ResMed AirSense 10 Motherboard Replacement

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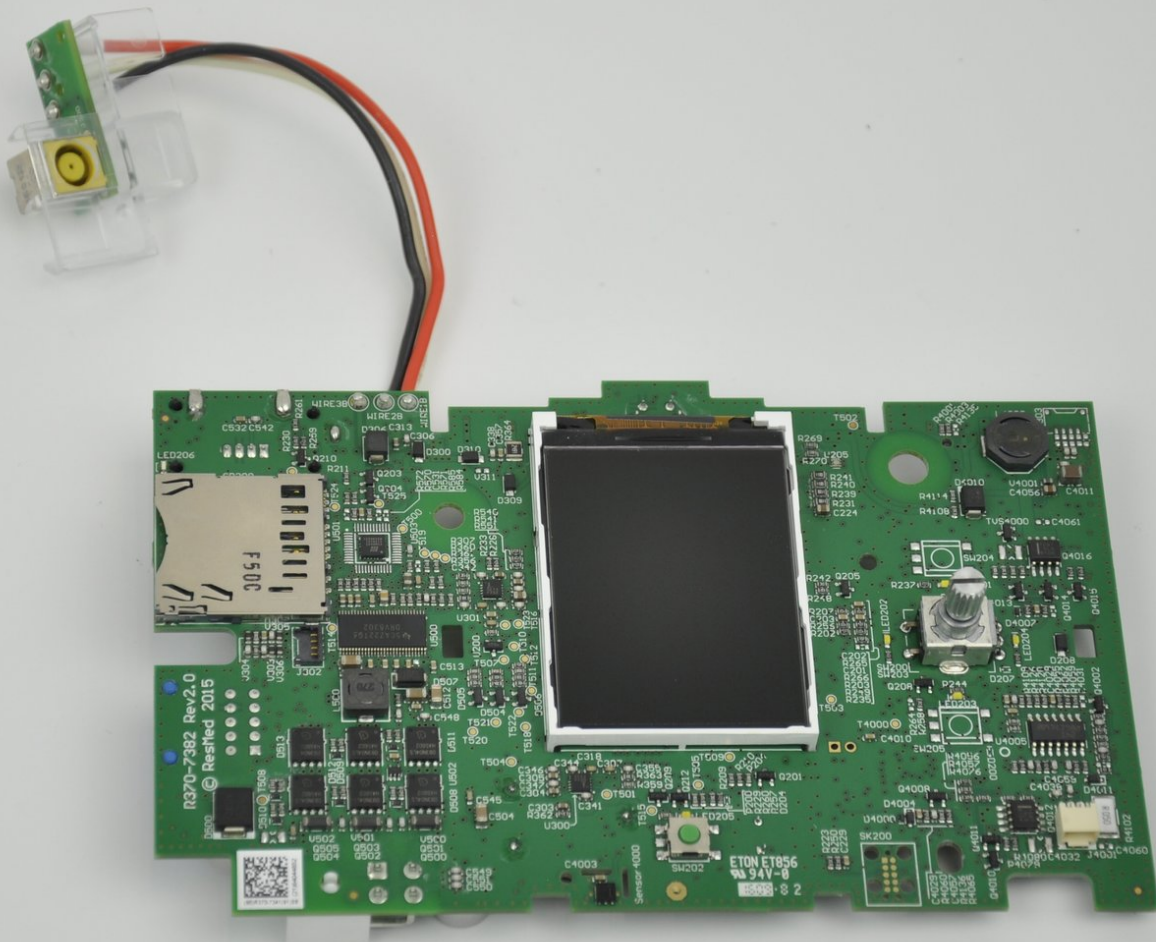
INTRODUCTION

This guide shows how to replace the motherboard on a ResMed AirSense 10 CPAP machine. The motherboard is one of two circuit boards in this device (the other being a wireless communication board), and is the one responsible for the primary functions of the device.

If the device does not switch on, first check that the power cable is correctly connected and plugged in to an active power source. When power is correctly applied to the device and the device does not function or the screen does not display anything, it is likely that the motherboard is damaged. If the memory of the device does not retain information (such as the time) when the device is disconnected from a power source, the battery could be dead. The battery is spot-welded to tabs on the motherboard, so replacing the motherboard will replace the battery too.

Before removing the plastic covers of the device, make sure it is powered off and disconnected from mains power.

🔧 TOOLS:

- Halberd Spudger (1)
- TR10 Torx Security Screwdriver (1)
- iFixit Opening Tool (1)

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Step 1 — Top Cover

- Remove the water tub by gently pulling it out.

Step 2

- Pry off the face plate by using your finger or an opening tool.

  (i) Use a moderate amount of force when prying open.

- Remove the face plate from the top cover.

(i) There will be a clicking sound on either side of the divot when assembling and disassembling.

Step 3

- Unscrew and remove the two 11.8 mm TR10 Torx screws that were revealed from the face plate being removed.
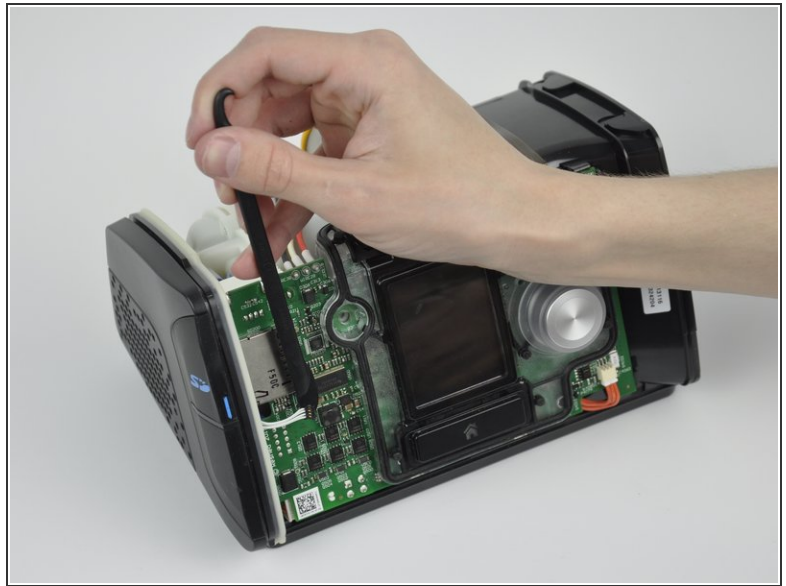
Step 4

- Unscrew and remove the two 11.8 mm TR10 Torx screws from the bottom of the device.

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Step 5

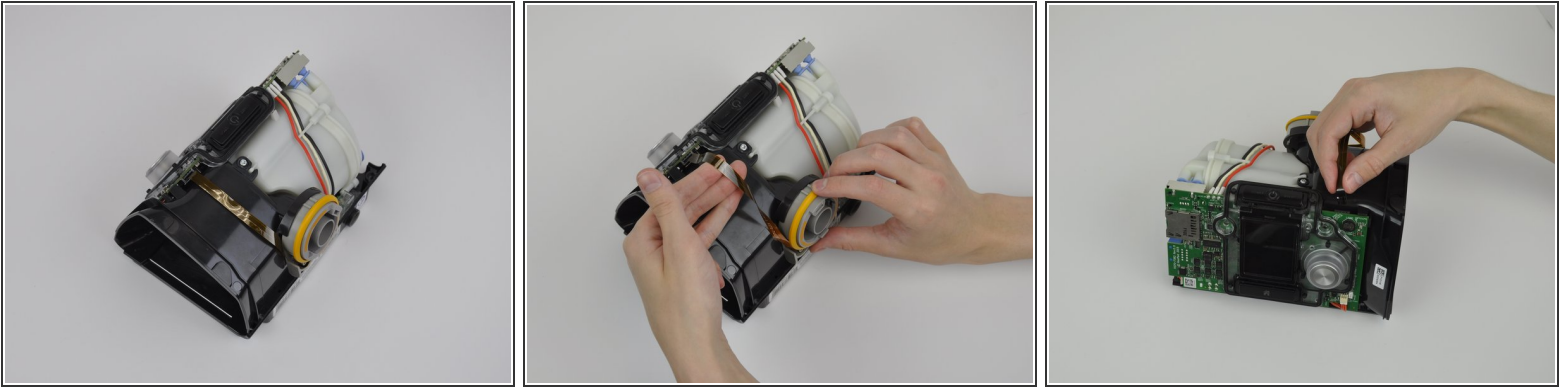- Remove the top cover from the rest of the device.

Step 6 — Motherboard

- Insert a halberd spudger behind the black connector on the white wires from the wireless communication board.

- Apply gentle pressure away from the motherboard to the black connector.

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Step 7

- Remove the two 11.8 mm TR10 Torx screws from the air filter side underneath the device.

- Use an opening tool to pry the air filter side cover away from the chassis of the device.

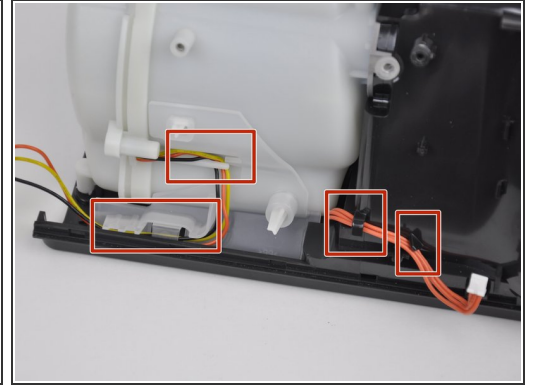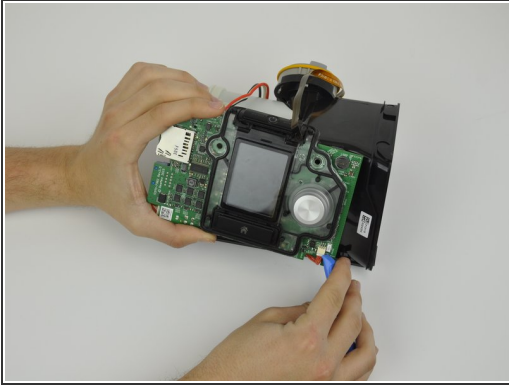- Pull the air filter side cover directly away from the chassis of the device.

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Step 8

- Rotate the outer ring of the air outlet port counterclockwise to provide slack in the ribbon cable.

  (i) As the ribbon cable becomes slack, you can put a finger under it to support it and gently pull the cable upwards from the frame.

  ⚠ Do not pull the ribbon cable more than an inch and a half from the top of the black plastic housing. Pulling the ribbon cable too far could damage it.

- Grip the thin sides of the hard plastic tab on the end of the ribbon cable which connects to the motherboard.

  - Gently pull the hard plastic end of the ribbon cable upwards from the top of the motherboard, and wiggle it slightly from side to side to disconnect it.

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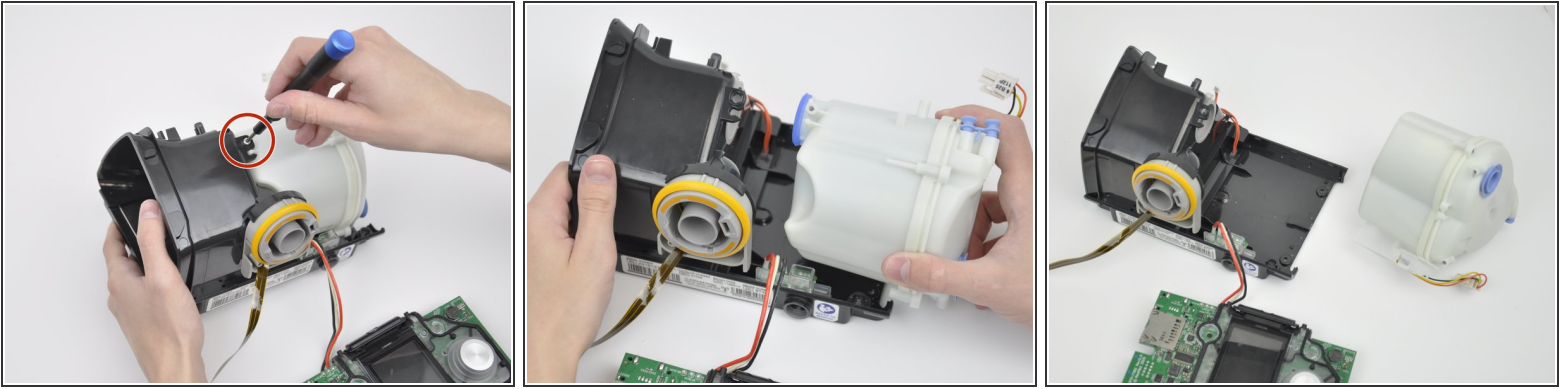
Step 9
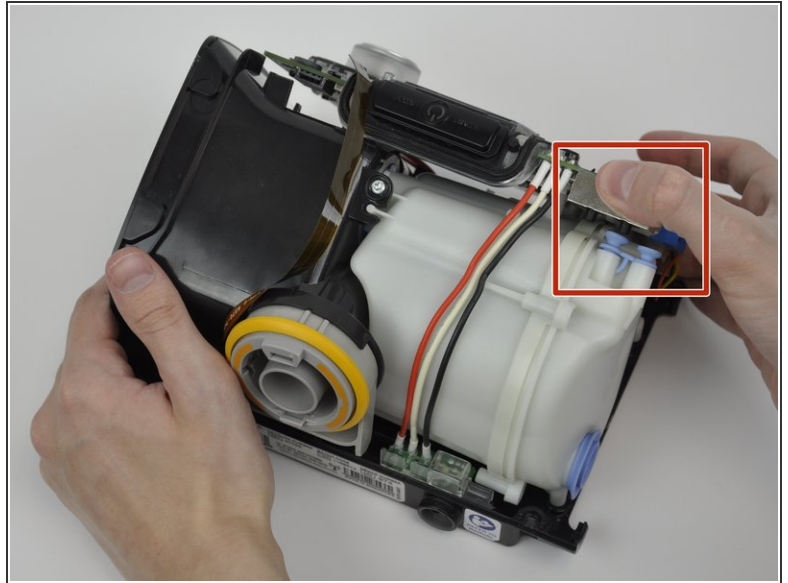
- Slide the red, white, and black wires out from under the plastic tab on the top of the pump housing.

- Gently pull the silver case away from the pump housing to disconnect the two small pipes.

- 📌 When reassembling the device, make sure that the blue rubber adapter is in place.

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Step 10

- Use an opening tool, a spudger, or your finger nails to apply pressure to the connector on the orange wires. Pull the connector downwards in the direction of the bottom of the motherboard.

- Depress the lever of the plastic catch on the pump motor wiring connector.

- Gently pull the connector away from the side of the motherboard. Wiggling it slightly may make removing the connector easier.

- *(i)* Pull on the white plastic connectors, not the wires themselves. Pulling on the wires can damage the small contacts in the connectors.

- *(i)* Make sure that the wires are held in the clips (shown in the red rectangles) on the pump housing and chassis when reassembling the device. This will keep the wires from interfering with the position of the motherboard.

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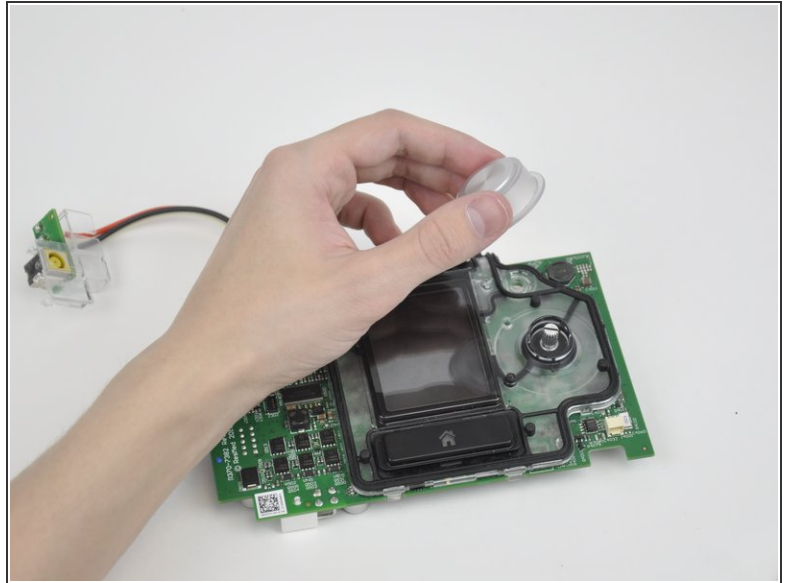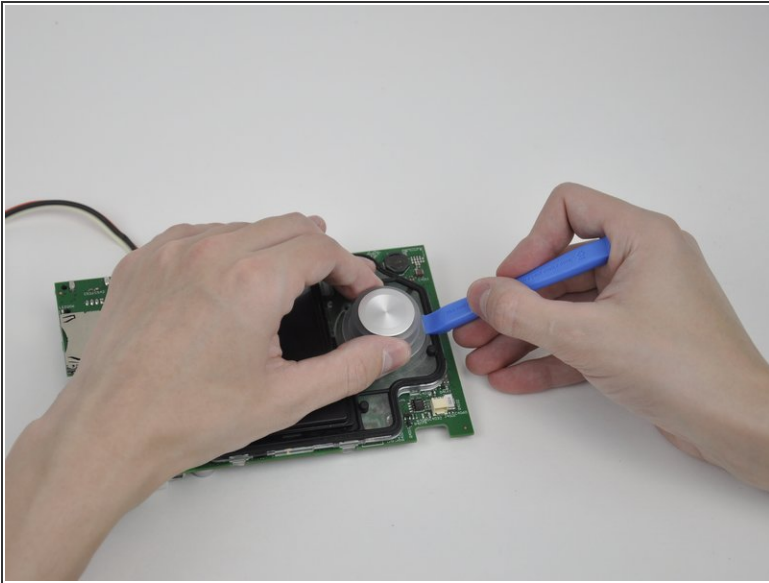
Step 11

- Remove the 14 mm TR10 Torx screw (located above the air outlet port) from the water tank housing.

- Hold the black plastic body of the device and slide the pump housing away from the body.

- ⓘ The underside of the pump housing and the device chassis have corresponding rails (marked with the orange rectangles) that must be aligned when removing or replacing the pump housing.

Step 12
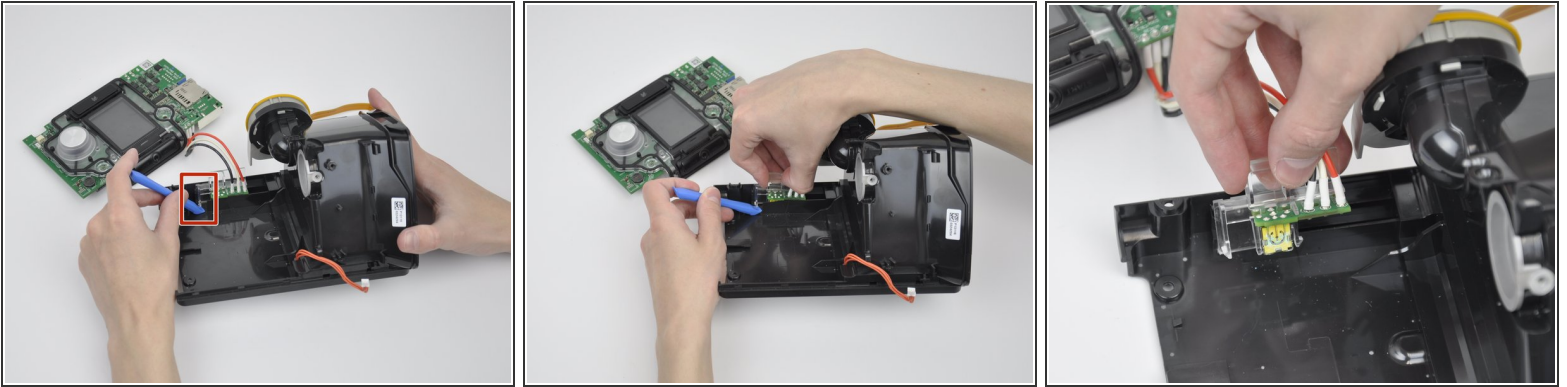
- Place the device with the air outlet port facing away from you.

- Press the clear plastic clip (on the left-hand side) towards the air outlet port using one of the opening tools.

- Apply pressure upwards on the clip with the opening tool to disengage the clear plastic clip from the corresponding clip on the black plastic body of the device.

- Apply moderate force to the square clear plastic tab towards the air outlet port while also pulling the square tab upwards.

- Remove the motherboard from the chassis of the device.

Step 13

- Pry the knob away from the screen cover plate using a spudger or opening tool, while supporting the opposite side of the knob and pulling it upwards and away from the cover plate.

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Step 14
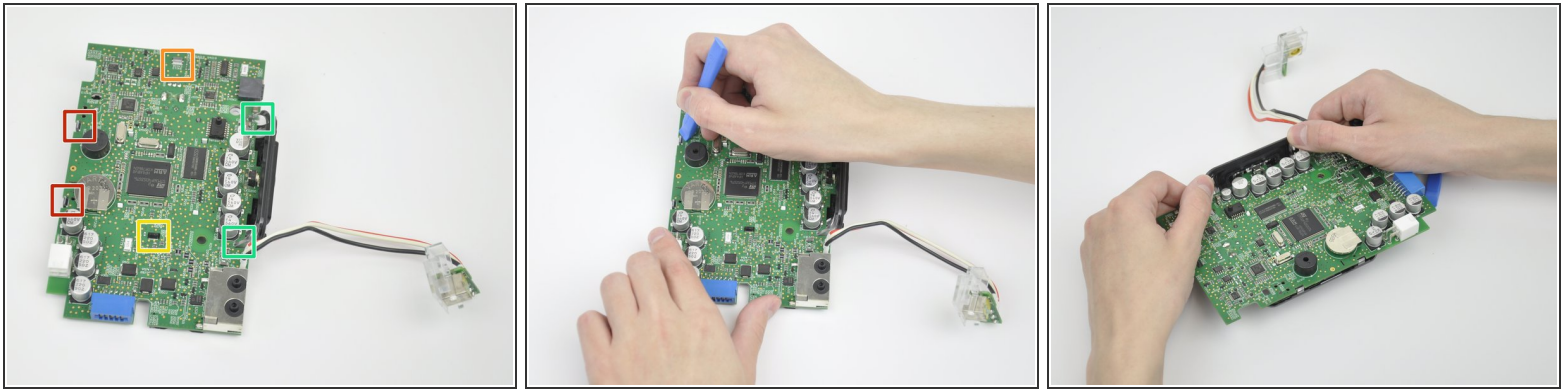
- Apply pressure to the two protruding clear plastic tabs on the long edge of the motherboard using an opening tool, to unclip them from the motherboard. Gently press downwards on the top of the tabs and lift upwards on the motherboard until the tabs sit slightly below the level of the circuit board and no longer clip the board in.

- Repeat the procedure to unclip the tab on the shorter edge of the motherboard.

- Repeat the procedure to unclip the tab in the center of the motherboard.
  - ⚠ Be careful that the opening tool does not slip along the motherboard. This could damage components on the board.

- Push the screen cover plate away from you using your thumbs until it clears the top of the motherboard.

To reassemble your device, follow these instructions in reverse order.