

12 Disassembly and reassembly

12.1 Disassembly guidelines

Field repair of the patient monitor is limited to replacing Field Replaceable Units (FRUs). See chapter 13. [Service parts](#) for a detailed list of available FRUs. Attempting a field repair on a printed circuit board, or a factory sealed component or assembly could jeopardize the safe and effective operation of the monitor.

NOTE: Only a qualified service technician should perform field replacement procedures.

NOTE: Perform the checkout procedure described in chapter 10. [Maintenance and checkout](#) always after doing any disassembly of the patient monitor.

12.1.1 ESD precautions

All external connectors of the patient monitor are protected against electrostatic discharge (ESD) damage. However during service of the patient monitor, exposed components and assemblies inside the patient monitor are susceptible to ESD damage. Human hands, non-ESD protected work stations or improperly grounded test equipment can cause ESD damage. The following guidelines do not fully guarantee static-free workstation, but can greatly reduce the potential for failure of any electronic assemblies being serviced:

- Discharge any static charge you may have built up before handling semiconductors or assemblies containing semiconductors.
- A grounded, antistatic wristband or heel strap should be worn at all times while handling or repairing assemblies containing semiconductors.
- Use properly grounded test equipment.
- Use a static-free work surface while handling or working on assemblies containing semiconductors.
- Semiconductors and electronic assemblies should be stored only in antistatic bags or boxes.
- Handle all PCB assemblies by their edges.
- Do not remove semiconductors or assemblies containing semiconductors from antistatic containers until absolutely necessary.
- Do not slide semiconductors or electrical/electronic assemblies across any surface.
- Do not touch semiconductor leads unless absolutely necessary.
- Do not flex or twist a circuit board.

WARNING Pins of connectors identified with the ESD warning symbol should not be touched. Connections should not be made to these connectors unless electrostatic discharge (ESD) precautions are used.

12.1.2 Reassembly precautions

Pay attention to the following precautions when reassembling the monitor:

- Note the positions of any wires, cables or connectors. Mark them, if necessary, to ensure their correct reassembly.
- Save and set aside all hardware for reassembly.

- GE recommends using the new fasteners (screws, washers, etc.) in the FRU kits rather than reusing the old fasteners. Some fasteners are not intended to be re-used more than three times.
- Use only new screws when attaching parts into light metal parts. Before fastening a screw, turn it counterclockwise until it drops into an existing thread pattern.

12.1.3 Required tools



- insulated crosshead screwdrivers (small and medium)
- antistatic ESD wristband
- spanner size 5.5 mm

WARNING Due to possible high voltage present, use an insulated screwdriver at all times.

12.1.4 Before disassembly

WARNING **PATIENT MONITORING INTERRUPTION** — Make sure a patient is not being monitored while servicing the equipment.

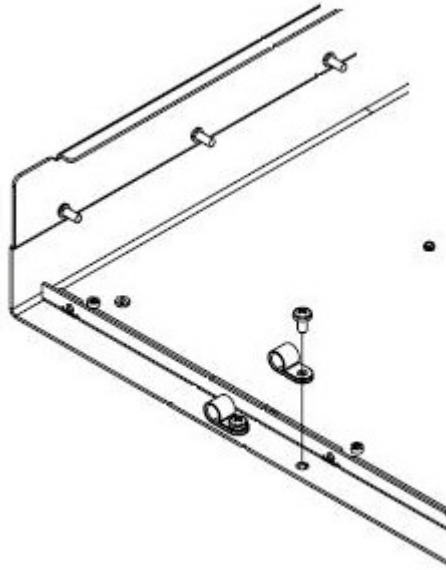
WARNING **DISCONNECTION FROM MAINS** - When disconnecting the device from the power line, remove the plug from the wall outlet first. Then you may disconnect the power cord from the device. If you do not observe this sequence, there is a risk of coming into contact with line voltage by inserting metal objects, such as the pins of leadwires, into the sockets of the power cord by mistake.

WARNING **SAFETY GROUND** - Remove power cord from the mains source by grasping the plug. Do not pull on the cable.

WARNING **ELECTRIC SHOCK** - Always unplug the grounded cables when not in use. Leaving them connected could result in an electric shock from the ground contact in the other end.

1. Turn the monitor off from the rear **On/off** switch.
2. Disconnect the power cord first from the wall outlet and then from the CPU unit. Detach the retaining clips for the power cord and USB cables.

NOTE: Remember to reattach the retaining clips for the power cord and USB cables after reassembly.



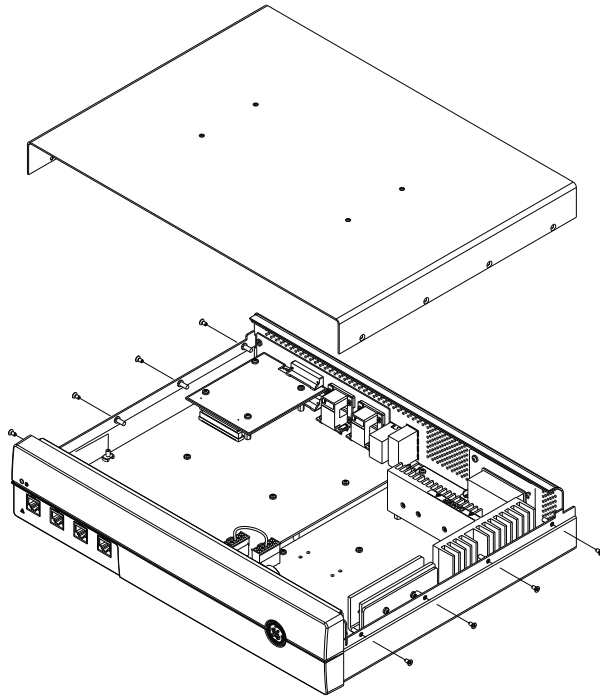
3. Disconnect all external cables connected to the CPU unit.
4. Detach the CPU unit from the mount if installed.

12.2 Unit disassembly

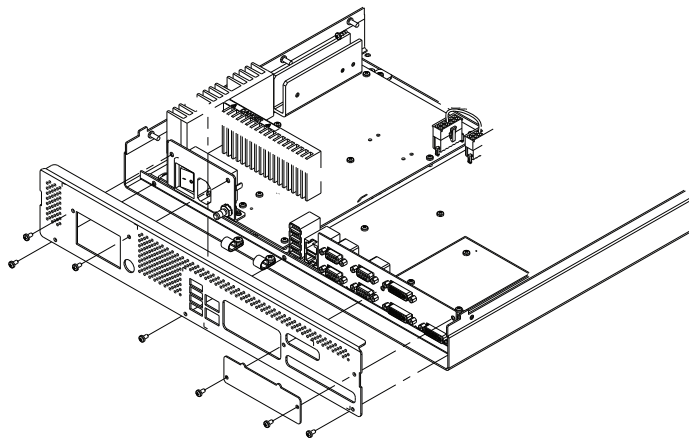
12.2.1 Opening the unit

If the monitor is opened, electrical safety tests must always be performed after the monitor is reassembled. For more information, refer to the [Corrective maintenance](#) requirements in the [10. Maintenance and checkout](#) chapter.

1. Remove 4 screws on each side of the top cover. Remove the top cover.

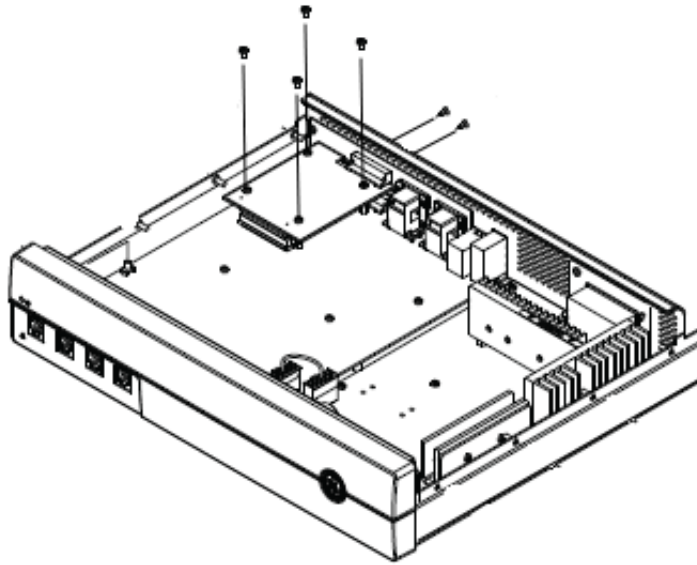


2. Remove 7 screws on the rear panel. Remove the rear panel.

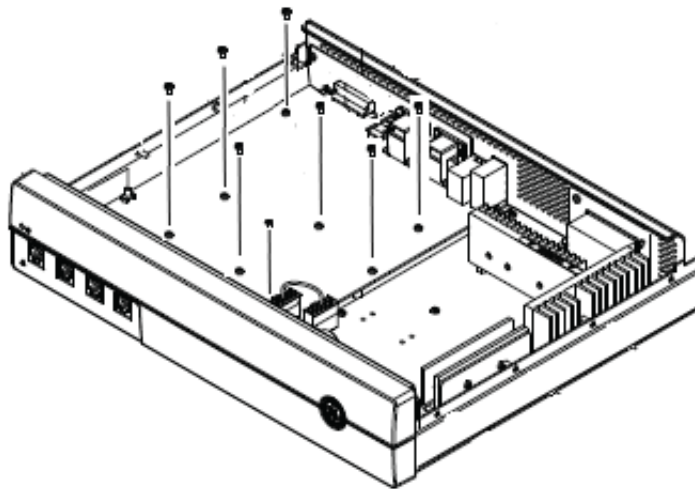


12.2.2 Replacing the processor board

1. Open the unit as described in steps 1 and 2 in [Opening the unit](#).
2. Disconnect the speaker cable connection, light pipe (pull gently from the receptacle on the PCB), and power supply cable.
3. If installed, remove the optional third DVI-I board:
 - a. Remove 4 screws and 4 standoffs.
 - b. Remove 2 jackscrews from the third DVI-I board.



4. Remove the 8 screws that hold the processor board to the chassis. Remove the processor board.

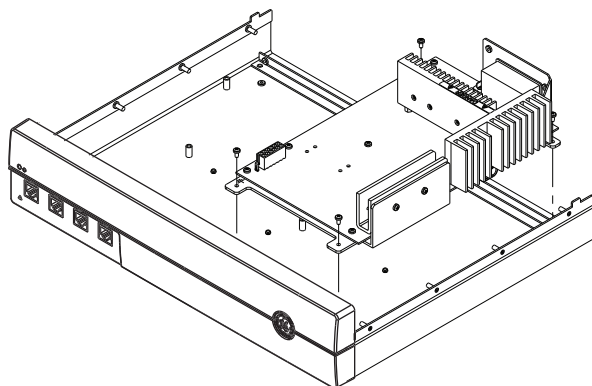


5. Replace the processor board.
6. Remove the screw that holds the uDOM to the old processor board. Remove the uDOM from the old processor board and reassemble it to the new processor board.
7. Reassemble the patient monitor in the reverse order of disassembly.

12.2.3 Replacing the power supply

1. Open the unit as described in step 1 and 2 in [Opening the unit](#).
2. Disconnect the speaker and power supply cables.

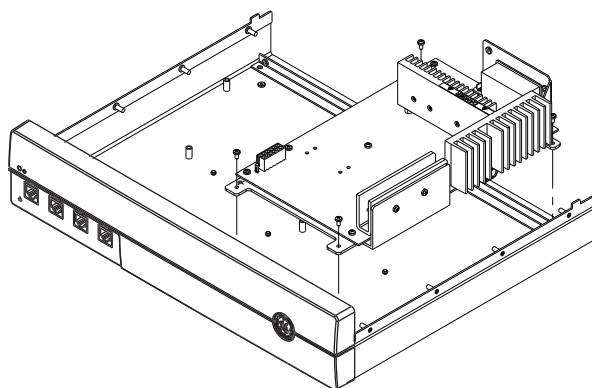
3. Remove the 4 screws that hold the power supply to the chassis. Remove the power supply.



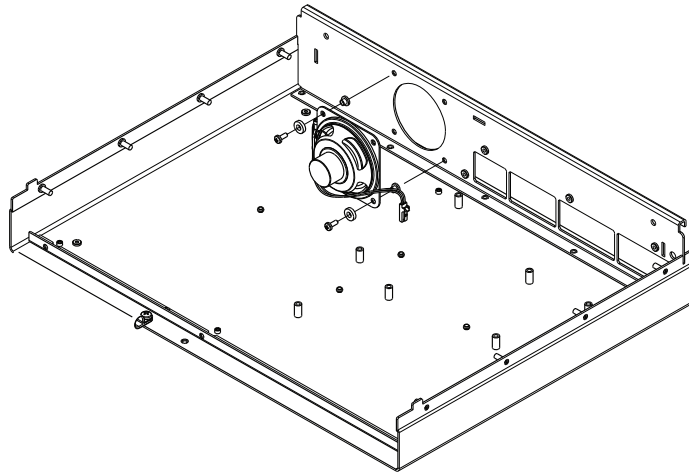
4. Replace the power supply.
5. Reassemble the patient monitor in the reverse order of disassembly.

12.2.4 Replacing the speaker

1. Open the unit as described in steps 1 and 2 in [Opening the unit](#).
2. Disconnect the speaker and power supply cables.
3. Remove the 4 screws that hold the power supply to the chassis. Remove the power supply.



4. Remove the power supply PCB to access the speaker screws.
5. Remove the 2 screws and washers, that hold the speaker to the front bezel. Remove the speaker.

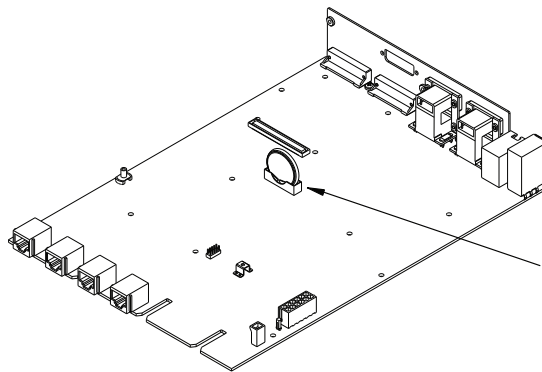


6. Replace the speaker.
7. Reassemble the power supply PCB.
8. Reassemble the patient monitor in the reverse order of disassembly.

12.2.5 Replacing the CPU timekeeper battery

Once the battery is replaced, the system loses its time and the time must be configured before connecting the patient monitor to the network. For instructions on configuring the time, see [7.3. Setting time and date](#).

1. Open the unit as described in step 1 in [Opening the unit](#).
2. Remove the lithium ion battery from the bracket on the processor board.

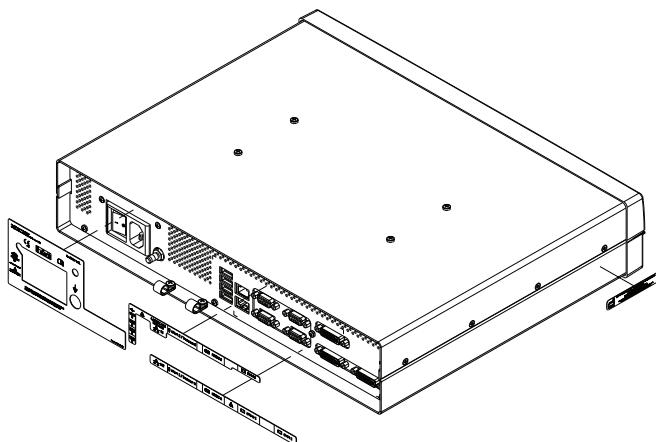


3. Replace the battery.
4. Reassemble the patient monitor in the reverse order of disassembly.

12.2.6 Replacing the labels

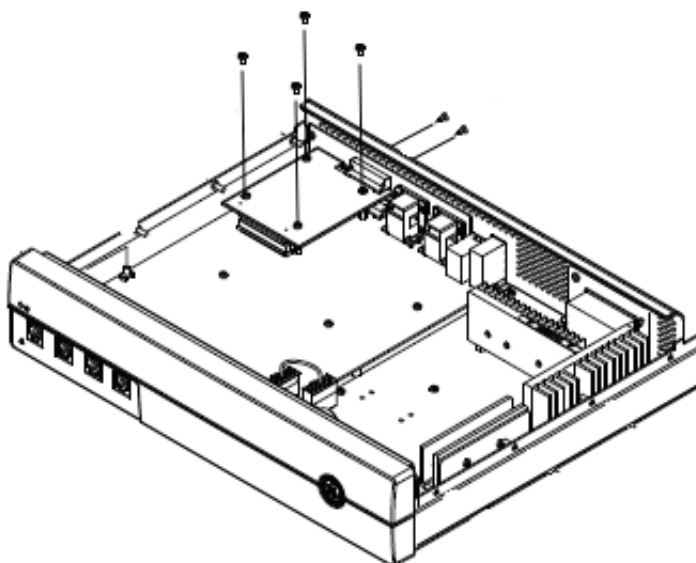
The device labels are affixed permanently. Do not try to remove them by using solutions that might cause damage. Affix new labels on top of the existing ones.

NOTE: Take care not to obstruct connector or screw openings when affixing labels.



12.2.7 Replacing or installing the third video card

1. Open the unit as described in step 1 in [Opening the unit](#).
2. Remove the third DVI-I board.
 - a. Remove 4 screws and 4 standoffs.
 - b. Remove 2 jackscrews from the third DVI-I board.



3. Replace the DVI-I board.
4. Reassemble the patient monitor in the reverse order of disassembly.

12.2.8 Replacing the front bezel

1. Open the unit as described in step 1 in [Opening the unit](#).
2. Remove 2 screws on front of bezel.

3. Disconnect light pipe from receptacle on PCB.
4. Release 3 snap fingers to free bezel from front of chassis.
5. Remove the bezel.
6. Reassemble the patient monitor in the reverse order of disassembly.