

Service Manual

Notebook Computer

CF-29

TOUGHBOOK

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

Model No. CF-29NTQGZBM

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic[®]

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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.

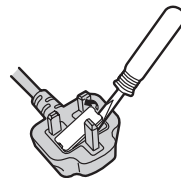
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured RED.

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 screwdriver 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-conductive-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 non-serviceable 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 manufacturer'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.
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 ⚠

• CAUTION

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

LITHIUMBATTERIES ⚠

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben oder 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 MÊME TYPE OU D'UN TYPE RECOMMANDÉ PAR LE CONSTRUCTEUR. METTRE AU RÉBUT LES PILES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.

For U.S.A. / CANADA



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.

Lithium Battery

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 personnel.

Warning! A risk of explosion from incorrect installation or mis-application may possibly occur.

Precautions (Battery Pack)

- Care should be exercised with regard to the following in order to avoid the possibility of overheating, fire or damage.



Avoid Heat

Do not throw the battery pack into a fire or expose it to excessive heat.



Keep Articles Away

Do not place the battery pack together with articles such as necklaces or hairpins when carrying or storing.



Do Not Disassemble

Do not insert sharp objects into the battery pack, expose it to bumps or shocks, deform, disassemble, or modify it.



Do Not Short

Do not short the positive (+) and negative (-) contacts.



Avoid Extreme Heat, Cold and Direct Sunlight

Do not charge, use or leave the battery pack for extended periods where it will be exposed to direct sunlight, in a hot place (in an automobile on a sunny day, for example), or in a cold place.



Do Not Use With Any Other Computer

The battery pack is rechargeable and was intended for the specified computer or charger. Do not use it with a computer other than the one for which it was designed.



Do Not Put into a Microwave

Do not put the battery pack into a microwave oven or a pressurized chamber.



Discontinue Use

Should the battery emit an abnormal odor, become hot to the touch, become discolored, change shape, or become in any way different from normal, remove it from the computer or charger and discontinue use.

- 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% 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 outside of the allowable temperature range (0 °C to 50 °C {32°F to 122 °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 less.)
- 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 off a particular battery pack becomes dramatically shorter and repeated rechargings do not restore its performance, the battery pack should be replaced with a new one.
- When transporting spare batteries 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

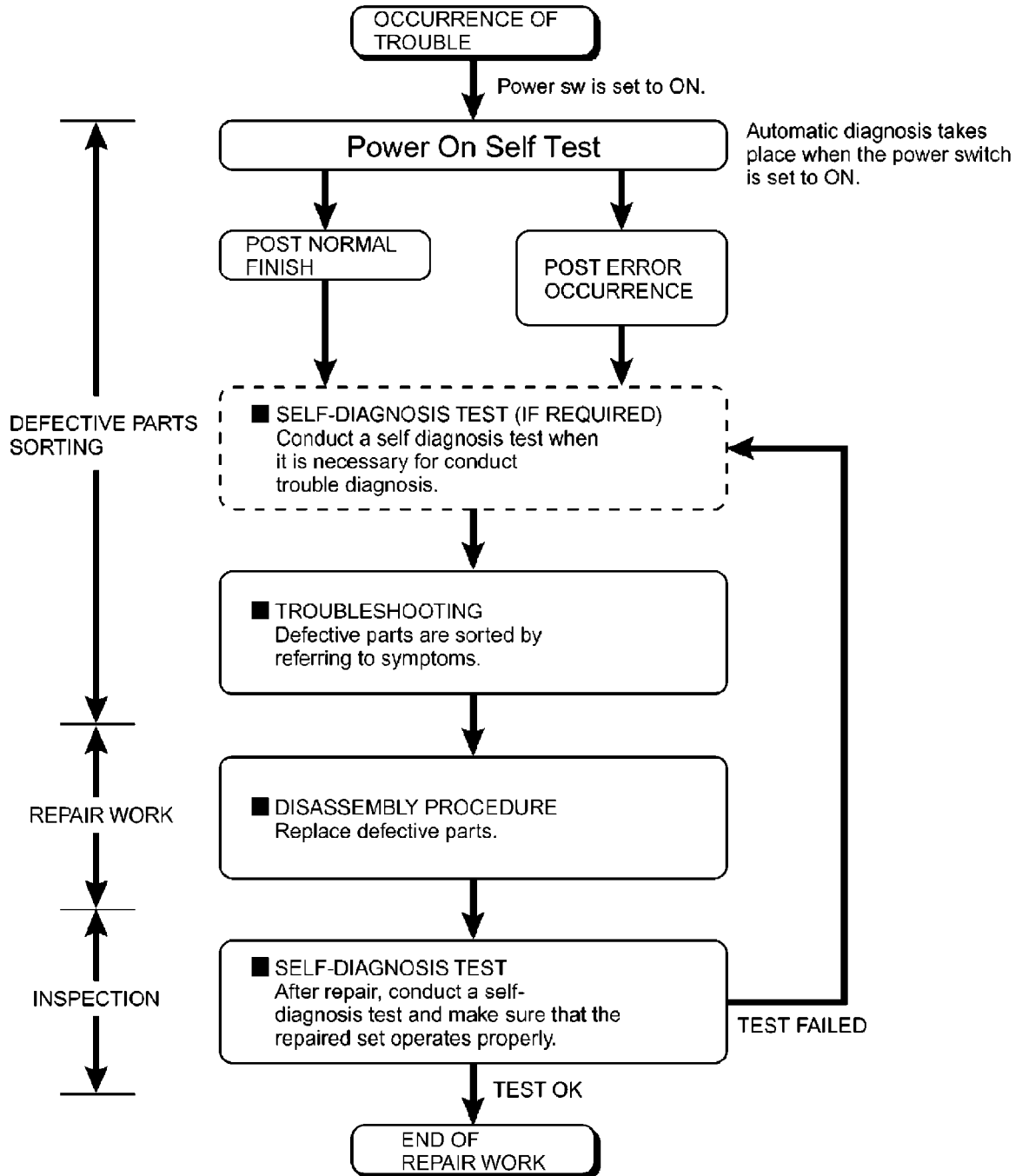
1 Diagnosis Procedure	1-1
2 Power-On Self Test (Boot Check)	2-1
3 List of Error Codes	3-1
4 Diagnostic Test	4-1
5 Self Diagnosis Test	5-1
6 Wiring Connection Diagram	6-1
7 Disassembly/Reassembly	7-1
8 Exploded View	8-1
9 Replacement Parts List	9-1

1 Diagnosis Procedure

1.1. Basic Procedure

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**



1.2. 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'.

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

HDD access

NO

Check HDD cable connection and continuity.
Replace if defective.
Replace HDD & Reinstall.
Replace main board.

YES

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.

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.

*Clean DVD-ROM drive with an applicator.

Starts but operates unstably.

Reinstall HDD.
Replace main board.

END

Each kind of
trouble in
operation.

2 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.

- StartTest begins automatically when power switch is set to ON.
- Normal finishAfter 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:



(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.

3. 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.

4. Diagnostic Test

4.1 Equipment

(1) Test Computer	1 unit
(2) AC Adapter	1 pc.
(3) External Printer	1 unit
(4) Loopback Plug (Parallel Port Test) [P/N: DFWV95C0081]	1 pc.
(5) Loopback Plug (Serial Port Test for RS232C) [P/N: DFWV95C0067]	1 pc.
(6) Floppy Disk containg file DIAG	1 pc.

4.2 Preparation

- (1) Connect the AC Adapter and External Printer to the computer.
- (2) The System Setup should be set to the factory setting values by executing the "SETUP UTILITY" which can be invoked by F2 key at the POST.
If not, the messages and items of the diagnostic test may not be displayed properly on the LCD.
- (3) The serial port must be enabled in the "SETUP UTILITY" in order to execute the "1st SERIAL PORT" test.
- (4) Connect the serial loopback plug.
- (5) In order to test the parallel port with Loopback Plug, disconnect the printer cable and connect the parallel loopback plug with Power OFF.

4.3 NOTICE

When "Enter password" is displayed, use "Password Skipping Plug" in order to skip the user password.

- 1) Connect the parallel plug to the parallel port.
- 2) Connect the PS/2 mouse plug to the mouse port
- 3) Power on the computer.

The wiring of the parallel plug is described below.

Connect pins 2-5-6-8-11-13-15-18-19-20-21-22-23 to Shield GND (PS/2 mouse plug pin3).

Connect pins 3-4-7-9-10-12 to VC5 (PS/2 mouse plug pin4) with 4.7KW each.

CAUTION

The plug described above must be used for servicing purpose only.

Do not use it for other than the above purpose and ensure that it remains confidential.

Using the plug enables the user to skip the previous password and disable the password.

5 Self Diagnosis Test

1. Floppy disk is included for the self-diagnostic tests that should be performed before using this product.
2. Connect External Floppy Disk Drive (FDD) to USB port for diagnosis test.

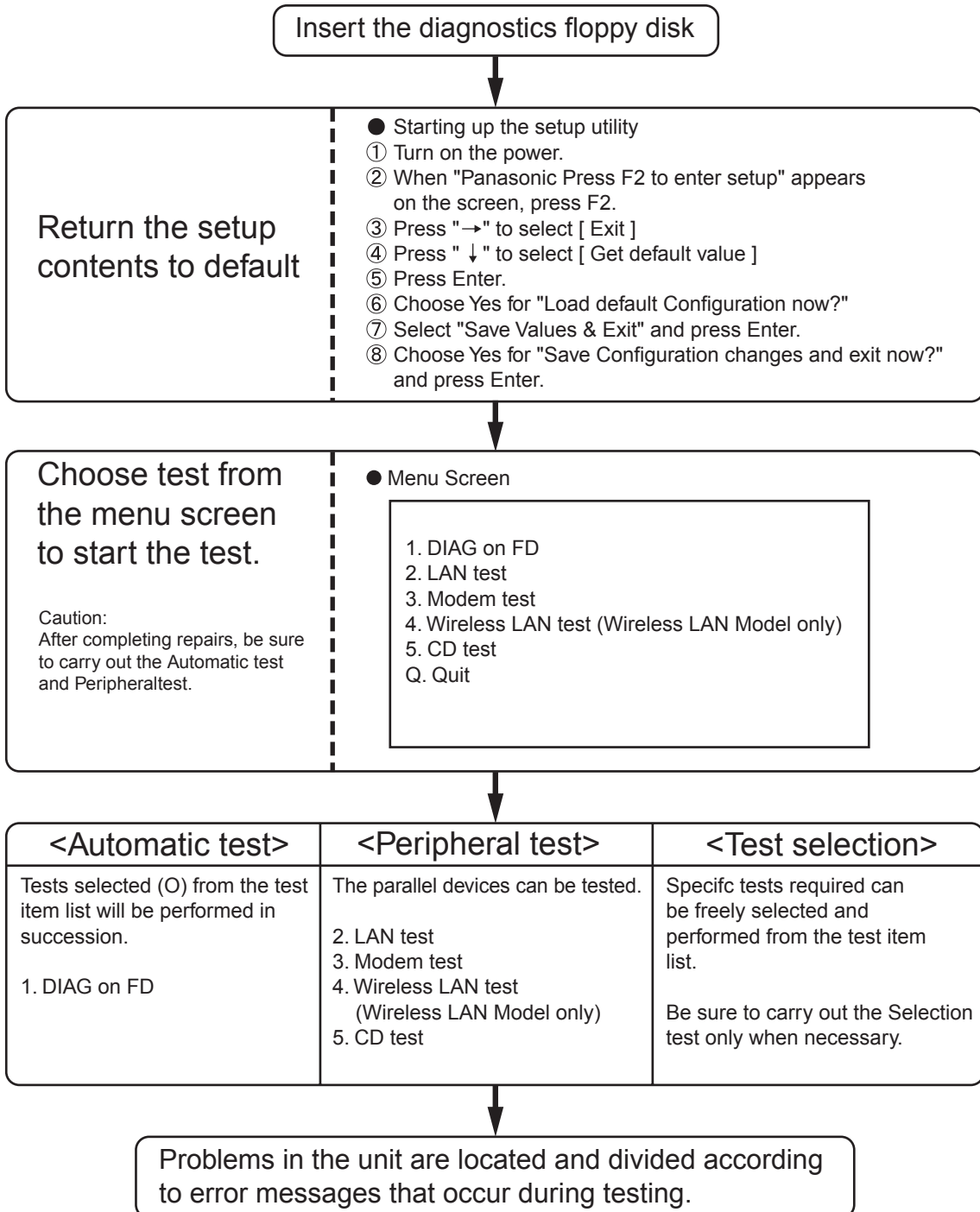
Important notice

System password

This product has a password function. If this function is turned on, the self-diagnostics tests will not work.

You will need ask the user for the password before performing the self-diagnostics.

5.1. Outline of Self Diagnostic Tests



5.1.1. List of main test items

The selection item displays the items selected under Automatic test. If you select Automatic test, these test items will be performed automatically. You can use Selection test to choose items from the menu screen that you want to have tested.

These items are shown below.

	Test classification	Test items shown on the screen	Contents	Select
1		SPEAKER TEST	Speaker test	<input type="radio"/>
2		VESA MODE TEST	VESA mode test	<input type="radio"/>
3	CPU (CPU related)	A20 GATE TEST	Address A20 line	<input type="radio"/>
4		CACHE ON/OFF TEST	Cache memory on/off test	—
5		NPU OPERAND TEST	Floating point processor function test	<input type="radio"/>
6	RAM (Memory related)	RAM STANDARD TEST	Memory standard test	<input type="radio"/>
7	CONTROL (Control ICs on the main board, etc.)	DMA PAGE REG TEST	DMA page register test	<input type="radio"/>
8		DMA REGISTER TEST	DAM register test	<input type="radio"/>
9		DMAC TRANSFER TEST	DAM transfer test	<input type="radio"/>
10		PIC HALT INSTRUCTION TEST	Interrupt controller halt instruction test	<input type="radio"/>
11		PIC REGISTER TEST	Interrupt controller register test	<input type="radio"/>
12		RTC CMOS RAM TEST	Real time clock CMOS test	<input type="radio"/>
13		RTC TEST	Real time clock test	<input type="radio"/>
14		PIT CH0 TEST	interrupt timer CH0	<input type="radio"/>
15		PIT CH1 TEST	interrupt timer CH1	<input type="radio"/>
16		PIT CH2 TEST	interrupt timer CH2	<input type="radio"/>
17	IO (Input-output)	KEYBOARD REG TEST	Keyboard test	<input type="radio"/>
18		PS/2 MOUSE REG	Mouse registration test	<input type="radio"/>
19	COMMUNICATION	SERIAL WRAP TEST	Serial loop back (jig required)	—
20		SERIAL ALL INTERNAL TEST	Serial port interior test	—
21		PARALLEL REGISTER R/W	Parallel register R/W test	—
22	AUX (Auxiliary functions)	PCIC ALL TEST	PCIC test	<input type="radio"/>
23		Card Bus Reg	Card Bus register test	<input type="radio"/>
24		USB Reg	USB register test	<input type="radio"/>
25	VIDEO (Display related)	VGA ALL TEST	VGA test	<input type="radio"/>
26		SVGA RAM TEST	SVGA RAM test	<input type="radio"/>
27	DISK (FDD, HDD)	FD WT/RD/WP TEST	FD WT, RD WP test	—
28		HDD ALL TEST	Only HDD lead test selected	<input type="radio"/>
29	UNIQUE (Individual functions)	ECP REGISTER R/W	ECP register R/W test	<input type="radio"/>
30		EPP REGISTER R/W	EPP register R/W test	<input type="radio"/>
31		EXT. CMOS R/W TEST	Extension CMOS R/W test	<input type="radio"/>

	Test function settings	Test condition save/play	Following file command
		Test automatic execute	Test executed on run settings by selecting command
		Error display (Paging style)	Select displayed items Error, Log, Option

5.2. Automatic Test

Test execution

From the menu screen shown below For Celeron models Select and press Enter for DIAG on FD

1. DIAG on FD
 2. LAN test
 3. Modem test
 4. Wireless LAN test (Wireless LAN Model only)
 5. CD testQ. Quit

menu screen

Speaker test, VESA test

The speaker test involves listening to music and choosing OK or Not okay. The VESA test involves looking at the display to see if it is satisfactory then choosing OK or Not okay.

Serial loop back test

The Automatic test's initial settings are set so that the serial loop back test will be executed. Connect the serial loop back jig and then perform the test.

(This test is not executed on default mode)

Diagnostics result

If no errors occur. The screen shows the word "Pass" in large letters.

If errors occur. The test is stopped when an error occurs and the error message is displayed.

For explanations of error messages, see Error Messages and Problem Categories (section 5.5).

Quitting the test

At the screen shown below, simultaneously press the ALT and X keys.



Input screen

5.3. Peripheral Test

Test execution

From the menu screen shown below, be sure to choose the following items and press Enter.

1. DIAG on FD
2. LAN test
3. Modem Test
4. Wireless LAN test (Wireless LAN Model only)
5. CD test
- Q. Quit

menu screen

2. LAN Test

This test checks for internal LAN device. Choose LAN test and press Enter.

3. Modem Test

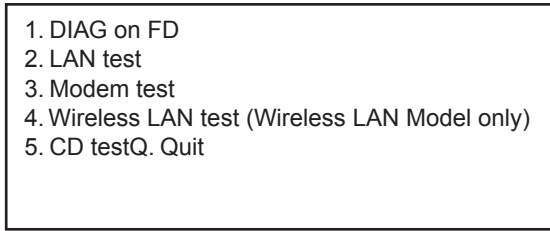
4. Wireless LAN Test

5. CD Test

5.4. Test Selection

Starting up the input menu

1. From the menu screen shown below, choose Quit and press Enter.



menu screen

2. When A: \DIAG appears, input "JDG_295, XEX" and press Enter.
3. The input screen shown below will appear.
To choose menu items, hold down "ALT" and press the selection key.

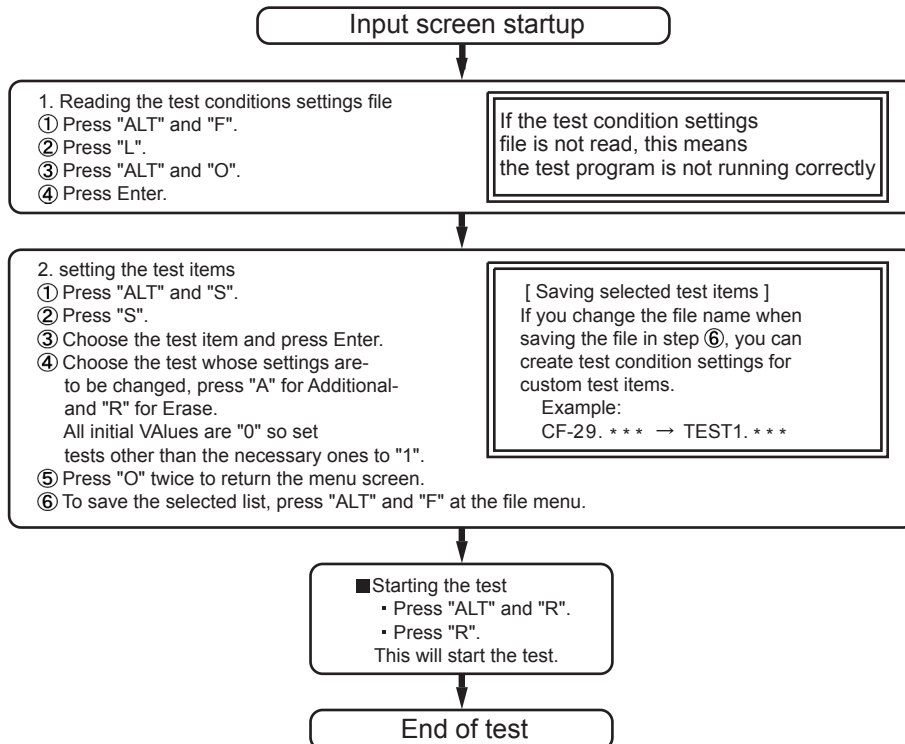
Example:

"ALT" + F brings up the File menu.



Input screen

Order of test flow selection

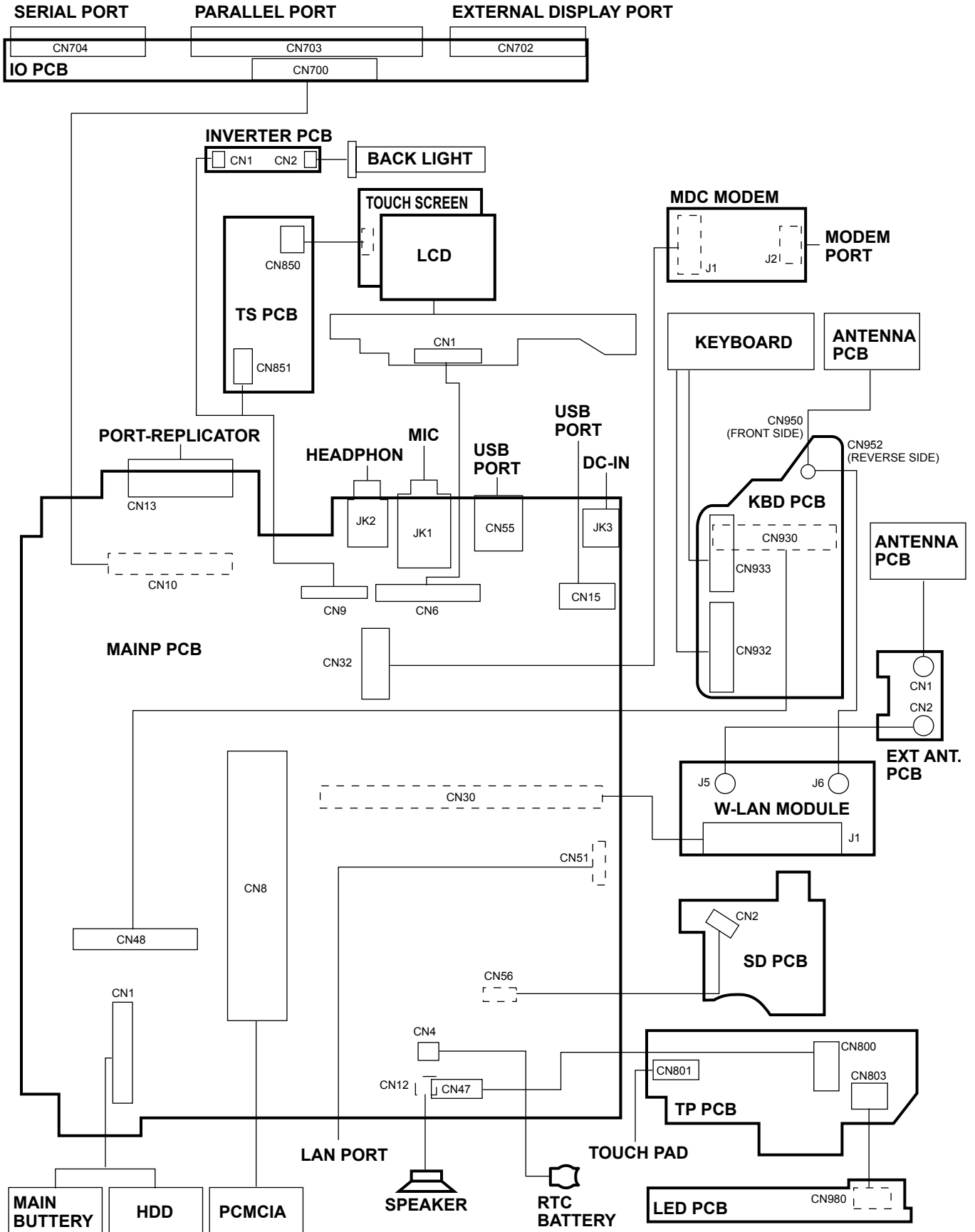


5.5. Error Messages and Troubleshooting

The table below explains the parts that may be faulty or damaged should an error message occur while performing the various test items of the self diagnostics program.

	Test classification	Screen display test items	Contents
1	CPU (CPU related)	A20 GATE TEST	Address 20 line
2		CACHE ON/OFF	Cache memory on/off
3		NPU OPERAND TEST	Floating point processor function
4	RAM (Memory related)	RAM STANDARD	Memory standard
5	CONTROL (Control ICs on the main board, etc.)	DMA PAGE REG TEST	DMA page register
6		DMA REGISTER TEST	DAM register
7		DMAC Transfer TEST	DAM transfer test
8		PIC HALT INSTRUCTION TEST	Interrupt controller
9		PIC REGISTER TEST	Interrupt controller
10		RTC CMOS RAM TEST	Real time clock CMOS
11			
12		SPEAKER TEST	Speaker
13		PIT CH0 TEST	Interrupt timer CH0
14		PIT CH1 TEST	Interrupt timer CH1
15	PIT CH2 TEST	Interrupt timer CH2	
16	IO (Input-output)	KEYBOARD REG TEST	Keyboard
17		PS/2 MOUSE REG	Mouse
18	COMMUNICATION	SERIAL WRAP TEST	Serial loop back (jig required)
19		SERIAL ALL INTERNAL TEST	Serial port
20		PARALLEL REGISTER R/W	Parallel register
21	AUX (Auxiliary functions)	PCIC ALL TEST	PCIC
		Card Bus REG	Card Bus port
		USB REG	USB port
22	VIDEO (Display related)	VGA ALL TEST	VGA
23		SVGA RAM TEST	SVGA RAM
24		VESA MODE TEST	VESA mode
25	DISK (FDD, HDD)	FD WT/RD/WP TEST	FD write/read/write protection
26		HDD ALL TEST	Only HDD lead selected
27	UNIQUE (Individual functions)	ECP REGISTER R/W	Parallel port
28		EPP REGISTER R/W	Parallel port
29		EXT. CMOS R/W TEST	Extension CMOS R/W test

6 Wiring Connection Diagram



7 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.

7.1. Disassembly Instructions

7.1.1. 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.

7.1.2. Removing the Battery Pack, HDD Pack and FDD Pack

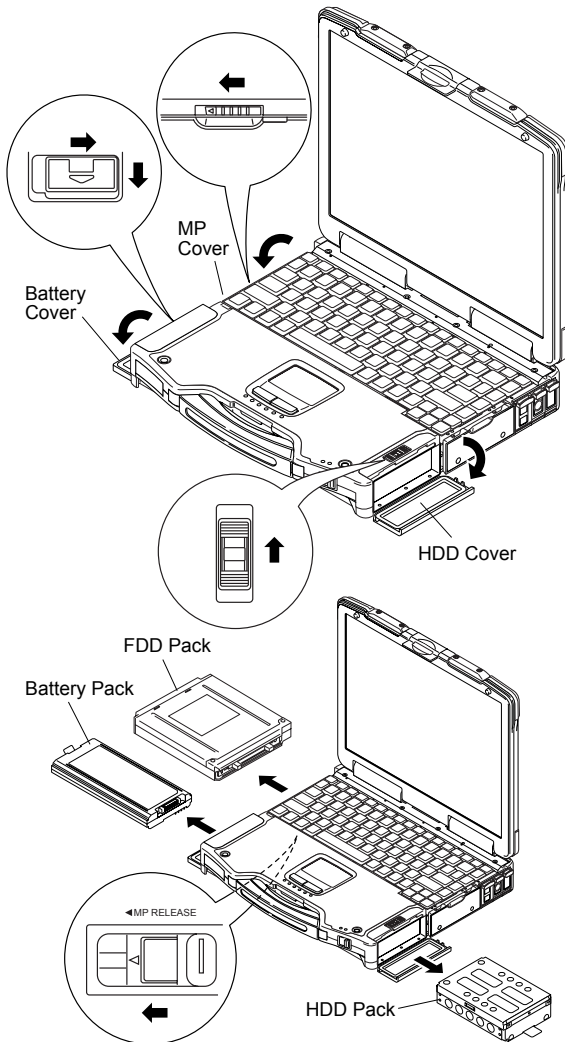
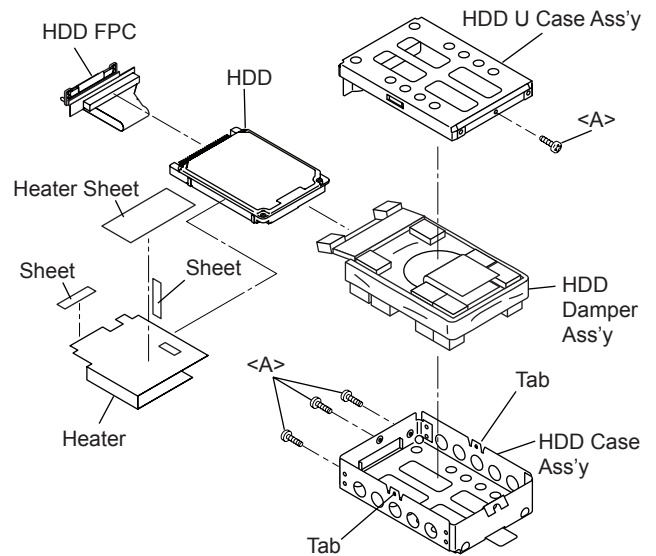


Figure 1

1. Open the Battery Cover.
 2. Remove the Battery Pack.
 3. Open the HDD Cover.
 4. Remove the HDD Pack.
 5. Open the FDD Cover.
 6. Remove the FDD Pack.
- Use the MP Eject Lever.

7.1.3. Removing the HDD



1. Remove the four Screws<A>.
2. Release the two Tabs, and remove the HDD U Case Ass'y and the HDD L Case Ass'y.
3. Remove the HDD Damper Ass'y.
4. Remove the two Sheets.
5. Remove the Heater and the Heater Sheet.
6. Remove the HDD FPC.

Screws <A>: DFHE5025XA

7.1.4. Removing the KB Cover, Hinge Cover L, Hinge Cover R and Keyboard

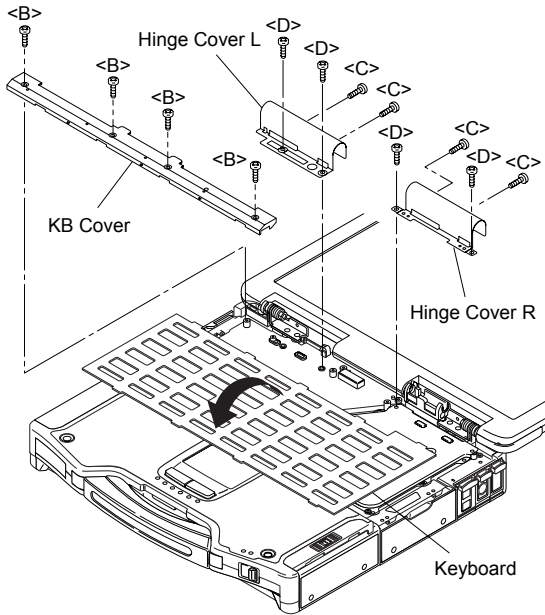


Figure 3

1. Remove the four Screws, and remove the KB Cover.
2. Remove the four Screws<C> and the four Screws<D>, and remove Hinge Cover L,R.
3. Remove the Keyboard.

Screws : DRQT26+D4FZL

Screws <C>: DFHE5054XA

Screws <D>: DFHE5054XA

7.1.5. Remove the KB Cable Cover, Keyboard and PCMCIA Protector

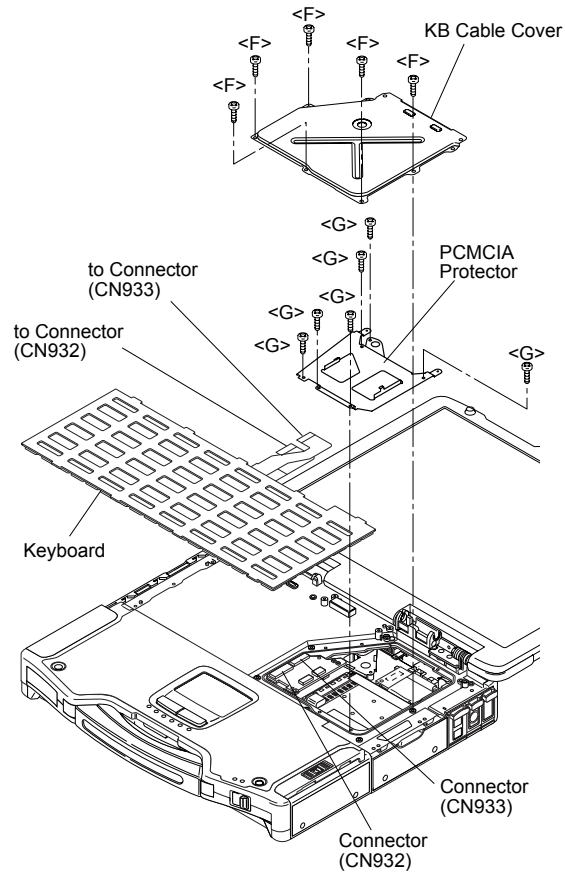


Figure 4

1. Remove the five Screws<F>, and remove the KB Cable Cover.
2. Disconnect the two Cables from two Connectors (CN932, CN933)
3. Remove the six Screws<G>, and remove the PCMCIA Protector.

Screws <F>: DRHM0002ZA

Screws <G>: DRQT2+I35FKL

7.1.6. Removing the KBD PCB, MDC Modem and LCD Cable/MIC Frame

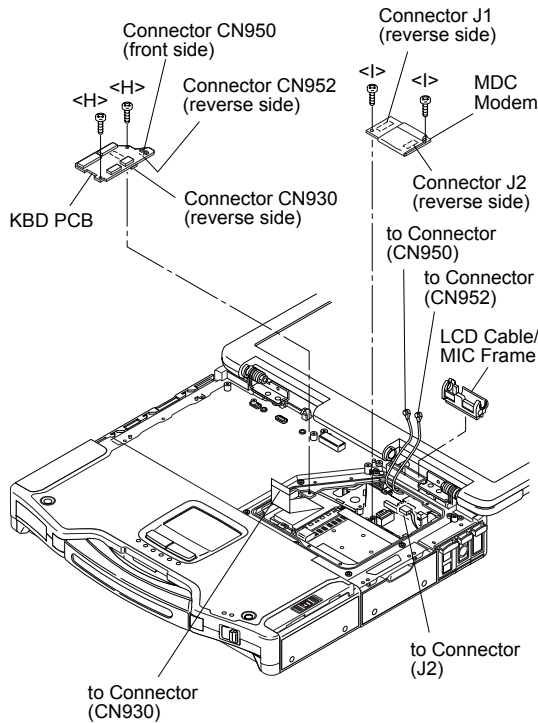


Figure 5

1. Remove the LCD Cable/MIC Frame.
2. Remove the two Screws. <H>
3. Disconnect the three Cable from three Connectors (CN930, CN950, CN952).
4. Remove the KB PCB.
5. Remove the two Screws. <I>
6. Disconnect the Cable from Connector. (J2)
7. Remove the MDC Modem.

Screws <H>: DFHE5025XA

Screws <I>: DFHE5025XA

7.1.7. Removing the DIMM Cover and Bottom Cover

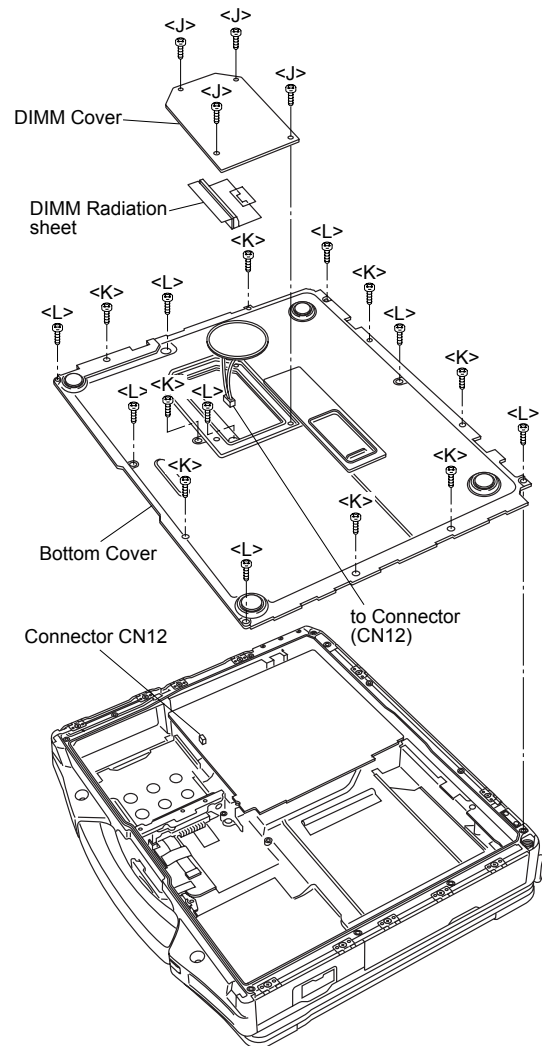


Figure 6

1. Remove the four Screws<J>, and remove the DIMM Cover.
2. Remove the eight Screws<K> and the eight Screws<L>.
3. Disconnect the Cable from Connector (CN12).

Screws <J>: DRQT26+D4FZLT

Screws <K>: DRQT26+D4FZLT

Screws <L>: DRSB3+8FKL

7.1.8. Removing the Speaker

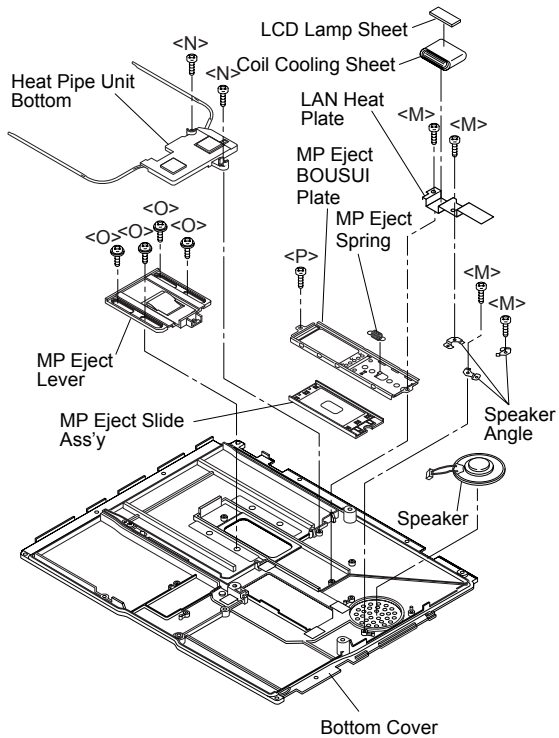


Figure 7

1. Remove the LCD Lamp
2. Remove the four Screws<M>, and remove the LAN Heat Plate, Speaker Angle and the Speaker.
3. Remove the two Screws<N>, and remove the Heat Pipe Unit Bottom.
4. Remove the four Screws<O>, and remove the MP Eject Lever.
5. Remove the Screw<P>, and remove the MP Eject BOUSUI Plate and MP Eject Slide Ass'y.

Screws <M>: DXQT26+D4NLT

Screws <N>: DXYN+J6FNL

Screws <O>: DXYN26+F5NLT

Screw <P>: DXQT26+D4NLT

7.1.9. Removing the Wireless Module and SD PCB

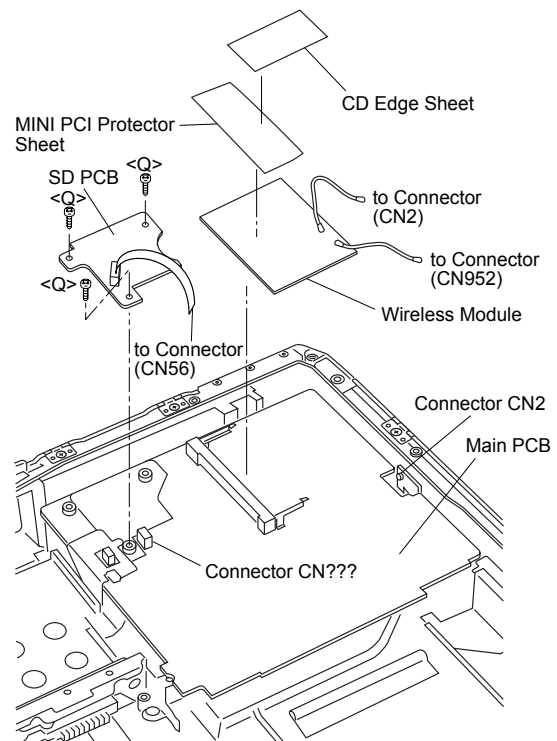


Figure 8

1. Disconnect the Cable from Connector (CN2).
2. Remove the Wireless Module.
3. Remove the MINI PCI Protector Sheet and the CD Edge Sheet.
4. Remove the three Screws<Q>.
5. Disconnect the Cable from Connector (CN56).
6. Remove the SD PCB.

Screws <Q>: DFHE5025XA

7.1.10. Removing the PAD SW FFC Cover

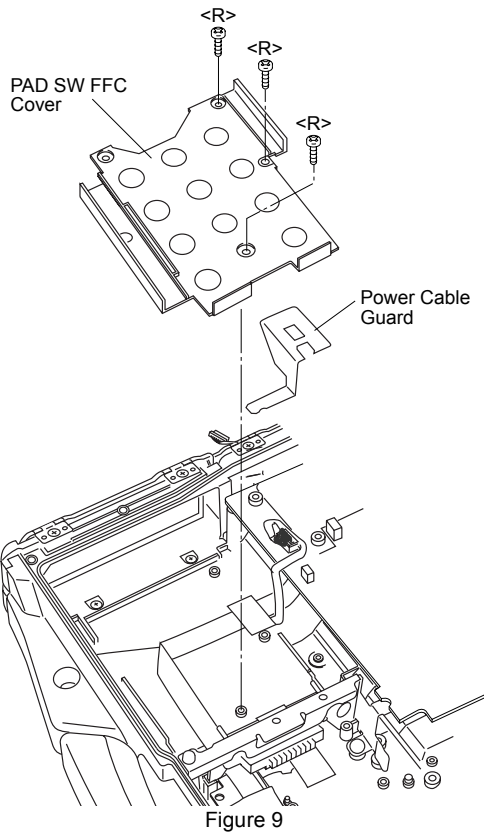


Figure 9

1. Remove the three Screws<R>, and remove the PAD SW FFC Cover.

Screws <R>: DFHE5054XA

7.1.11. Removing Main PCB, EXT Antenna PCB, PCMCIA Unit and RTC Battery

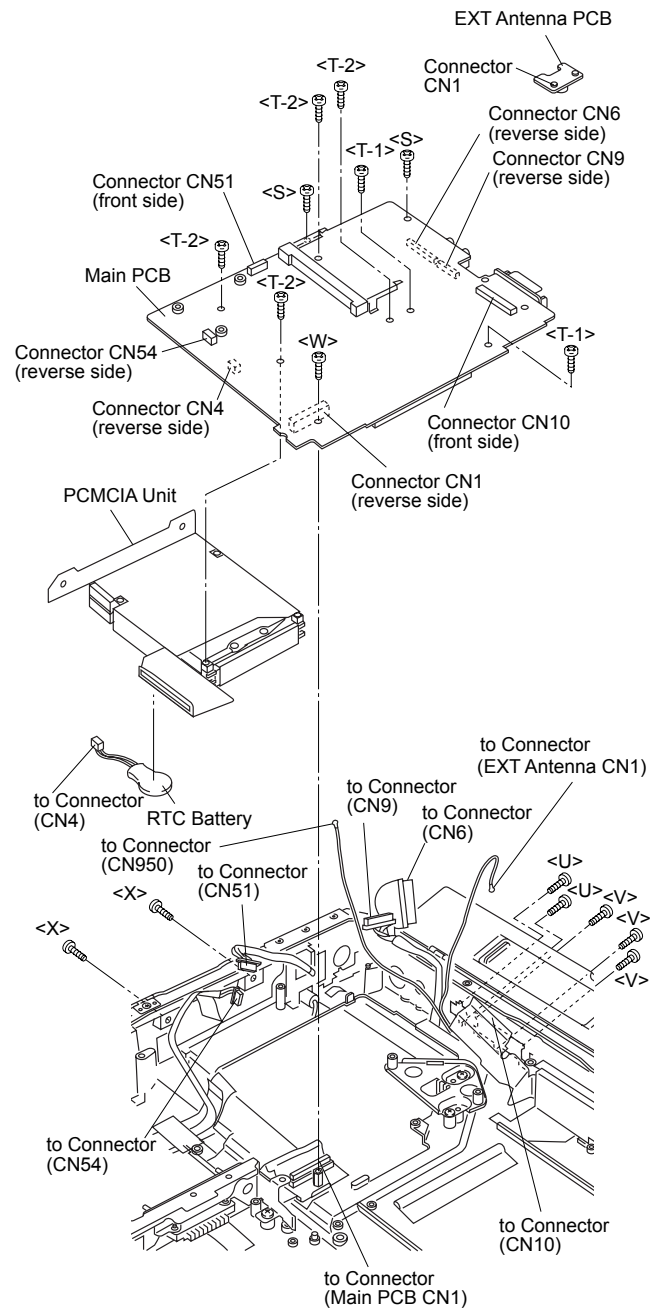
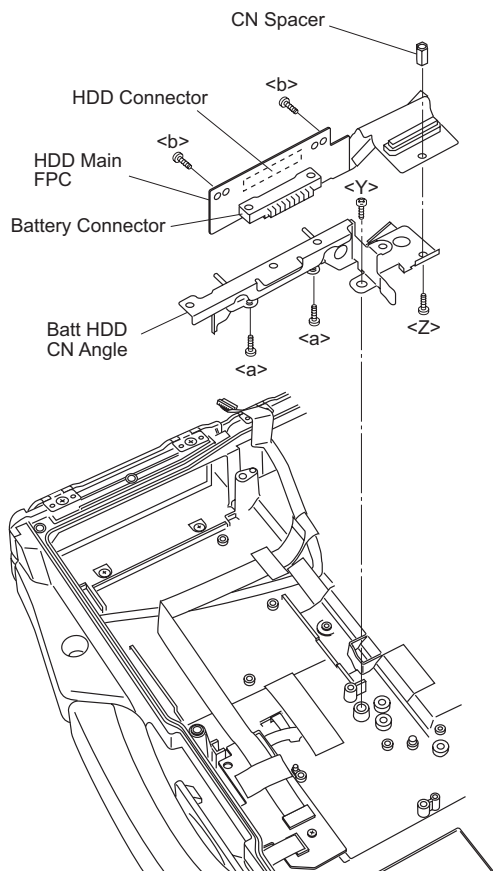


Figure 10

1. Remove the two Screws<S>.
2. Remove the two Screws<T-1>.
3. Remove the two Screws<U>.
4. Remove the four Screws<V>.
5. Remove the Screw<W>.
6. Remove the two Screws<X>.
7. Disconnect the six Cables from six Connectors.
(Main PCB: CN1, CN6, CN9, CN10, CN51, CN54)
(EXT Antenna: CN1)
8. Remove the EXT Antenna.
9. Remove the Main PCB.
10. Disconnect the Cable from Connector (CN4).
11. Remove the RTC Battery
12. Remove the four Screws<T-2>, and remove the PCMCIA Unit.

Screws <S>: DFHM5054XA
 Screws <T-1>:DFHE5025XA
 Screws <T-2>:DFHE5025XA
 Screws <U>: DRQT2+G6FKL
 Screw <V>: DRHM5104ZA
 Screw <W>: DFHE5025ZA
 Screw <X>: DRHM5117ZA

7.1.12. Remove the HDD Main FPC



1. Remove the Screws<Y>, and remove the Batt HDD CN Angle.
2. Remove the Screw<Z>, the two Screws<a> and the two Screws.
3. Remove the HDD Main FPC.

Screw <Y>: DFHE5092ZA
 Screw <Z>: DFHE5025ZA
 Screws <a>: DRHM5104ZA
 Screws : DFHE5025XA

7.1.13. Removing the TP PCB

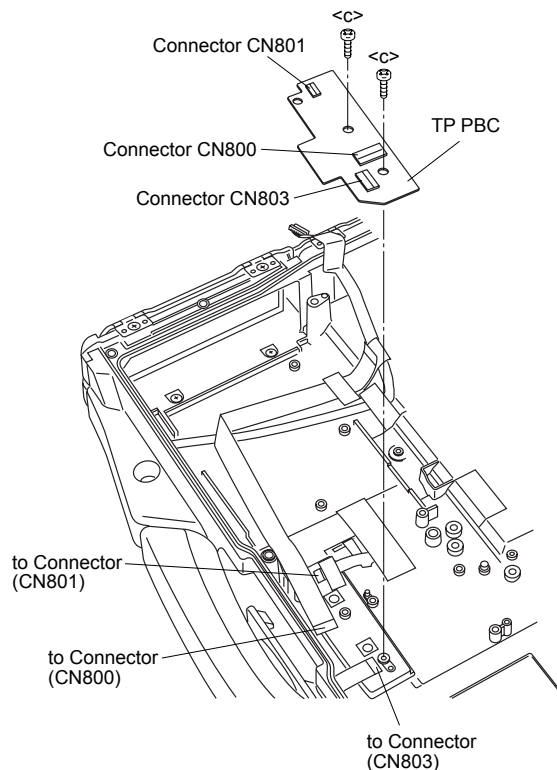


Figure 11

1. Disconnect the three cables from three Connectors. (CN800, CN801, CN803)
2. Remove the two Screws<c>, and remove the TP PCB.

Screws <c>: DRHM0002ZA

7.1.14. Removing the IO PCB

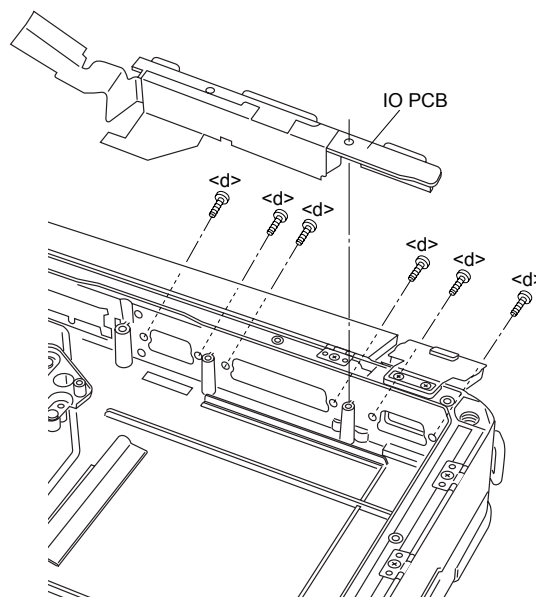


Figure 12

1. Remove the six Screws<d>, and remove the IO PCB.

Screws <d>: DFHE5058ZB

7.1.15. Removing the Palm Top Cover Sheet, Palm Top Cover, Touch Pad Adhesion Seat, Touch Pad, Touch Pad SW Knob, LED PCB and SW LED PCB

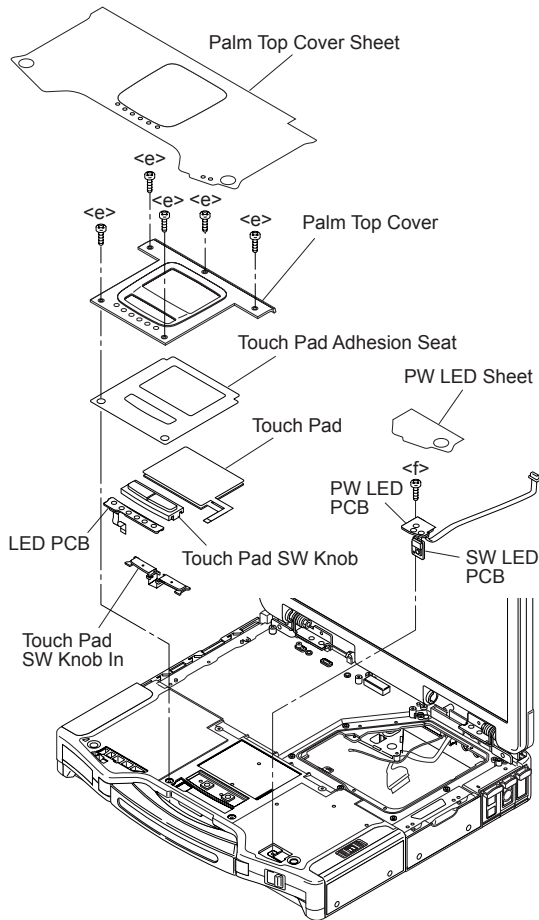


Figure 14

1. Remove the Palm Top Cover Sheet.
2. Remove the five Screws<e>, and remove Palm Top Cover.
3. Remove the Touch Pad Adhesion Seat.
4. Remove the Touch Pad.
5. Remove the Touch Pad SW Knob and Touch Pad SW Knob In.
6. Remove the LED PCB.
7. Remove the PW LED Sheet.
8. Remove the Screw<f>, and remove the SW LCD PCB.

Screws <e>: DRHM0002ZA

Screw <f>: DRHM0002ZA

7.1.16. Removing the Handle and Power SW

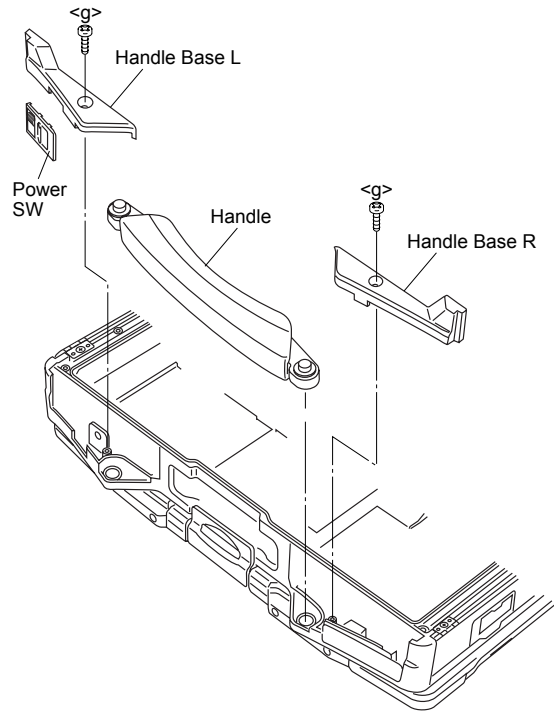


Figure 15

1. Remove the two Screws<g>, and remove Handle Base L,R.
2. Remove the Handle.
3. Remove the Power SW.

Screws <g>: DRSB4+8FKL

7.1.17. Removing LCD Unit

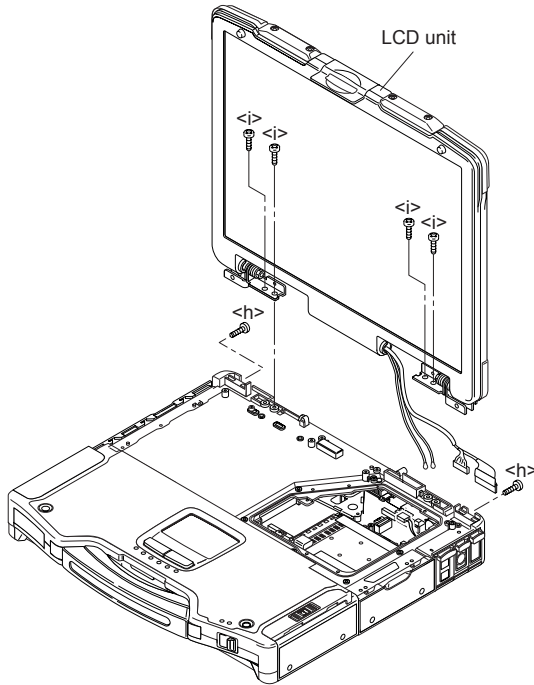


Figure 16

1. Remove the two Screws<h> and the four Screws<i>, and remove the LCD Unit.

Screws <h>: DXSB4+12FNLB

Screws <i>: DXYN4+J8FNL

7.1.18. Removing LCD Rear Cabinet, Hinge L and Hinge R

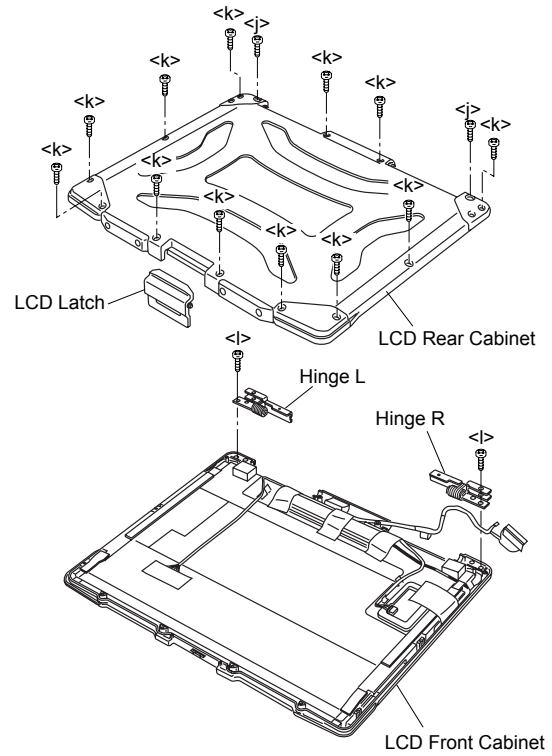


Figure 17

1. Remove the two Screws<j> and the twelve Screws<k>, and remove the LCD Rear Cabinet.
2. Remove the LCD Latch.
3. Remove the two Screws<l>, and remove the Hinge L and R.

Screws <j>: DRSB4+10FKL

Screws <k>: DRSB26+8HKL

Screws <l>: DRHM0062ZA

7.1.19. Removing the Inverter PCB, TS PCB and LCD Unit

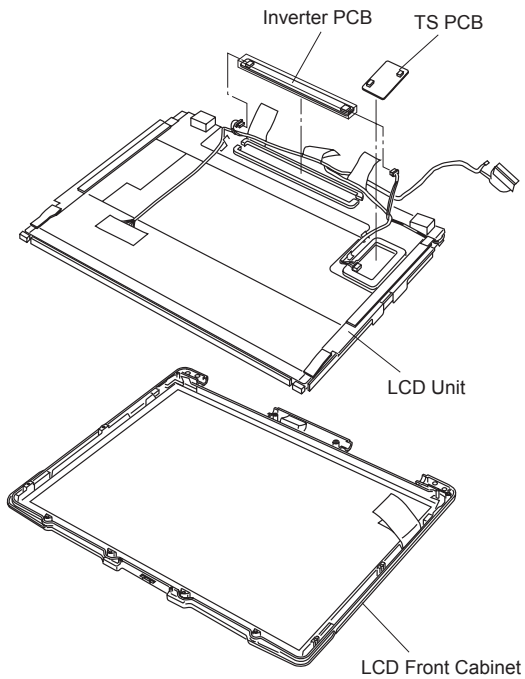


Figure 18

1. Disconnect two Cables from Connectors. (on Inverter PCB)
2. Remove the Inverter PCB.
3. Disconnect two Cables from Connectors. (on TS PCB)
4. Remove the TS PCB.
5. Remove the LCD Unit.

7.1.20. Removing the Antenna PCB L and R

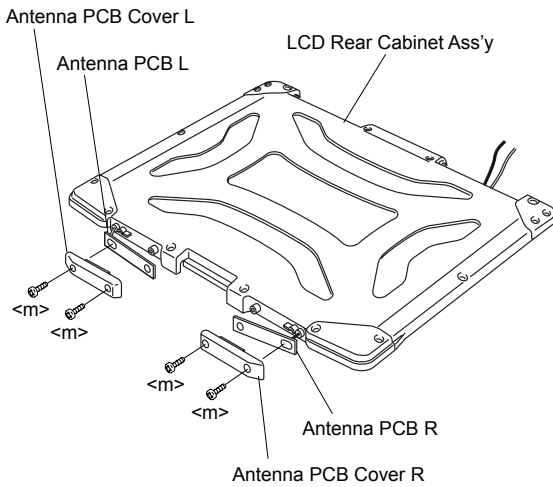


Figure 19

1. Remove the four Screws <m>.
2. Remove the Antenna PCB Cover L and R and Antenna PCB L and R.

Screws <m>: DRSB26+8KL

7.2. Reassembly Instructions

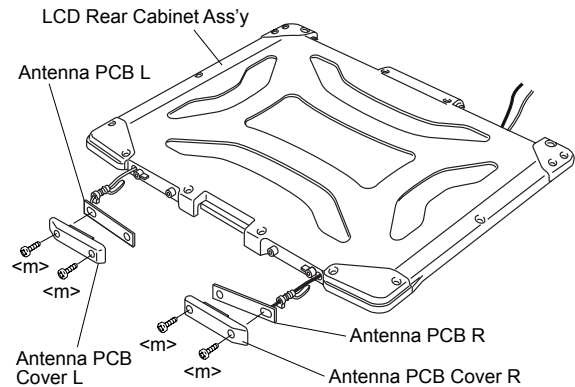
7.2.1. Attention when CF-29 series is repaired

- 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.

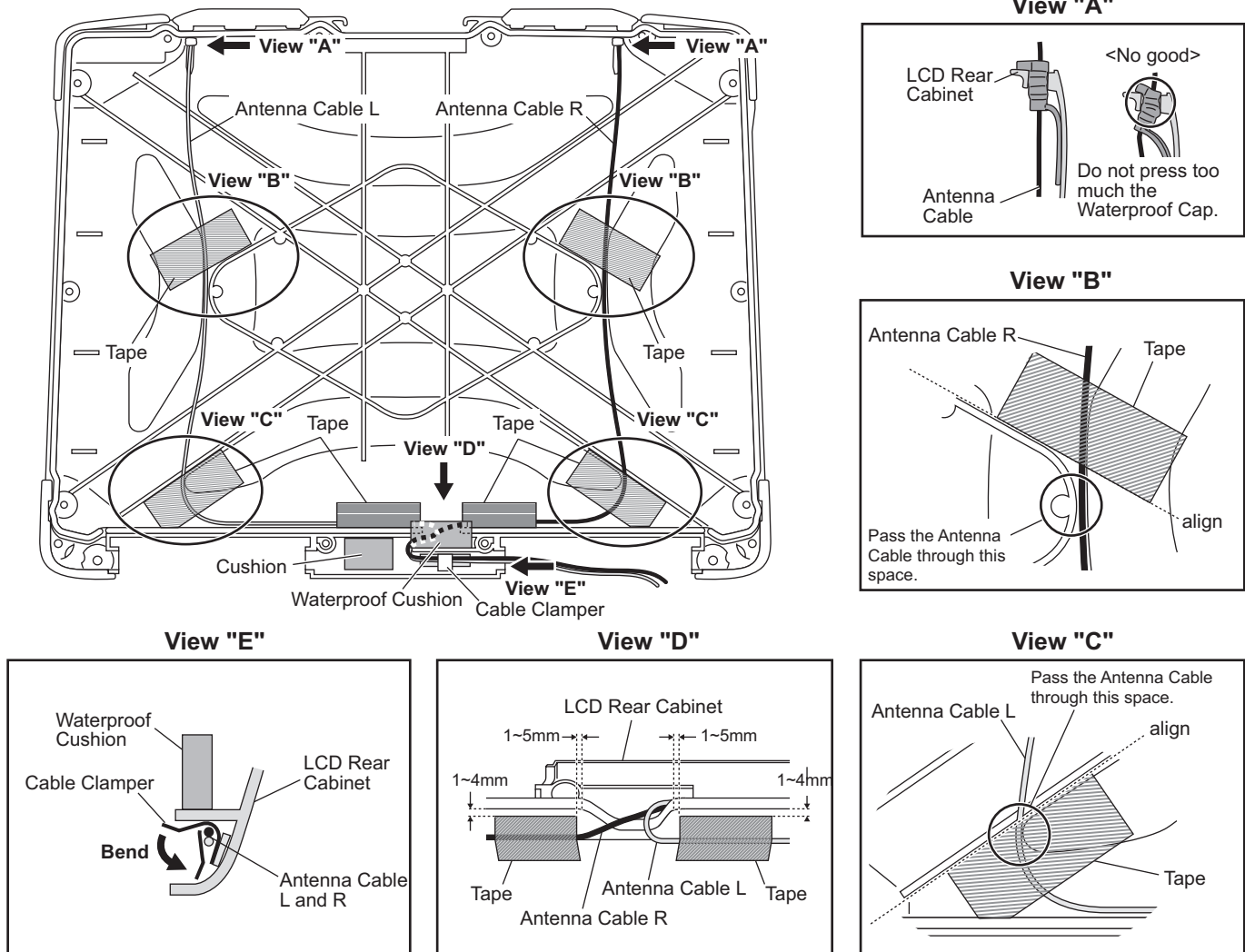
7.2.2. Setting the Antenna PCB L and R

1. Set the Antenna PCB L and R to the LCD Rear Cabinet Ass'y.
2. Fix the Antenna PCB Cover L and R using the four Screws. <i>

Screws <m>: DRSB26+8KL

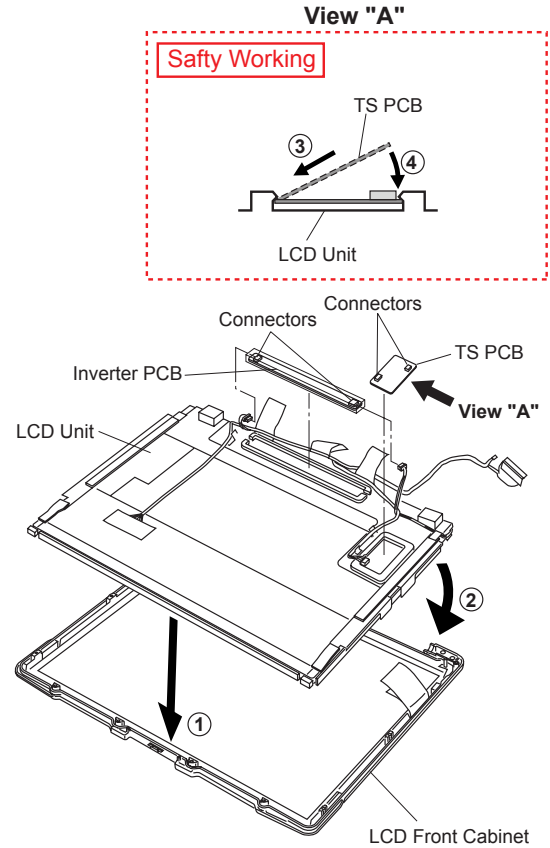


■ Arranging the Antenna L and R Cables



7.2.3. Setting the Inverter PCB, TS PCB and LCD Unit

1. Set the LCD Unit to the LCD Front Cabinet in order.
2. Attach the Inverter PCB to the LCD Unit and connect the two Cables to the two Connectors on the Inverter PCB.
3. Attach the TS PCB to the LCD Unit in order and connect the two Cables to the two Connectors on the TS PCB.

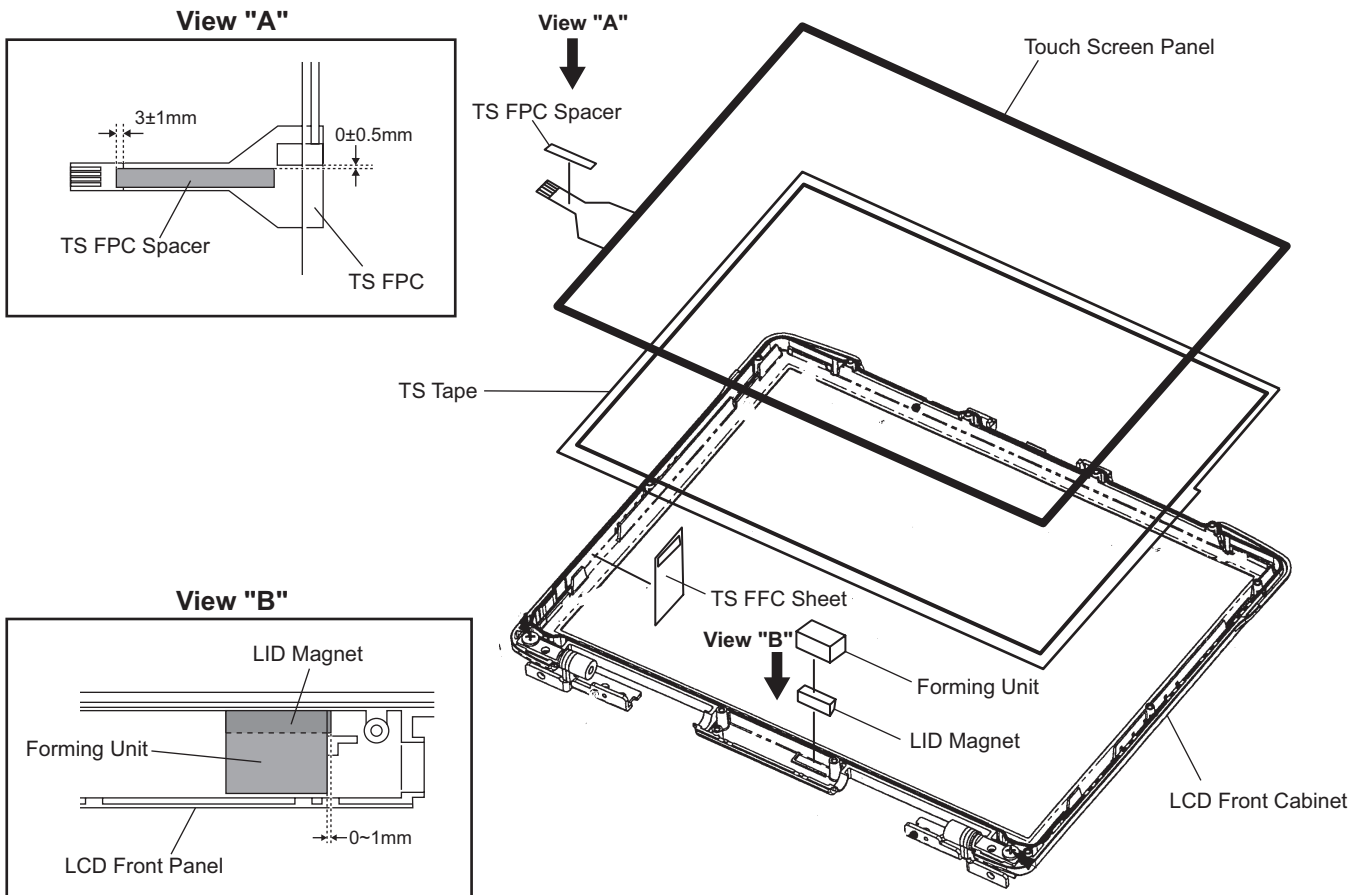


■ Attaching the Touch Screen Panel.

1. Attach the Touch Screen Panel to the LCD Front Cabinet using the TS Tape.

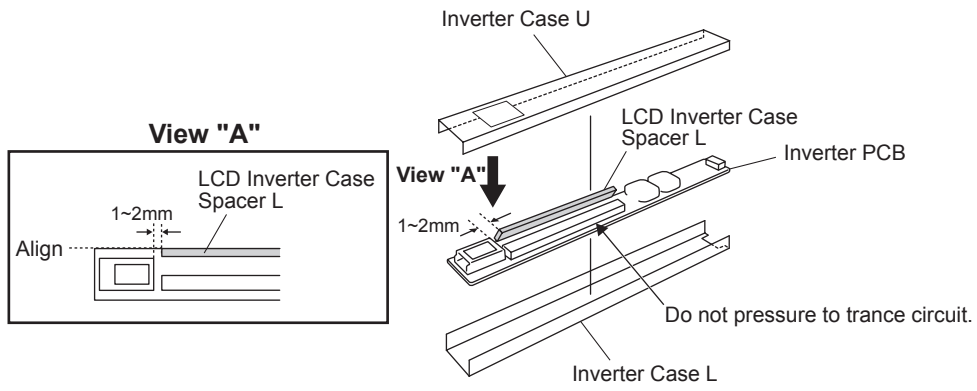
Note:

Use extreme caution when handling the Touch Screen Panel to avoid damage, fingerprints, etc.

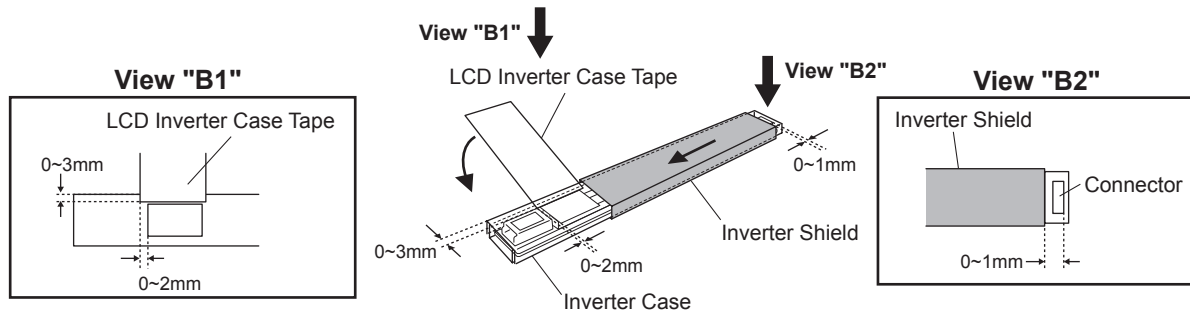


■ Arranging the Inverter PCB

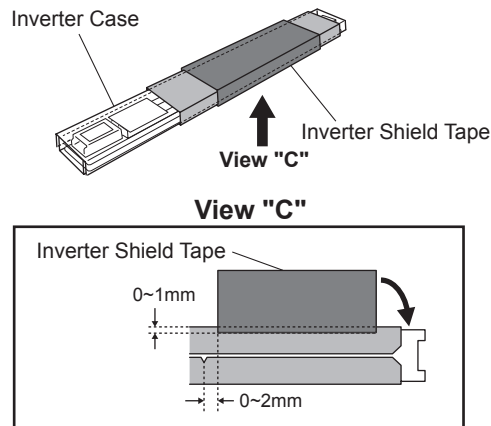
1. Attach the LCD Inverter Case Spacer L to the Inverter PCB.
2. Attach the Inverter Case L/U to the Inverter Case L.



3. Attach the LCD Inverter Case Tape and the Inverter Shield to the Inverter Case.

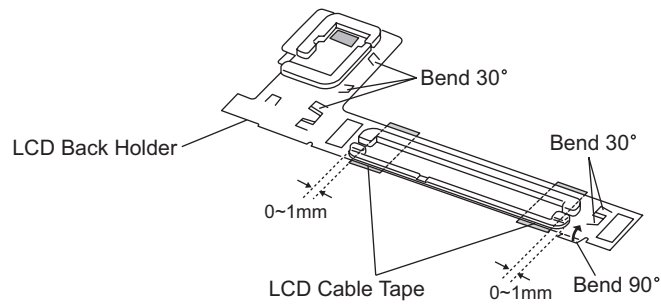


4. Attach the Inverter Shield Tape to the Inverter Case.



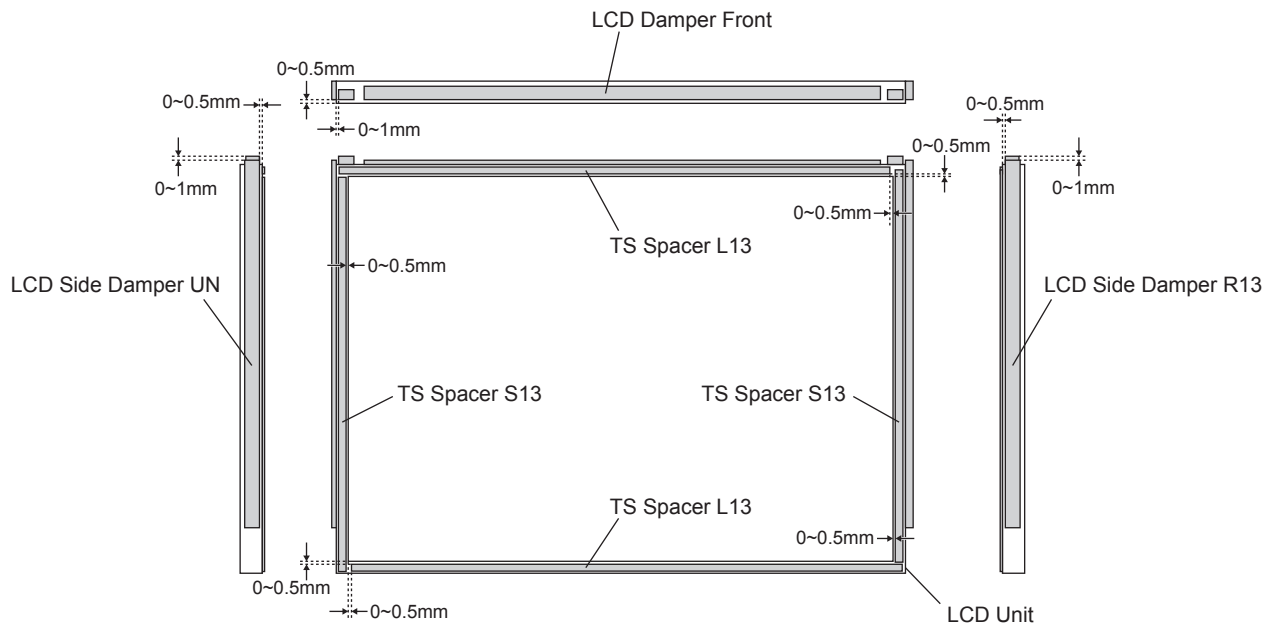
■ Arranging the LCD Back Holder

1. Attach the two LCD Cable Tapes to the LCD Back Holder.



■ Attaching the LCD Damper Front, LCD Side Damper UN/R13 and TS Spacer L13/S13

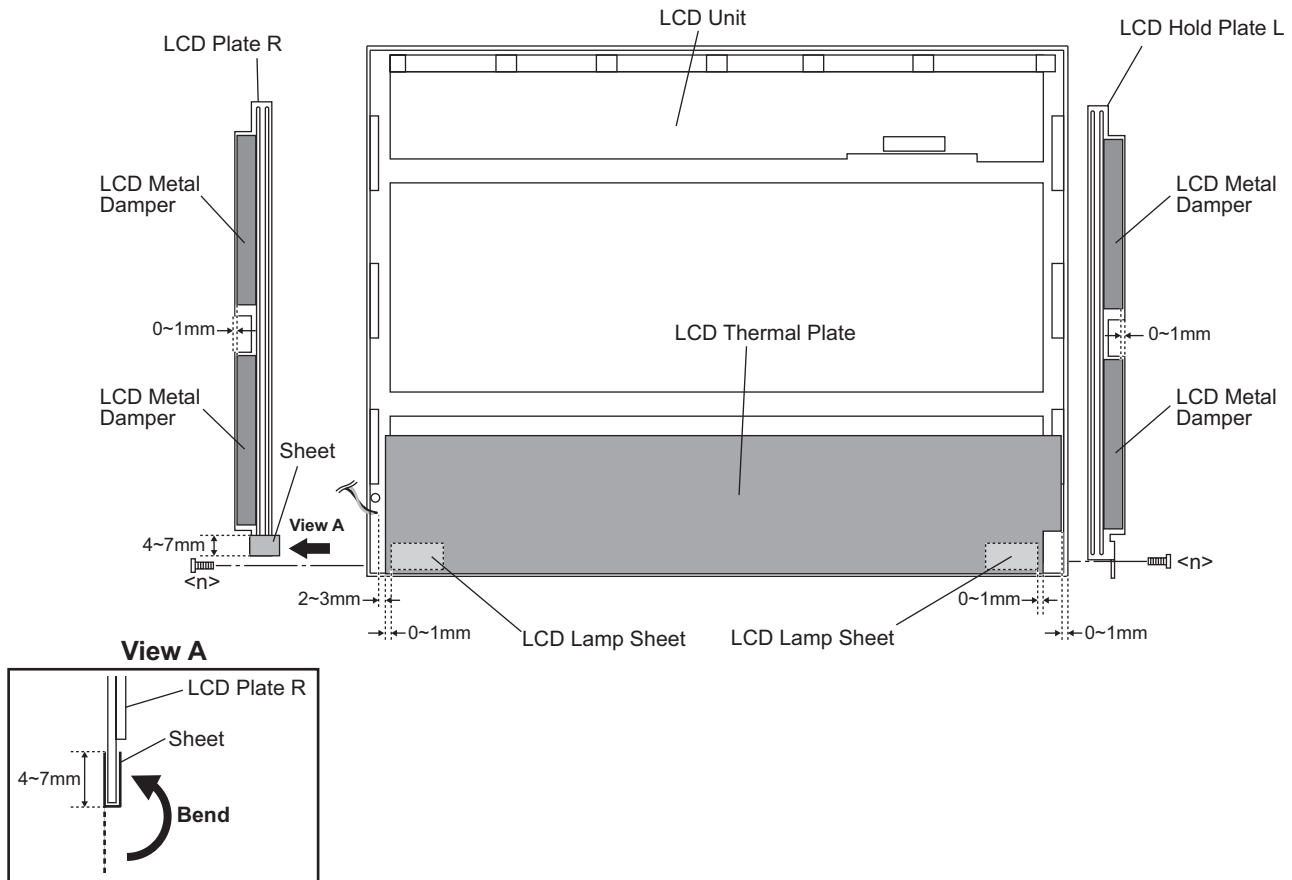
1. Attach the LCD Damper Front to the upper part of the LCD Unit.
2. Attach the LCD Side Damper UN to the left side of the LCD Unit.
3. Attach the LCD Side Damper R13 to the right side of the LCD Unit.
4. Attach the TS Spacer L13 and the two TS Spacer S13 to the all sides of the LCD Unit.



■ **Attaching the LCD Thermal Plate, LCD Hold Plate L and LCD Hold Plate R**

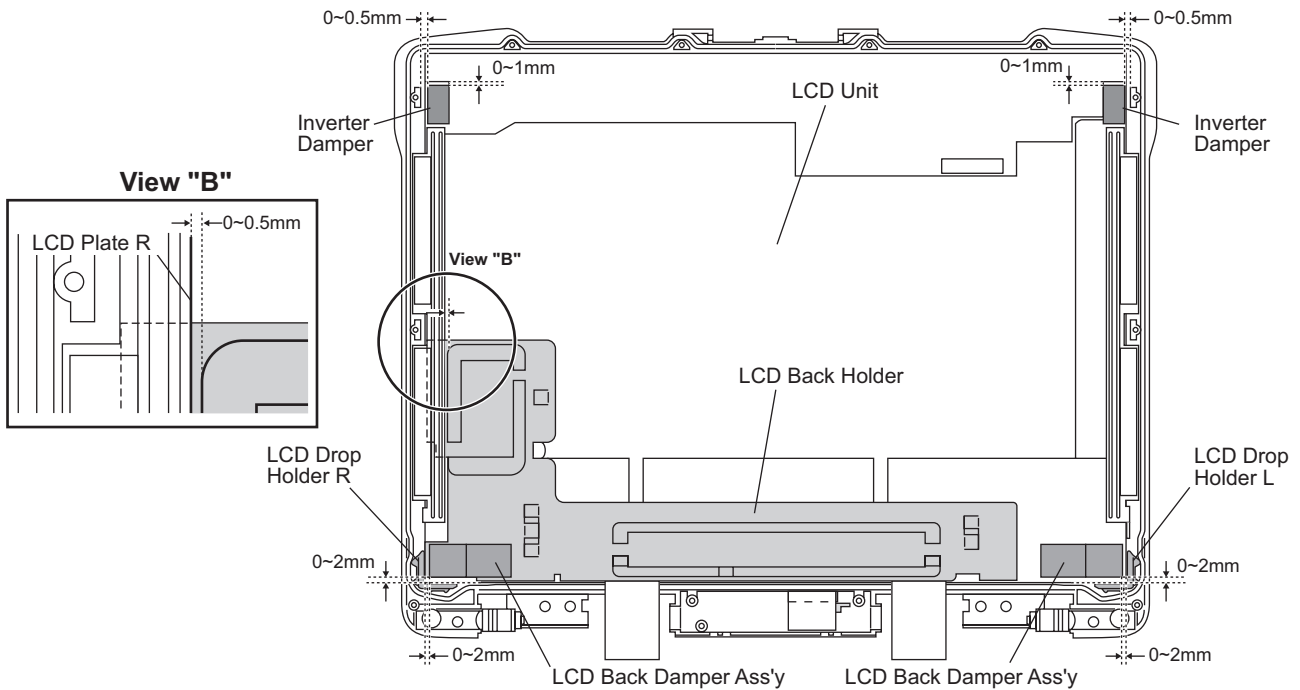
1. Attach the LCD Thermal Plate to the LCD Unit.
2. Fix the LCD Plate L and LCD Hold Plate R to sides of the LCD Unit using the two Screws<n>.

Screws <n>: DXYN2+C3FNL



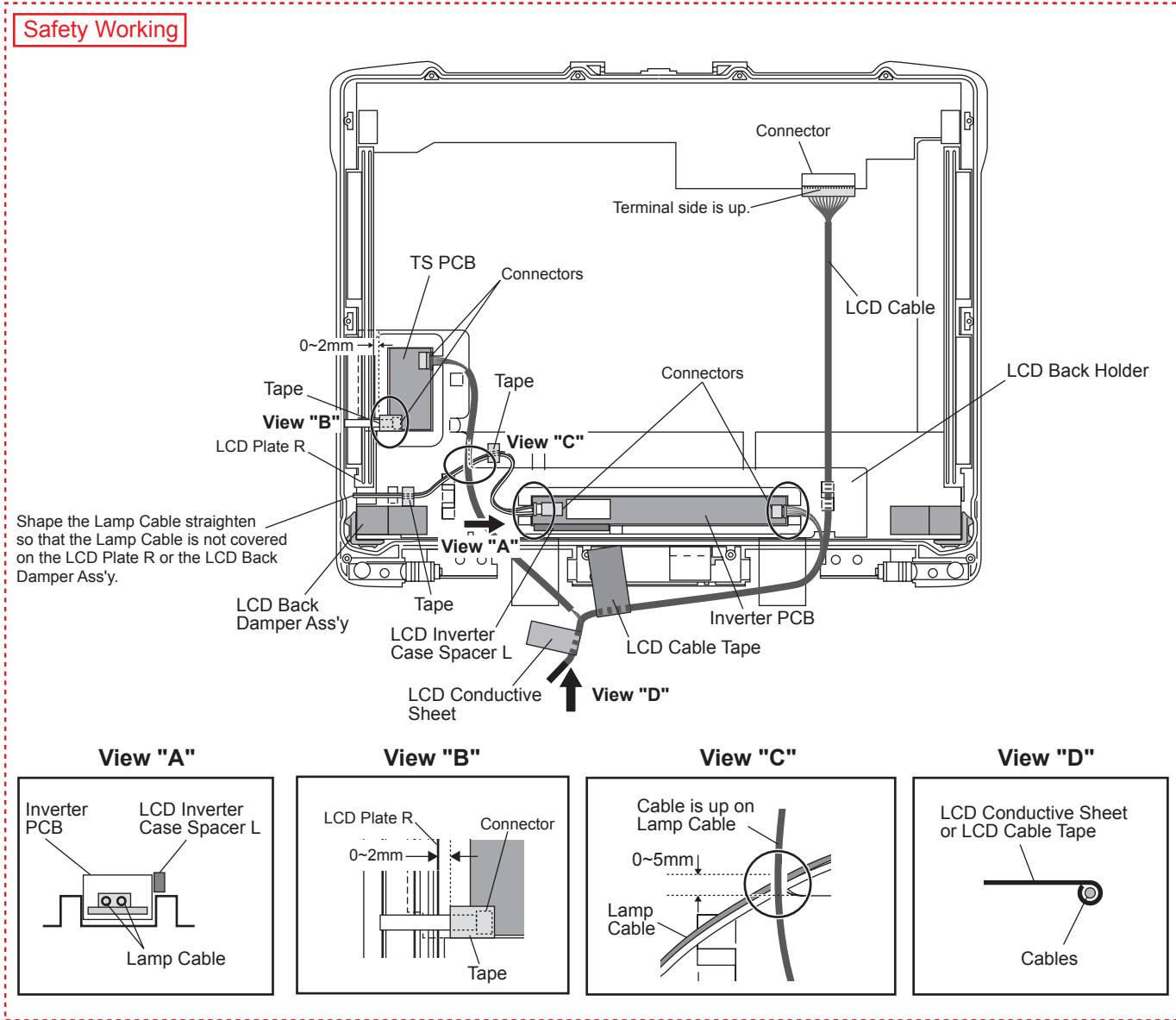
■ **Attaching the LCD Back Holder, LCD Back Damper Ass'y and Inverter Damper**

1. Attach the LCD Back Holder to the LCD Unit.
2. Attach the two LCD Back Damper Ass'y to the LCD Unit and LCD Back Holder.
3. Attach the two Inverter Damper to the LCD Unit.



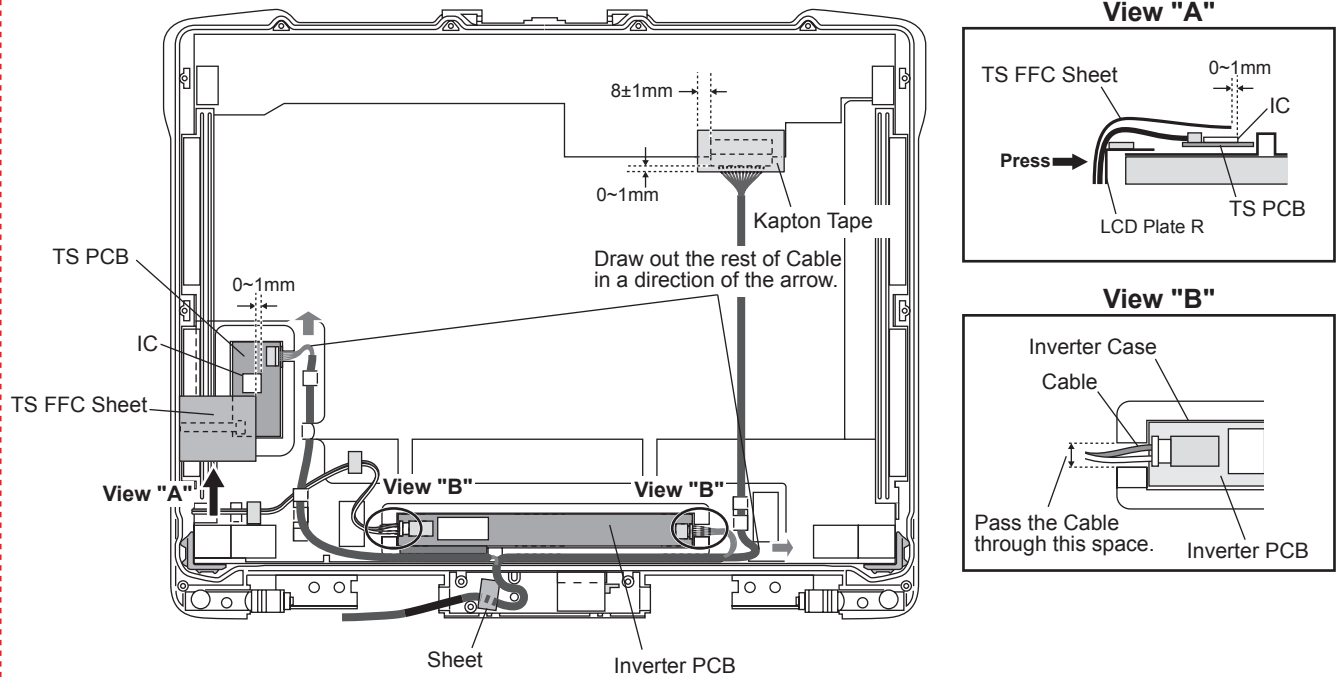
■ **Attaching the Inverter PCB and TS PCB**

1. Attach the Inverter PCB to the LCD Back Holder of the LCD Unit and connect the two Cables to the two Connectors on the Inverter PCB.
2. Attach the TS PCB to the LCD Back Holder of the LCD Unit and connect the two Cables to the two Connectors on TS PCB.

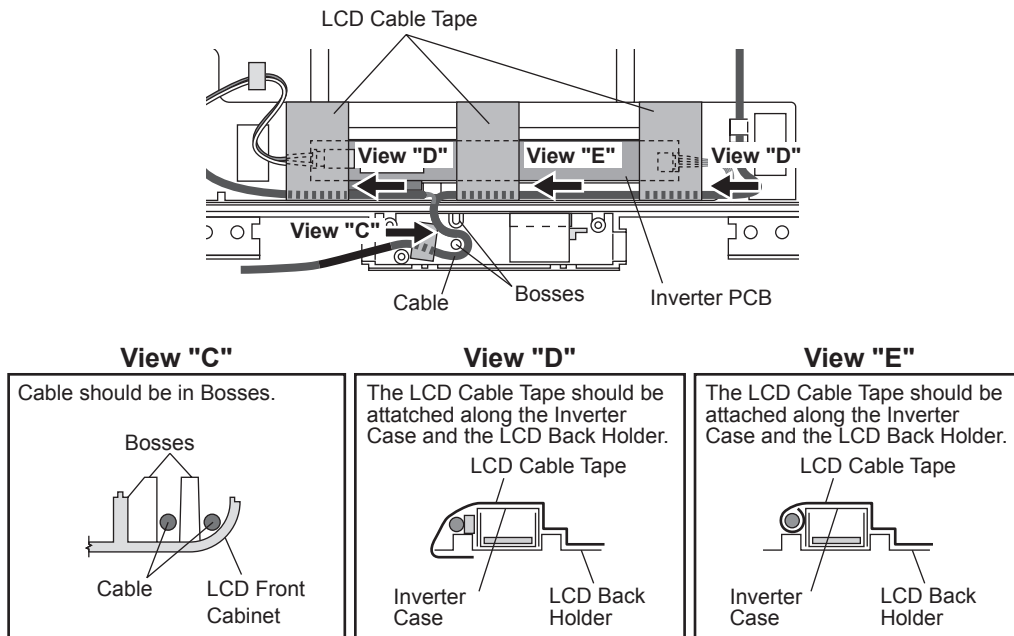


■ Arranging the Cables

Safety Working



Attaching the LCD Cable Tape



7.2.4. Setting the LCD Rear Cabinet, Hinge L and Hinge R

1. Fix the Hinge L and R using the two Screws<e>.
2. Set the Latch.
3. Set the LCD Front Cabinet to the LCD Rear Cabinet.
4. Fix the LCD Front Cabinet using the two Screws<k-1>. No1, No2
5. Fix the LCD Front Cabinet using the ten Screws<k-2>.
6. Fix the LCD Front Cabinet using the two Screws<j>.

Note:

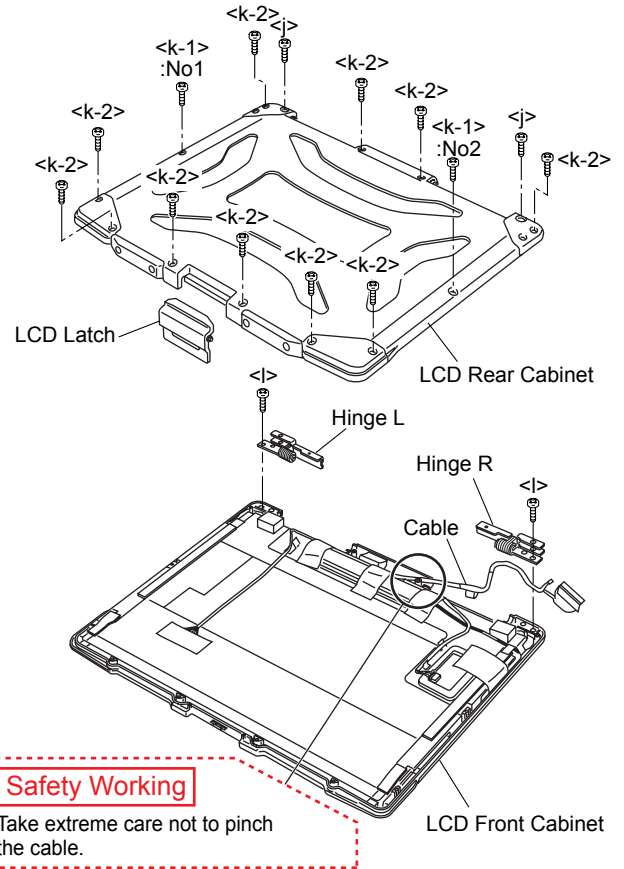
Tighten the Screws in the numbered order (No1, No2).

Screws <j>: DRSB4+10FKL

Screws <k-1>:DRSB26+8HKL

Screws <k-2>:DRSB26+8HKL

Screws <l>: DRHM0062ZA



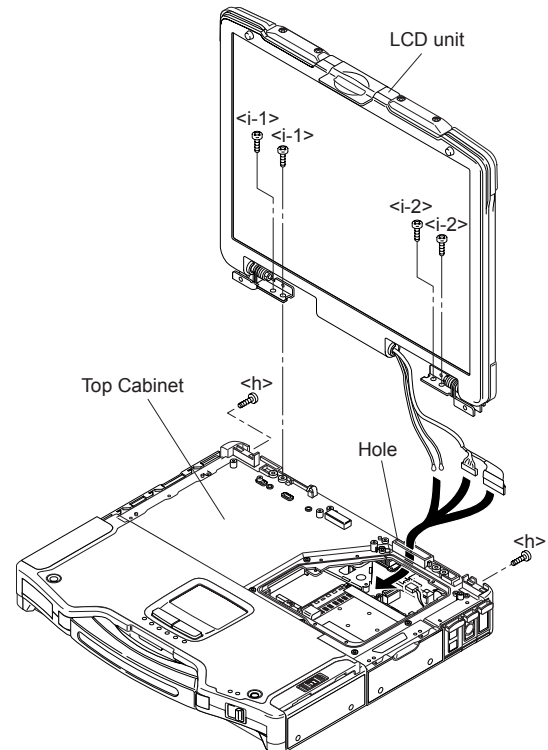
7.2.5. Setting the LCD unit

1. Pass the Cables into the hole of the hole of the Top Cabinet.
2. Fix the LCD Unit using the two Screws<i-1>.
3. Fix the LCD Unit using the two Screws<i-2>.
4. Fix the LCD Unit using the two Screws<h>.

Screws <h>: DXSB4+12FNLB

Screws <i-1>: DXYN4+J8FNL

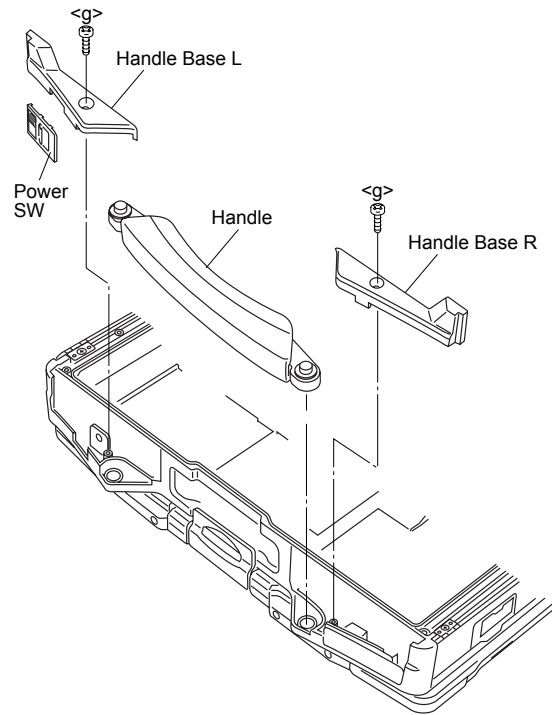
Screws <i-2>: DXYN4+J8FNL



7.2.6. Setting the Handle and Power SW

1. Set the Power SW.
2. Set the Handle.
3. Fix the Handle Base Land R using the two Screws<g>.

Screws <g>: DRSB4+8FKL



7.2.7. Setting the Palm Top Cover Sheet, Palm Top Cover, Touch Pad Adhesion Seat, Touch Pad, Touch Pad SW Knob, LED PCB and SW LED PCB

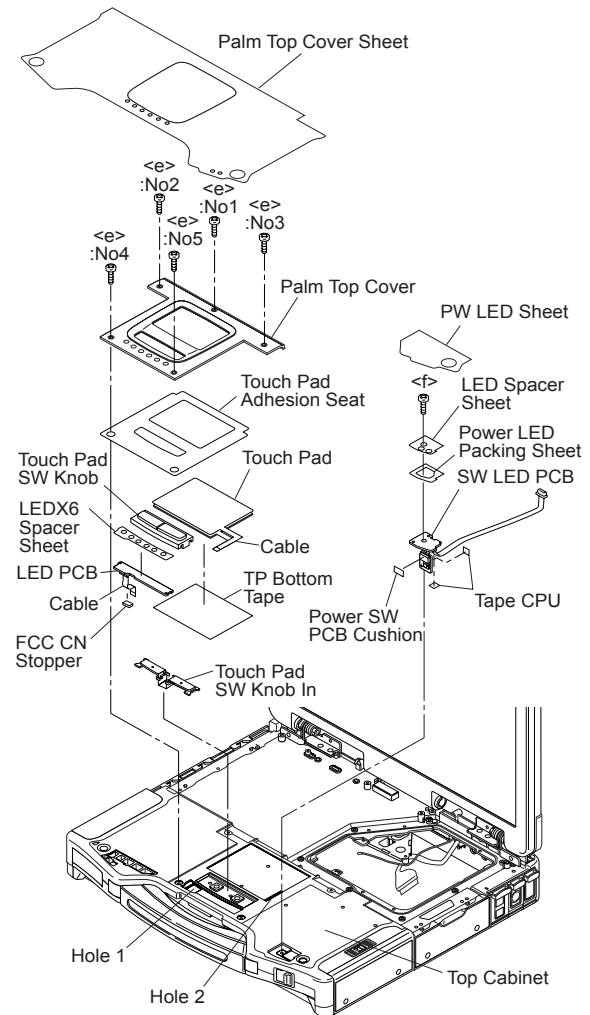
1. Set the SW LED PCB.
2. Attach the Power LED Packing Sheet to the LED Spacer Sheet.
3. Attach the LEDX6 Spacer Sheet on the SW LED PCB.
4. Fix the SW LED PCB using the Screw<f>.
5. Attach the PW LED Sheet.
6. Pass the Cable of LED PCB through the hole 1 on the Top Cabinet, then set the LED PCB.
7. Attach the LED Spacer Sheet on the LED PCB
8. Set the Touch Pad SW Knob In and Touch Pad SW Knob.
9. Attach the TP Bottom Tape to the Touch Pad.
10. Pass the Cables of the Touch Pad through the hole 2 on the Top Cabinet, set the Touch Pad.
11. Attach the Touch Pad Adhesion Seat.
12. Fix the Palm Top Cover using the five Screws<e>. No1 to No5
13. Attach the Palm Top Cover Sheet.

Note:

Tighten the Screws in the numbered order (No1 to No5).

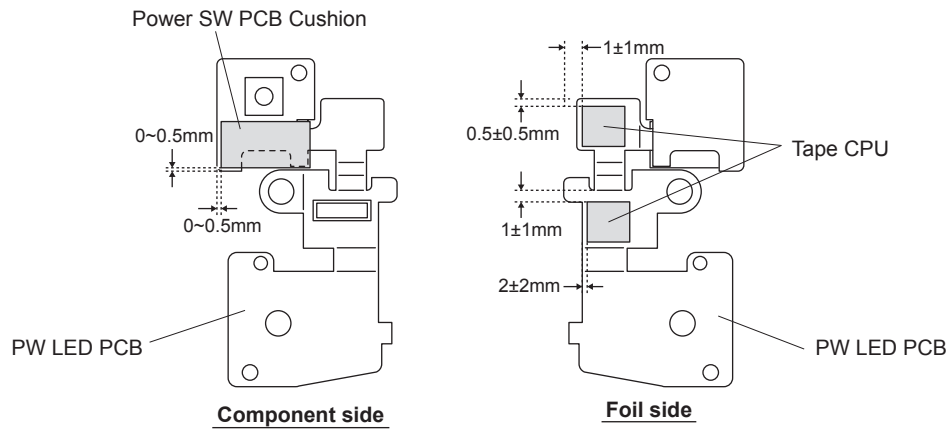
Screws <e>: DRHM0002ZA

Screw <f>: DRHM0002ZA

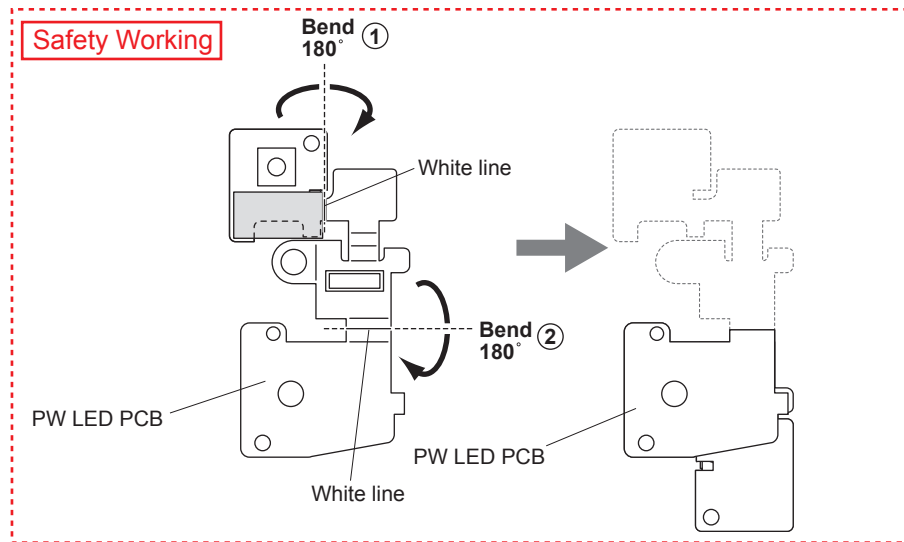


■ Arranging the SW LED PCB

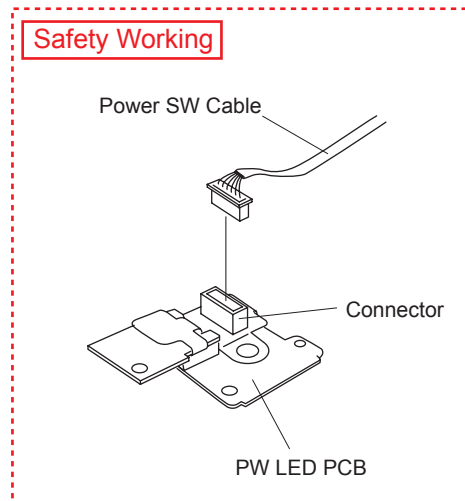
1. Attach the Power SW PCB Cushion and the two Tape CPU to the PW LED PCB.



2. Bend the PW LED PCB as shown.



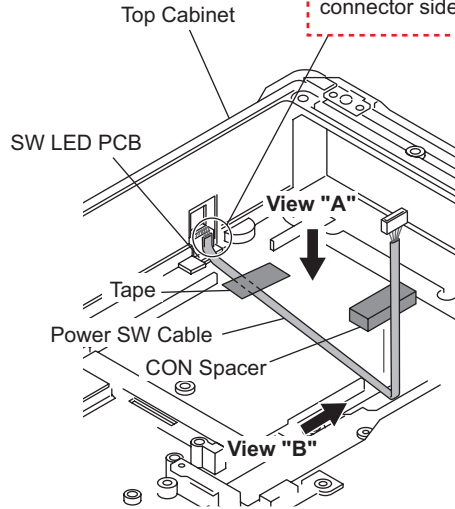
3. Connect the Power SW Cable to the Connector on the PW LED PCB.



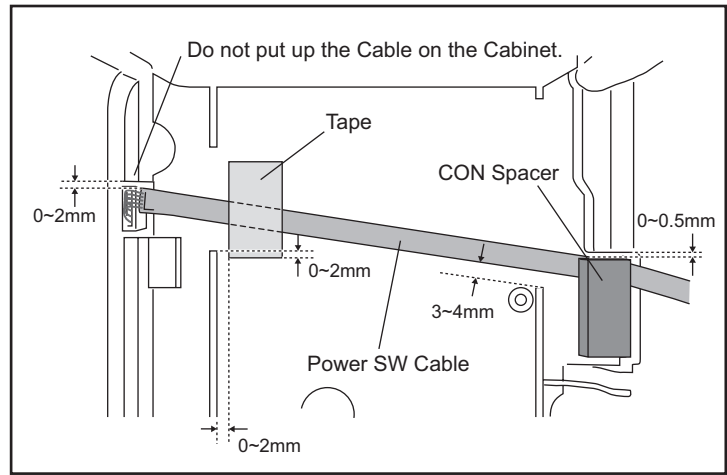
■ Arranging the Power SW Cable

Safety Working

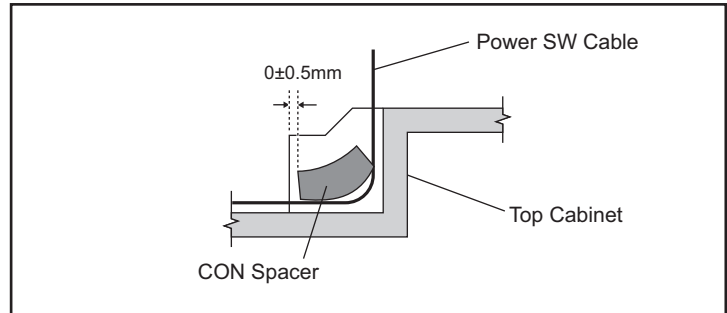
Set the Cable along a connector side, not to prop.



View "A"



View "B"



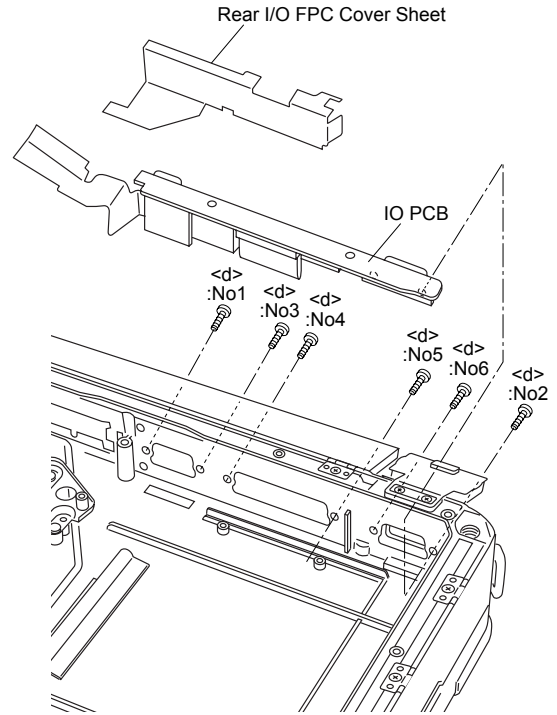
7.2.8. Setting the IO PCB

1. Fix the IO PCB using the six Screws<d>. No1 to No6

Note:

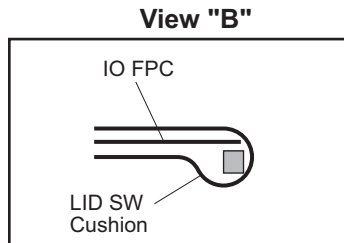
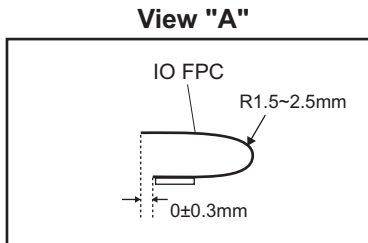
Tighten the Screws in the numbered order (No1 to No6).

Screws <d>: DFHE5058ZB



■ Arrange the IO FPC

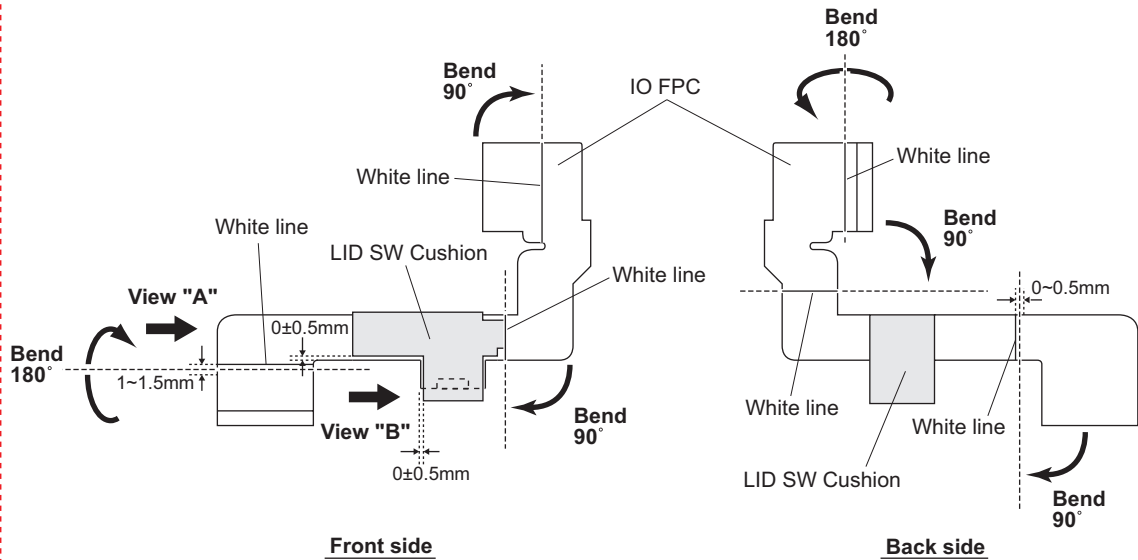
Safety Working



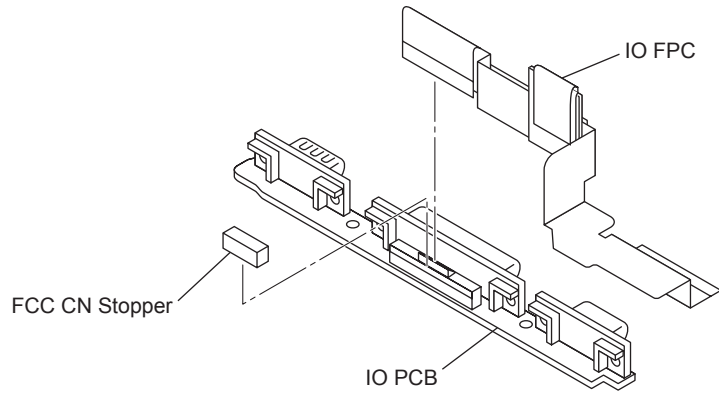
Attention when bending the FPC

1. Inside of bending should be from R0.5mm to R1mm.
2. Do not mistake the direction of bending.
3. For bending point, it should be within 0.5mm from the white line unless there is a regulation.

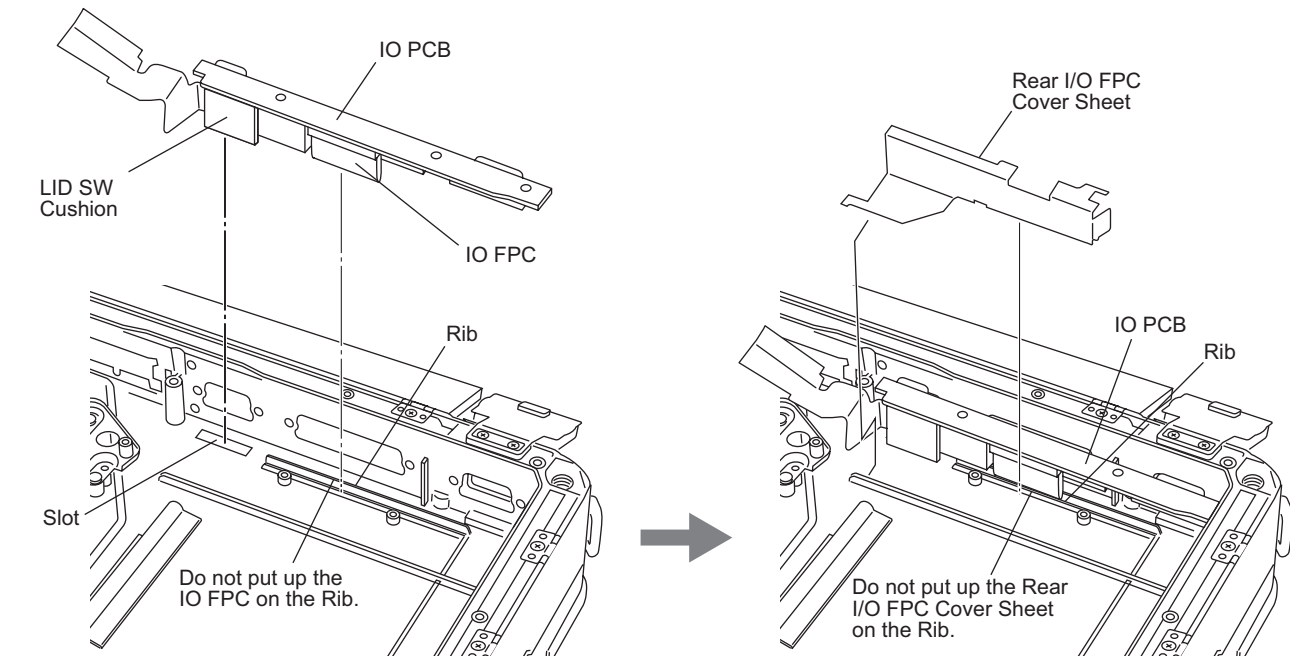
<No good>



■ Setting the IO FPC



■ Setting the IO PCB and attaching the Rear I/O FPC Cover Sheet



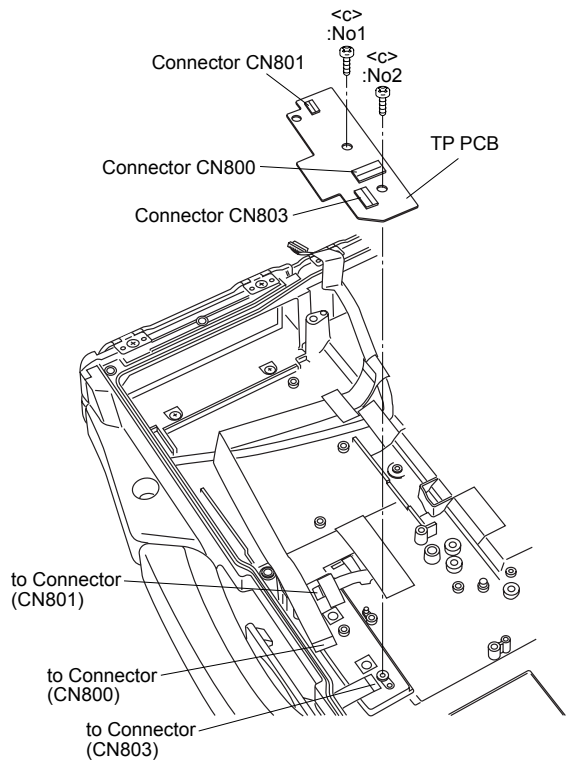
7.2.9. Setting the TP PCB

1. Fix the TP PCB using the two Screws<c>. No1, No2
2. Connect the three Cables to the three Connectors on the TP PCB (CN800, CN801, CN803).

Note:

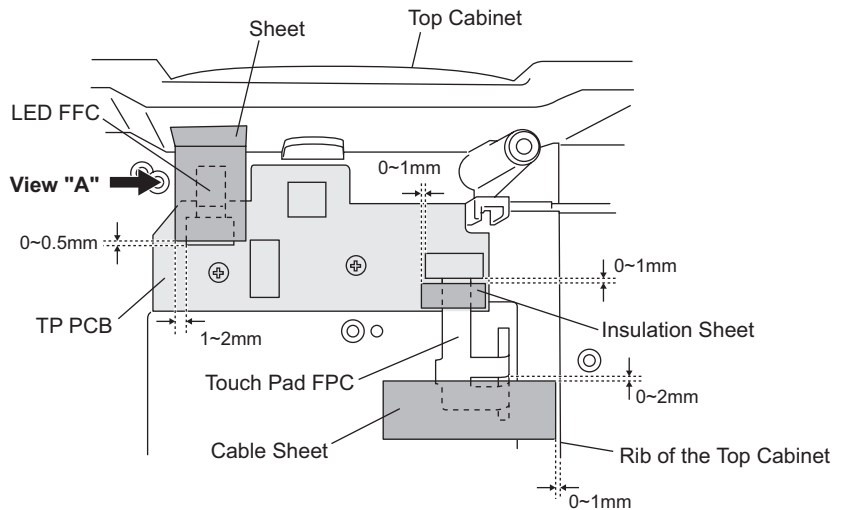
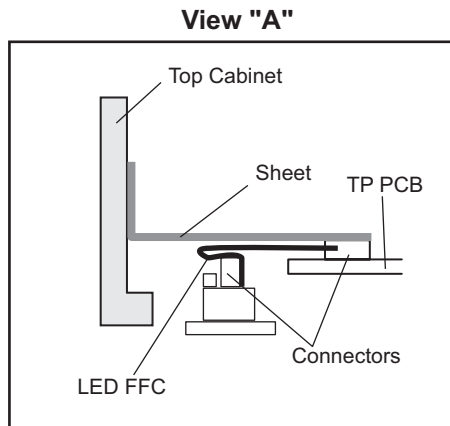
Tighten the Screws in the numbered order (No1, No2).

Screws <c>: DRHM0002ZA



■ **Attaching the Cable Sheet, Insulation Sheet and the Sheet**

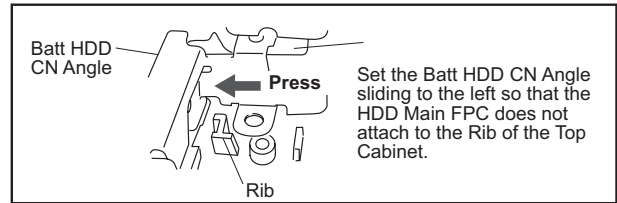
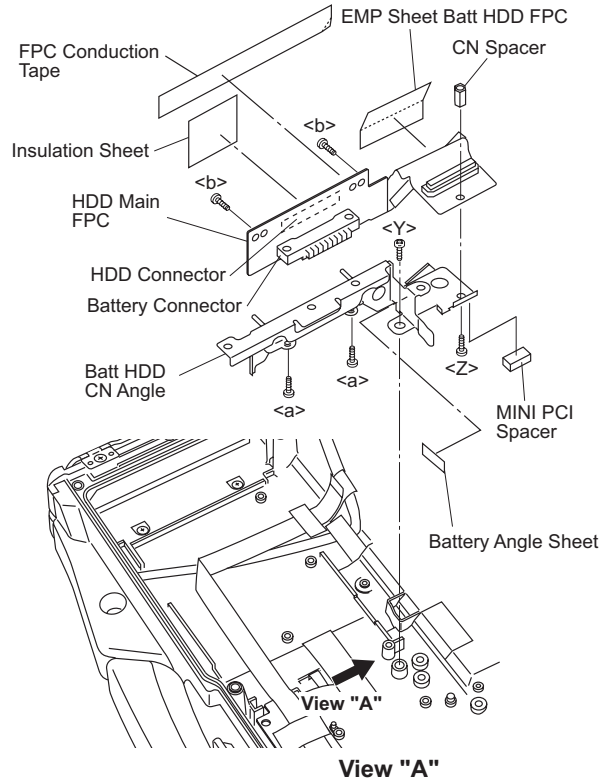
1. Attach the Sheet and Insulation Sheet on the TP PCB.
2. Attach the Cable Sheet on the Touch Pad FPC.



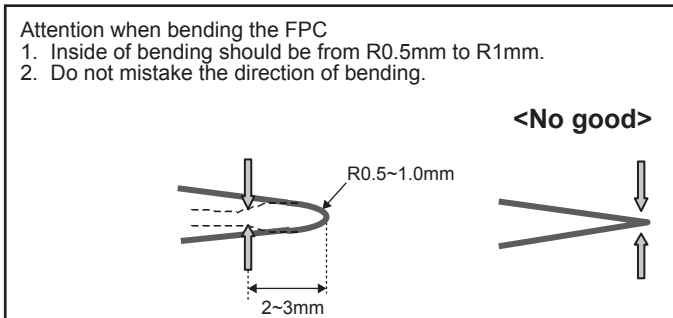
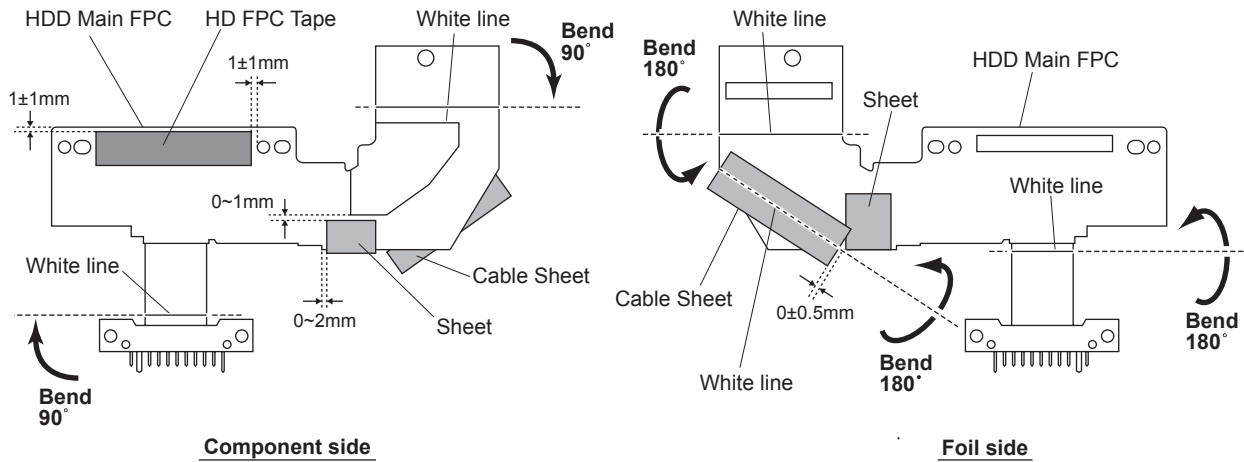
7.2.10. Setting the HDD Main FPC

1. Fix the HDD Main FPC to the Batt HDD CN Angle using the two Screws<a> and the two Screws
2. Fix the CN Spacer to the Batt HDD CN Angle using the Screw<Z>.
3. Fix the Batt HDD CN Angle using the Screw<Y>.

Screw <Y>: DFHE5092ZA
 Screw <Z>: DFHE5025ZA
 Screws <a>: DRHM5104ZA
 Screws : DFHE5025XA



■ Arranging the HDD Main FPC



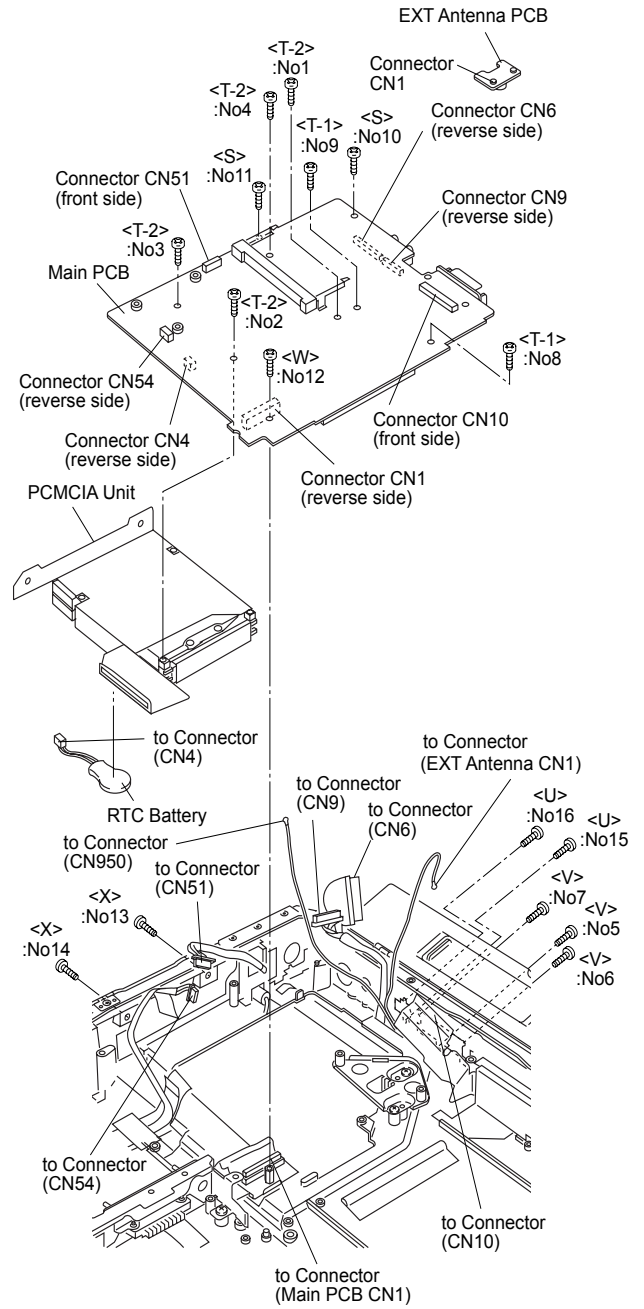
7.2.11. Setting the Main PCB, EXT Antenna PCB, PCMCIA Unit and RTC Battery

1. Connect the Cable the Connector (CN4) on the Main PCB, and Attach the RTC Battery.
2. Fix the PCMCIA to the Main PCB using the Screws<T-2>. No1 to No4
3. Connect the six Cables to the six Connectors.
(Main PCB: CN6, CN9, CN10, CN51, CN54)
(EXT Antenna PCB: CN1)
4. Fix the Main PCB using the three Screws<V>. No5 to No7
5. Fix the Main PCB using the two Screws<T-1>. No8, No9
6. Fix the Main PCB using the two Screws<S>. No10, No11
7. Fix the Main PCB using the Screw<W>. No12
8. Fix the Main PCB using the two Screw<X>. No13, No14
9. Fix the EXT Antenna PCB using the two Screws<U>. No15, No16

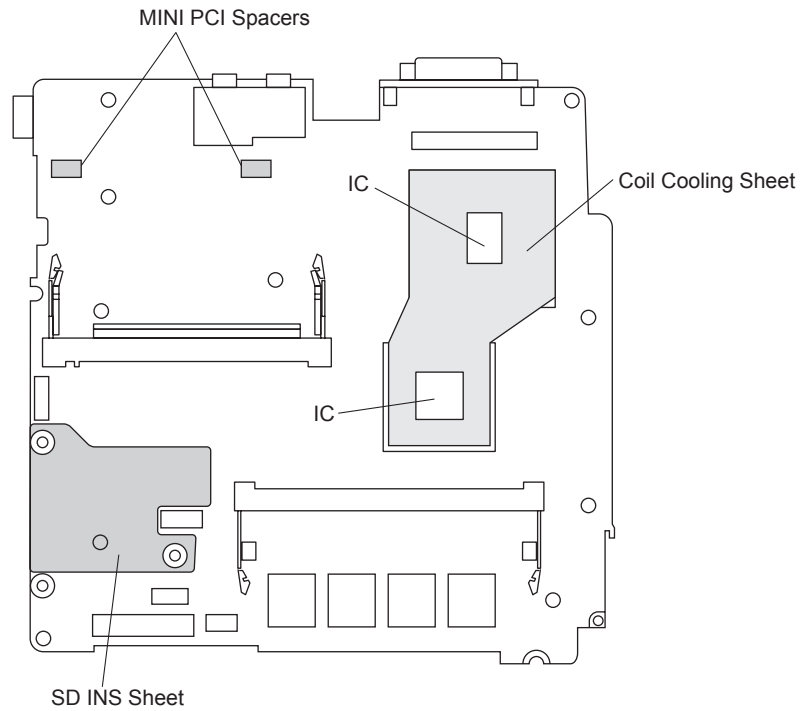
Note:

Tighten the Screws in the numbered order (No1 to No16).

Screws <S>: DFHM5054XA
 Screws <T-1>:DFHE5025XA
 Screws <T-2>:DFHE5025XA
 Screws <U>: DRQT2+G6FKL
 Screws <V>: DRHM5104ZA
 Screw <W>: DFHE5025ZA
 Screw <X>: DRHM5117ZA



■ Attaching the SD INS Sheet, Coil Cooling Sheet and MINI PCI Spacers



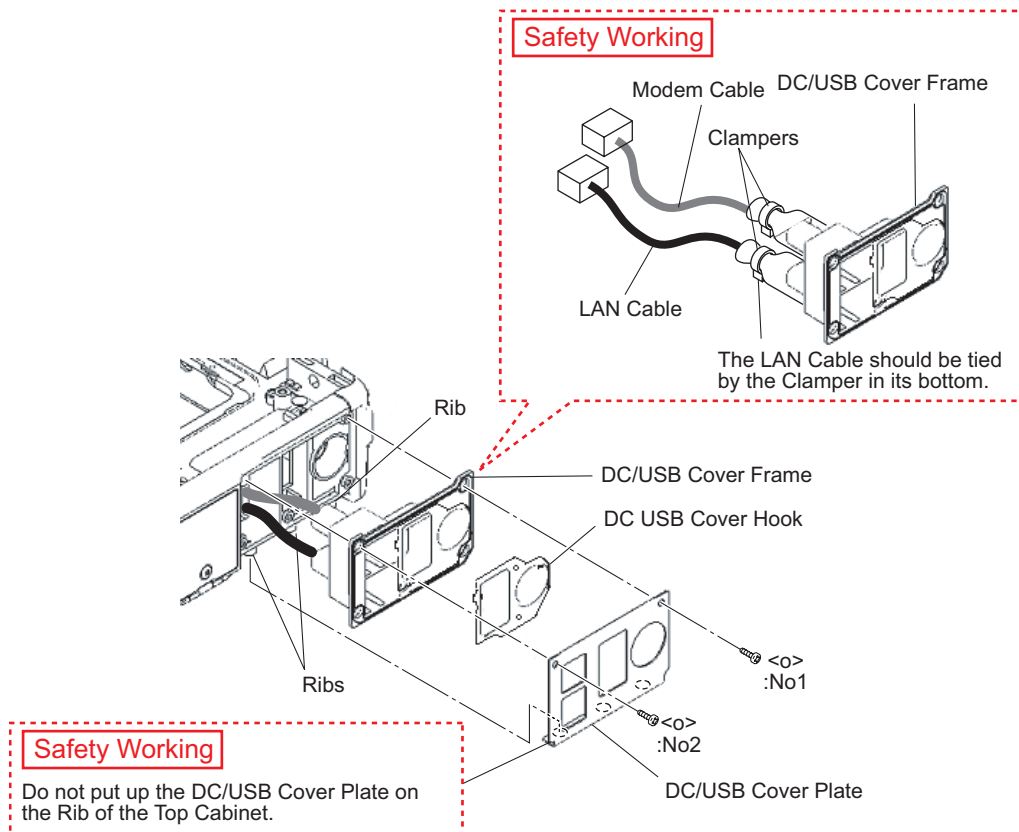
■ Setting the LAN Cable and Modem Cable

1. Set the LAN Cable and the Modem Cable to the DC/USB Cover Frame.
2. Set the Clampers to the LAN Cable and the Modem Cable.
3. Fix the DC/USB Cover Plate, the DC USB Cover Hook and the DC/USB Cover Frame using the two Screws<o>. No1, No2

Note:

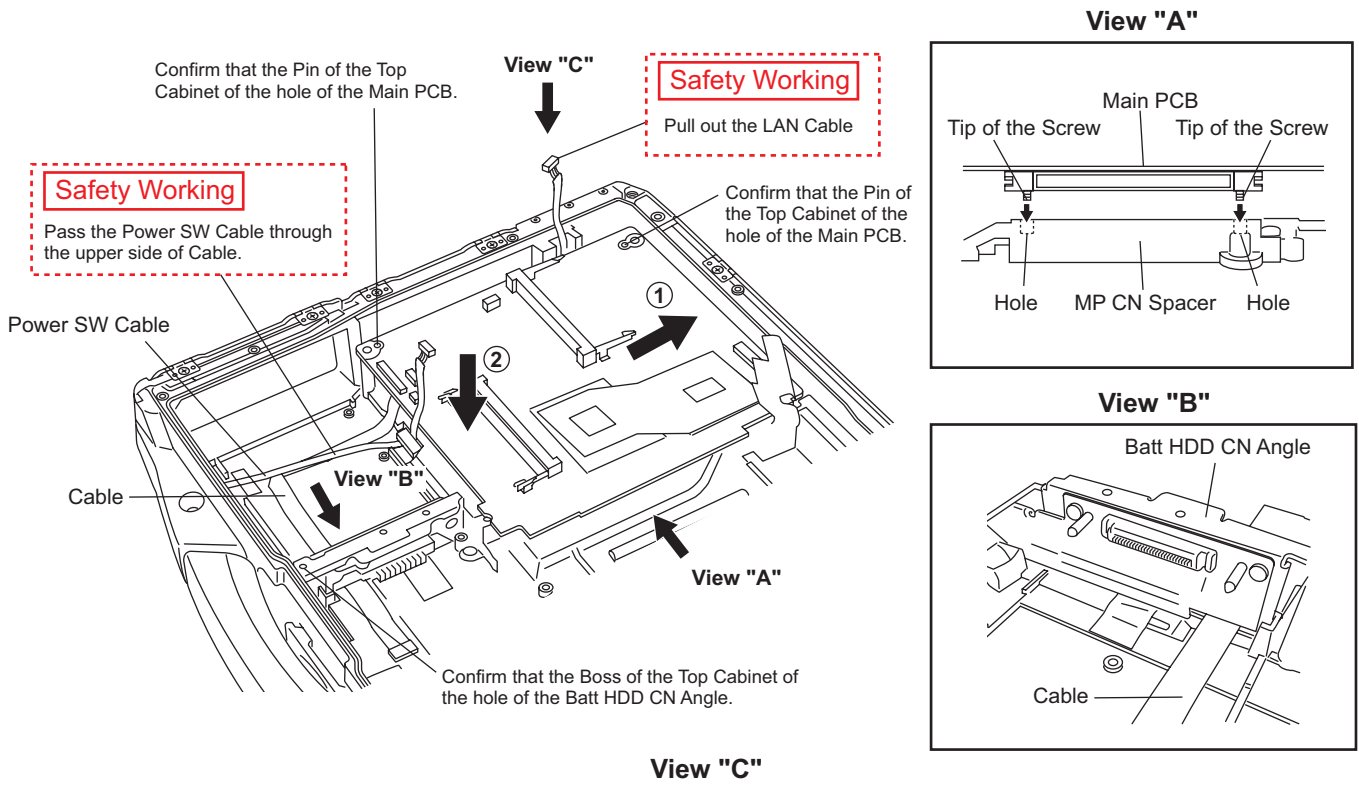
Tighten the Screws in the numbered order (No1, No2).

Screw <o>: DRHM5025YA



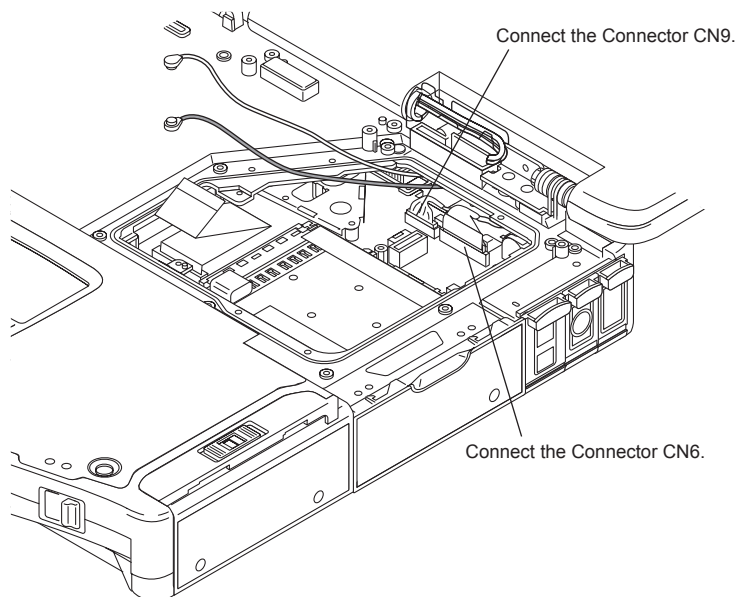
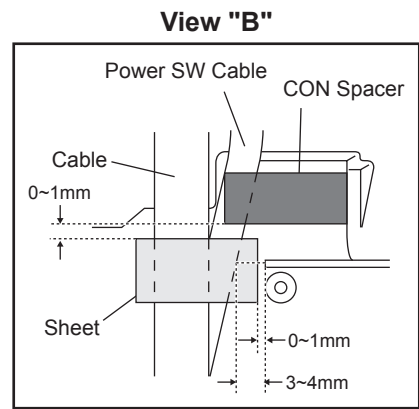
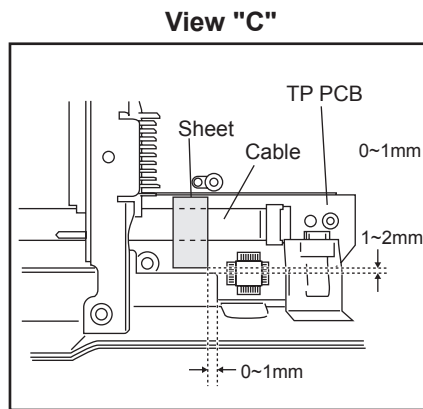
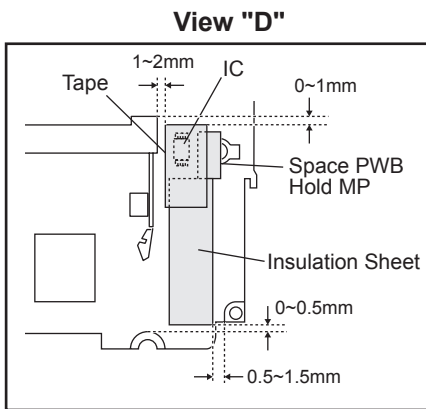
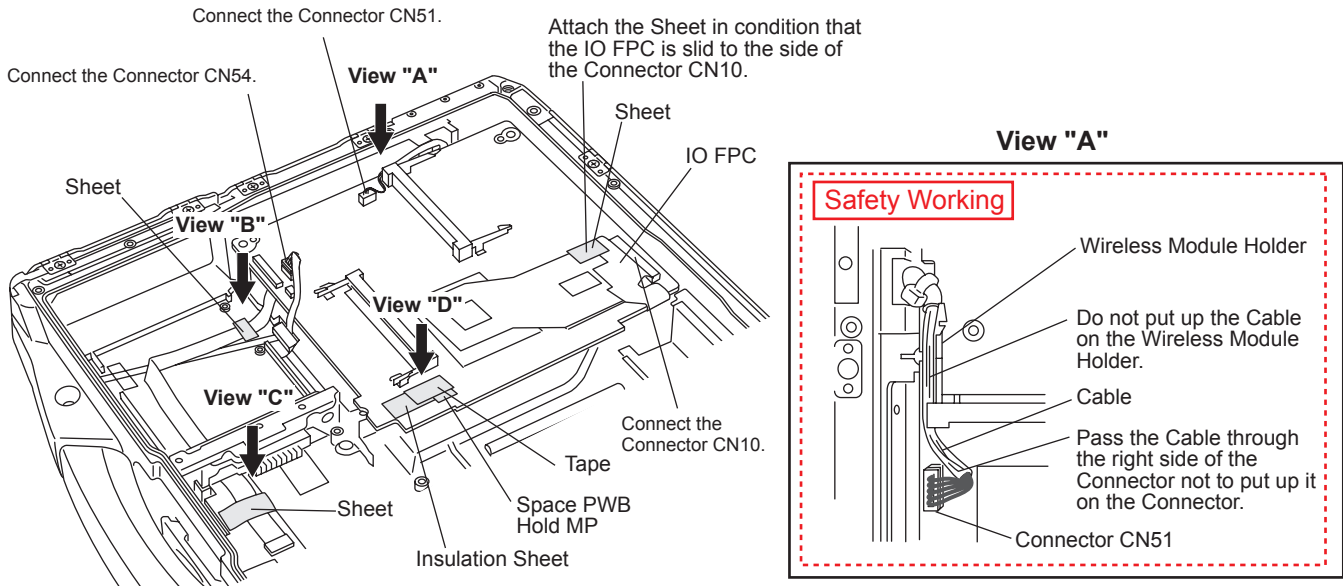
■ **Setting the Main PCB**

1. Set the Main PCB to the Top Cabinet in order.



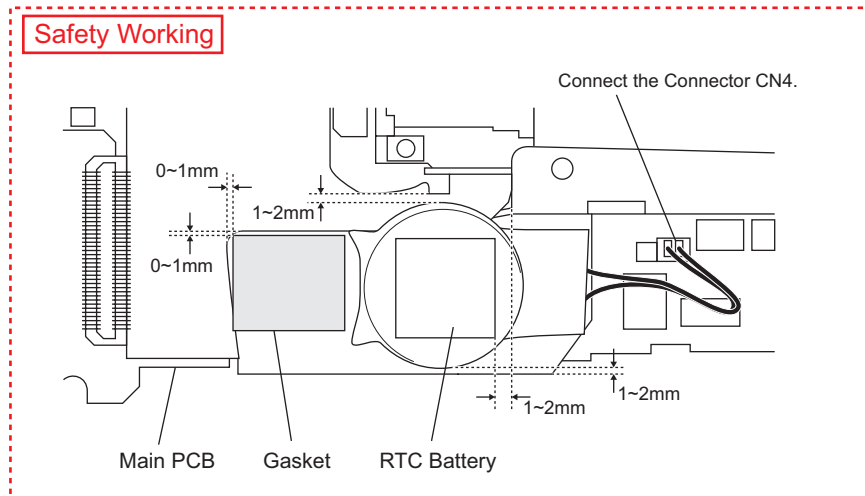
■ Arranging the Cables and attaching the Sheets, the Tape, the Space PWB Hold MP and the Insulation Sheet

1. Connect the five Cables to the five Connectors.
(Main PCB: CN6, CN9, CN10, CN51, CN54)
2. Attach the three Sheets, the Tape, the Space PWB Hold MP and the Insulation Sheet.



■ **Setting the RTC Battery**

1. Connect the Cable to the Connector CN4 on the Main PCB.
2. Attach the RTC Battery to the Main PCB.



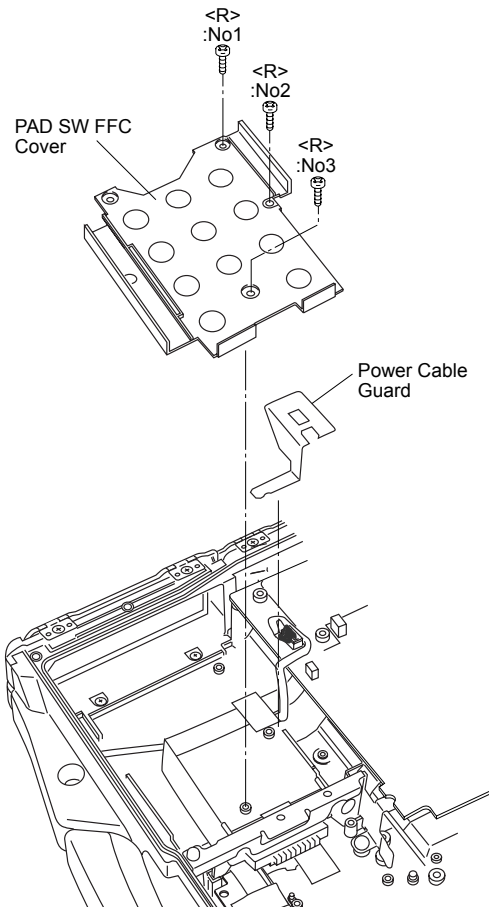
7.2.12. Setting the PAD SW FFC Cover

1. Set the Power Cable Guard.
2. Fix the PAD SW FFC Cover using the three Screws<R>. No1 to No3

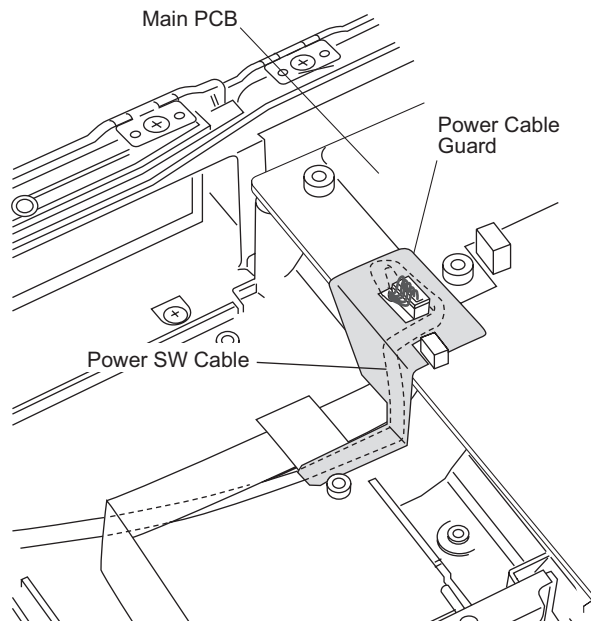
Note:

Tighten the Screws in the numbered order (No1 to No3).

Screws <R>: DFHE5054XA



■ Arranging the Power SW Cable



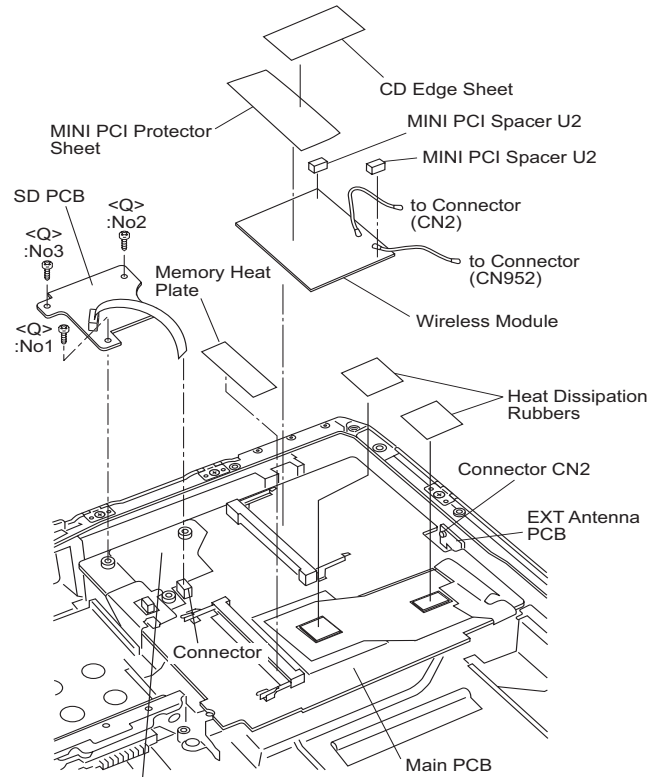
7.2.13. Setting the Wireless Module and SD PCB

1. Attach the Memory Heat Plate to the Main PCB.
2. Set the Wireless Module to the Main PCB.
3. Attach the MINI PCI Protector Sheet to the Wireless Module.
4. Connect the Cable to the Connector (CN2) on the EXT Antenna PCB.
5. Attach the CD Edge Sheet and the two MINI PCI Spacers U2.
6. Fix the SD PCB using the three Screws<Q>. No1 to No3.
7. Connect the Cable to the Connector on the Main PCB.
8. Attach the two Heat Dissipation Rubbers to the Main PCB.

Note:

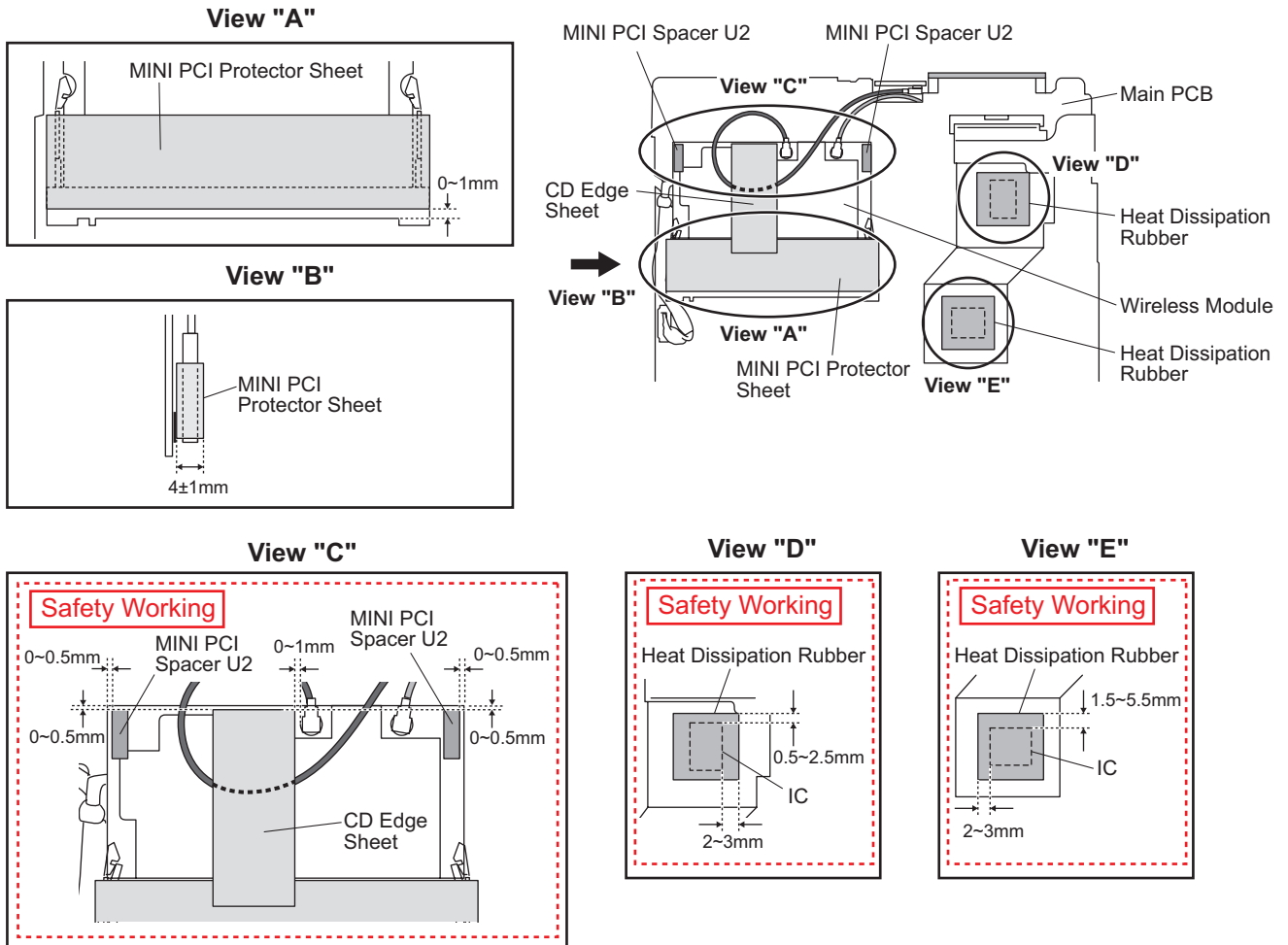
Tighten the Screws in the numbered order (No1 to No3).

Screws <Q>: DFHE5025XA

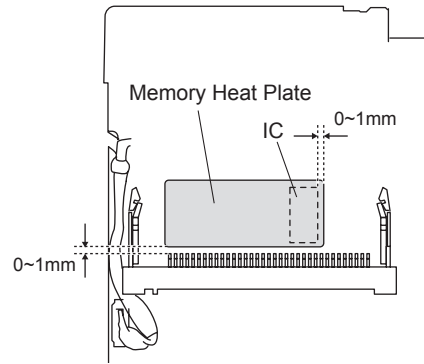


Safety Working
Confirm that the Insulation Sheet is attached between the SD PCB and the Main PCB.

■ Attach the MINI PCI Protector Sheet, the CD Edge Sheet, the MINI PCI Spacers U2 and the Heat Dissipation Rubbers



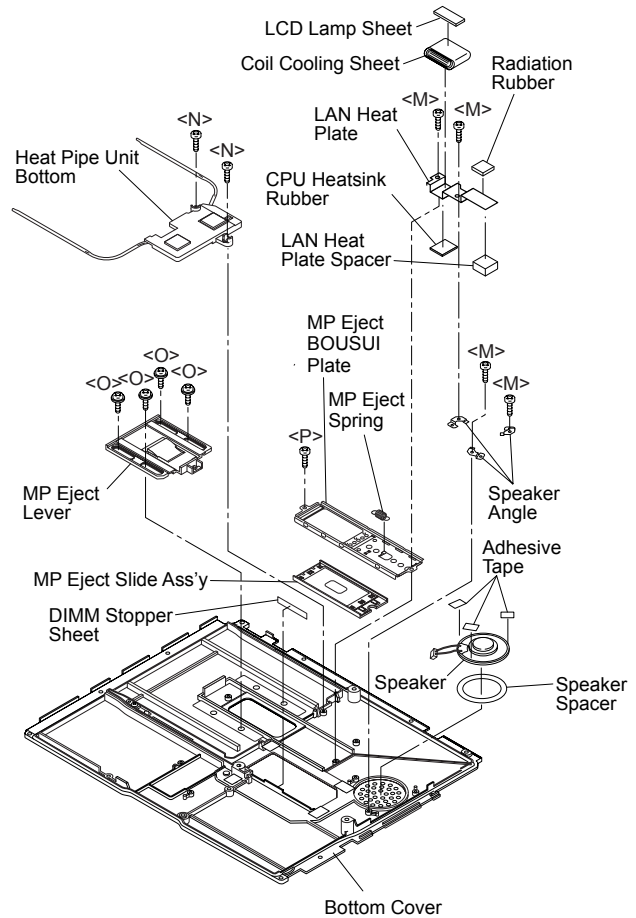
■ Attaching the Memory Heat Plate



7.2.14. Setting the Speaker

1. Set the MP Eject Slide Ass'y to the Bottom Cover.
2. Fix the MP Eject BOUSUI Plate using the Screw<P>.
3. Fix the MP Eject Lever using the four Screws<O>.
4. Fix the Heat Pipe Unit Bottom using the two Screws<N>.
5. Fix the three Speaker Angles to the Speaker using the three Adhesive Tapes.
6. Attach the Speaker Spacer to the Speaker.
7. Attach the CPU Heatsink Rubber and the LAN Heat Plate Spacer to the LAN Heat Plate.
8. Fix the Speaker and the LAN Heat Plate using the four Screws<M>.
9. Attach the Radiation Rubber, Coil Cooling Sheet and the LCD Lamp Sheet to the LAN Heat Plate.

Screws <M>: DXQT26+D4NLT
 Screws <N>: DXYN+J6FNL
 Screws <O>: DXYN26+F5NLT
 Screw <P>: DXQT26+D4NLT



7.2.15. Setting the DIMM Cover and Bottom Cover

1. Set the Bottom Cover.
2. Connect the Cable to the Connector (CN12) on the Main PCB.
3. Fix the Bottom Cover using the eight Screws<L>. No1 to No8
4. Fix the Bottom Cover using the eight Screws<K>. No9 to No16
5. Attach the DIMM Radiation Sheet.
6. Fix the DIMM Cover using the four Screws<J>. No17 to No20

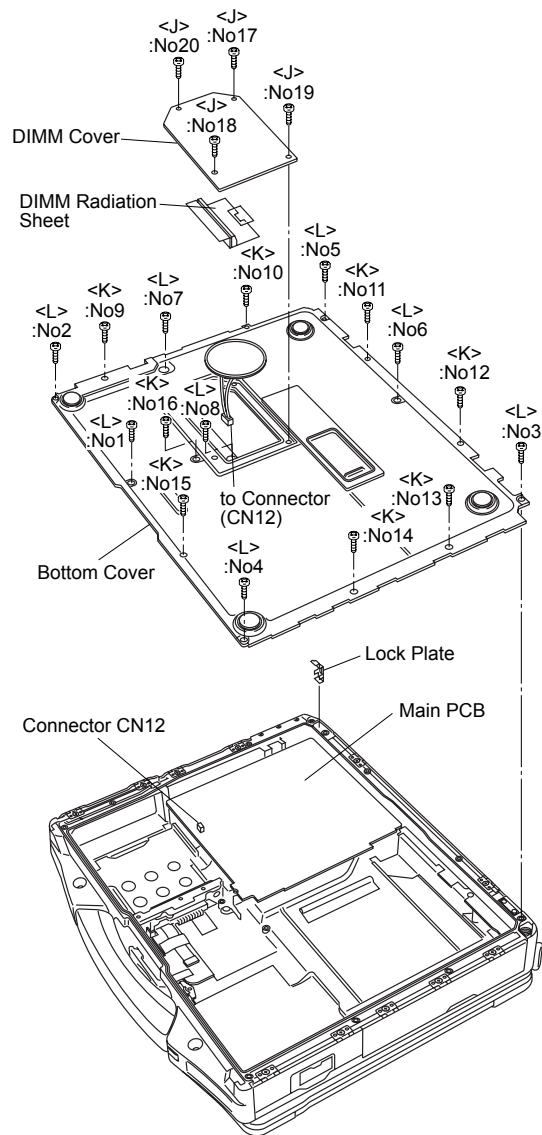
Note:

Tighten the Screws in the numbered order (No1 to No20).

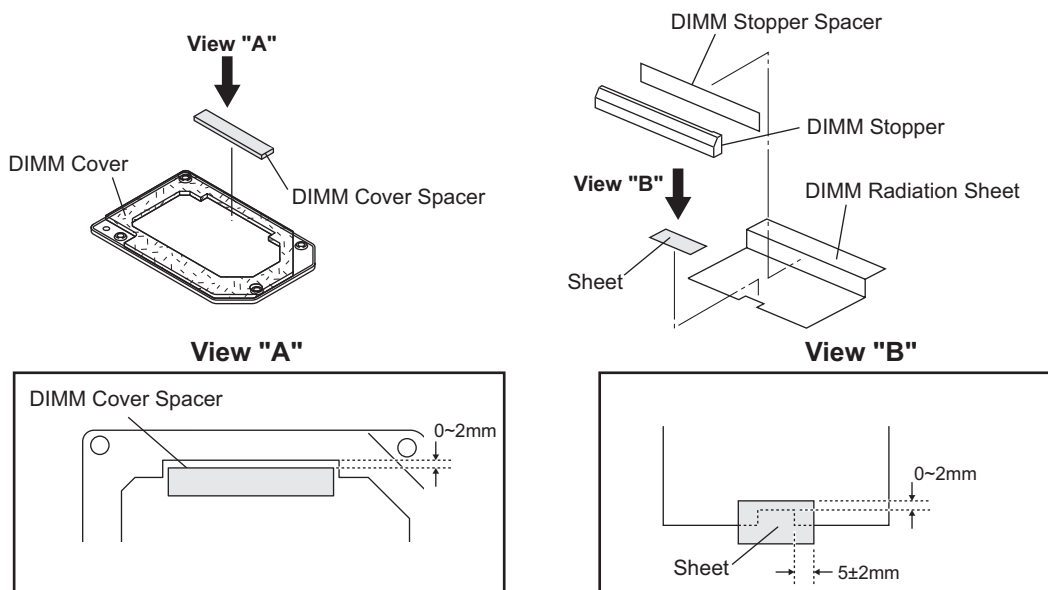
Screws <J>: DRQT26+D4FZLT

Screws <K>: DRQT26+D4FZLT

Screws <L>: DRSB3+8FKL



■ Arranging the DIMM Cover and the DIMM Radiation Sheet



7.2.16. Setting the KBD PCB, MDC Modem and LCD Cable/MIC Frame

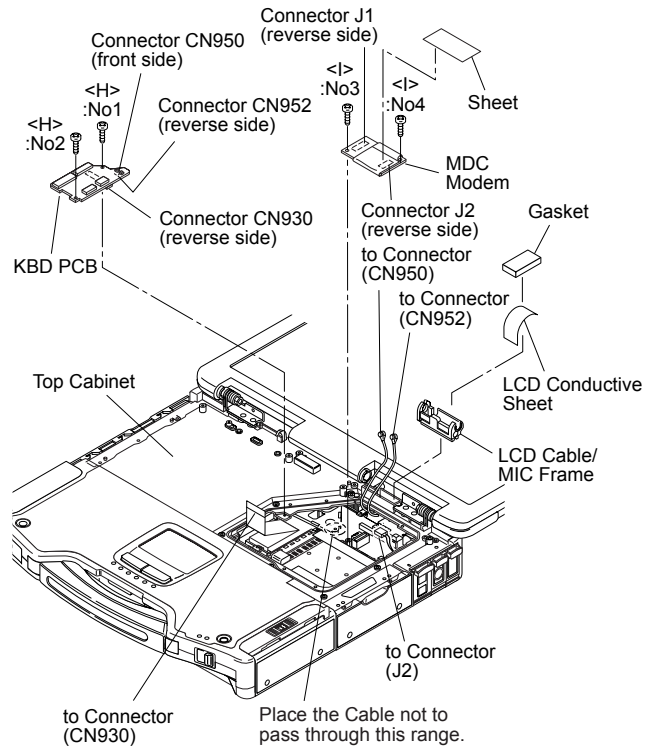
1. Connect the three Cables to the three Connectors (CN930, CN950, CN952) on the KBD PCB.
2. Fix the KBD PCB using the two Screws<H>. No1, No2
3. Connect the Cable to the Connector (J2) on the MDC Modem.
4. Attach the Sheet to the MDC Modem.
5. Fix the MDC Modem using the two Screws<I>. No3, No4
6. Attach the LCD Conductive Sheet and the Gasket to the LCD Cable/MIC Frame.
7. Set the LCD Cable/MIC Frame to the Top Cabinet.

Note:

Tighten the Screws in the numbered order (No1 to No4).

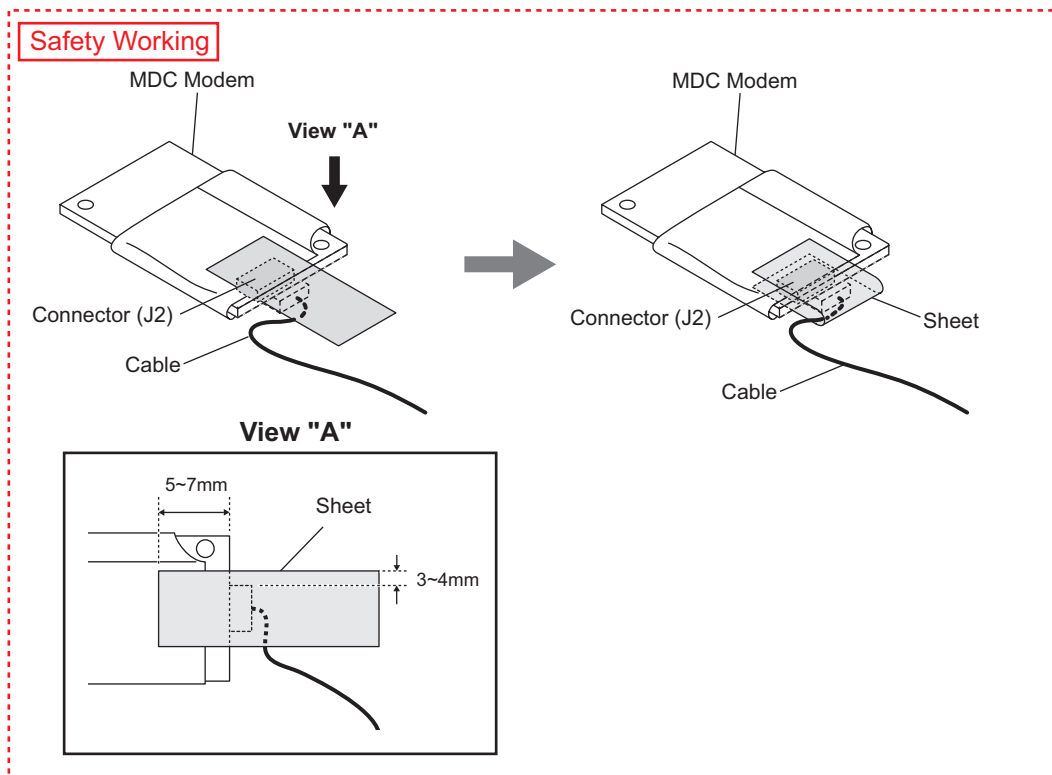
Screws <H>: DFHE5025XA

Screws <I>: DFHE5025XA



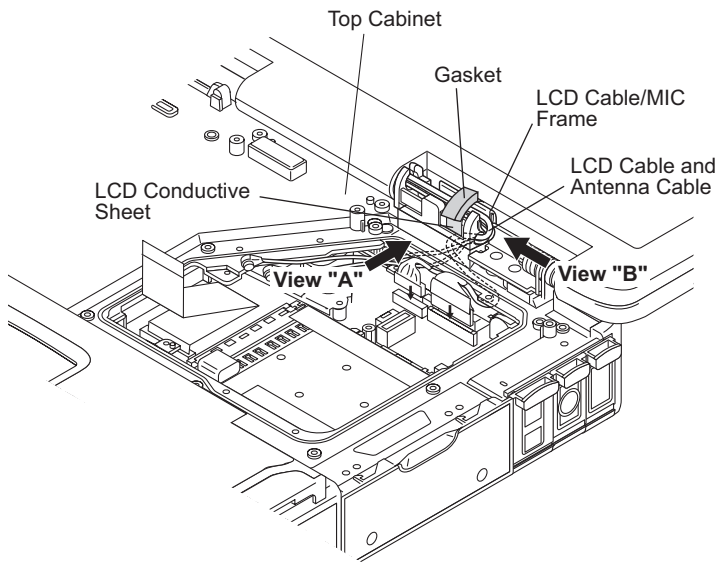
■ Attaching the Sheet to the MDC Modem

1. Connect the Cable to the Connector (J2) on the MDC Modem.
2. Attach the Sheet to the MDC Modem.

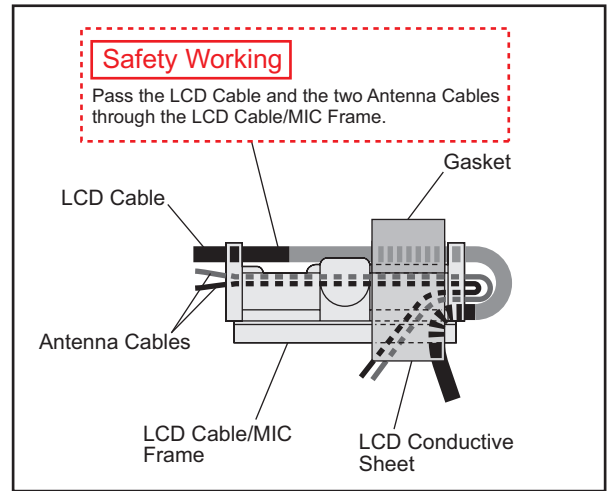


■ **Arranging the Cables and setting the LCD Cable/MIC Frame**

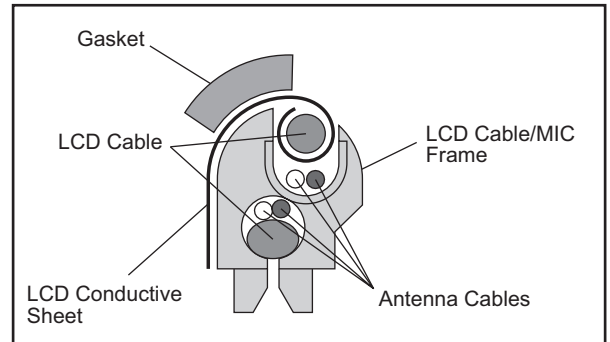
1. Pass the LCD Cable and Antenna Cables through the LCD Cable/MIC Frame.
2. Attach the LCD Conductive Sheet and the Gasket to the LCD Cable/MIC Frame.
3. Set the LCD Cable/MIC Frame to the Top Cabinet.



View "A"



View "B"



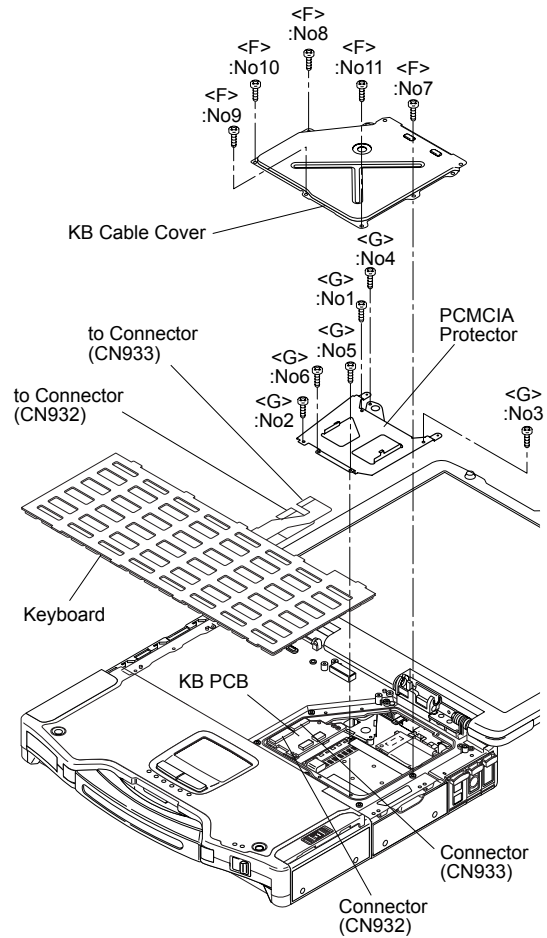
7.2.17. Setting the KB Cable Cover, Keyboard and PCMCIA Protector

1. Fix the PCMCIA Protector using the five Screws<G>. No1 to No6
2. Connect the two Cables of the Keyboard to the two Connectors (CN932, CN933) on the KBD PCB.
3. Set the Keyboard.
4. Fix the KB Cable Cover using the five Screws<F>. No7 to No11

Note:

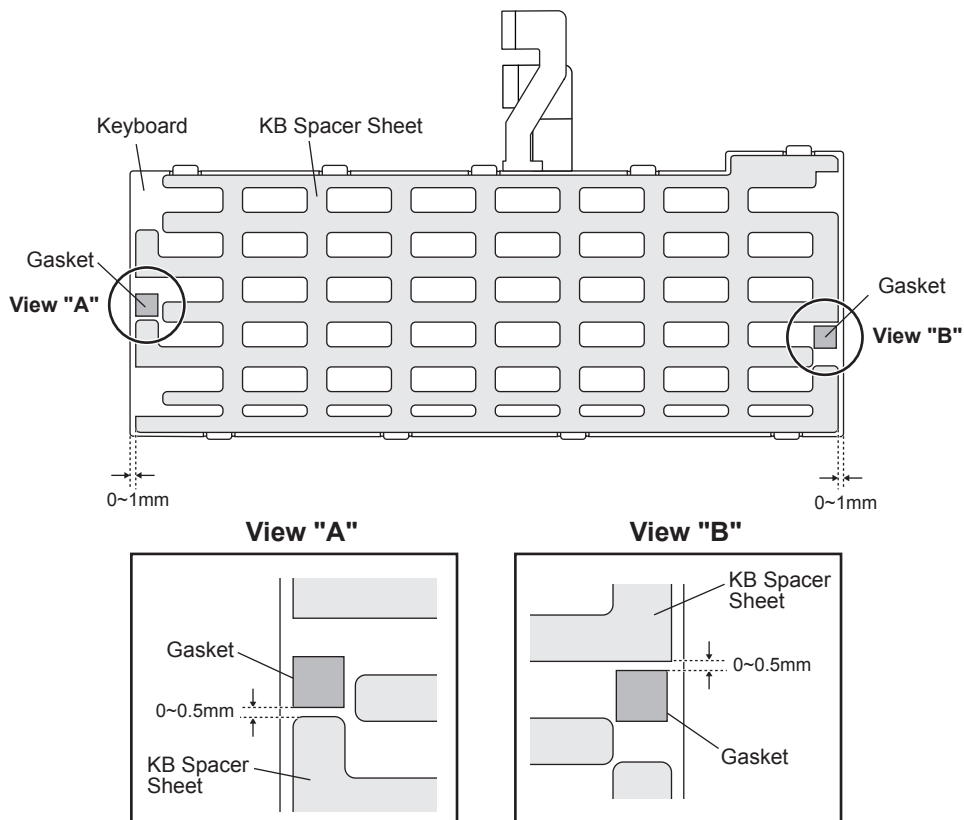
Tighten the Screws in the numbered order (No1 to No11).

Screws <F>: DRHM0002ZA
Screws <G>: DRQT2+I35FKL



■ Arranging the Keyboard

1. Attach the KB Spacer Sheet and the two Gaskets to the Keyboard.



7.2.18. Setting the KB Cover, Hinge Cover L, Hinge Cover R and Keyboard

1. Insert the front hooks of the Keyboard to the Top Cabinet in order, and set the Keyboard.
2. Fix the Hinge Cover L and R using the four Screws<C>. No1 to No4
3. Fix the Hinge Cover L and R using the four Screws<D>. No5 to No8
4. Fix the KB Cover using the four Screws. No9 to No12

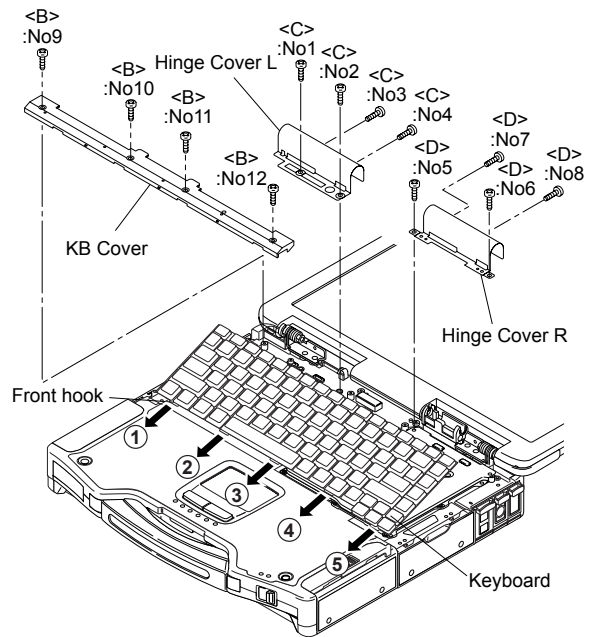
Note:

Tighten the Screws in the numbered order (No1 to No12).

Screws : DRQT26+D4FZL

Screws <C>: DFHE5054XA

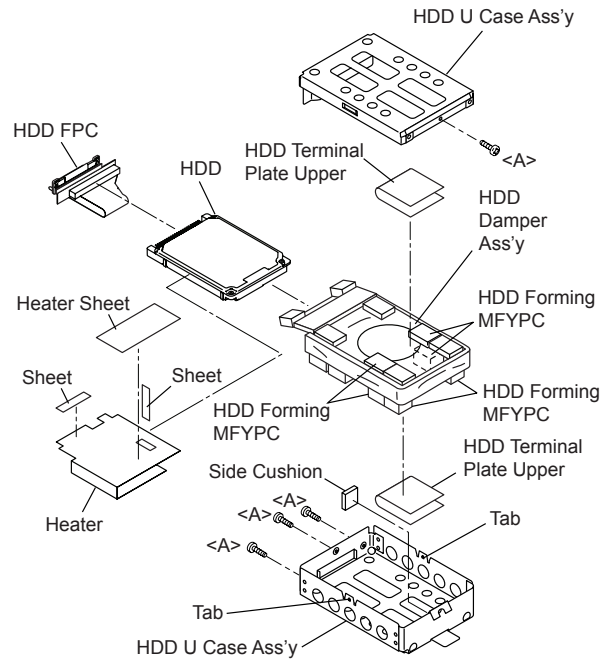
Screws <D>: DFHE5054XA



7.2.19. Setting the HDD

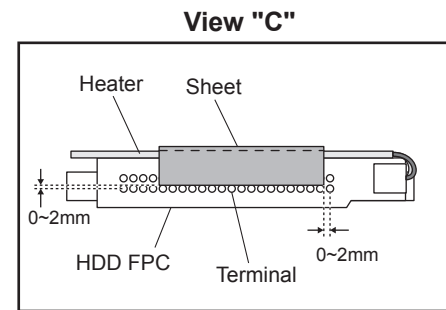
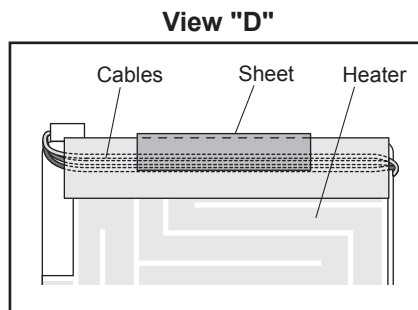
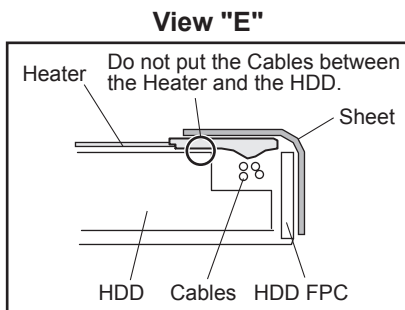
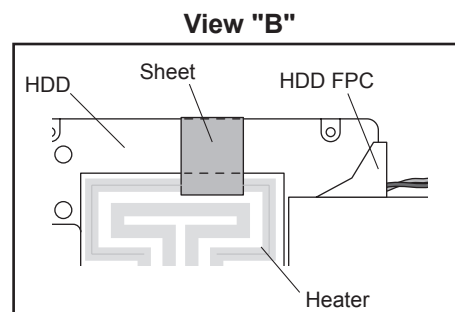
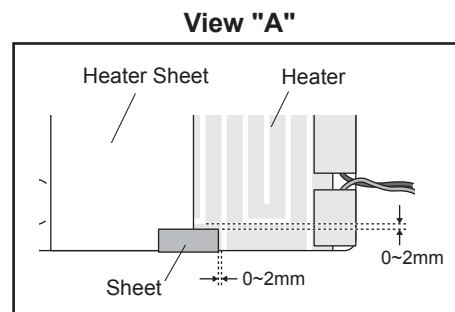
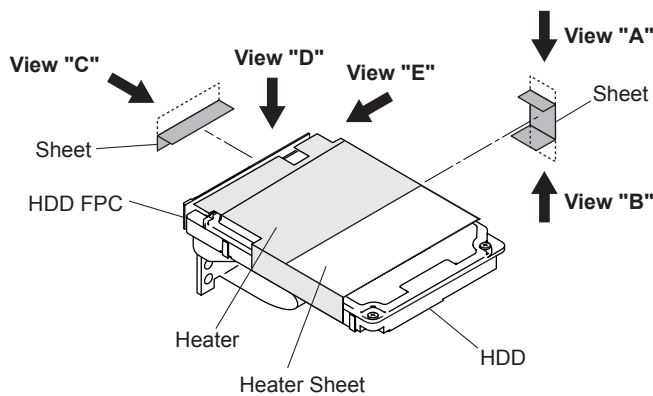
1. Set the HDD FPC to HDD.
2. Attach the Heater to HDD.
3. Attach the Heater Sheet to the Heater.
4. Attach the two Sheets to HDD.
5. Attach the six HDD Forming MFYPC and the two HDD Terminal Plate Upper to the HDD Damper Ass'y
6. Attach the six HDD Forming MFYPC and the two HDD Terminal Plate Upper to the HDD Damper Ass'y.
7. Set the HDD Damper Ass'y to HDD.
8. Attach the Side Cushion to the HDD L Case Ass'y.
9. Set the HDD U Case Ass'y and the HDD L Case Ass'y, and set the two Tabs of the HDD L Case Ass'y.
10. Fix the HDD U Case Ass'y and the HDD L Case Ass'y using the four Screws<A>.

Screws <A>: DFHE5025XA



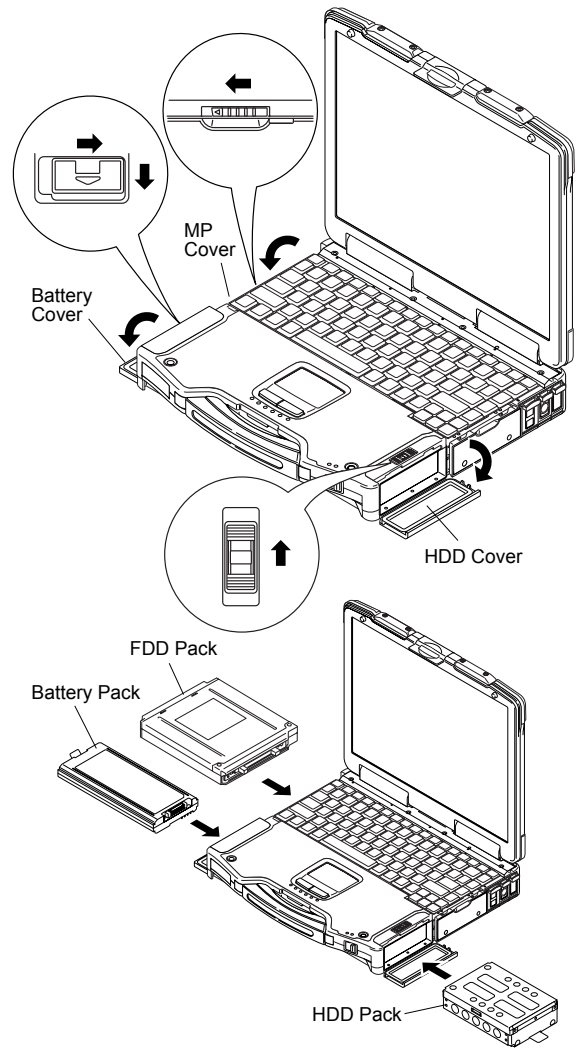
■ Attaching the Sheet

Safety Working

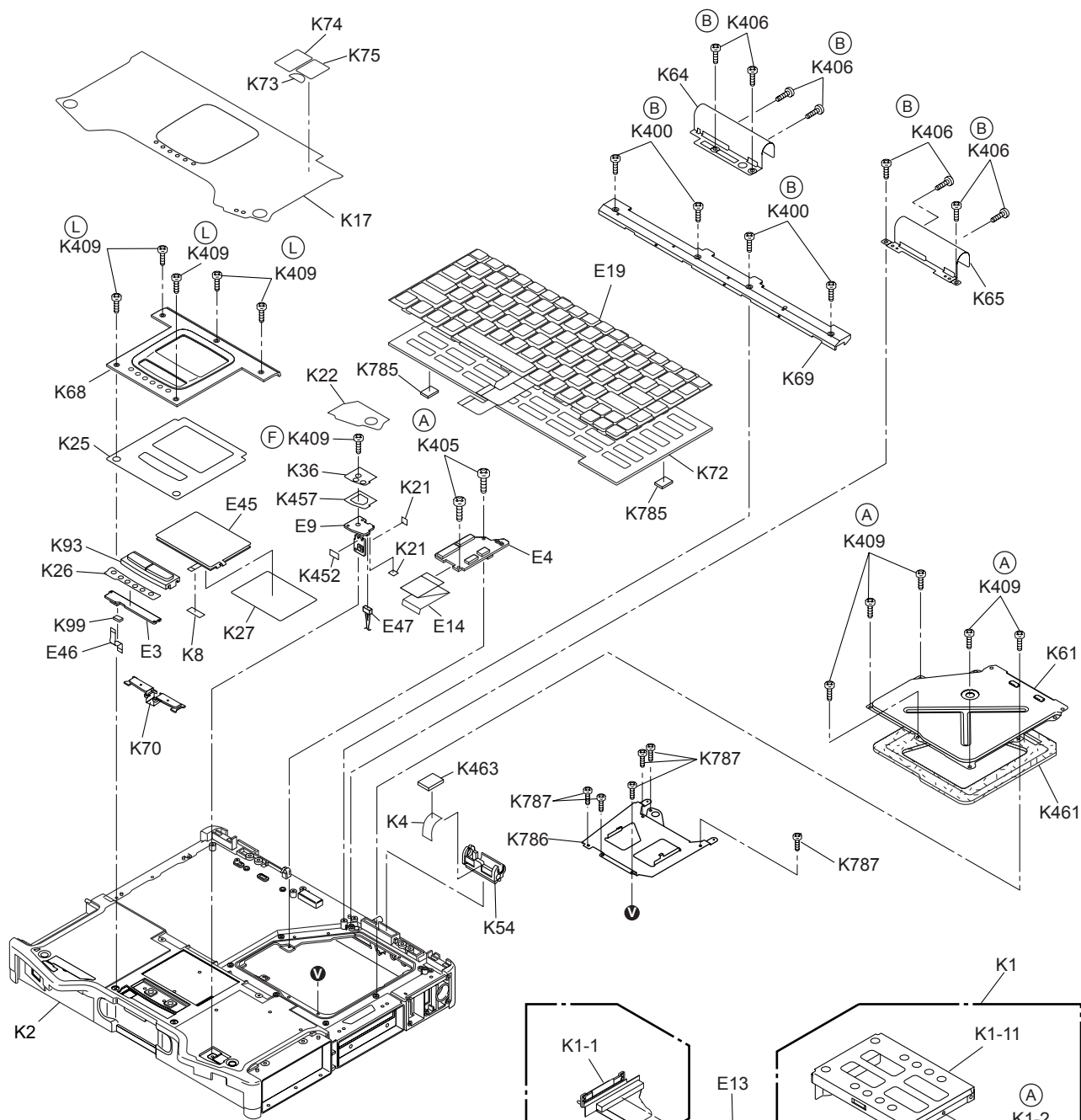


7.2.20. Setting the Battery Pack, the HDD Pack and the FDD Pack

1. Set the FDD Pack.
2. Set the HDD Pack.
3. Set the Battery Pack.

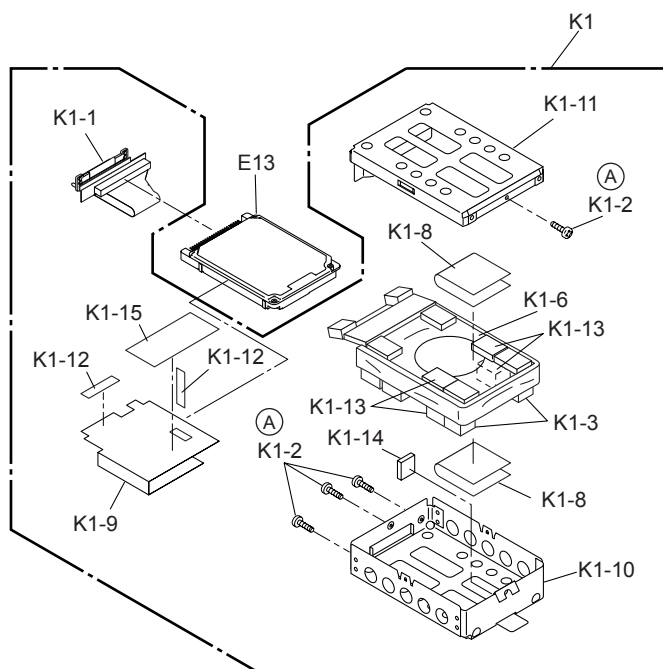


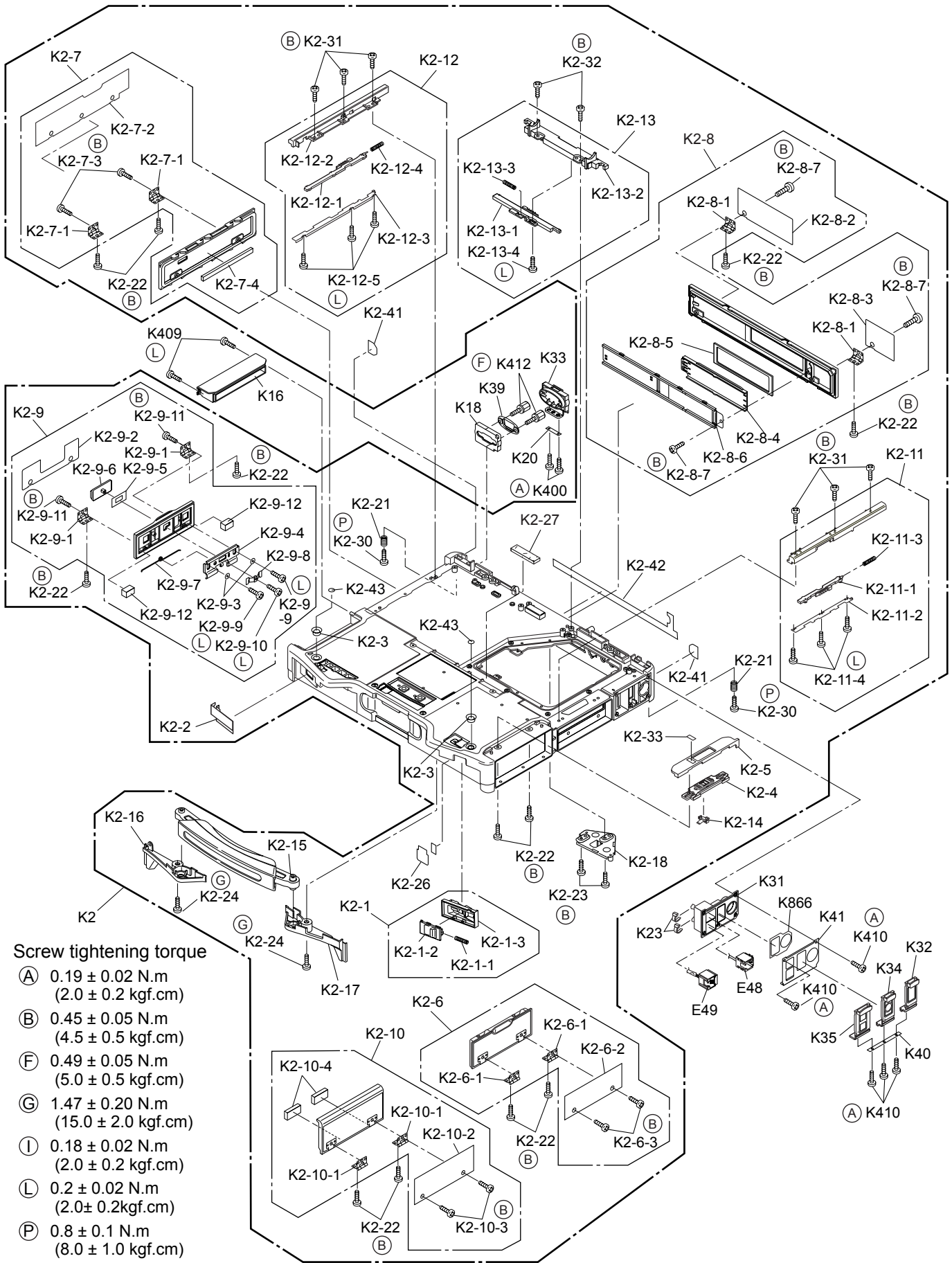
8 Exploded View



Screw tightening torque

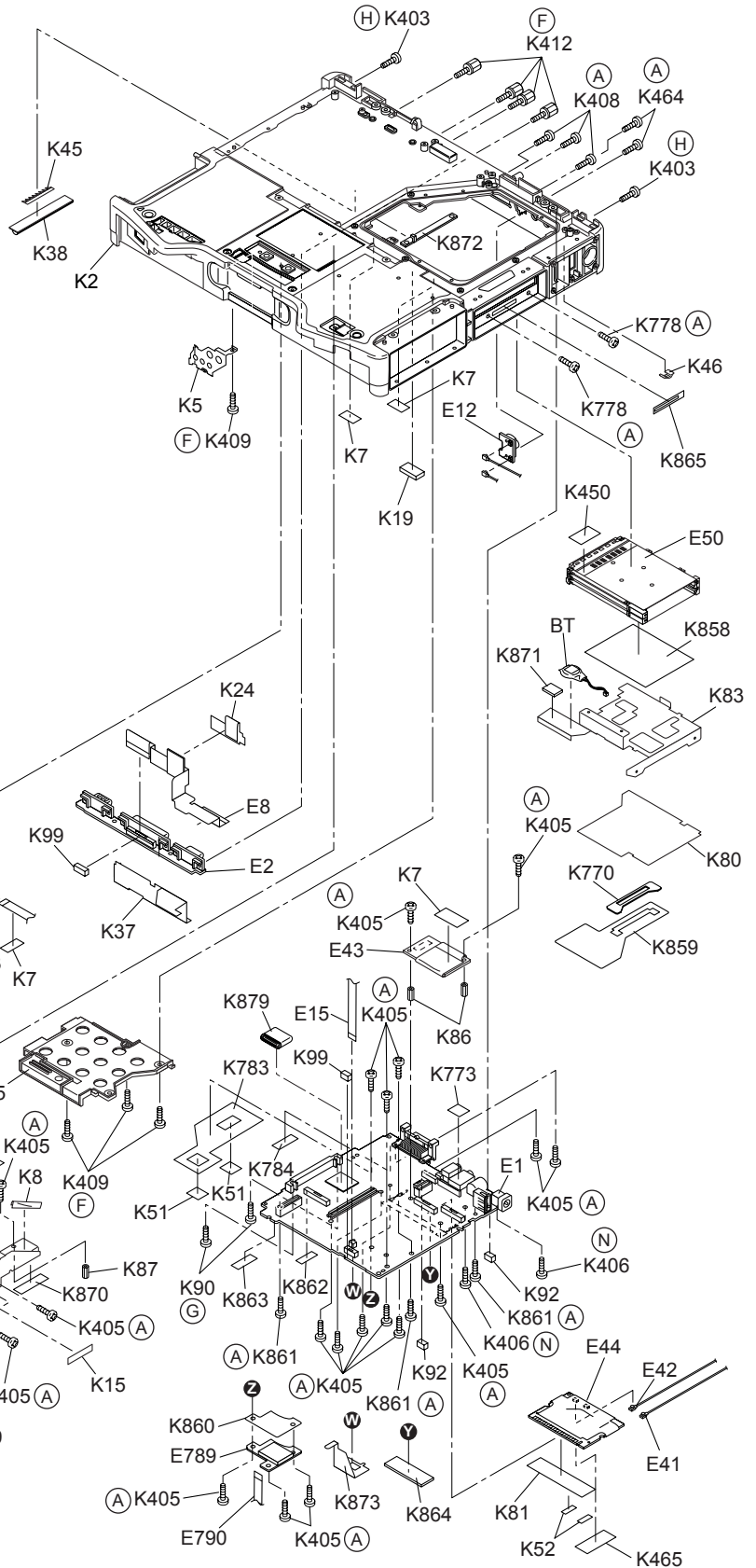
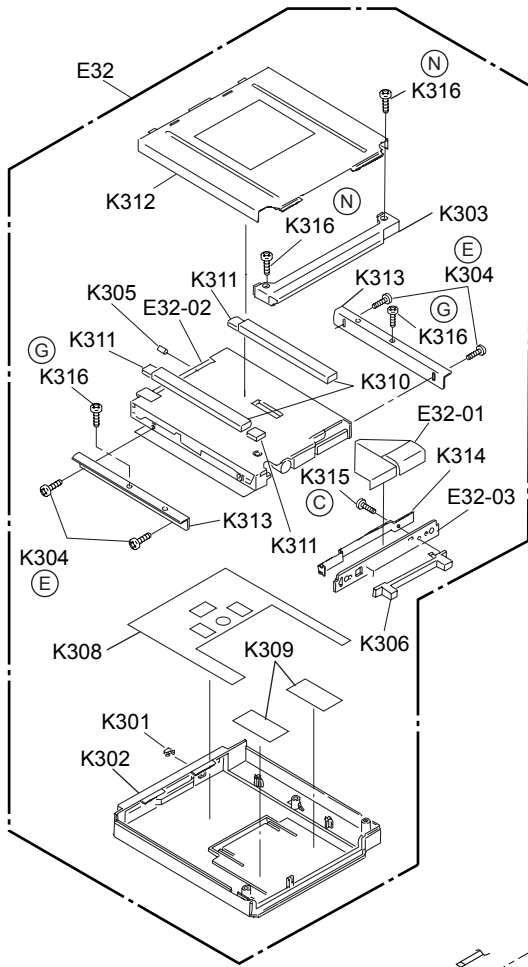
- (A) 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- (B) 0.45 ± 0.05 N.m
(4.5 ± 0.5 kgf.cm)
- (F) 0.49 ± 0.05 N.m
(5.0 ± 0.5 kgf.cm)
- (G) 1.47 ± 0.20 N.m
(15 ± 2.0 kgf.cm)
- (I) 0.18 ± 0.22 N.m
(2.0 ± 0.2 kgf.cm)
- (L) 0.2 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)





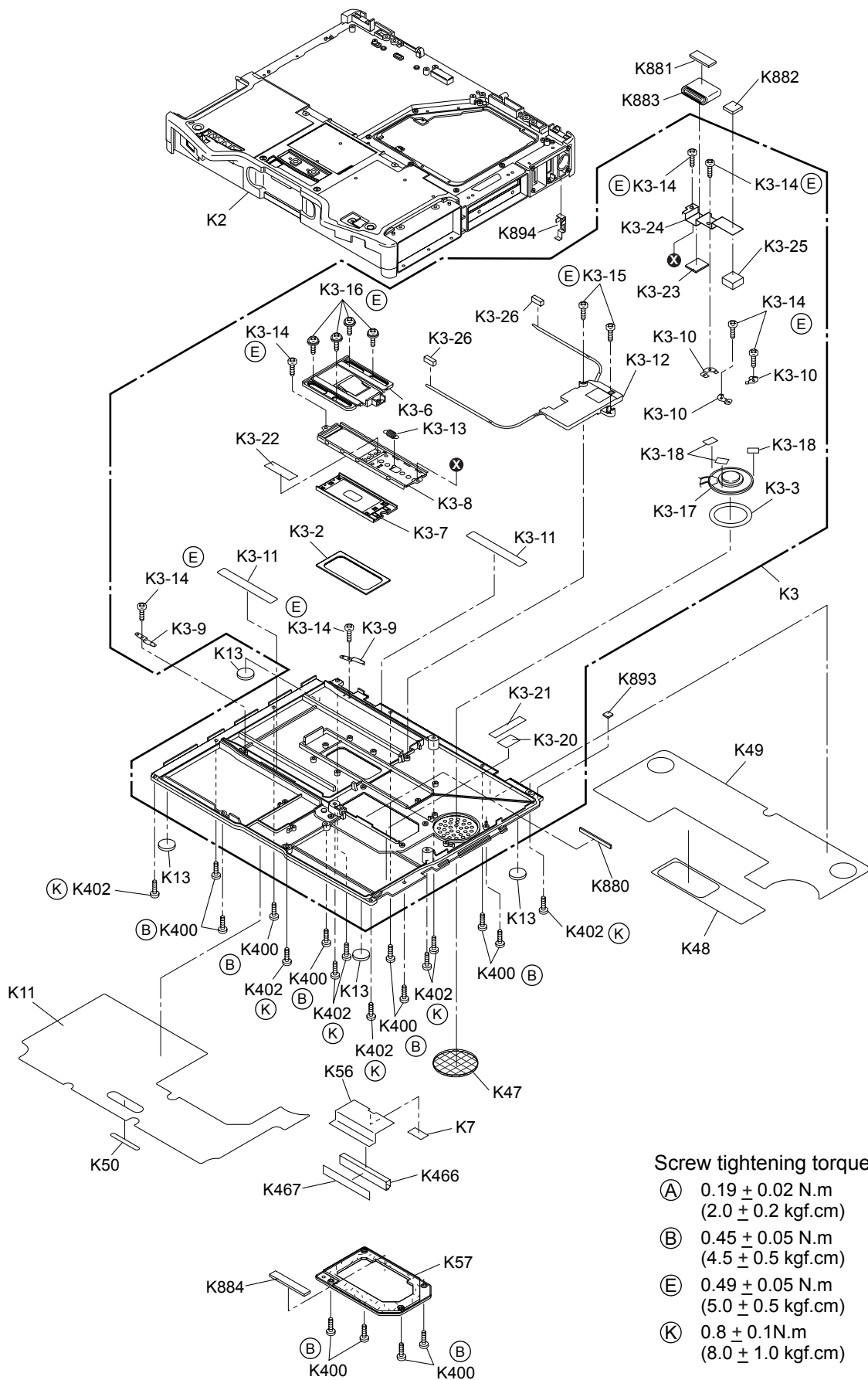
Screw tightening torque

- (A) $0.19 \pm 0.02 \text{ N.m}$
($2.0 \pm 0.2 \text{ kgf.cm}$)
- (B) $0.45 \pm 0.05 \text{ N.m}$
($4.5 \pm 0.5 \text{ kgf.cm}$)
- (F) $0.49 \pm 0.05 \text{ N.m}$
($5.0 \pm 0.5 \text{ kgf.cm}$)
- (G) $1.47 \pm 0.20 \text{ N.m}$
($15.0 \pm 2.0 \text{ kgf.cm}$)
- (I) $0.18 \pm 0.02 \text{ N.m}$
($2.0 \pm 0.2 \text{ kgf.cm}$)
- (L) $0.2 \pm 0.02 \text{ N.m}$
($2.0 \pm 0.2 \text{ kgf.cm}$)
- (P) $0.8 \pm 0.1 \text{ N.m}$
($8.0 \pm 1.0 \text{ kgf.cm}$)



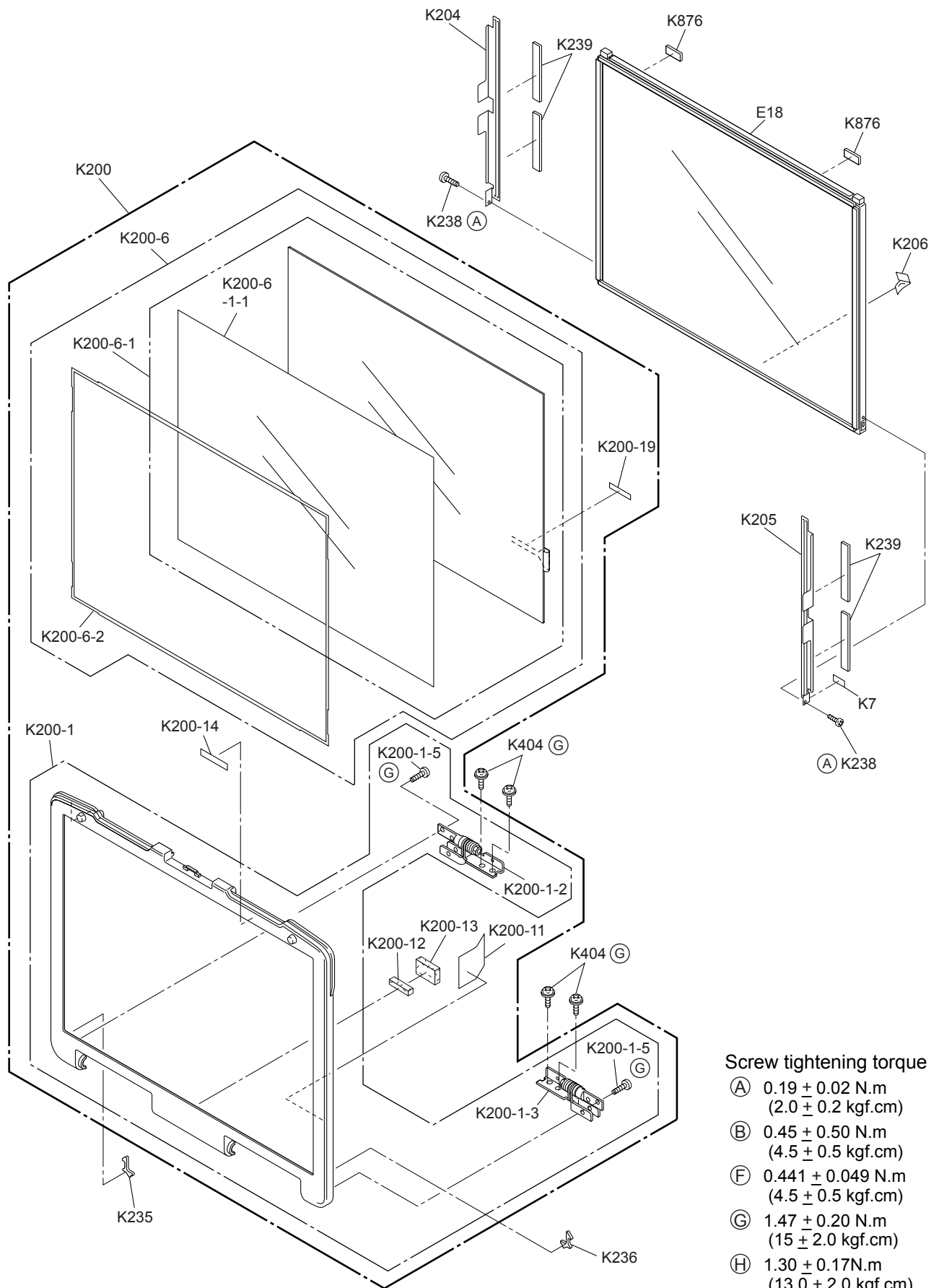
Screw tightening torque

- (A) 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- (C) 0.216 ± 0.0196 N.m
(2.2 ± 0.2 kgf.cm)
- (E) 0.314 ± 0.0196 N.m
(3.2 ± 0.2 kgf.cm)
- (F) 0.49 ± 0.05 N.m
(5.0 ± 0.5 kgf.cm)
- (G) 0.441 ± 0.049 N.m
(4.5 ± 0.5 kgf.cm)
- (H) 1.47 ± 0.20 N.m
(15 ± 2.0 kgf.cm)
- (I) 1.30 ± 0.17 N.m
(13 ± 2.0 kgf.cm)
- (L) 0.18 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- (M) 0.2 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- (N) 0.45 ± 0.03 N.m
(4.5 ± 0.3 kgf.cm)
- (P) 0.8 ± 0.1 N.m
(8.0 ± 1.0 kgf.cm)



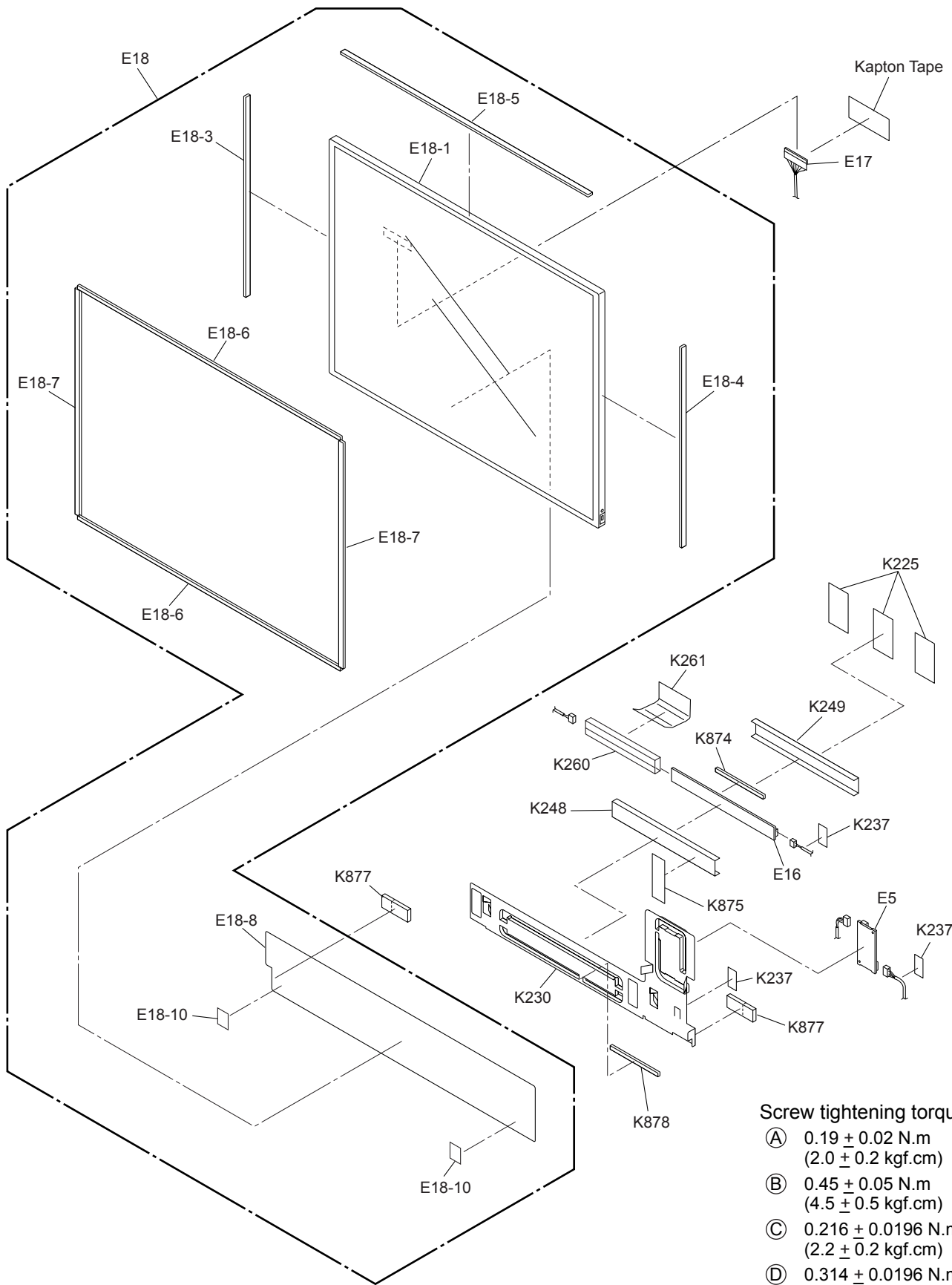
Screw tightening torque

- (A) 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- (B) 0.45 ± 0.05 N.m
(4.5 ± 0.5 kgf.cm)
- (E) 0.49 ± 0.05 N.m
(5.0 ± 0.5 kgf.cm)
- (K) 0.8 ± 0.1 N.m
(8.0 ± 1.0 kgf.cm)



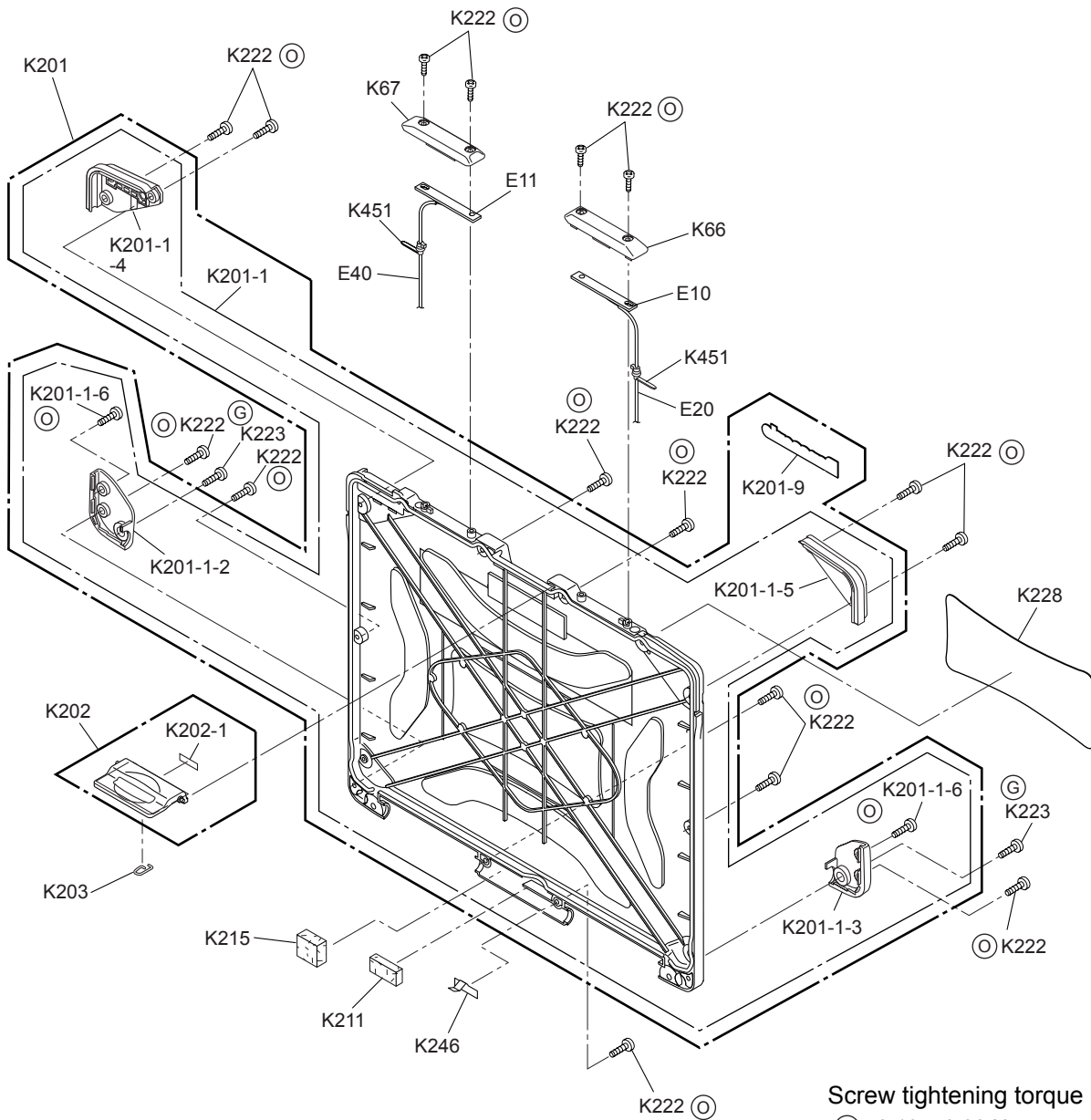
Screw tightening torque

- (A) 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- (B) 0.45 ± 0.50 N.m
(4.5 ± 0.5 kgf.cm)
- (F) 0.441 ± 0.049 N.m
(4.5 ± 0.5 kgf.cm)
- (G) 1.47 ± 0.20 N.m
(15 ± 2.0 kgf.cm)
- (H) 1.30 ± 0.17 N.m
(13.0 ± 2.0 kgf.cm)



Screw tightening torque

- Ⓐ $0.19 \pm 0.02 \text{ N.m}$
($2.0 \pm 0.2 \text{ kgf.cm}$)
- Ⓑ $0.45 \pm 0.05 \text{ N.m}$
($4.5 \pm 0.5 \text{ kgf.cm}$)
- Ⓒ $0.216 \pm 0.0196 \text{ N.m}$
($2.2 \pm 0.2 \text{ kgf.cm}$)
- Ⓓ $0.314 \pm 0.0196 \text{ N.m}$
($3.2 \pm 0.2 \text{ kgf.cm}$)
- Ⓔ $0.49 \pm 0.05 \text{ N.m}$
($5.0 \pm 0.5 \text{ kgf.cm}$)




Screw tightening torque






- (A) 0.19 ± 0.02 N.m
(2.0 ± 0.2 kgf.cm)
- (B) 0.45 ± 0.05 N.m
(4.5 ± 0.5 kgf.cm)
- (C) 0.216 ± 0.0196 N.m
(2.2 ± 0.2 kgf.cm)
- (D) 0.314 ± 0.0196 N.m
(3.2 ± 0.2 kgf.cm)
- (G) 1.47 ± 0.20 N.m
(15 ± 2.0 kgf.cm)
- (O) 0.49 ± 0.05 N.m
(5.0 ± 0.5 kgf.cm)

9 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-29NTQGZBM

REF.NO. and AREA	PART NO.	DESCRIPTION	Q'TY
Main Block Unit			
E1	DL3UPB465GRA	PCB, MAIN	RTL 1
E2	DL3U1B266CRA	PCB, IO	RTL 1
E3	DL3U2B266CRA	PCB, LED	RTL 1
E4	DL3U3B266CRA	PCB, KBD	RTL 1
E5	DL3U4B266CRA	PCB, TS	RTL 1
E6	DL3U5B266CRA	PCB, TP	RTL 1
E7	DL3UP1269ARA	FPC, HDD-MAIN	1
E8	DL3UPB270ARA	FPC, IO	1
E9	DL3UP1271BRA	FPC, SW-LED	1
E10	DL3U11331ARA	PCB, W-LAN ANT R	RTL 1
E11	DL3U21331ARA	PCB, W-LAN ANT L	RTL 1
E12	DL3UP1336ARA	PCB, EXT ANT	RTL 1
E13	N3CABTD00006	HDD	1
E14	DFJK50U092BB	KB CN FFC	1
E15	DFJK9007ZA	TP SW FFC	1
E16	 N0GF1J000007	INVERTER	1
E17	DFJS875XA	LCD CABLE	1
E18	DFWV08A0072	LCD UNIT ASS'Y	1
E18-1	DL3DE0177ARA	LCD ASS'Y	1
E18-3	DFHG874ZA	LCD SIDE DAMPER UN	1
E18-4	DFHG850YA	LCD SIDE DUMPER R13	1
E18-5	DFHG884ZA	LCD DAMPER FRONT	1
E18-6	DFHG852ZA	TS SPACER L13	2
E18-7	DFHG853ZA	TS SPACER S13	2
E18-8	DFMY0409ZA	LCD THERMAL PLATE	1
E18-10	DFMY0348ZB	LCD LAMP SHEET	2
E19	N2ABZJ000033	KEYBOARD	1
E20	DFJS868ZA	CABLE (BLACK), ANT PCB R	1
E40	DFJS869ZA	CABLE (GRAY), ANT PCB L	1
E41	DFJS870ZA	CABLE (BLACK), KB PCB	1
E42	DFJS871ZA	CABLE (GRAY), KB PCB	1
E43	N5HAZ0000013	MDC MODEM	1
E44	N5HZC0000014	WIRELESS LAN MODULE	1
E45	N2EABEC00006	TOUCH PAD	1
E46	DFJK10T017BB	LED 6 FFC	1
E47	DFJS865ZA	POWER SW CABLE	1
E48	DFJS866ZA	MODEM CABLE	1
E49	DFJS978ZA	LAN CABLE	1
E50	K1NBD6A00006	PCMCIA EJECTOR	1
E789	DL3UPB484ARA	PCB, SD-CN	RTL 1
E790	DFJK12T034DB	FFC, PAD	1
Accessories			
A1	 CF-AA1653AM4	AC ADAPTER	1
A2	 K2CG3DR00003	AC CABLE	1
A3	 DFQX5556YB	MANUAL	1
A5	 CGR-B/982A	BATTERY PACK	1
A6	DFJS954ZA	MODEM CABLE	1
A7	DFHS9017ZA	CLOTH, TOUCH PANEL	1
A8	DFHR9084YA	PEN	1
Packing Material			

P1	DFPK1154LA	PACKING CASE	1
P2	DFPE0611ZA	MANUAL HOLDER	1
P3	DFPN0754XA	CUSHION	1
Mechanical Parts			
K1	DFWV99A0105	HDD MOUNTING KIT	1
K1-1	DL3UP1268ARA	FPC, HDD	1
K1-2	DFHE5025XA	SCREW	4
K1-3	DFHG1696ZA	LCD DUMPER	2
K1-6	DFHR8489ZA	HDD DAMPER ASS'Y	1
K1-8	DFMY3143YA	HDD THERMAL PLATE UPPER	2
K1-9	L9DZAA000004	HEATER	1
K1-10	DFMD8038ZA	HDD L CASE ASS'Y	1
K1-11	DFMD8039ZA	HDD U CASE ASS'Y	1
K1-12	DFMX0634ZA	SHEET	2
K1-13	DFHG1750ZA	HDD FORMING MFYPC	4
K1-14	DFHR8482YA	SIDE CUSHION, HDD	1
K1-15	DFHR3C10ZA	SHEET, HEATER	1
K2	DFKM8179YC-0	TOP CABINET ASS'Y 2	1
K2-1	DFBD9005ZA-1	POWER SW ASS'Y	1
K2-1-1	DFUQ0099ZA	POWER SW SPRING	1
K2-1-2	DFBD0168ZA-1	POWER SW KNOB	1
K2-1-3	DFHR6069ZA-1	POWER SW ARM	1
K2-2	DFHR6126YA-0	WM SW COVER	1
K2-3	DFHM0352ZA	LCD FOOT CAP	2
K2-4	DFKE0732WA-0	HDD LATCH LEVER	1
K2-5	DFKE0733VA-0	HDD LATCH COVER	1
K2-6	DFKE8182YA-0	PC COVER ASS'Y 2	1
K2-6-1	DFBH3033ZB	LID HINGE	2
K2-6-2	DFGE0119ZA-0	PC COVER SHEET SD	1
K2-6-3	DRQT26+D3FKL	SCREW	2
K2-7	DFKE8181ZA-0	MP COVER ASS'Y 2	1
K2-7-1	DFBH3033ZB	LID HINGE	2
K2-7-2	DFGE0116ZA-0	MP COVER SHEET 2	1
K2-7-3	DRQT26+D3KLT	SCREW	2
K2-7-4	DFHR3B69ZA	CUSHION, MP COVER	1
K2-8	DFKE8180ZA-0	CN COVER ASS'Y 2	1
K2-8-1	DFBH3033ZB	LID HINGE	2
K2-8-2	DFGE0082XA-0	CN COVER SHEET R	1
K2-8-3	DFGE0081ZA-0	CN COVER SHEET L	1
K2-8-4	DFKE9062YA-0	CN SLIDE COVER	1
K2-8-5	DFHR3527XA	CN PACKING-SLIDE	1
K2-8-6	DFMD1165YA	CN WATER PROOF PLATE	1
K2-8-7	DRQT26+D3KLT	SCREW	3
K2-9	DFKE8184ZA-0	BATT COVER ASS'Y 2	1
K2-9-1	DFBH3033ZB	LID HINGE	2
K2-9-2	DFGE0083YA-0	BATT COVER SHEET	1
K2-9-3	DFHM0310YA	WASHER	2
K2-9-4	DFHM0327YA	BATT LATCH ANGLE	1
K2-9-5	DFHR3466YA	LID KNOB SHEET	1
K2-9-6	DFKE0799ZA-0	LID KNOB	1
K2-9-7	DFUN0068XA	LID KNOB SPRING	1
K2-9-8	DFUS0292ZB	LID KNOB SPRING PLATE	1
K2-9-9	DRHM5025YAT	SCREW	2
K2-9-10	DXQT2+F3FNLT	SCREW	1
K2-9-11	DRQT26+D3KLT	SCREW	2
K2-9-12	DFHR3B71ZA	CUSHION, BATT COVER	2
K2-10	DFKE8183ZA-0	HDD COVER ASS'Y 2	1
K2-10-1	DFBH3033ZB	LID HINGE	2

K2-10-2	DFGE0084ZA-0	HDD COVER SHEET	1
K2-10-3	DRQT26+D3KLT	SCREW	2
K2-10-4	DFHR3697ZAT	HDD COVER CUSHION	2
K2-11	DFKE8177ZA-0	PC LATCH ASS'Y 2	1
K2-11-1	DFBD0185ZA-0	PC LATCH LEVER 2	1
K2-11-2	DFMD1161ZA	PC LATCH ANGLE	1
K2-11-3	DFUQ0089YA	SPRING (MP/PC LATCH)	1
K2-11-4	DRHM5025YA	SCREW	3
K2-12	DFKE8176ZA-0	MP LATCH ASS'Y 2	1
K2-12-1	DFBD0170WA-0	MP LATCH LEVER	1
K2-12-2	DFKE0811ZA-0	MP LATCH CASE 2	1
K2-12-3	DFMD1162ZB	MP LATCH ANGLE	1
K2-12-4	DFUQ0089YA	SPRING (MP/PC LATCH)	1
K2-12-5	DRHM5025YA	SCREW	3
K2-13	DFKE8175ZA-0	CH LATCH ASS'Y 2	1
K2-13-1	DFBD0184ZA-0	CN LATCH LEVER 2	1
K2-13-2	DFKE0810ZA-0	CN LATCH CASE 2	1
K2-13-3	DFUQ0108ZA	SPRING, CN LATCH	1
K2-13-4	DRHM5025YAT	SCREW	1
K2-14	DFKE9068ZA-0	HDD LATCH LOCK ASS'Y	1
K2-15	DFKH8008YA-0	HANDLE ASS'Y 2	1
K2-16	DFKX0049YA-0	HANDLE BASE L	1
K2-17	DFKX0050XA-0	HANDLE BASE R	1
K2-18	DFMD7938WA	TOP LIB ANGLE CPU	1
K2-21	DFUQ0102ZA	POTRE SPRING	2
K2-22	DRQT26+D3KLT	SCREW	12
K2-23	DRSB26+4FKLT	SCREW	2
K2-24	DRSB4+8FKLT	SCREW	2
K2-26	DFHR3497YA	POWER SW SHEET	1
K2-27	DFHR3524ZA	KB CABLE CUSHION	1
K2-30	DXQT3+F4FNLT	SCREW	2
K2-31	DFHE5121YA	SCREW	6
K2-32	DXQT26+D4NLT	TW SCREW	2
K2-33	DFGE0097ZA-0	HDD LATCH LOCK CASE SHEET	1
K2-41	DFGE0102ZA-0	SHEET, REAR BELT COVER	2
K2-42	DFGE0104ZA-0	SHEET(USB), TOP REAR COVER	1
K2-43	DFHG1699ZA	LCD LOCK SHEET	2
K3	DFKF8162YA-0	BOTTOM CABINET ASS'Y 2	1
K3-2	DFHG3526YA	MP EJECT PACKING-SLIDE	1
K3-3	DFHG3528ZA	SPEAKER SPACER	1
K3-6	DFHR6083XA-0	MP EJECT LEVER	1
K3-7	DFKE8166ZA-0	MP EJECT SLIDE ASS'Y	1
K3-8	DFMD1164ZA	MP EJECT PLATE	1
K3-9	DFMD7945ZA	HEAT PIPE BOTTOM ANGLE	2
K3-10	DFMS0019ZA	SPEAKER ANGLE	3
K3-11	DFMY0414ZA	CPU HEAT PIPE RUBBER	2
K3-12	DFMY9023WA	HEAT PIPE UNIT BOTTOM	1
K3-13	DFUW0064YAT	MP EJECT SPRING	1
K3-14	DXQT26+D4NLT	SCREW	7
K3-15	DXYN26+J6FNL	SCREW	2
K3-16	DXYN26+F5NLT	SCREW	4
K3-17	L0AA04A00023	SPEAKER	1
K3-18	DFHP7163ZA	ADHESIVE TAPE, SP	3
K3-20	DFUS0299ZAT	EMI SPRING	1
K3-21	DFMC0406ZAT	EMI GASKET HDD	1
K3-22	DFMC0685ZAT	GASKET SHEET	1
K3-23	DFMY0248YA	CPU HEATSINK RUBBER	1
K3-24	DFMY3212ZA	LAN HEAT PLATE	1

K3-25	DFHR3B66ZA	LAN HEAT PLATE SPACER	1
K3-26	DFHR3B67ZA	HEAT PIPE SPACER	2
K4	DFMC0685ZA	CONDUCTIVE SHEET, LCD	1
K5	DFMD7929XA	TOP RIB ANGLE FRONT	1
K6	DFMD9090XA	BATT HDD CN ANGLE	1
K7	DFMX0635ZB	SHEET	7
K8	DFMX1006ZA	CABLE SHEET	2
K11	 DFGT1055ZA	BOTTOM COVER SHEET A	1
K13	DFHG370ZA	FOOT RUBBER	4
K15	DFHP7162ZA	HD FPC TAPE	1
K16	DFGE0077ZA-0	WM COVER	1
K17	DFGP0198ZB-0	PALM TOP COVER SHEET	1
K18	DFHG1734ZA-0	SERIAL CN COVER	1
K19	DFHG830ZA	CON SPACER	1
K20	DFHR3C26ZA	SERIAL CN LID PLATE	1
K21	DFHP7140ZA	TAPE CPU	2
K22	DFHP7160YA	PW LED SHEET	1
K23	DFHR1012ZA	CLAMPER	2
K24	DFHR3529YA	LID SW CUSHION	1
K25	DFHR3560YB	TOUCH PAD ADHESION SEAT	1
K26	DFHR3619ZA	LEDX6 SPACER SHEET	1
K27	DFHR3643ZA	TP BOTTOM TAPE	1
K31	DFHR6065WA	DC/USB CN COVER FRAME	1
K32	DFHR6180ZA-0	DC COVER	1
K33	DFHR6090XA-0	SERIAL CN CAP 2	1
K34	DFHR6181ZA-0	USB COVER	1
K35	DFHR6104WA-0	LAN CN COVER	1
K36	DFHR6107YA	LED SPACER SHEET	1
K37	DFHR6108ZA-0	REAR I/O FPC COVER SHEET	1
K38	DFMC0406XA	GASKET FOR MP	1
K39	DFMD4045ZA	SERIAL COVER PLATE	1
K40	DFMD4048ZA	DC/USB COVER LID PLATE	1
K41	DFMD7960ZA	DC/USB COVER PLATE	1
K43	DFMX0702ZA	INSULATION SHEET	1
K45	DFUS0296ZA	MP FINGER	1
K46	DFUS0297ZA	USB SHIELD SPRING	1
K47	DFGE0078ZA-0	SPEAKER NET	1
K48	DFGE0085ZA-0	BOTTOM COVER SHEET B	1
K49	DFGE0086YA-0	BOTTOM COVER SHEET C	1
K50	DFGE0087ZA-0	BOTTOM COVER SHEET D	1
K51	DFHR3445ZA	HEAT DISSIPATION RUBBER	2
K52	DFHR3713ZA	MINI PCI SPACER U2	3
K54	DFHR6068ZA	LCD CABLE/MIC FRAME	1
K55	DFHR6084YA	PAD SW FFC COVER	1
K56	DFHR6117WA	DIMM RADIATION SHEET	1
K57	DFKE8173YB-0	DIMM COVER ASS'Y 2	1
K61	DFKE0808ZA-0	KB CABLE COVER	1
K64	DFKE0714YA-0	HINGE COVER L	1
K65	DFKE0715YA-0	HINGE COVER R	1
K66	DFKE0739YA-0	ANTENNA PCB COVER R	1
K67	DFKE0740YA-0	ANTENNA PCB COVER L	1
K68	DFGE0075UA-0	PALM TOP COVER	1
K69	DFGE0076YA-0	KB COVER	1
K70	DFHR6064ZA	TOUCH PAD SW KNOB IN	1
K72	DFHR3523WA	KB SPACER SHEET	1
K73	DFQT0045ZA	ENERGY STAR LABEL	1
K74	DFQT9974ZA	WINDOWS XP LABEL	1
K75	DFQT9948ZA	CENTRINO LABEL	1

K80	DFMX1102XA	PC PLATE SHEET	1
K81	DFHR3A32ZA	MINI PCI PROTECTOR SHEET	1
K83	DFMY9032ZA	PCMCIA HEAT P ASS'Y	1
K86	DFHM0304YB	MDC SPACER	2
K87	DFHM0330YB	CN SPACER	1
K90	DRHM5118ZA	SCREW	2
K92	DFHR3713ZA	MINI PCI SPACER U2	2
K93	DFHG0306ZA-0	TOUCH PAD SW KNOB	1
K99	DFHR3741ZA	FFC CN STOPPER	3
K200	DFWV80A0352	LCD FRONT CABINET/TS PANEL ASS'Y	1
K200-1	DFKF8163ZA-0	LCD FRONT CABINET 2	1
K200-1-2	DFBH3027YA	HINGE L	1
K200-1-3	DFBH3028YA	HINGE R	1
K200-1-5	DXSB4+6FNLT	SCREW	2
K200-6	DFWV84A0259	TOUCH SCREEN PANEL KIT	1
K200-6-1	DL3DV0177ARA	TOUCH SCREEN PANEL	1
K200-6-1-1	DFHR9068ZA	PROTECTIVE FILM	1
K200-6-2	DFHP7183ZA	TS TAPE 13 L	1
K200-11	DFHR3702ZA	TS FFC SHEET	1
K200-12	DFHE0829ZA	LID MAGNET	1
K200-13	DFHG1706ZA	FORMING U	1
K200-14	DFQT9664ZA-1	TOUGH BOOK LABEL (W)	1
K200-19	DFHR3695ZA	TS FPC SPACER	1
K201	DFWV80C0496	LCD REAR CABINET ASS'Y	1
K201-1	DFKM8180ZA-0	LCD REAR CABINET 2	1
K201-1-2	DFGX0374ZA-0	LCD CORNER PROTECTOR RL	1
K201-1-3	DFGX0375ZA-0	LCD CORNER PROTECTOR RR	1
K201-1-4	DFGX0376ZA-0	LCD CORNER PROTECTOR FL	1
K201-1-5	DFGX0377ZA-0	LCD CORNER PROTECTOR FR	1
K201-1-6	DRHM0062ZAT	SCREW	2
K201-9	DFGB0070ZA-1	PANA BADGE	1
K202	DFBS8002ZA-0	LCD LATCH ASS'Y	1
K202-1	DFHR3700ZA	PUSH LABEL	1
K203	DFUW0095ZD	LCD LATCH SPRING	1
K204	DFMD1156WA	LCD HOLD PLATE 13 L	1
K205	DFMD1194YA	LCD PLATE R	1
K206	DFMC0685ZA	CONDUCTIVE SHEET, LCD	1
K211	DFHG1698ZA	WATER RESIST SHEET CTR	1
K215	DFHG1706ZA	FORMING U	1
K222	DRSB26+8HKL	SCREW	16
K223	DRSB4+10FKL	SCREW	2
K225	DFHP5320YA	LCD CABLE TAPE	3
K228	DFGB0087YA-2	TOUGH BOOK BADGE	1
K230	DFHR3425XB	LCD BACK HOLDER 13	1
K235	DFHR8500ZA	LCD DROP HOLDER L	1
K236	DFHR8501ZA	LCD DROP HOLDER R	1
K237	DFHR7968ZA	CDD SHEET	3
K238	DXYN2+C3FNL	SCREW	2
K239	DFHG886ZA	LCD METAL DAMPER	4
K246	DFMD2158ZA	CABLE CLAMPER	1
K248	DFMX1187ZB	INVERTER CASE L	1
K249	DFMX1186ZA	INVERTER CASE U	1
K260	DFMC0842YA	INVERTER SHIELD	1
K261	DFMC0820ZA	INV SHIELD TAPE	1
K400	DRQT26+D4FKL	SCREW	18
K402	DRSB3+8FKL	SCREW	8
K403	DXSB4+12FNLB	SCREW	2
K404	DXYN4+J8FNL	SCREW	4

K405	DFHE5025XA	SCREW	21
K406	DRHM5054XA	SCREW	10
K408	DRHM5104ZA	SCREW	5
K409	DRHM0002ZA	SCREW	19
K410	DRHM5025YA	SCREW	5
K412	DFHE5058ZB	SCREW	6
K450	DFMC0685ZA	CONDUCTIVE SHEET, LCD	1
K451	DFHG1727ZA	ANTENNA CAP (LAN)	2
K452	DFHR3747ZA	POWER SW PWB CUSHION	1
K457	DFHR3743YA	POWER LED PACKING SHEET	1
K458	DFMX0634ZA	SHEET	1
K460	DFHR3778ZA	BATTERY ANGLE SHEET W	1
K461	DFHR3807ZA	KB CABLE COVER CAUTION	1
K462	DFHE5092ZA	SCREW	1
K463	DFHE0284YA	GASKET	1
K464	DRQT2+G6FKL	SCREW	2
K465	DFMX0634ZA	CD EDGE SHEET	1
K466	DFHR6144YA	DIMM STOPPER	1
K467	DFHG1757YA	DIMM STOPPER SPACER	1
K770	DFMD7A49ZA	CONNECTOR RING	1
K773	DFHE0910ZA	ESD GASKET-A	1
K778	DRHM5117ZA	SCREW	2
K783	DFMX1191ZA	CPU INSULATION SHEET	1
K784	DFHE0522ZA	SHEET, CCFL PROTECT	1
K785	DFHE0910ZA	ESD GASKET-A	2
K786	DFMD7A37ZA	PCMCIA PROTECTOR	1
K787	DRQT2+I35FKL	SCREW	6
K858	DFMY0418ZA	PCMCIA GRAPHITE PLATE	1
K859	DFMX1196ZA	PCMCIA RING INS SHEET	1
K860	DFMX1195YA	SD INS SHEET	1
K861	DRHM5104ZA	SCREW	3
K862	DFHG1812ZA	SPACE PWB HOLD MP	1
K863	DFMX1198ZA	INS SHEET, HEAT PIPE	1
K864	DFMY3151ZA	MEMORY HEAT PLATE	1
K865	DFGK0133ZA	SD LED SHEET	1
K866	DFHR6184ZA	DC USB COVER HOOK	1
K868	DFHR7518ZA	INSULATION SHEET	1
K869	DFHE0965ZA	FPC CONDUCTION TAPE	1
K870	DFHE0967ZA	EMP SHEET BATT HDD FPC	1
K871	DFHE0842ZA	CABLE GASKET	1
K872	DFHR6197ZA	MP CN SPACER	1
K873	DFHR3B57ZA	POWER CABLE GUARD	1
K874	DFHR3B75ZA	LCD INVERTER CASE SPACER L	1
K875	DFHR3B76ZA	LCD INVERTER CASE TAPE	1
K876	DFHG876ZA	INVERTER CUSHION	2
K877	DFHG9004ZA	LCD BACK DAMPER ASS'Y	2
K878	DFHR3B74ZA	LCD INVERTER CASE SPACER S	1
K879	DFMY0416ZA	ICH6 COOLING SHEET	1
K880	DFHR3B08XA	SHEET, DIMM STOPPER	1
K881	DFMY0348ZB	LCD LAMP SHEET	1
K882	DFMY0407ZA	RADIATION RUBBER	1
K883	DFMY0417ZA	COIL COOLING SHEET	1
K884	DFHR6195ZA	SPACER, DIMM COVER	1
K893	DFHG1852ZA	CUSHION, LOCK PLATE	1
K894	DFMD2168ZA	LOCK PLATE	1
FDD ASS'Y			
E32	DL1BAA174ARA	ASS'Y, FDD	1
E32-01	DFJK9003ZA	FFC, FDD	1

E32-02	N3AAYYY00001	FDD	1
E32-03	DL3UPB330ARA	PCB, FDD	1
K301	DFGL0018ZC-3	LENS, FDD	1
K302	DFGX0178PA-0	CABINET, FDD	1
K303	DFGX0179VA-0	BACK PANEL, FDD	1
K304	DRHM5076YA	SCREW	4
K305	DFHR4050ZA	TUBE, LED	1
K306	DFHR5440YA	GUIDE, FDD CONNECTOR	1
K308	DFHR8295ZC	LS DAMPER, UNDER-1	1
K309	DFHR8296ZB	LS DAMPER, UNDER-2	2
K310	DFHR8297YA	DAMPER, FDD	2
K311	DFHE0861ZA	CUSHION, FDD	3
K312	DFMD7339ZA	CHASSIS, FDD	1
K313	DFMD7340ZA	CLAMP, FDD	2
K314	DFMD7445YA	FDD RELAY METAL PLATE	1
K315	XTB2+6GFJK	SCREW	1
K316	XTB26+8GFJK	SCREW	4

Replacement Parts List

Note: Important Safety Notice

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

CF-29NTQGZBM

REF. NO and AREA	PART NO.	DESCRIPTION	Q'TY
Main PCB			
BT 1	CR2032/S5J	RTC BATTERY	1
C 2	F1J0J106A013	CAPACITOR, 6.3V, 10 μ F	75
C 3			
C 4			
C 6			
C 7			
C 8			
C 11			
C 12			
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C 447			
C 448			
C 472			
C 483			
C 484			
C 502			
C 504			
C 505			
C 549			
C 5	EEFCD0D151ER	CAPACITOR, 2V, 150μF	5
C 205			
C 211			
C 512			
C 553			
C 9	F1G1C104A042	CAPACITOR, 16V, 0.1μF	194
C 10			
C 14			
C 18			
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C 576			
C 589			
C 593			
C 598			
C 627			
C 628			
C 629			
C 630			
C 631			
C 632			
C 633			
C 50	F1G1E103A062	CAPACITOR, 25V, 0.01 μ F	47
C 113			
C 115			
C 116			
C 118			
C 121			
C 122			
C 125			
C 126			
C 164			
C 182			
C 183			
C 184			
C 185			
C 194			
C 212			

C 231			
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C 491			
C 542			
C 577			
C 578			
C 579			
C 580			
C 584			
C 585			
C 591			
C 55 C 389	F1G1H222A450	CAPACITOR, 50V, 2200pF	2
C 56 C 57 C 178 C 179 C 180 C 403 C 404	F1G1A104A014	CAPACITOR, 10V, 0.1μF	7
C 66 C 85 C 109 C 111 C 128 C 161 C 165 C 264 C 266 C 267	F1H0J1050022	CAPACITOR, 6.3V, 1μF	12



C 414			
C 462			
C 71	F1G1H102A496	CAPACITOR, 50V, 1000pF	30
C 295			
C 297			
C 301			
C 303			
C 359			
C 360			
C 382			
C 384			
C 459			
C 460			
C 464			
C 465			
C 467			
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C 480			
C 517			
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C 537			
C 545			
C 563			
C 570			
C 594			
C 596			
C 597			
C 616			
C 72	EEFCX0D331R	CAPACITOR, 2V, 330μF	8
C 73			
C 81			
C 82			
C 84			
C 506			
C 508			
C 510			
C 80	F1G1A474A018	CAPACITOR, 10V, 0.47μF	7
C 90			
C 91			
C 93			
C 94			
C 95			
C 96			
C 92	F1G0J224A001	CAPACITOR, 6.3V, 0.22μF	16
C 106			
C 343			

C 350			
C 352			
C 353			
C 354			
C 367			
C 368			
C 377			
C 378			
C 380			
C 385			
C 386			
C 391			
C 392			
C 102	EEFCD0D101ER	CAPACITOR, 2V, 100 μ F	3
C 531			
C 550			
C 105	EEFCX0D221R	CAPACITOR, 2V, 220 μ F	1
C 119	F1G1H270A451	CAPACITOR, 50V, 27pF	2
C 120			
C 129	F1H1A1050015	CAPACITOR, 10V, 1 μ F	27
C 132			
C 133			
C 138			
C 139			
C 144			
C 145			
C 148			
C 151			
C 152			
C 186			
C 191			
C 192			
C 241			
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C 407			
C 412			
C 413			
C 417			
C 421			
C 461			
C 493			
C 548			
C 607			
C 638			
C 155	F1G1H3R3A475	CAPACITOR, 50V, 3.3pF	2
C 156			
C 166	F1J0J106A016	CAPACITOR, 6.3V, 10 μ F	4
C 168			

C 170			
C 172			
C 175	F1G1H101A451	CAPACITOR, 50V, 100pF	10
C 306			
C 307			
C 309			
C 310			
C 375			
C 376			
C 456			
C 547			
C 561			
C 181	F1G1H6R0A452	CAPACITOR, 50V, 6pF	2
C 258			
C 187	F1G1H5R0A452	CAPACITOR, 50V, 5pF	3
C 408			
C 411			
C 245	EEFUD0J151ER	CAPACITOR, 6.3V, 150µF	2
C 246			
C 259	F1G1H7R0A452	CAPACITOR, 50V, 7pF	1
C 328	F1J1E105A080	CAPACITOR, 25V, 1µF	7
C 329			
C 330			
C 331			
C 332			
C 619			
C 620			
C 336	ECJ2FF1A106Z	CAPACITOR, 10V, 10µF	5
C 365			
C 396			
C 397			
C 422			
C 342	F1J0J475A009	CAPACITOR, 6.3V, 4.7µF	6
C 351			
C 524			
C 543			
C 568			
C 639			
C 383	F1J1A1050021	CAPACITOR, 10V, 1µF	1
C 393	F1H1H104A748	CAPACITOR, 50V, 0.1µF	19
C 492			
C 515			
C 518			
C 533			
C 534			
C 536			
C 544			
C 552			
C 559			
C 562			

C 569			
C 599			
C 601			
C 602			
C 604			
C 606			
C 608			
C 609			
C 409 C 590	F1G1C473A004	CAPACITOR, 16V, 0.047µF	2
C 449	F1L3D102A003	CAPACITOR, 2000V, 1000pF	1
C 479 C 566	F1G1H471A450	CAPACITOR, 50V, 470pF	2
C 489	F1H1H223A748	CAPACITOR, 50V, 0.022µF	1
C 494	F1J1E334A081	CAPACITOR, 25V, 0.33µF	1
C 496 C 497 C 498 C 514 C 532 C 551 C 558 C 573 C 600 C 610	F1L1E106A017	CAPACITOR, 25V, 10µF	10
C 516	F1H1H182A748	CAPACITOR, 50V, 1800pF	1
C 520 C 538 C 541 C 564 C 567	F1G1H220A451	CAPACITOR, 50V, 22pF	5
C 521 C 535 C 539 C 540 C 565 C 572	F1G1H221A495	CAPACITOR, 50V, 220pF	6
C 546 C 560 C 571	F1H1H103A748	CAPACITOR, 50V, 0.01µF	3
C 554 C 555	EEFCX0J101R	CAPACITOR, 6.3V, 100µF	2
C 574	EEFCD0G101ER	CAPACITOR, 4V, 100µF	1
C 592	F1G1A683A014	CAPACITOR, 10V, 0.068µF	1
C 605	F1G1H152A450	CAPACITOR, 50V, 1500pF	1
C 611 C 612 C 613	DCUI1C106HDB	CAPACITOR, 16V, 10µF	3
C 634	F1L0J4760005	CAPACITOR, 6.3V, 47µF	1
C 635	EEFUE0J181ER	CAPACITOR, 6.3V, 180µF	2

C 636			
C 637	F1L0J107A016	CAPACITOR, 6.3V, 100µF	1
CF 1	D4CC1103A038	THERMISTOR	2
CF 2			
CN 1	K1KB80A00101	CONNECTOR	1
CN 3	K1MML0B00004	CONNECTOR	1
CN 4	K1KA02AA0229	CONNECTOR	2
CN 12			
CN 5	K1KBA0B00028	CONNECTOR	1
CN 6	K1KA20AA0261	CONNECTOR	1
CN 8	K1MMF4A00002	CONNECTOR	1
CN 9	K1KA13AA0268	CONNECTOR	1
CN 10	K1MN50AA0018	CONNECTOR	2
CN 43			
CN 13	K1FY180BA001	CONNECTOR	1
CN 15	K1FB104B0047	CONNECTOR	2
CN 55			
CN 18	K1MN40BA0059	CONNECTOR	1
CN 23	K1KA03AA0263	CONNECTOR	1
CN 30	K1MMC4B00012	CONNECTOR	1
CN 32	K1KB30A00172	CONNECTOR	1
CN 47	K1MN16AA0018	CONNECTOR	1
CN 48	K1MN40AA0018	CONNECTOR	2
CN 49			
CN 51	K1KA08AA0266	CONNECTOR	1
CN 52	K1MN12AA0018	CONNECTOR	2
CN 56			
CN 54	K1KA06A00454	CONNECTOR	1
D 1	MA2J72900L	DIODE	6
D 2			
D 3			
D 19			
D 24			
D 25			
D 4	B0JDBE000002	DIODE	4
D 51			
D 57			
D 59			
D 5	B0KB00000044	DIODE	2
D 7			
D 9	B0ADCJ000041	DIODE	11
D 10			
D 11			
D 12			
D 13			
D 14			
D 15			
D 16			
D 17			
D 18			

D 62			
D 27	B0JCCE000008	DIODE	1
D 29	B0JCPD000023	DIODE	3
D 52			
D 53			
D 31	B0JCMD000010	DIODE	5
D 34			
D 36			
D 37			
D 39			
D 32	B0ADCJ000025	DIODE	3
D 35			
D 38			
D 41	MAZ80510ML	DIODE	5
D 43			
D 44			
D 46			
D 47			
D 45	MAZ80620ML	DIODE	1
D 48	B2ABAM000002	DIODE	1
D 49	MA3S132E0L	DIODE	1
D 50	MA2S111-TX	DIODE	1
D 54	MAZ81200ML	DIODE	1
D 55	MAZ81800ML	DIODE	1
D 56	DED10QS04TL	DIODE	1
D 58	B0JDRE000007	DIODE	1
F 2	 K5H502Z00003	FUSE, 5A	2
F 3			
F 4	 K5H202Z00005	FUSE, 2A	3
F 5			
F 6			
IC 1	C0JBAZ002592	IC, CLOCK GENERATOR	1
IC 2	C3ABSG000029	IC, DDR2 SDRAM	8
IC 3			
IC 4			
IC 5			
IC 6			
IC 7			
IC 8			
IC 9			
IC 10	C0DBZH000043	IC, USB POWER CONTROL	1
IC 11	C1DB00001361	IC, LSI	1
IC 12	C0ABZA000047	IC, AMP	1
IC 13	C1DB00001159	IC, PERIPHERAL LSI	1
IC 14	C1BB00000868	IC, AC97 CODEC	1
IC 15	C1DB00001362	IC, LSI	1
IC 16	C0CBCBC00137	IC, REGULATOR	1
IC 17	C0DBALH00003	IC	3
IC 18			
IC 19			

IC 20	C0JBZZ000327	IC, THERMAL SENSOR	1
IC 22	DA2205IDBLET	IC, BIPOLAR	1
IC 23	C1ZBZ0002759	IC	1
IC 24	C0ZBZ0000978	IC	1
IC 25	C0CBCBC00181	IC	1
IC 26	C1BB00001025	IC, AUDIO AMP	1
IC 27	C0JBAS000215	IC, GATE LOGIC	1
IC 28	C3EBFC000056	IC, EEPROM	1
IC 29	C1CB00002268	IC, SECURITY CHIP	1
IC 30	C3FBLC000040	IC, FLASH MEMORY	1
IC 31	C2CBJA000003	IC, MICON	1
IC 32	C0JBAN000235	IC, LOGIC	1
IC 33	C0JBAZ002372	IC, LOGIC	1
IC 34	C0JBAZ002346	IC, LOGIC	2
IC 35			
IC 36	C0DBAFH00035	IC	1
IC 39	C0DBEFH00002	IC, REGULATOR	1
IC 40	C0EBE0000333	IC	1
IC 41	C0EBE0000460	IC	3
IC 42			
IC 43			
IC 44	C0EBH0000457	IC	1
IC 45	C0DBDJH00009	IC, LINEAR	1
IC 46	C0EBH0000336	IC	2
IC 47			
IC 48	C2GBC0000257	IC, CPU	1
IC 49	C1DB00001476	IC, CHIP SET	1
IC 50	C1DB00001359	IC, CHIP SET	1
IC 62	C0JBAE000306	IC, 1 GATE LOGIC	1
IC 63	C0JBAB000622	IC, 1 GATE LOGIC	4
IC 113			
IC 115			
IC 603			
IC 64	C1DB00001179	IC, LSI	1
IC 73	C0JBAB000619	IC, GATE LOGIC	1
IC 78	C0JBAA000347	IC, 1 GATE LOGIC	7
IC 90			
IC 95			
IC 96			
IC 97			
IC 109			
IC 600			
IC 99	C0JBAC000339	IC, LOGIC	2
IC 107			
IC 100	C0CBCAC00161	IC	1
IC 101	C0DBEFE00003	IC	1
IC 102	C0JBAA000348	IC, 1 GATE LOGIC	3
IC 103			
IC 108			
IC 105	C0ABBA000093	IC, OP AMP	2

IC 111			
IC 106 IC 201	C0JBAC000338	IC, GATE LOGIC	2
IC 602	C0JBAD000182	IC, LOGIC	1
JK 1	K2HC103B0197	JK	1
JK 2	K2HC103B0198	JK	1
JK 3	K2EZ2B000046	JK	1
L 1 L 2	G1C100Z00013	INDUCTOR	2
L 3 L 4 L 5 L 7 L 8	G1C1R0Z00002	INDUCTOR	5
L 6	G1C91NM00001	INDUCTOR	1
L 9	J0JJC0000015	INDUCTOR	1
L 10 L 13	J0MAB0000116	INDUCTOR	2
L 11 L 12 L 14 L 15 L 18 L 29	DDB5Z031J-L	INDUCTOR	6
L 16 L 17	J0MAB0000169	INDUCTOR	2
L 19 L 20 L 21 L 23 L 24 L 25	DDB5Z021C-Y	INDUCTOR	6
L 26 L 27 L 28	J0JCC0000078	INDUCTOR	3
L 32	ETQP4LR56WFC	INDUCTOR	1
L 33 L 35 L 36	G1C4R7MA0022	INDUCTOR	3
L 37 L 38	DDAZS100MT3T	INDUCTOR	2
L 39	J0JKC0000007	INDUCTOR	1
L 40	G1A160H00001	INDUCTOR	1
PA 1 PA 2	D4FB1R100009		2
Q 1 Q 2 Q 6 Q 9 Q 10	UNR9214J0L	TRANSISTOR	20

Q 11 Q 14 Q 18 Q 20 Q 39 Q 105 Q 106 Q 108 Q 114 Q 121 Q 131 Q 132 Q 133 Q 134 Q 141			
Q 3 Q 58 Q 100 Q 103 Q 122 Q 135 Q 136	DETA144EETL	TRANSISTOR	7
Q 4 Q 12 Q 129 Q 130 Q 137 Q 138	B1DDED000004	TRANSISTOR	6
Q 5 Q 71 Q 76 Q 86 Q 93 Q 94 Q 99	B1MBEDA00017	TRANSISTOR	7
Q 7 Q 8 Q 23 Q 53 Q 54 Q 70 Q 81 Q 82 Q 95 Q 96 Q 101 Q 102 Q 107 Q 109 Q 123	UNR9213J0L	TRANSISTOR	21

Q 124			
Q 125			
Q 126			
Q 127			
Q 128			
Q 139			
Q 13	B1DHDC000028	TRANSISTOR	11
Q 17			
Q 19			
Q 22			
Q 25			
Q 41			
Q 42			
Q 47			
Q 48			
Q 50			
Q 140			
Q 15	B1CFGD000004	TRANSISTOR	7
Q 16			
Q 56			
Q 57			
Q 72			
Q 77			
Q 78			
Q 24	XP0421300L	TRANSISTOR	10
Q 26			
Q 44			
Q 45			
Q 49			
Q 55			
Q 89			
Q 90			
Q 98			
Q 117			
Q 27	XP0411300L	TRANSISTOR	6
Q 29			
Q 30			
Q 32			
Q 34			
Q 36			
Q 40	UNR9111J0L	TRANSISTOR	1
Q 51	2SB0766ARL	TRANSISTOR	1
Q 60	B1DBGD000006	TRANSISTOR	3
Q 79			
Q 80			
Q 63	B1DFGD000032	TRANSISTOR	2
Q 64			
Q 83	B1CFGD000003	TRANSISTOR	1
Q 84	B1MBEDA00018	TRANSISTOR	1
Q 87	B1GKCFJN0004	TRANSISTOR	2

Q 88			
Q 104	XP0421400L	TRANSISTOR	1
Q 110	B1DHFD000015	TRANSISTOR	2
Q 112			
Q 111	B1CFGD000016	TRANSISTOR	4
Q 116			
Q 118			
Q 119			
Q 113	B1MBEDA00008	TRANSISTOR	1
Q 115	B1DHDD000031	TRANSISTOR	2
Q 120			
R 1	ERJ2GEJ681X	RESISTOR, 1/16W, 680Ω	2
R 188			
R 2	ERJ2RKF27R4X	RESISTOR, 1/16W, 27.4Ω	3
R 15			
R 16			
R 4	ERJ2RKF54R9X	RESISTOR, 1/16W, 54.9Ω	5
R 17			
R 18			
R 35			
R 36			
R 5	ERJ2RKF39R2X	RESISTOR, 1/16W, 39.2Ω	1
R 6	ERJ2GEJ151X	RESISTOR, 1/16W, 150Ω	1
R 11	ERJ3GEY0R00V	RESISTOR, 1/16W, 0Ω	6
R 289			
R 291			
R 364			
R 365			
R 628			
R 12	ERJ2RKF2000X	RESISTOR, 1/16W, 200Ω	2
R 43			
R 13	ERJ2GEJ560X	RESISTOR, 1/16W, 56Ω	14
R 14			
R 27			
R 29			
R 31			
R 32			
R 125			
R 142			
R 144			
R 145			
R 146			
R 147			
R 178			
R 197			
R 23	ERJ3GEYJ100V	RESISTOR, 1/16W, 10Ω	5
R 483			
R 522			
R 541			
R 568			

R 24 R 220 R 542	ERJ2RHD102X	RESISTOR, 1/16W, 1K Ω	3
R 25	ERJ2RKF2001X	RESISTOR, 1/16W, 2K Ω	1
R 26 R 208 R 609 R 610 R 611 R 619	ERJ2GEJ562X	RESISTOR, 1/16W, 5.6K Ω	6
R 28	ERJ2GEJ750X	RESISTOR, 1/16W, 75 Ω	1
R 33 R 39	ERJ2RKF2210X	RESISTOR, 1/16W, 221 Ω	2
R 34 R 40 R 42	ERJ2RKF1000X	RESISTOR, 1/16W, 100 Ω	3
R 37 R 38 R 61 R 163 R 173	ERJ2RKF24R9X	RESISTOR, 1/16W, 24.9 Ω	5
R 41 R 135 R 161 R 166 R 168 R 179 R 180 R 232 R 244 R 272 R 274 R 287 R 290 R 333 R 334 R 347 R 349 R 361 R 399 R 406 R 418 R 426 R 444 R 449 R 455 R 456 R 463 R 492 R 496	ERJ2GE0R00X	RESISTOR, 1/16W, 0 Ω	45

R 498			
R 499			
R 501			
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R 513			
R 525			
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R 653			
R 655			
R 713			
R 714			
R 715			
R 716			
R 717			
R 718			
R 726			
R 46	ERJ2RKF80R6X	RESISTOR, 1/16W, 80.6Ω	2
R 47			
R 48	ERJ2GEJ103X	RESISTOR, 1/16W, 10KΩ	76
R 52			
R 62			
R 114			
R 115			
R 124			
R 130			
R 131			
R 152			
R 157			
R 159			
R 162			
R 177			
R 182			
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R 567			
R 573			
R 612			
R 613			
R 634			
R 635			
R 49	ERJ2GEJ222X	RESISTOR, 1/16W, 2.2KΩ	9
R 50			
R 231			
R 261			
R 262			
R 265			

R 266 R 371 R 373			
R 51 R 158 R 160 R 176 R 184 R 235 R 236 R 281 R 402 R 405 R 428 R 460 R 478 R 596 R 598 R 599 R 600 R 601 R 602	ERJ2GEJ101X	RESISTOR, 1/16W, 100Ω	19
R 53 R 54 R 55 R 258 R 259 R 260	ERJ2RKF1500X	RESISTOR, 1/16W, 150Ω	6
R 57	ERJ2RKF1501X	RESISTOR, 1/16W, 1.5KΩ	1
R 58 R 59	ERJ2GEJ390X	RESISTOR, 1/16W, 39Ω	2
R 60	ERJ2RKF2550X	RESISTOR, 1/16W, 255Ω	1
R 63	ERJ6GEYJ100V	RESISTOR, 1/10W, 10Ω	1
R 72 R 96	ERJ2GEJ2R2X	RESISTOR, 1/16W, 2.2Ω	2
R 79 R 80 R 81 R 82 R 83 R 89 R 93 R 94 R 98 R 99 R 101 R 102 R 103 R 104 R 105	ERJ2GEJ330X	RESISTOR, 1/16W, 33Ω	33

R 110 R 112 R 113 R 151 R 171 R 198 R 199 R 200 R 201 R 202 R 203 R 204 R 205 R 206 R 338 R 339 R 400 R 593			
R 86 R 186 R 196 R 215 R 242 R 321 R 322 R 370 R 372 R 409 R 475	ERJ2GEJ102X	RESISTOR, 1/16W, 1K Ω	11
R 91 R 100	D1H83304A024	RESISTOR ARRAY	2
R 97 R 183	ERJ2GEJ1R0X	RESISTOR, 1/16W, 1 Ω	2
R 107 R 108 R 109 R 111	ERJ2GEJ120X	RESISTOR, 1/16W, 12 Ω	4
R 126 R 127 R 128 R 129	ERJ2GEJ201X	RESISTOR, 1/16W, 200 Ω	4
R 138 R 150 R 153 R 192 R 303 R 317 R 323 R 348 R 467	D1H81034A024	RESISTOR ARRAY	9

R 149 R 154 R 210 R 211 R 248 R 249 R 263 R 268 R 276 R 279 R 280 R 283 R 288 R 305 R 335 R 369 R 378 R 381 R 382 R 404 R 413 R 414 R 420 R 465 R 480 R 500 R 502 R 517 R 552 R 614 R 615 R 660	ERJ2GEJ104X	RESISTOR, 1/16W, 100K Ω	32
R 164	ERJ2RKF22R6X	RESISTOR, 1/16W, 22.6 Ω	1
R 165 R 189 R 190 R 191 R 252 R 324 R 327 R 328 R 329 R 331 R 466 R 468 R 469 R 472	DEARA8AJ103M	RESISTOR ARRAY	14
R 167 R 226 R 318	ERJ2GEJ472X	RESISTOR, 1/16W, 4.7K Ω	12

R 360 R 380 R 398 R 422 R 427 R 432 R 629 R 637 R 638			
R 169	ERJ2GEJ203X	RESISTOR, 1/16W, 20K Ω	1
R 170 R 227	ERJ2GEJ106X	RESISTOR, 1/16W, 10M Ω	2
R 172 R 254 R 255 R 429 R 581 R 582 R 583 R 584 R 585 R 586 R 587 R 588	ERJ2GEJ105X	RESISTOR, 1/16W, 1M Ω	12
R 185	ERJ6GEYJ680V	RESISTOR, 1/10W, 68 Ω	1
R 207 R 229 R 240 R 241 R 300 R 451 R 452 R 576	ERJ2RHD103X	RESISTOR, 1/16W, 10K Ω	8
R 212 R 213 R 250 R 251 R 264 R 269 R 336 R 416 R 417 R 563 R 617 R 658 R 659	ERJ2GEJ474X	RESISTOR, 1/16W, 470K Ω	13
R 221 R 366 R 389 R 390	ERJ2GEJ471X	RESISTOR, 1/16W, 470 Ω	4

R 230 R 547 R 575	ERJ2RHD303X	RESISTOR, 1/16W, 30K Ω	3
R 233 R 239 R 569 R 640 R 641	ERJ2RHD104X	RESISTOR, 1/16W, 100K Ω	5
R 234 R 238	ERJ2RKD154X	RESISTOR, 1/16W, 150K Ω	2
R 237	D1ZZ00000046	RESISTOR, 1W, 5m Ω	1
R 245 R 246 R 247	D1HGR008A001	RESISTOR ARRAY	3
R 253	DEARA8CJ330M	RESISTOR ARRAY	1
R 256	D1H8R0040009	RESISTOR ARRAY	1
R 257	D1H81014A024	RESISTOR ARRAY	1
R 271	D1H81044A024	RESISTOR ARRAY	1
R 294 R 295 R 518 R 519 R 537 R 538 R 549 R 550 R 564 R 565 R 577 R 578	ERJ2GEJ100X	RESISTOR, 1/16W, 10 Ω	12
R 306 R 307	ERJ2RKF3010X	RESISTOR, 1/16W, 301 Ω	2
R 325 R 326	DEARA8AJ472M	RESISTOR ARRAY	2
R 330	DEARA8AJ102M	RESISTOR ARRAY	1
R 342 R 357 R 375 R 497 R 562 R 606 R 646 R 650 R 651 R 656 R 657	ERJ2GEJ473X	RESISTOR, 1/16W, 47K Ω	11
R 344	ERJ2GEJ273X	RESISTOR, 1/16W, 27K Ω	1
R 346 R 354 R 355	ERJ2GEJ220X	RESISTOR, 1/16W, 22 Ω	27

R 665			
R 666			
R 667			
R 668			
R 669			
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R 671			
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R 685			
R 686			
R 687			
R 688			
R 350 R 351 R 352	ERJ2GEJ363X	RESISTOR, 1/16W, 36K Ω	3
R 353	ERJ2GEJ333X	RESISTOR, 1/16W, 33K Ω	1
R 362 R 363 R 367 R 368 R 572 R 603	ERJ2GEJ223X	RESISTOR, 1/16W, 22K Ω	6
R 374	ERJ2GEJ683X	RESISTOR, 1/16W, 68K Ω	1
R 386 R 387 R 388 R 391 R 396 R 397 R 551	ERJ2GEJ221X	RESISTOR, 1/16W, 220 Ω	7
R 392	D1H82204A024	RESISTOR ARRAY	1
R 56	D1H82224A024	RESISTOR ARRAY	1
R 393 R 394 R 395	ERJ2GEJ511X	RESISTOR, 1/16W, 510 Ω	3
R 421	ERJ2GEJ334X	RESISTOR, 1/16W, 330K Ω	1
R 430	ERJ2RKF4871X	RESISTOR, 1/16W, 4.87K Ω	1
R 433	ERJ2RKF49R9X	RESISTOR, 1/16W, 49.9 Ω	8

R 434			
R 435			
R 436			
R 437			
R 438			
R 439			
R 440			
R 445	D1H87504A024	RESISTOR ARRAY	1
R 450	ERJ2RKF5602X	RESISTOR, 1/16W, 56K Ω	1
R 481	ERJ2RKF1600X	RESISTOR, 1/16W, 160 Ω	1
R 482	ERJ2RKF2150X	RESISTOR, 1/16W, 215 Ω	1
R 486	ERJ2RKF7501X	RESISTOR, 1/16W, 7.5K Ω	1
R 489	ERJ2RKF4531X	RESISTOR, 1/16W, 4.53K Ω	1
R 490	ERJ2RKF2400X	RESISTOR, 1/16W, 240 Ω	1
R 491	ERJ2RKF5101X	RESISTOR, 1/16W, 5.1K Ω	1
R 493	ERJ2RKF5103X	RESISTOR, 1/16W, 510K Ω	1
R 494	ERJ2RKF1100X	RESISTOR, 1/16W, 110 Ω	1
R 495	ERJ2RKF5361X	RESISTOR, 1/16W, 5.36K Ω	1
R 503	ERJ3GEYJ3R3V	RESISTOR, 1/16W, 3.3 Ω	3
R 647			
R 648			
R 505	D1JB3M00A001	RESISTOR, 1W, 3m Ω	1
R 510	D1BDR0220001	RESISTOR, 1/8W, 0.022 Ω	6
R 511			
R 535			
R 554			
R 556			
R 579			
R 520	ERJ2GEJ153X	RESISTOR, 1/16W, 15K Ω	3
R 539			
R 566			
R 523	ERJ2RHD472X	RESISTOR, 1/16W, 4.7K Ω	1
R 524	ERJ2RHD153X	RESISTOR, 1/16W, 15K Ω	1
R 536	D1BDR0330001	RESISTOR, 1/8W, 0.033 Ω	6
R 553			
R 555			
R 561			
R 580			
R 632			
R 543	ERJ2RHD203X	RESISTOR, 1/16W, 20K Ω	2
R 571			
R 544	ERJ2RHD243X	RESISTOR, 1/16W, 24K Ω	2
R 548			
R 557	ERJ2RKF5601X	RESISTOR, 1/16W, 5.6K Ω	2
R 558			
R 559	ERJ2RKF1302X	RESISTOR, 1/16W, 13K Ω	1
R 560	D1BDR0470002	RESISTOR, 1/8W, 0.047 Ω	2
R 621			
R 570	ERJ2RHD622X	RESISTOR, 1/16W, 6.2K Ω	1
R 574	ERJ2RHD132X	RESISTOR, 1/16W, 1.3K Ω	1

R 604 R 605	ERJ6GEYJ222V	RESISTOR, 1/10W, 2.2K Ω	2
R 607	ERJ3GEYJ562V	RESISTOR, 1/16W, 5.6K Ω	1
R 608	D1BDR4700001	RESISTOR, 1/8W, 0.47 Ω	1
R 616	ERJ2RKD114X	RESISTOR, 1/16W, 110K Ω	1
R 618	ERJ2RHD3652X	RESISTOR, 1/16W, 36.5K Ω	1
R 620	ERJ2GEJ154X	RESISTOR, 1/16W, 150K Ω	1
R 622	D1BDR0680001	RESISTOR, 1/8W, 0.068 Ω	1
R 626	ERA3EKB1623V	RESISTOR, 1/16W, 162K Ω	1
R 627	ERA3EEB1692V	RESISTOR, 1/16W, 16.9K Ω	1
R 630 R 631	ERJ2RHD302X	RESISTOR, 1/16W, 3K Ω	2
R 636 R 639 R 652 R 654	ERJ2GEJ564X	RESISTOR, 1/16W, 560K Ω	4
R 642 R 643	ERJ2RHD333X	RESISTOR, 1/16W, 33K Ω	2
R 644 R 645	ERJ2RHD473X	RESISTOR, 1/16W, 47K Ω	2
R 661 R 662 R 663 R 664 R 689 R 690 R 691 R 692	D1HG2208A001	RESISTOR ARRAY	8
R 720 R 721 R 722 R 723 R 724 R 725	D1HA56080001	RESISTOR ARRAY	6
SP 1	DFHD05H009ZA	SPACER	1
SP 2 SP 3	DFHD05H008ZA	SPACER	2
T 1 T 2	G5BYC0000010	TRANCE	2
X 1	H0J143500040	OSCILLATOR, 14.318MHz	1
X 2	H0J327200115	OSCILLATOR, 32.768KHz	1
X 3 X 4	H0J250500025	OSCILLATOR, 25MHz	2
X 5	H2D800400015	OSCILLATOR, 8MHz	1
IO PCB			
C 701 C 702 C 703 C 704 C 705	F1G1H101A451	CAPACITOR, 50V, 100pF	8

C 706			
C 708			
C 710			
C 707	F1G1H221A450	CAPACITOR, 50V, 220pF	23
C 709			
C 711			
C 712			
C 713			
C 714			
C 715			
C 716			
C 717			
C 718			
C 719			
C 720			
C 721			
C 722			
C 723			
C 724			
C 725			
C 726			
C 727			
C 730			
C 732			
C 733			
C 734			
C 728	F1G1H330A451	CAPACITOR, 50V, 33pF	3
C 729			
C 731			
C 735	F1G1C104A042	CAPACITOR, 16V, 0.1µF	1
CN 700	K1MN50AA0018	CONNECTOR	1
CN 702	K1FB115BA014	CONNECTOR	1
CN 703	K1FB125BA015	CONNECTOR	1
CN 704	K1FA209BA004	CONNECTOR	1
D 700	MA3X74800L	DIODE	1
L 700	DDB5Z021G-Y	INDUCTOR	8
L 701			
L 702			
L 703			
L 704			
L 705			
L 706			
L 707			
L 708	DDB5Z024E-L	INDUCTOR	7
L 709			
L 710			
L 711			
L 712			
L 713			
L 714			

PS 700	K5J1AB000001	POLY SW	1
R 704 R 705 R 706 R 707 R 708 R 709 R 710 R 711 R 712	ERJ2GEJ472X	RESISTOR, 1/16W, 4.7K Ω	9
R 713 R 714 R 715 R 716 R 717 R 718 R 719 R 720	ERJ2GEJ102X	RESISTOR, 1/16W, 1K Ω	8
R 751 R 752 R 753 R 754	ERJ3GEYJ102V	RESISTOR, 1/16W, 1K Ω	4
LED PCB			
CN 980	K1MN10AA0018	CONNECTOR	1
LD 1 LD 2 LD 3 LD 6 LD 7	B3ABB0000210	LED	5
LD 5	B3ADB0000065	LED	1
LD 41	B3AGB0000040	LED	1
KBD PCB			
C 930	F1G1C104A042	CAPACITOR, 16V, 0.1 μ F	1
CN 930	K1MN50BA0059	CONNECTOR	1
CN 931	K1MN16BA0059	CONNECTOR	1
CN 934	K1MY07BA0096	CONNECTOR	1
CN 933	K1MY13BA0102	CONNECTOR	1
CN 932	K1MY16BA0097	CONNECTOR	1
CN 950 CN 951 CN 952 CN 953	K1QZA1AE0001	CONNECTOR	4
IC 930	C0JBAA000402	IC	1
TS PCB			
C 850 C 858	F1H1A1050015	CAPACITOR, 10V, 1 μ F	2
C 851 C 853	F1G1E472A062	CAPACITOR, 25V, 4700pF	2
C 852 C 854	F1G1H681A450	CAPACITOR, 50V, 680pF	2

C 855 C 859	F1G1C104A042	CAPACITOR, 16V, 0.1µF	2
C 856 C 857	F1G1H560A542	CAPACITOR, 50V, 56pF	2
CN 850	K1MN04BA0071	CONNECTOR	1
CN 851	K1KA06BA0014	CONNECTOR	1
D 850	DED1SS355T17	DIODE	1
IC 850	C1DB00001351	IC	1
Q 850 Q 852	B1MBADA00003	TRANSISTOR	2
Q 851	UNR9113J0L	TRANSISTOR	1
R 850	ERJ2GEJ224X	RESISTOR, 1/16W, 220KΩ	1
R 851 R 854	ERJ2GEJ102X	RESISTOR, 1/16W, 1KΩ	2
R 852 R 855	ERJ2GEJ822X	RESISTOR, 1/16W, 8.2KΩ	2
R 853	ERJ2GEJ303X	RESISTOR, 1/16W, 30KΩ	1
R 856 R 857	ERJ2GE0R00X	RESISTOR, 1/16W, 0Ω	2
R 859 R 860	ERJ2GEJ222X	RESISTOR, 1/16W, 2.2KΩ	2
RA 850	D1H8R0040009	RESISTOR ARRAY	1
X 850	H2D100500002	OSCILLATOR, 10MHz	1
TP PCB			
C 800 C 804	F1H1A1050015	CAPACITOR, 10V, 1µF	2
C 801 C 802	F1G1H681A450	CAPACITOR, 50V, 680pF	2
C 803	F1G1C104A042	CAPACITOR, 16V, 0.1µF	1
CN 800	K1MN16BA0059	CONNECTOR	1
CN 801	K1MY04BA0104	CONNECTOR	1
CN 803	K1MN10BA0059	CONNECTOR	1
D 800	DED1SS355T17	DIODE	1
IC 800	C1DB00001417	IC, FLAT PAD CONTROLLER	1
Q 800 Q 801	B1GKCFJN0004	TRANSISTOR	2
R 800	ERJ2GEJ224X	RESISTOR, 1/16W, 220KΩ	1
R 801 R 803	ERJ2GEJ822X	RESISTOR, 1/16W, 8.2KΩ	2
R 802	ERJ2GEJ273X	RESISTOR, 1/16W, 27KΩ	1
R 804	ERJ2GEJ105X	RESISTOR, 1/16W, 1MΩ	1
R 805 R 806	ERJ2GEJ222X	RESISTOR, 1/16W, 2.2KΩ	2
RA 800	D1H81034A024	RESISTOR ARRAY	1
SW 800 SW 801	EVQPLDA15	SW	2
X 800	H2D400400012	OSCILLATOR, 4MHz	1
IO FPC			
SW 1	K0ZZ00000620	SW	1
SW-LED FPC			

CN 950	K1KA06A00454	CONNECTOR	1
LD 8	B3ABB0000210	LED	1
LD 72	B3AGB0000040	LED	1
LD 73	B3ADB0000065	LED	1
SW 950	EVQPLDA15	SW	1
EXT ANT PCB			
CN 1	K1QZA1AE0001	CONNECTOR	2
CN 2			
CN 3	K1QZB1AA0020	CONNECTOR	1
FDD PCB			
C 780	F1H1H104A731	CAPACITOR,	1
CN 760	K1KAA0AA0243	CONNECTOR	1
CN 761	K1MY26BA0008	CONNECTOR	1
IC 760	C0JBAB000675	IC	1
SD-CN PCB			
C 1	F1H1H104A748	CAPACITOR,	1
CN 1	K1NA09E00073	CONNECTOR	1
CN 2	K1MN12BA0059	CONNECTOR	1
D 1	B3ACB0000020	DIODE	1
R 1	ERJ3GEYJ101V	RESISTOR, 1/16W, 100Ω	1