

5 Repair and Disassembly

5.1 Tools

During disassembly and replacing, the following tools may be required:

- Phillips screwdrivers
- Small flat-bladed screwdrivers
- Contact spanner
- Tweezers
- Sharp nose pliers
- Sleeve

5.2 Preparations for Disassembly

Before disassembling the monitor, finish the following preparations:

- Stop monitoring the patient, turn off the monitor and disconnect all the accessories and peripheral devices.
- Disconnect the AC power source and take out both of the batteries.
- Pull off all the modules in the integral module rack. If the SMR is connected, disconnect the SMR from the monitor and then remove all the modules in it.

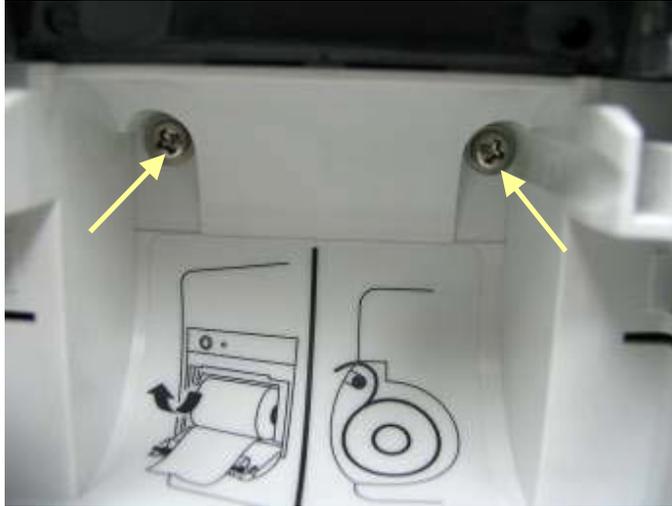
WARNING

- **Before disassembling the monitor, be sure to eliminate the static charges first. When disassembling the parts labeled with static-sensitive symbols, make sure you are wearing electrostatic discharge protection such as antistatic wristband or gloves to avoid damaging the equipment.**
 - **Put the cables or wires in place when reassemble the monitor to avoid short circuit.**
 - **When assembling the monitor, be sure to select proper screws. If an unfit screw is tightened by force, the monitor may be damaged and the screw or the part may fall off during use to cause unpredictable damage or human injury.**
 - **Be sure to follow the correct sequence to disassembly the monitor. Otherwise, the monitor may be damaged permanently.**
 - **Be sure to disconnect all the cables before disassembling any parts. Be sure not to damage any cables or connectors.**
 - **Be sure to place the monitor face up when disassembling it. Otherwise, the screen or the knob may be scratched or damaged.**
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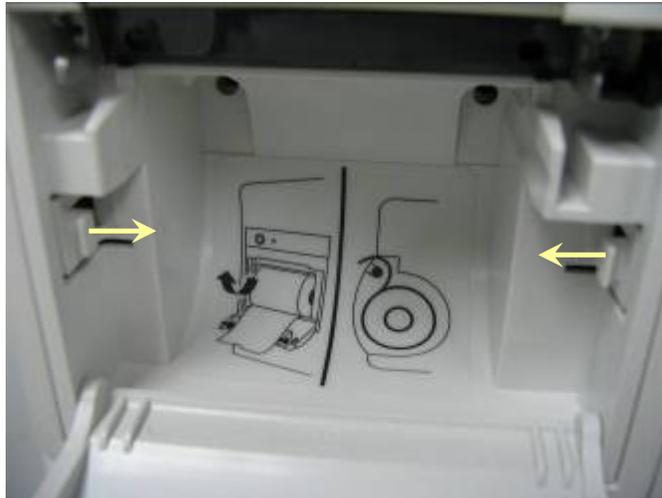
5.3 Disassembling Procedure

5.3.1 Removing the Recorder

1. Open the recorder door and unscrew the two M3×6 screws.



2. Pull the two clips in the directions as indicated and meanwhile pull out the recorder.



NOTE

- Be sure not to damage the connecting cables or connectors when pulling out the recorder.

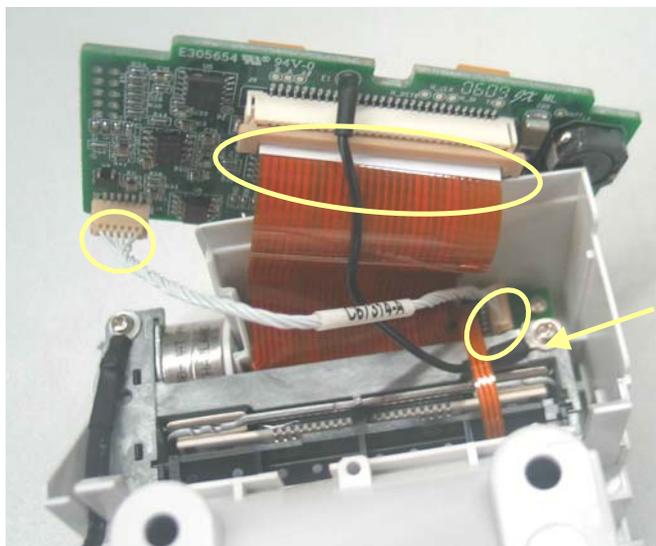
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3. Unscrew the M3×6 screw and unplug the recorder grounding cable and the cable between the recorder and the mother board.



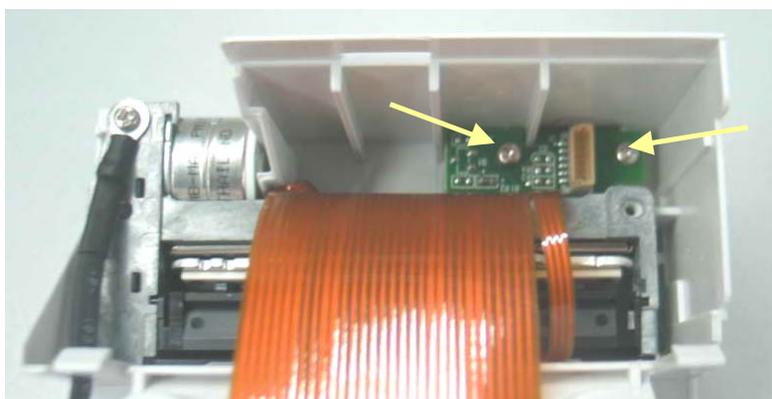
4. Pull the two clips backwards and remove the recorder driving board.



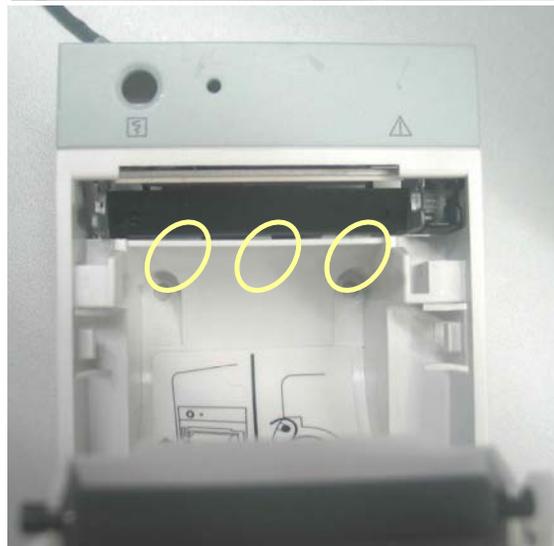
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5. Pull the press bar upwards about 1 mm and then unplug the flexible cable. Remove the cable that connects the driving board and the button board. Unscrew the PT2×6 screw and remove the drive board's grounding cable. Then take out the recorder driving board.



6. Unscrew the two PT2×6 screws and take out recorder's button board.



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7. Unscrew the PT2×6 screw. Prize the thermal printhead a little using a small flat-bladed screwdriver to remove the printhead.



5.3.2 Separating the Front and Rear Housing

1. Remove the hook and then unscrew the four M3×12 screws, one of which can be seen only when the battery door is opened.



NOTE

- Exercise care when pulling the front housing out. Be sure not to damage the cables and connectors.
 - Avoid pressing the knob on the table.
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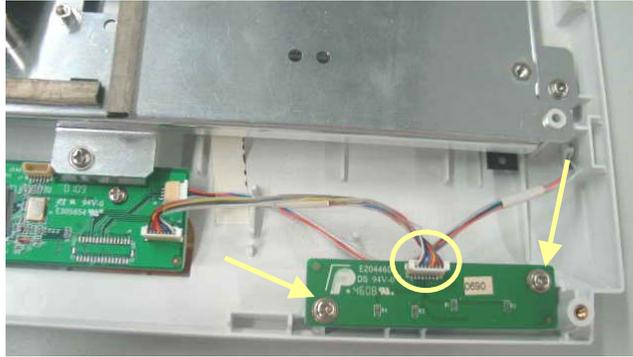
2. Separate the front and rear housing and unplug the connecting cable between button board and main board as well as the cable between the LCD and the main board.



Avoid pressing the knob on the table.

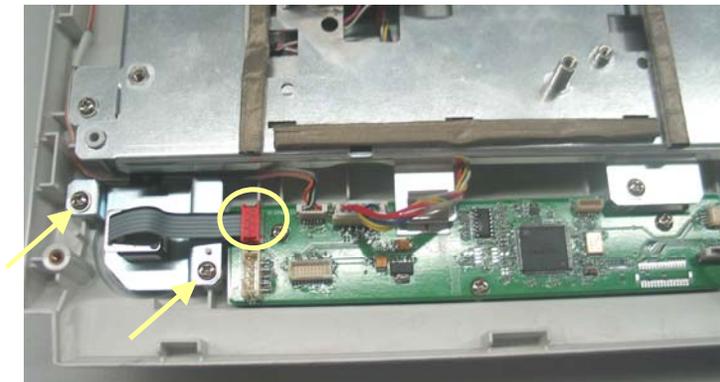
5.3.3 Removing the Power Switch & LED Board

1. Unplug the connecting cable between power switch & LED board and the button board. Unscrew the two M3×6 screws and remove the power switch & LED board.



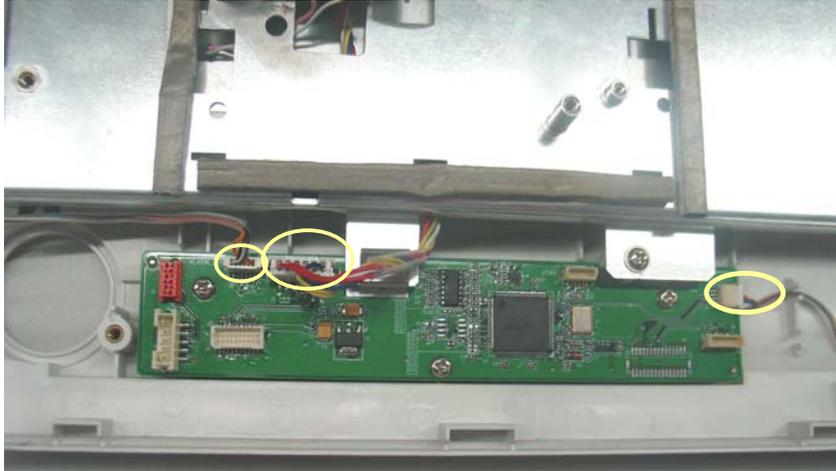
5.3.4 Removing the Knob Encoder

- Disconnect the cable that connects the knob encoder and the button board. Then unscrew the two M3×6 screws and take out the knob encoder.

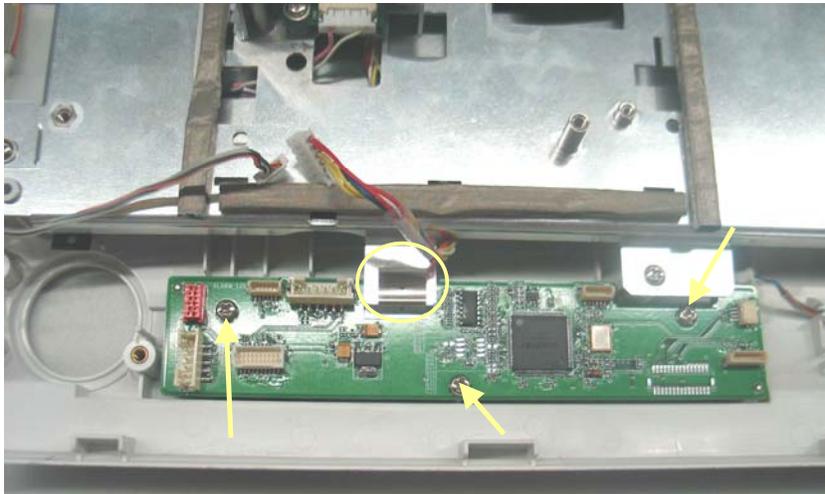


5.3.5 Removing the Button Board

1. Disconnect the cables from the button board to the alarm LED board, backlight board and touchscreen control board.



2. Remove the grounding spring and then unscrew the three PT3×8 screws and take out the button board.

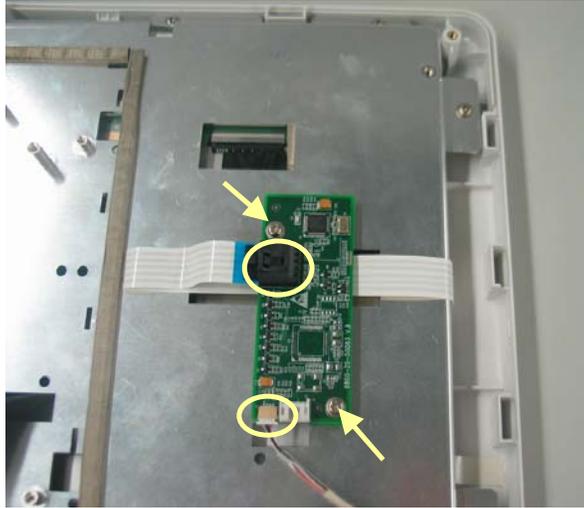


NOTE

- Do not forget the grounding spring when reassembling..

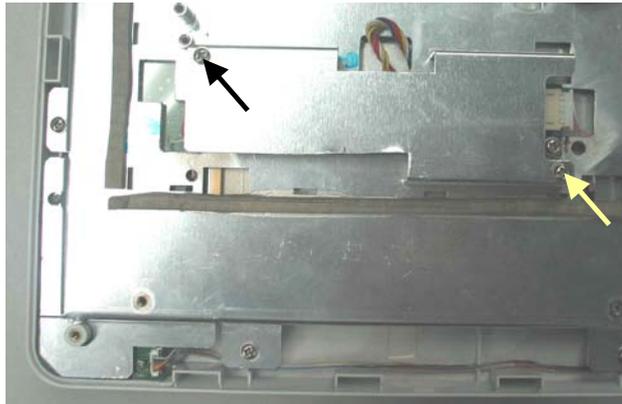
5.3.6 Removing the Touchscreen Control Board

1. Unplug the cables respectively from the touchscreen and button board to the touchscreen control board. Then, unscrew the two M3×6 screws and remove the touchscreen control board.

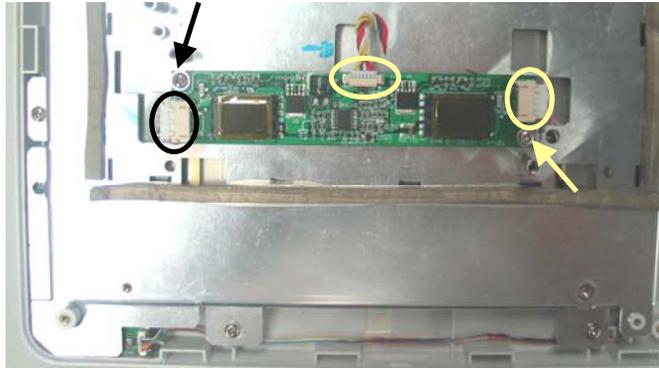


5.3.7 Removing the Inverter

1. Unscrew the two M3×6 screws and remove the backlight board shield.



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2. Unplug the cables respectively from the button board and the LCD to the backlight board. Then, unscrew the two M3×6 screws to remove the inverter.

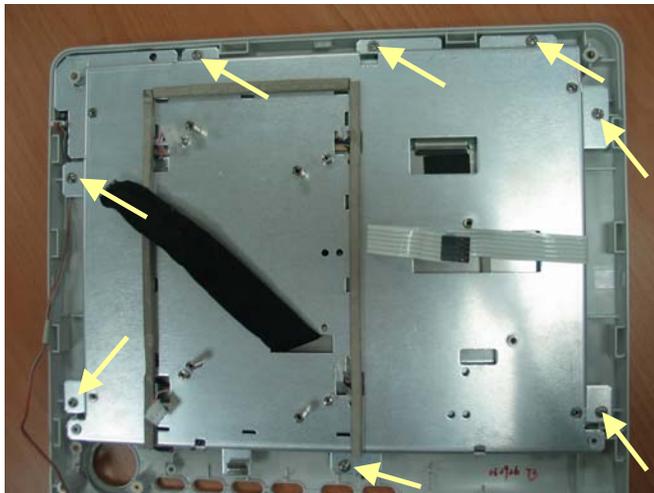


5.3.8 Removing the LCD

CAUTION

- Do not touch the LCD.
- Disassemble the LCD in an environment as dust-free as possible.

1. Unscrew the eight M3×6 screws and remove the LCD with care. Do not touch the LCD surface and prevent it from being contaminated by dust.



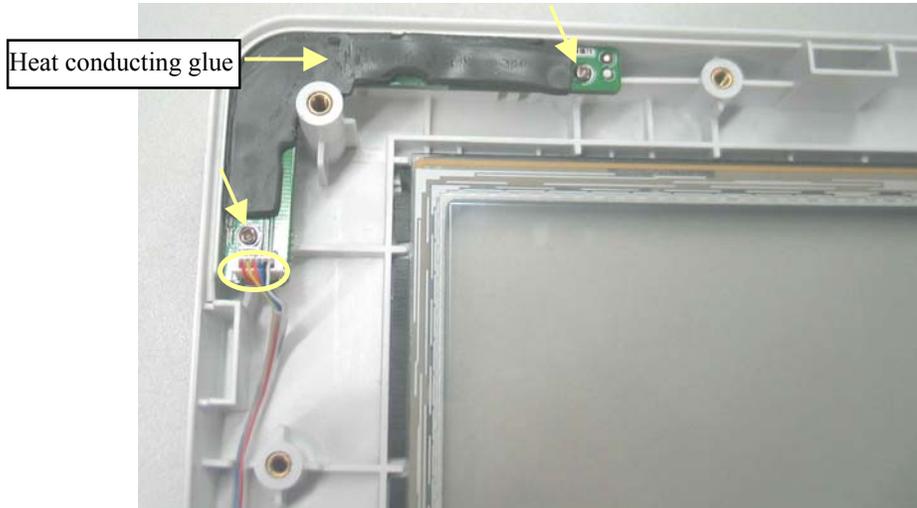


2. Unscrew the four M3×6 screws underneath the screen cover and then remove the LCD.



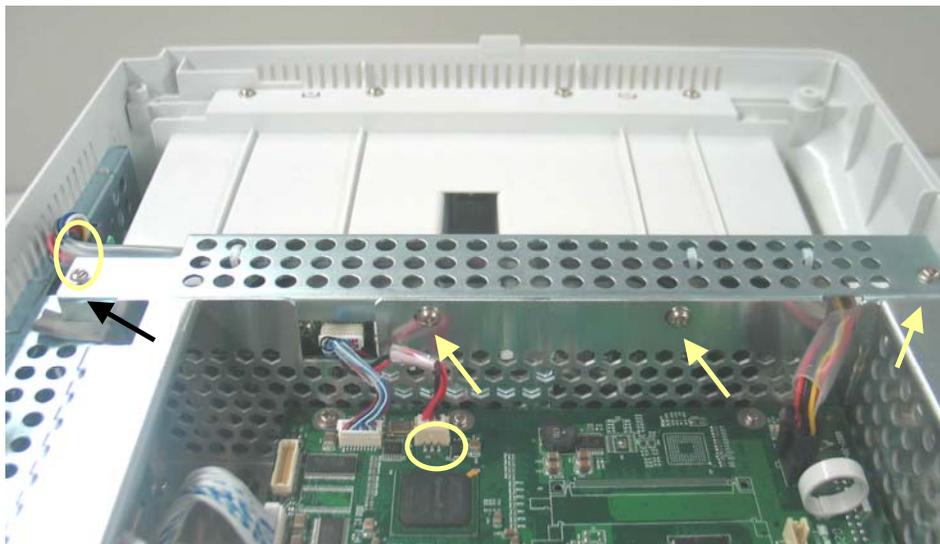
5.3.9 Removing the Alarm LED Board

1. After removing the LCD, disconnect the cable that connects the alarm LED board and the button board, and then, unscrew the two PT2×6 screws to remove the alarm LED board.



5.3.10 Removing the Fan Assembly

Unplug the cable that connects the fan assembly and the mother board. Then, unscrew the four M3×6 screws and remove the fan assembly.



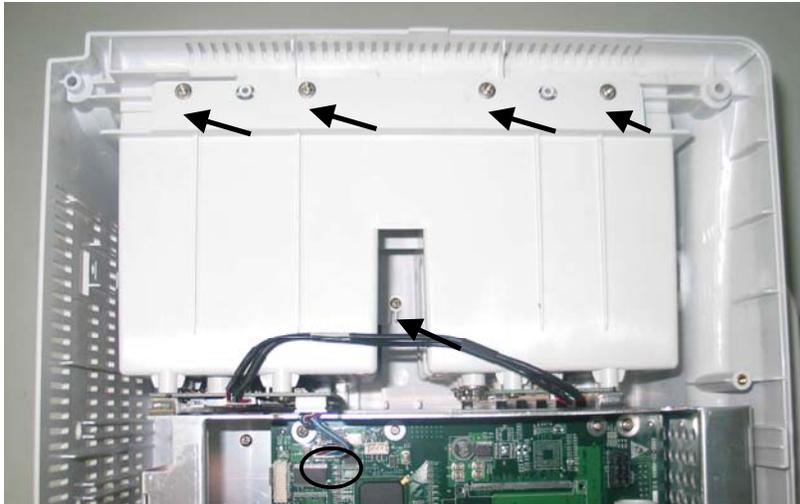
5.3.11 Removing Battery Compartment Assembly

1. Unplug the cable that connects the battery compartment assembly and the mother board. Then, unscrew the three M3×6 screws and take out the battery compartment assembly.

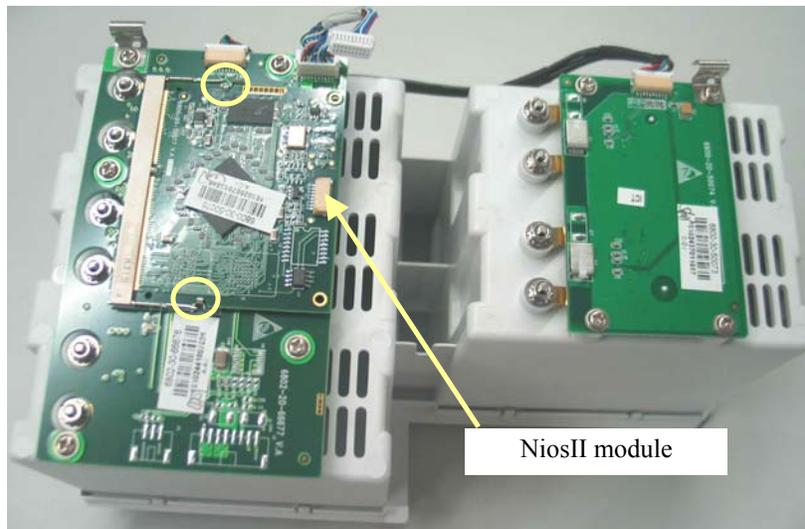


5.3.12 Removing the Integral Module Rack

1. Disconnect the cable that connects the integral module rack and the motherboard. Unscrew the five M3×8 screws and remove the integral module rack.



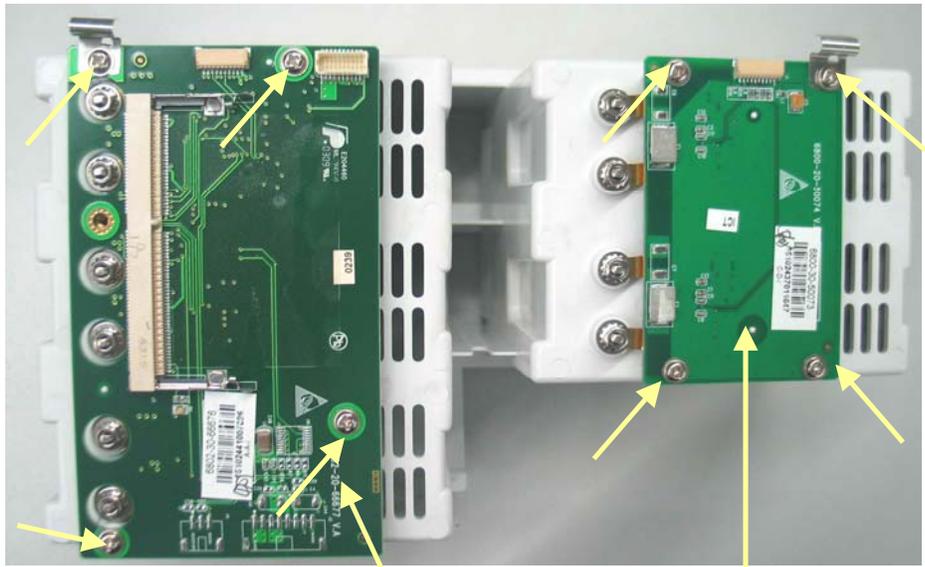
2. Disconnect the cable that connects the MPM module rack communication board and the 3-slot module rack communication board. Release the two snaps and unplug the NiosII module on the 3-slot module rack.



3. Unscrew the eight M3×6 screws and then remove the 3-slot module rack communication board and MPM module rack communication board.

NOTE

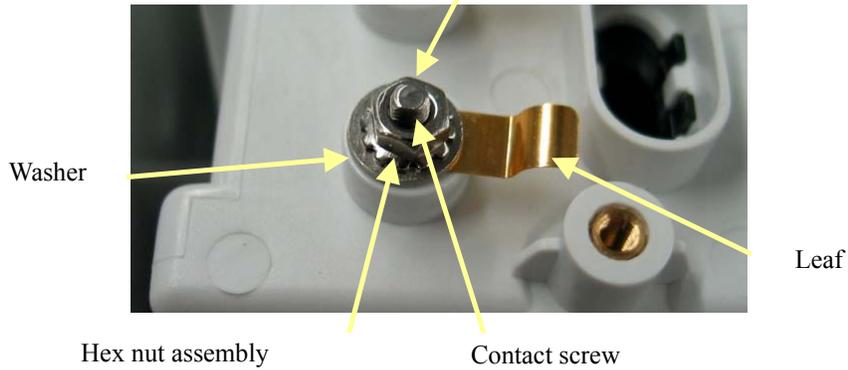
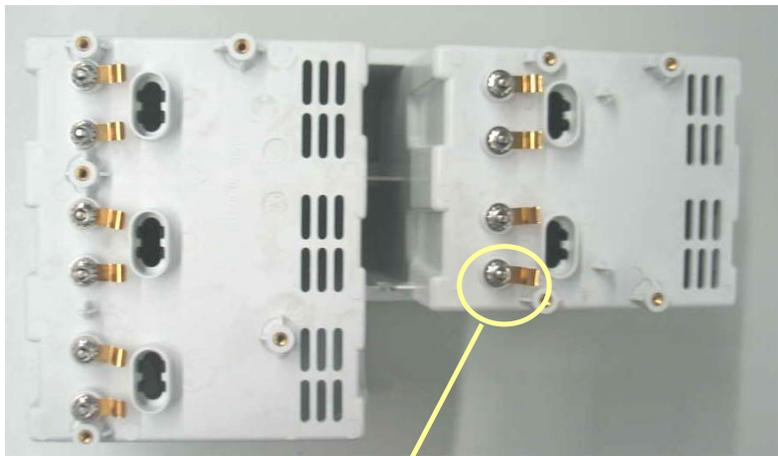
- Do not forget the grounding spring when reassembling..



3-slot module rack communication board

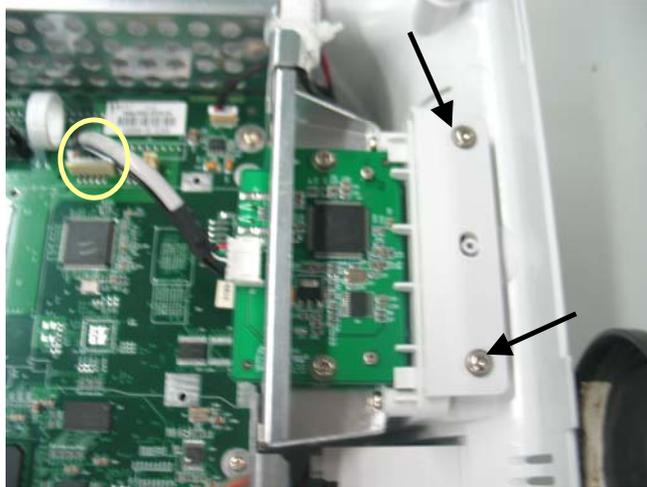
MPM module rack communication board

- 4. Unscrew the hex nut assy using the sleeve. Then separate the washer, spring and contact screw from each other.



5.3.13 Removing the CF Card Assembly

1. Unplug the cable that connects the CF card assembly and the mother board. Then, unscrew the two M3×6 screws and remove the CF card assembly.



2. Unscrew the two M3×6 screws and remove the CF card assembly with the shield.



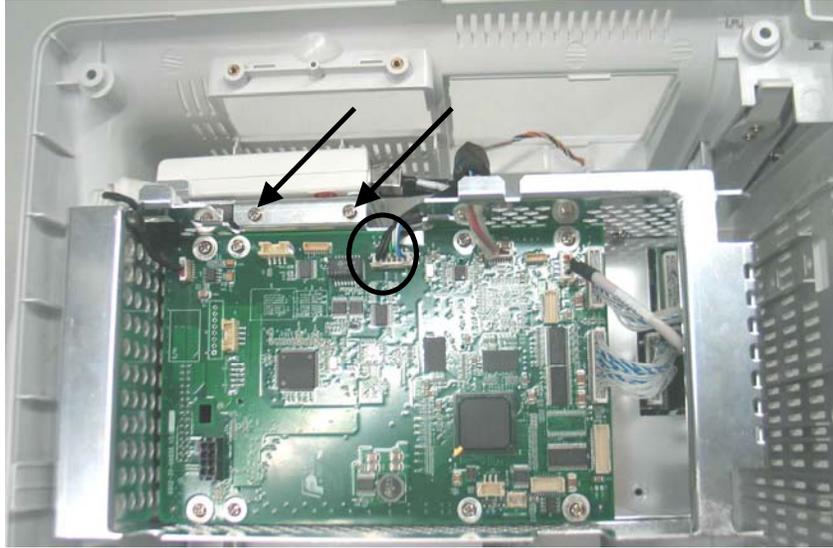
NOTE

- When reassembling the CF card assembly, be sure to install the CF card door first.
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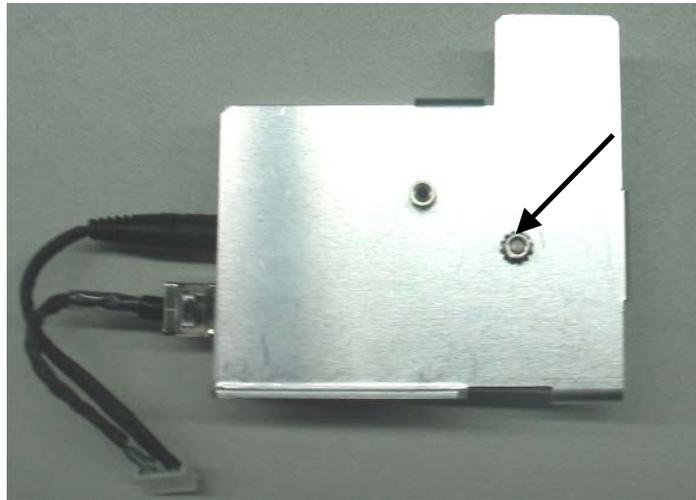
5.3.14 Removing the wireless AP assembly

5.3.14.1 Removing the internal wireless AP

1. Disconnect the wireless AP cable. Then unscrew the two M3×6 screws to remove the wireless AP assembly.

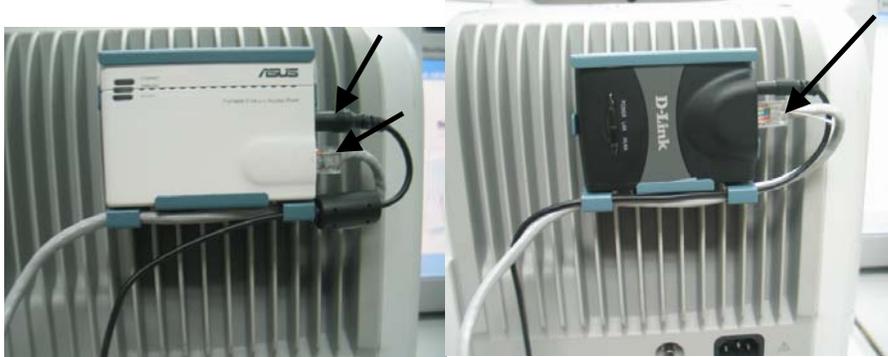


2. Unscrew the M3 nut assembly to remove the wireless AP.

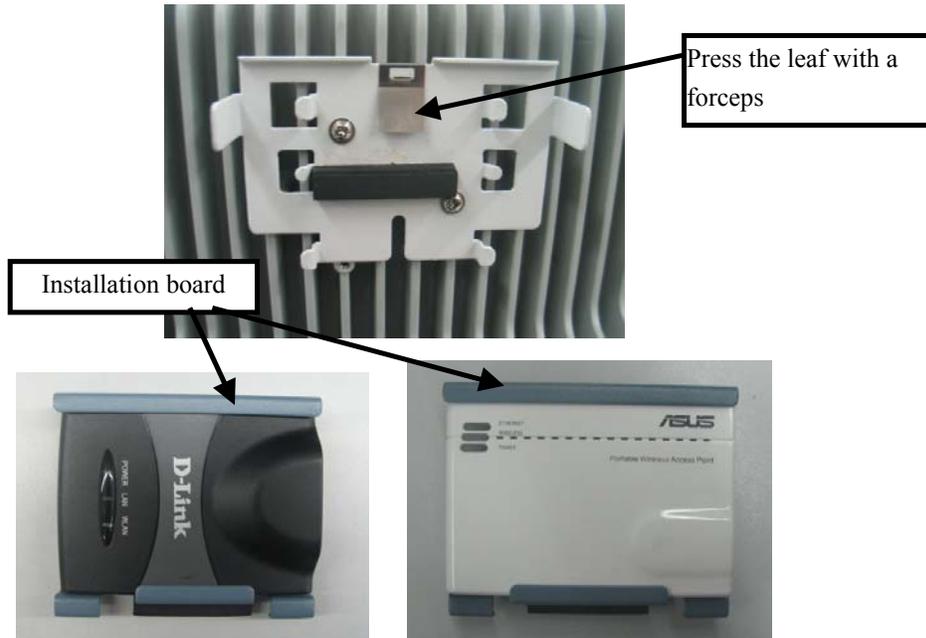


5.3.14.2 Removing the external wireless AP

1. Disconnect the network cable and the power cord



2. Press the leaf on the fix board with forceps; push the AP and installation board upwards. Then remove the AP and installation board.



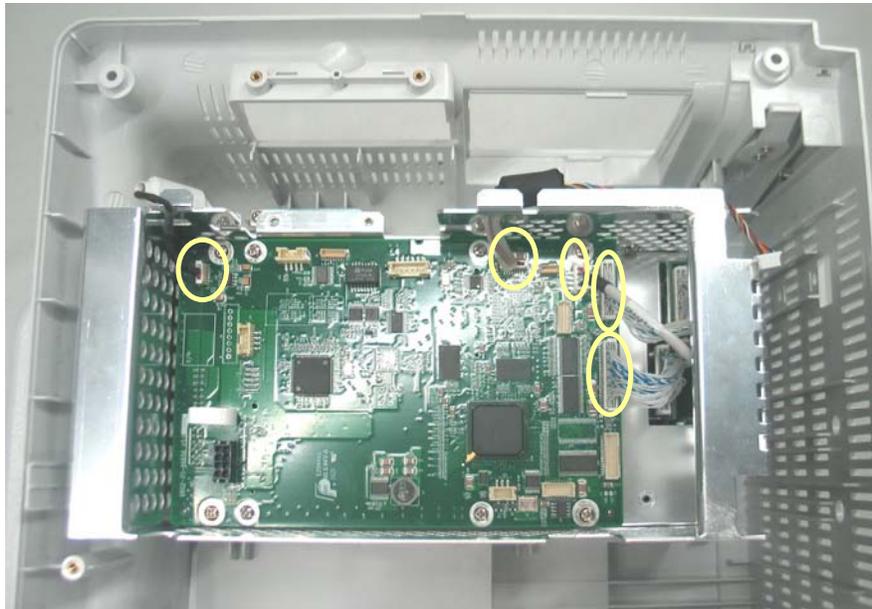
3. Unscrew the two M3×8 screws and take out the fix board.



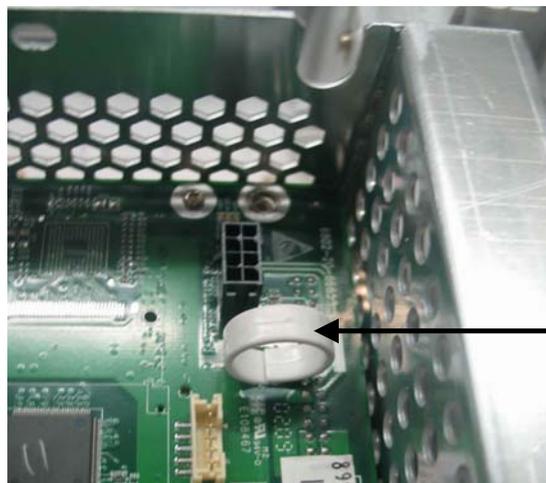
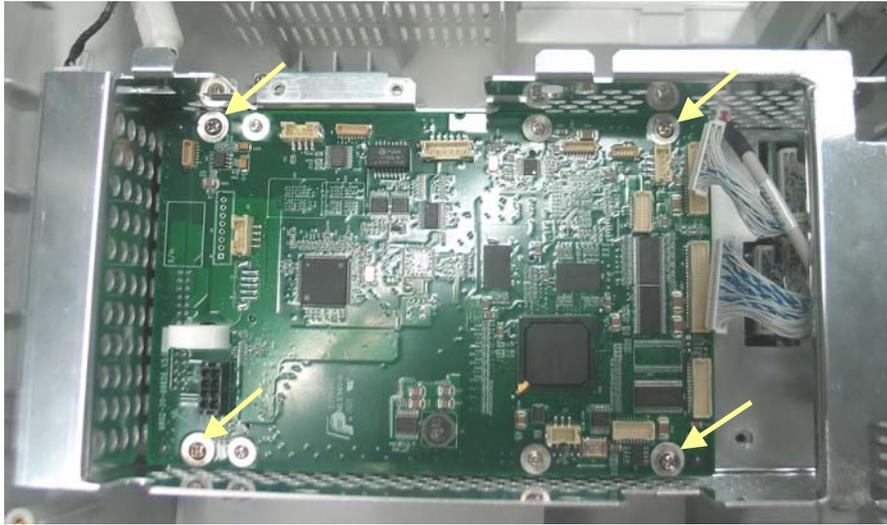
5.3.15 Removing the Main Board

Unplug all the cables on the mother board. The numbers beside the connectors indicates what device is connected with the connector.

J4	Button board	J17	speaker
J5	Recorder	J19	LCD
J6	DVI interface board	J9	Wireless AP
J7	Battery interface board	J23	Fan
J10	CF card board	J25	3-slot module rack communication board
J12	power board	J18、J26	USB_Hub board



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2. Unscrew the 4 M3×6 screws and take out the main board assembly.

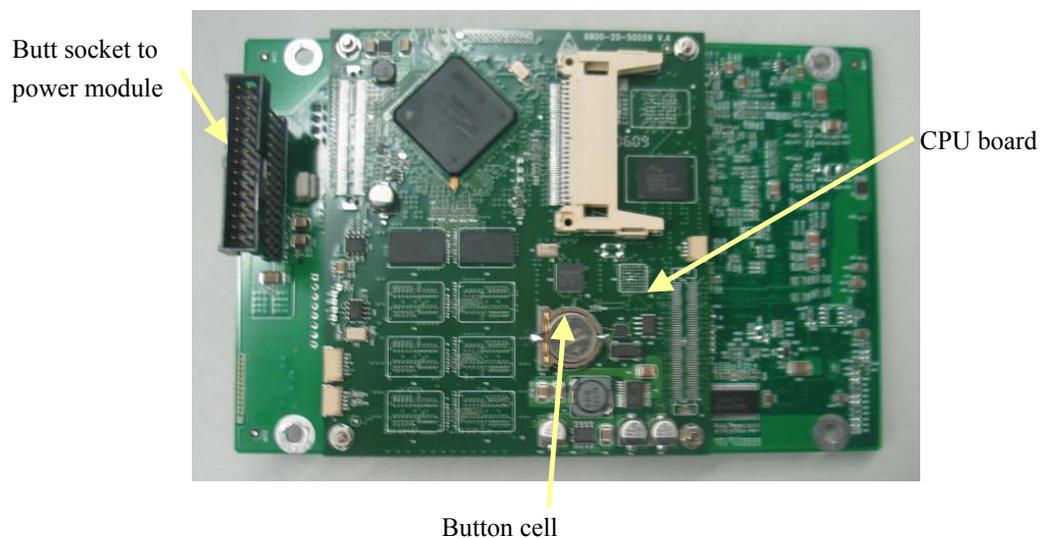
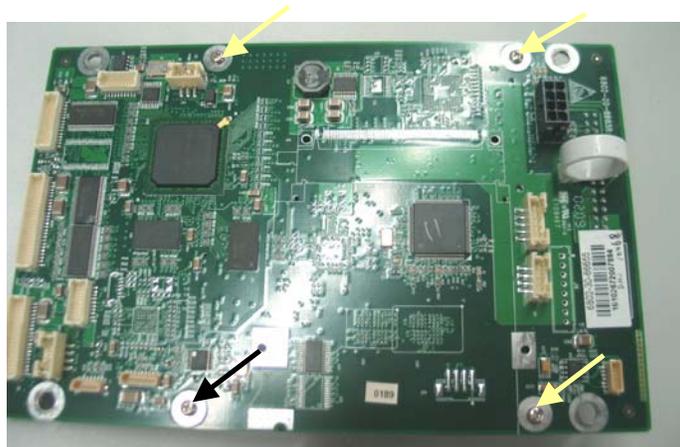


Ring

NOTE

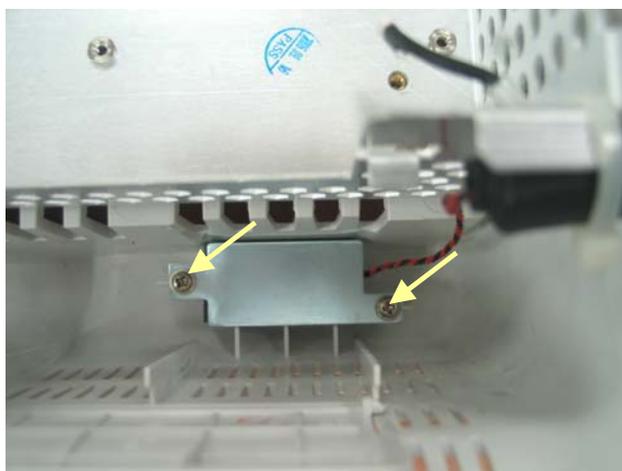
- Since the main board assembly is connected with the power module via a butt socket and the CPU radiator may be adhered to it, the main board assembly should be removed with force. Take care not to damage the butt socket.

3. Unscrew the 4 M2.5×6 screws on the CPU board and vertically separate the CPU board and the mother board. Take care not to damage the butt socket.



5.3.16 Removing the Speaker

1. Unscrew the two M3×6 screws and remove the speaker.

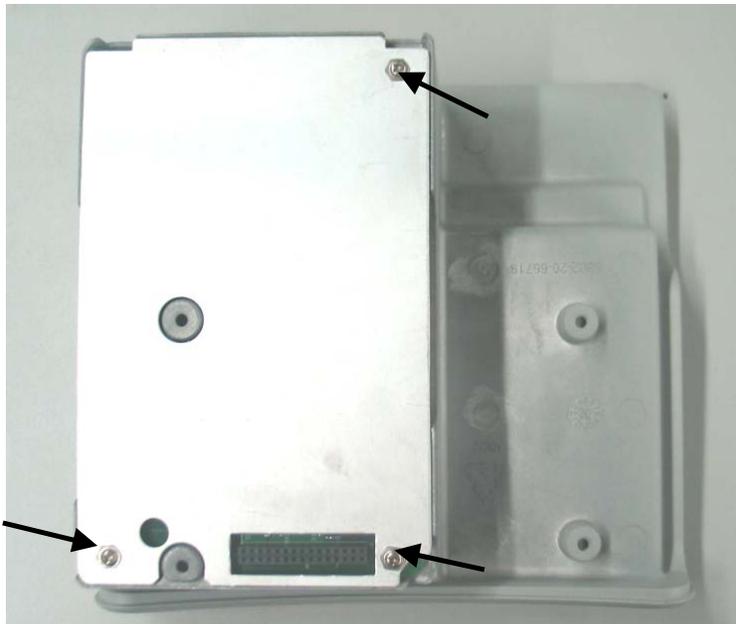


5.3.17 Removing the Power Module Assembly

1. Unscrew the four M3×12 screws and remove the power module assembly.



2. Unscrew the three M3×12 screws and remove the power supply cover.



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3. Lift the power board with a small flat screwdriver. Then, turn it over.



4. Unplug the cable between the AC input filter and the power board, then remove the power board.



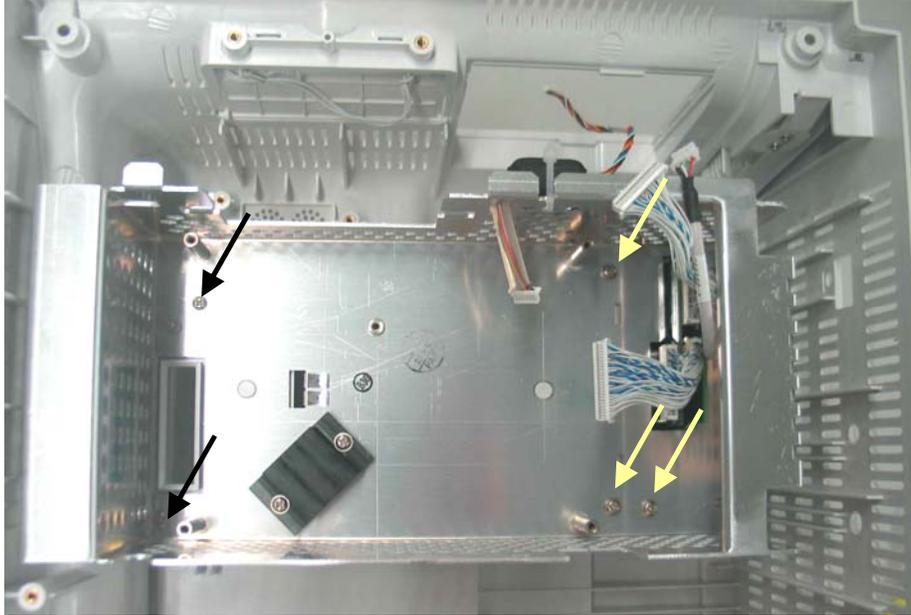
Equipotential Pillar

NOTE

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- Since the power board may be adhered to the insulator, be careful not to damage the parts, connectors and cables on the power board when prizing it.
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5.3.18 Removing the Main Support

1. Unscrew the five M3×6 screws and disassemble the main support.

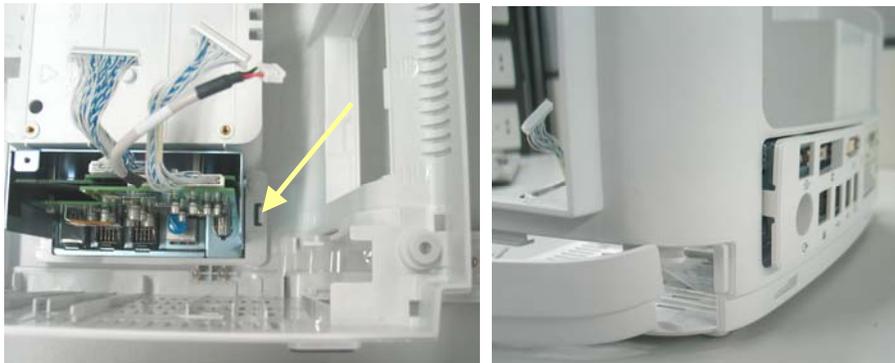


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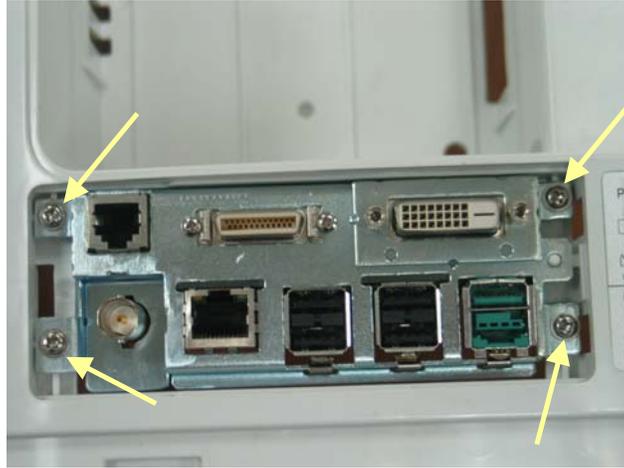
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- Be sure to remove the power module first before removing the main support.
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5.3.19 Removing the Interface Board Assembly

1. Release the clip that locks the interface board and push it outwards.



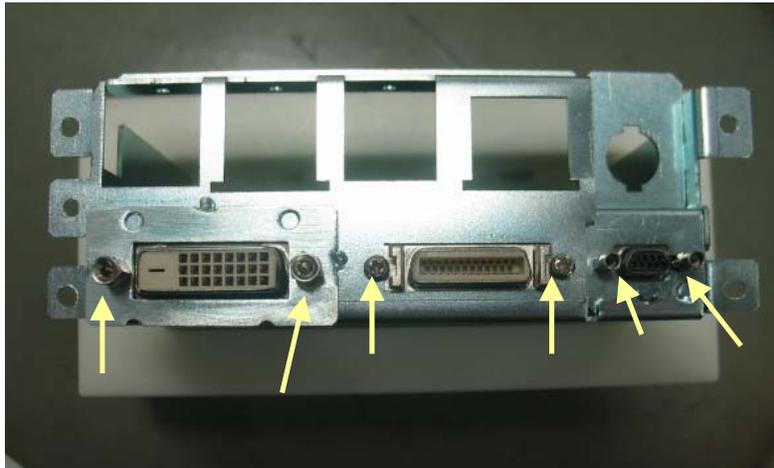
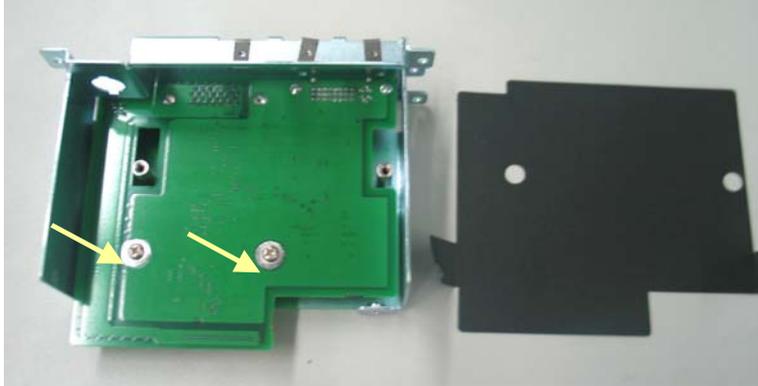
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2. Open the interface board cover and unscrew the four M3×6 screws, then, unplug the interface board assembly.



3. Unplug the cables on the interface board. Then unscrew the two M3×6 screws and remove the USB_Hub board.



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4. Tear the insulating pad off the interface board. Unscrew the two M3×6 screws on the DVI interface board. Then unscrew the two screws beside the DVI socket , the two screws beside micro-D socket and the two M2.5×6 screws.



NOTE

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- Be careful not to damage the insulation between the DVI interface board and the USB_Hub board. If it is damaged, stick a new one.
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