B1GBCFNN0042	TRANSISTOR	24
Q 15		2SB0766ARL	TRANSISTOR	1
Q 16, 32, 1015, 1051, 1058, 1121		B1MBFDG00001	FET	6
Q 18		XP0450100L	TRANSISTOR	1
Q 20, 30		B1GFCFNN0019	TRANSISTOR	2
Q 22, 23, 24, 25, 26		XP0411500L	TRANSISTOR	5

Q 27	B1DHDC000028	TRANSISTOR	1
Q 1001, 1003	B1CFRD000009	TRANSISTOR	2
Q 1004, 1005, 1006, 1007, 1024, 1038, 1057, 1108, 1110, 1115, 1116	B1CFRD000020	FET	11
Q 1012, 1013, 1017, 1018, 1021, 1023, 1039, 1041, 1097	B1CFRD000014	FET	9
Q 1052, 1084, 1085, 1089, 1093	B1CHRD000001	TRANSISTOR	5
Q 1094	B1MBEDA00008	TRANSISTOR	1
R 1, 201, 202, 220, 427, 428, 553, 702	D1H81034A024	RESISTOR ARRAY	8
R 2, 3, 7, 29, 30, 42, 43, 44, 207, 289, 364, 489, 511, 512, 650, 766	D0GA102JA023	RESISTOR, 1/16W, 1KO	16
R 4	D0GA510JA023	RESISTOR, 1/16W, 51O	1
R 5	D1H85104A024	RESISTOR ARRAY	1
R 8, 22, 23, 27, 28, 36, 46, 63, 64, 65, 66, 72, 73, 91, 92, 93, 94, 95, 96, 98, 99, 100, 101, 102, 133, 134, 135, 138, 142, 144, 145, 146, 152, 162, 190, 191, 196, 197, 229, 247, 266, 268, 294, 313, 314, 426, 461, 462, 471, 472, 474, 476, 502, 518, 519, 522, 608, 610, 614, 615, 616, 630, 642, 648, 651, 661, 683, 684, 690, 691, 706, 762, 797, 1001, 1003, 1018, 1054, 1113, 1138, 1140, 1142, 1143, 1204, 1293	D0GAR00J0005	RESISTOR, 1/16W, 0O	84
R 10, 11, 33, 360, 362, 369, 371	D1BA1000A023	RESISTOR, 1/16W, 100O	7
R 13, 34, 76, 78, 80, 1026, 1085, 1091	D1BA1001A023	RESISTOR, 1/16W, 1KO	8
R 14, 35, 339	D1BA2001A023	RESISTOR, 1/16W, 2KO	3
R 17, 18	D1BA27R4A023	RESISTOR, 1/16W, 27.4O	2
R 19, 20, 299, 509	D1BA54R9A023	RESISTOR, 1/16W, 54.9O	4
R 24	D1BA68R0A023	RESISTOR, 1/16W, 68O	1
R 25, 166, 171, 298, 304	D0GA560JA023	RESISTOR, 1/16W, 56O	5
R 26, 488, 790, 1049, 1050, 1061, 1062, 1097, 1098, 1111, 1112, 1157, 1158, 1170, 1171	D0GA100JA023	RESISTOR, 1/16W, 10O	15
R 31, 1213, 1216, 1219, 1234	D0GA562JA023	RESISTOR, 1/16W, 5.6KO	5
R 32	D1BA2210A023	RESISTOR, 1/16W, 221O	1
R 37, 231, 295, 301	D1BA24R9A023	RESISTOR, 1/16W, 24.9O	4
R 49, 50, 496	D1BA1002A023	RESISTOR, 1/16W, 10KO	3
R 51, 264, 317, 581, 594, 597, 639, 640, 647, 670, 692, 777, 1069, 1139, 1192, 1194, 1195, 1196, 1197, 1198, 1200, 1206, 1207	D0GA101JA023	RESISTOR, 1/16W, 100O	23
R 62, 77, 402, 404, 493	D1BA4990A023	RESISTOR, 1/16W, 499O	5
R 74, 75	D1BA80R6A023	RESISTOR, 1/16W, 80.6O	2
R 79, 1024, 1246, 1247	D1BA3001A022	RESISTOR, 1/16W, 3KO	4
R 85, 86	D0GA222JA023	RESISTOR, 1/16W, 2.2KO	2
R 89, 446, 452, 455, 459, 463, 465, 467	D1H8R0040009	JUMPER	8
R 97	D1BA2401A023	RESISTOR, 1/16W, 2.4KO	1

R 103, 107, 363, 365, 366, 424, 425, 445, 499, 500, 503, 505, 506, 604, 606, 617, 618, 1245	D0GA472JA023	RESISTOR, 1/16W, 4.7KO	18
R 105, 161, 177, 178, 182, 184, 186, 193, 239, 243, 271, 275, 276, 282, 297, 302, 310, 318, 373, 375, 379, 387, 388, 397, 419, 423, 485, 486, 498, 521, 530, 531, 532, 546, 554, 559, 561, 562, 563, 566, 568, 570, 571, 582, 589, 590, 595, 632, 635, 638, 643, 645, 660, 669, 672, 673, 707, 759, 775, 788, 789, 792, 793, 1008, 1052, 1057, 1087, 1100, 1108, 1121, 1122, 1133, 1160, 1203, 1222, 1230, 1255, 1291	D0GA103JA023	RESISTOR, 1/16W, 10KO	78
R 109, 128, 130, 165, 320, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754	D1BA1210A023	RESISTOR, 1/16W, 121O	25
R 116, 129, 131, 134, 145, 147	D0GAR00J0005	RESISTOR, 1/16W, 0O	6
R 127	D1BA49R9A023	RESISTOR, 1/16W, 49.9O	1
R 137, 141, 147, 148, 587, 588, 1014, 1032, 1033, 1034, 1035, 1070, 1072, 1073, 1147, 1148	D0GBR00J0004	RESISTOR, 1/10W, 0O	16
R 139, 140, 143	D0GA1R0JA023	RESISTOR, 1/16W, 1.0O	3
R 160	D0GA753JA023	RESISTOR, 1/16W, 75KO	1
R 163	D0GA2R2JA023	RESISTOR, 1/16W, 2.2O	1
R 164	D0GA4R7JA023	RESISTOR, 1/16W, 453O	1
R 167, 168, 170, 172, 173, 175	D1HA5608A010	RESISTOR, 1/16W, 56O	6
R 169, 174, 439	D1H85604A024	RESISTOR ARRAY	3
R 187, 293, 442, 478, 480, 481, 490, 584, 585, 586, 666, 1134, 1141, 1176, 1181, 1189, 1224, 1285, 1286, 1288, 1289, 1290	D0GA105JA023	RESISTOR, 1/16W, 1MO	22
R 188, 189, 283, 284, 675, 676, 677, 678, 679, 680	D1H83304A024	RESISTOR ARRAY	10
R 195, 215, 483, 555, 564, 576, 577, 592, 619, 620, 621, 622, 626, 627, 681, 682	D0GA330JA023	RESISTOR, 1/16W, 33O	16
R 200	D1BA4750A023	RESISTOR, 1/16W, 475O	1
R 216, 227, 272, 273, 274, 533, 534, 535, 541, 593	D1HA1038A010	RESISTOR, 1/16W, 10KO	10
R 217, 218, 219	D0GA150JA023	RESISTOR, 1/16W, 15O	3
R 226	D1BA22R6A023	RESISTOR, 1/16W, 22.6O	1
R 228, 251	D1H84724A024	RESISTOR ARRAY	2
R 238, 244, 245, 252, 259, 261, 263, 315, 357, 374, 416, 417, 421, 422, 466, 468, 514, 515, 538, 539, 545, 547, 572, 596, 601, 605, 649, 653, 700, 763, 767, 783, 795, 1005, 1047, 1114, 1124, 1175, 1223, 1225, 1226	D0GA104JA023	RESISTOR, 1/16W, 100KO	41
R 250	D0GA511JA023	RESISTOR, 1/16W, 510O	1
R 253, 255	D1BA3241A023	RESISTOR, 1/16W, 3.24KO	2

R 254, 256		D1BA4530A023	RESISTOR, 1/16W, 453O	2
R 257		D0GA121JA023	RESISTOR, 1/16W, 120O	1
R 258		D0GA470JA023	RESISTOR, 1/16W, 47O	1
R 260, 277		D0GD1R0JA052	RESISTOR, 1/8W, 1O	2
R 262, 646		D0GA334JA023	RESISTOR, 1/16W, 330KO	2
R 265		D1BA2431A023	RESISTOR, 1/16W, 2.43KO	1
R 285, 287		D1BA3323A023	RESISTOR, 1/16W, 332KO	2
R 290		D0GA106JA023	RESISTOR, 1/16W, 10MO	1
R 291, 292, 358, 1058, 1105, 1166		D0GA203JA023	RESISTOR, 1/16W, 20KO	6
R 303		D1BA56R0A023	RESISTOR, 1/16W, 56O	1
R 316, 768, 1010, 1106, 1155, 1165, 1221, 1263		D0GA473JA023	RESISTOR, 1/16W, 47KO	8
R 319, 401, 403, 406, 407, 623, 624, 625		D1BA1500A023	RESISTOR, 1/16W, 150O	8
R 338		D1BA7150A023	RESISTOR, 1/16W, 715O	1
R 340		D1BA1271A023	RESISTOR, 1/16W, 1.27KO	1
R 359, 361, 368, 370		D1BA40R2A023	RESISTOR, 1/16W, 40.2O	4
R 367, 715, 720, 739, 744		D1BA2400A023	RESISTOR, 1/16W, 240O	5
R 405		D1BA2490A023	RESISTOR, 1/16W, 249O	1
R 441, 1086		D1BA5101A023	RESISTOR, 1/16W, 5.1KO	2
R 479		D0GA512JA023	RESISTOR, 1/16W, 5.1KO	1
R 492		D1BA4991A023	RESISTOR, 1/16W, 4.99KO	1
R 494		D1H87504A024	RESISTOR ARRAY	1
R 495, 497, 504, 507, 508, 1103		D1BA3901A023	RESISTOR, 1/16W, 3.9KO	6
R 510		D0GA331JA023	RESISTOR, 1/16W, 330O	1
R 520, 703, 704, 791, 1038, 1039, 1056, 1169,		D1BA1002A022	RESISTOR, 1/16W, 10KO	9
R 536, 556, 644, 652		D1H81044A024	RESISTOR, 1/16W, 100KO	4
R 548		D0GA471JA023	RESISTOR, 1/16W, 470O	1
R 550, 551		D1H82214A024	RESISTOR, 1/16W, 220O	2
R 552		D0GA181JA023	RESISTOR, 1/16W, 180O	1
R 573, 701, 1156, 1180, 1183, 1188, 1228, 1232		D0GA474JA023	RESISTOR, 1/16W, 470KO	8
R 598, 709		D1H84734A024	RESISTOR ARRAY	2
R 600, 603		D0GA682JA023	RESISTOR, 1/16W, 6.8KO	2
R 664, 665		D1BA6041A023	RESISTOR, 1/16W, 6.04KO	2
R 705, 1125, 1168		D1BA3002A022	RESISTOR, 1/16W, 30KO	3
R 711, 713, 716, 718, 735, 737, 740, 742		D1BA2371A023	RESISTOR, 1/16W, 2.37KO	8
R 712, 714, 717, 719, 736, 738, 741, 743		D1BA5491A023	RESISTOR, 1/16W, 5.49KO	8
R 731, 732, 733, 734, 755, 756, 757, 758		D1BA60R4A023	RESISTOR, 1/16W, 60.4O	8
R 769		D0GA154JA023	RESISTOR, 1/16W, 150KO	1
R 1006		D1BA6801A023	RESISTOR, 1/16W, 6.8KO	1
R 1007, 1082		D1BA4022A022	RESISTOR, 1/16W, 40.2KO	2
R 1011		D1BA3093A023	RESISTOR, 1/16W, 309KO	1
R 1012		D1BA9311A023	RESISTOR, 1/16W, 9.31KO	1
R 1013		D1BA2151A023	RESISTOR, 1/16W, 2.15KO	1
R 1015		D1BA2000A023	RESISTOR, 1/16W, 200O	1
R 1016		D1BA2550A023	RESISTOR, 1/16W, 255O	1
R 1021		D1BA1821A023	RESISTOR, 1/16W, 1.82KO	1
R 1027, 1029, 1053, 1071, 1076, 1101, 1161		D0GB100JA065	RESISTOR, 1/10W, 10O	7
R 1028, 1079		D0GB101JA065	RESISTOR, 1/10W, 100O	2
R 1030, 1031, 1220		D0GB3R3JA065	RESISTOR, 1/10W, 3.3O	3
R 1036, 1037, 1092		D1BA1501A023	RESISTOR, 1/16W, 1.5KO	3
R 1040, 1041		D1JB1M00A001	RESISTOR, 1W, 1mO	2
R 1042, 1043		D1BA10R0A023	RESISTOR, 1/16W, 10O	2
R 1045, 1119, 1120, 1123, 1149, 1153, 1154, 1172, 1283		D1BDR0220001	RESISTOR, 1/8W, 0.022O	9

R 1051, 1099, 1136, 1159	D0GA153JA023	RESISTOR, 1/16W, 15KO	4
R 1055	D1BA3161A023	RESISTOR, 1/16W, 3.16KO	1
R 1059	D1BA1602A022	RESISTOR, 1/16W, 16KO	1
R 1060, 1126	D1BA1802A023	RESISTOR, 1/16W, 18KO	2
R 1065	D1BDR0470002	RESISTOR, 1/8W, 0.047O	1
R 1066, 1067, 1116, 1117, 1174, 1252, 1253, 1284	D1BDR0330001	RESISTOR, 1/8W, 0.033O	8
R 1068	D1ZZ00000093	RESISTOR, 1W, 1mO	1
R 1088, 1163	D1BA6201A022	RESISTOR, 1/16W, 6.2KO	2
R 1089, 1235	D1BA1503A023	RESISTOR, 1/16W, 150KO	2
R 1090	D1BA6981A023	RESISTOR, 1/16W, 6.98KO	1
R 1093, 1231	D1BA1103A022	RESISTOR, 1/16W, 110KO	2
R 1094, 1095, 1118, 1182	D1BDR018A099	RESISTOR, 1/3W, 0.018O	4
R 1104	D1BA4702A023	RESISTOR, 1/16W, 47KO	1
R 1109, 1209	D1BA1502A022	RESISTOR, 1/16W, 15KO	2
R 1110	D1BA1202A023	RESISTOR, 1/16W, 12KO	1
R 1115	D0GA221JA023	RESISTOR, 1/16W, 220O	1
R 1128, 1130, 1131, 1132, 1199, 1262	D0GA223JA023	RESISTOR, 1/16W, 22KO	6
R 1150, 1151	D1BA5601A023	RESISTOR, 1/16W, 5.6KO	2
R 1152	D1BA1302A023	RESISTOR, 1/16W, 13KO	1
R 1162, 1214, 1218	D1BA1003A022	RESISTOR, 1/16W, 100KO	3
R 1164	D1BA2002A022	RESISTOR, 1/16W, 20KO	1
R 1167	D1BA1301A022	RESISTOR, 1/16W, 1.3KO	1
R 1173, 1236, 1237, 1238, 1239, 1240, 1241	D1BDR1000002	RESISTOR, 1/8W, 0.1O	7
R 1201, 1202	D0GD222JA052	RESISTOR, 1/8W, 2.2KO	2
R 1205	D1ZZ00000046	RESISTOR, 1W, 5mO	1
R 1212	D1BDR4700001	RESISTOR, 1/8W, 0.47O	1
R 1215, 1217	D1BB1503A074	RESISTOR, 1/10W, 150KO	2
R 1233	D1BA3652A022	RESISTOR, 1/16W, 36.5KO	1
R 1243	D1BB1623A075	RESISTOR, 1/10W, 162KO	1
R 1244	D1BB1692A075	RESISTOR, 1/10W, 16.9KO	1
R 1248, 1249	D1BDR0680001	RESISTOR, 1/8W, 0.068O	2
R 1265, 1266	D0GD122JA052	RESISTOR, 1/16W, 1.2KO	2
T 1, 2	G5BYC0000015	TRANCE	2
X 1	H0J143500042	OSCILLATOR, 14.375MHz	1
X 2	H0J327200206	CRYSTAL OSCILLATOR	1
X 3	H0J245500046	OSCILLATOR, 24.576MHz	1
X 4, 6	H0J250500027	OSCILLATOR, 25MHz	2
X 5	H2D200500011	CRYSTAL OSCILLATOR	1
X 7	H0J300500021	CRYSTAL OSCILLATOR	1
ZA 1, 2, 3, 4, 1001, 1002	K1YGZZ000068	STUD	6
AUDIO PCB			
C 3003, 3014, 3015, 3028, 3034, 3035, 3050, 3051, 3053	F1G1A104A014	CAPACITOR, 10V, 0.1µF	9
C 3004, 3042, 3044	F1G0J105A001	CAPACITOR, 6.3V, 1µF	3
C 3005, 3006, 3043	F1G1H102A496	CAPACITOR, 50V, 1000pF	3
C 3007, 3008, 3019, 3020	F1L0J107A016	CAPACITOR, 6.3V, 100µF	4
C 3009, 3017, 3041	F1H1A1050015	CAPACITOR, 10V, 1µF	3
C 3010, 3033, 3052	F1J0J106A016	CAPACITOR, 6.3V, 10µF	3
C 3016, 3027	F1G0J224A001	CAPACITOR, 6.3V, 0.22µF	2
C 3023, 3024, 3025, 3054	F1J0J4750019	CAPACITOR, 6.3V, 4.7µF	4
C 3031, 3032	F1G0J334A001	CAPACITOR, 6.3V, 0.33µF	2
C 3036	F1G1C104A042	CAPACITOR, 16V, 0.1µF	1
C 3037, 3038	F1G1H1010005	CAPACITOR, 50V, 100pF	2
C 3039, 3040	F1H1A225A039	CAPACITOR, 10V, 2.2µF	2
CN 3000	K1KA30AA0184	CONNECTOR	1
D 3001, 3002	B3ACB0000207	LED	2
D 3046	B0JCMD000014	DIODE	1
IC 3052	C1CB00002983	LSI	1

IC 3053	C1AB00002507	IC, AUDIO POWER AMPLIFIER	1
IC 3054	C0CBCBC00181	IC	1
JK 3003, 3004	K2HC1YYB0040	AUDIO JACK	2
L 3043, 3044, 3045, 3046, 3047, 3048, 3049	J0JBC0000015	CHIP BEADS	7
Q 3016	B1GBCFNN0042	TRANSISTOR	1
Q 3017	B1GBCFJN0037	TRANSISTOR	1
R 3001, 3003, 3046, 3047	D0GA203JA023	RESISTOR, 1/16W, 20KO	4
R 3005, 3027, 3036, 3037, 3049	D0GAR00J0005	RESISTOR, 1/16W, 0O	5
R 3006	D0GDR00J0004	RESISTOR, 1/8W, 0O	1
R 3009, 3011	D0GA562JA023	RESISTOR, 1/16W, 5.6KO	2
R 3010, 3012, 3026	D0GA103JA023	RESISTOR, 1/16W, 10KO	3
R 3014	D0GA333JA023	RESISTOR, 1/16W, 33KO	1
R 3015, 3017	D0GA153JA023	RESISTOR, 1/16W, 15KO	2
R 3016, 3018	D0GA243JA023	RESISTOR, 1/16W, 24KO	2
R 3021, 3022	D1BA27R4A023	RESISTOR, 1/16W, 27.4O	2
R 3023	D0GA1R0JA023	RESISTOR, 1/16W, 1.0O	1
R 3024, 3043	D1BA2671A023	RESISTOR, 1/16W, 2.67KO	2
R 3025	D0GA330JA023	RESISTOR, 1/16W, 33O	1
R 3028	D1BA2002A023	RESISTOR, 1/16W, 20KO	1
R 3030, 3031	D0GA392JA023	RESISTOR, 1/16W, 3.9KO	2
R 3032, 3033	D0GA4R7JA023	RESISTOR, 1/16W, 453O	2
R 3034	D0GA471JA023	RESISTOR, 1/16W, 470O	1
R 3035	D0GA273JA023	RESISTOR, 1/16W, 273O	1
R 3042	D0GA100JA023	RESISTOR, 1/16W, 10O	1
R 3045	D1BA3922A023	RESISTOR, 1/16W, 39.2KO	1
R 3052, 3055	D0GBR00J0004	RESISTOR, 1/10W, 0O	2
R 3061, 3062	D0GA101JA023	RESISTOR, 1/16W, 100O	2
SW 3001	K0D112B00071	SW	1
SERIAL PCB			
CN 4000	K1KA10AA0033	CONNECTOR	1
CN 4001	K1FA209BA004	CONNECTOR	1
TOUCH PAD PCB			
C 4101	F1H0J1050022	CAPACITOR, 6.3V, 1µF	1
CN 4100	K1MY10BA0101	CONNECTOR	1
CN 4101	K1MY12BA0101	CONNECTOR	1
SW 4102, 4103	EVQPLDA15	SWITCH	2
SW LED PCB			
C 4202, 4203, 4204, 4205	F1G1H222A496	CAPACITOR, 50V, 2200pF	4
CN 4200	K1KA20BA0060	CONNECTOR	1
CN 4202, 4203	K1KA02BA0014	CONNECTOR	2
D 4200, 4201, 4202, 4203, 4204, 4205	B3ABB0000210	DIODE	6
SW 4200	EVQPLDA15	SWITCH	1
SD PCB			
C 4302	F1H1A1050015	CAPACITOR, 10V, 1µF	1
C 4303	F1G1H330A542	CAPACITOR, 50V, 33pF	1
C 4304	F1G1E103A062	CAPACITOR, 25V, 0.01µF	1
CN 4300	K1MY15BA0101	CONNECTOR	1
CN 4301	K1NA09E00073	CONNECTOR	1
D 4301	B3ACB0000020	DIODE	1
Q 4300	UNR9113J0L	TRANSISTOR	1
R 4300	D0GD101JA052	RESISTOR, 1/8W, 100O	1
R 4301	D0GA101JA023	RESISTOR, 1/16W, 100O	1
SW 4301	K0ZZ00000619	SW	1
PWR BATTERY PCB			
CN 4400	K1KA05BA0014	CONNECTOR	1
D 4401	B3ABB0000210	DIODE	1
D 4402	B3AGB0000040	DIODE	1
SC RELAY PCB			

CN 6502		K1KA10BA0162	CONNECTOR	1
CN 6503		K1MY10BA0101	CONNECTOR	1
WWAN PCB				
C 7000, 7004, 7008, 7012, 7013		F1G1C104A042	CAPACITOR, 16V, 0.1µF	5
C 7002		F1G1H221A495	CAPACITOR, 50V, 220pF	1
C 7006, 7007, 7009		F1J0J106A016	CAPACITOR, 6.3V, 10µF	3
C 7010, 7011		EEFCX0G151R	CAPACITOR, 2V, 150µF	2
C 7014		F1G1H1010005	CAPACITOR, 50V, 100pF	1
CN 7000		K1MY52BA0190	CONNECTOR	1
CN 7001		K1NA08E00007	CONNECTOR	1
CN 7002		K1MY14BA0101	CONNECTOR	1
D 7003		B0JCRC000002	DIODE	1
IC 7000		C0DBAYY00204	IC, DC/DC CONVERTER	1
JK 7001, 7002, 7003, 7004		K1QZA1AE0001	CONNECTOR	4
L 7000		G1C2R7MA0273	INDUCTOR, COIL	1
Q 7000		B1GBCFNN0042	TRANSISTOR	1
Q 7001		B1CFGD000023	TRANSISTOR	1
Q 7002		B1GDCFNN0031	TRANSISTOR	1
Q 7003		B1CHRD000001	TRANSISTOR	1
R 7000, 7002		D0GA103JA023	RESISTOR, 1/16W, 10KO	2
R 7001		D1BA1002A023	RESISTOR, 1/16W, 10KO	1
R 7003		D1BB3002A074	RESISTOR, 1/10W, 30KO	1
R 7004		D1BA1001A023	RESISTOR, 1/16W, 1KO	1
R 7005		D1BDR0470002	RESISTOR, 1/8W, 0.047O	1
R 7006		D1BDR0330001	RESISTOR, 1/8W, 0.033O	1
R 7008, 7013		D0GAR00J0005	RESISTOR, 1/16W, 0O	2
R 7011, 7012		D0GA101JA023	RESISTOR, 1/16W, 100O	2
SW 7000		K0D211A00015	DIP SWITCH	1
ZA 7001, 7002		K1YGZZ000060	SPACER	2
WLAN ANTENNA R PCB				
JK 8001, 8002		K1QZA1AE0001	CONNECTOR	2
WLAN ANTENNA L PCB				
JK 8101, 8102		K1QZA1AE0001	CONNECTOR	2
BIOS PCB HIGH				
C 9003		F1G1C104A042	CAPACITOR, 16V, 0.1µF	1
C 9025		F1J0J106A016	CAPACITOR, 6.3V, 10µF	1
CN 9000		K1KA30A00119	CONNECTOR	1
IC 9001		C3FBNY000173	FLASH ROM	1
R 9004		D0GA103JA023	RESISTOR, 1/16W, 10KO	1
R 9022		D1H83304A024	RESISTOR ARRAY	1
BLUETOOTH PCB				
C 5000		F1J0J1060004	CAPACITOR, 6.3V, 10µF	1
C 5001, 5006, 5009		F1G1C104A042	CAPACITOR, 16V, 0.1µF	3
C 5002, 5004		F1G1H102A496	CAPACITOR, 50V, 1000pF	2
C 5005, 5008		F1G1E103A062	CAPACITOR, 25V, 0.01µF	2
C 5007		F1G1H220A542	CAPACITOR, 50V, 22pF	1
C 5010		F1G1HR50A543	CAPACITOR, 50V, 0.5pF	1
CN 5000		K1KA10BA0014	CONNECTOR	1
IC 5000, 5003		C0JBAZ002422	IC, FET SWITCH	2
IC 5001		N5HZZ0000056	BLUETOOTH MODULE	1
IC 5002		C0EBE0000460	IC	1
L 5000		J0JHC0000074	INDUCTOR	1
L 5001		J0JJC0000021	INDUCTOR	1
L 5003		G1C6N8JA0024	CHIP INDUCTOR	1
Q 5000		B1GBCFNN0042	TRANSISTOR	1
Q 5001		B1DHDC000028	TRANSISTOR	1
R 5000, 5001		D0GA104JA023	RESISTOR, 1/16W, 100KO	2
R 5002		D0GAR00J0005	RESISTOR, 1/16W, 0O	1