Apple Powerbook G4 Aluminum 15" Repair Manual

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This manual is presented as a guide in order to help you repair problems on your powerbook. Working on a powerbook can be dangerous if not done properly. We at Powerbookmedic.com take no responsibility for any damage or harm done to yourself or your powerbook as a result of reading this guide.

Suggestions for making this manual better? Email: sales@powerbookmedic.com

Tools Needed for Take Apart:

Torx T8 Screwdriver   – Available from our online store
Torx T6 Screwdriver –   Available from our online sore
Philips head screwdriver (small and medium size screwdrivers)
Hex Wrench or pliers to remove hex nut (only for speaker disassembly)

Always remove the battery and power supply from the computer before beginning any take apart or repair!

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Battery Removal

Before beginning any repair, remove the battery first! Using a flat head screwdriver or a coin such as a nickel, turn the battery lock to the unlock position as shown. Keep the coin or screwdriver in this position, and simultaneously lift out the battery.

Airport Extreme Card

Before proceeding, you must first remove:

Battery

Begin by flipping back the airport door inside the battery bay. The door opens out towards the bay. You can open it by putting a small flathead screwdriver or your fingernail in the small slit in the top of the door and prying outwards toward the bay.
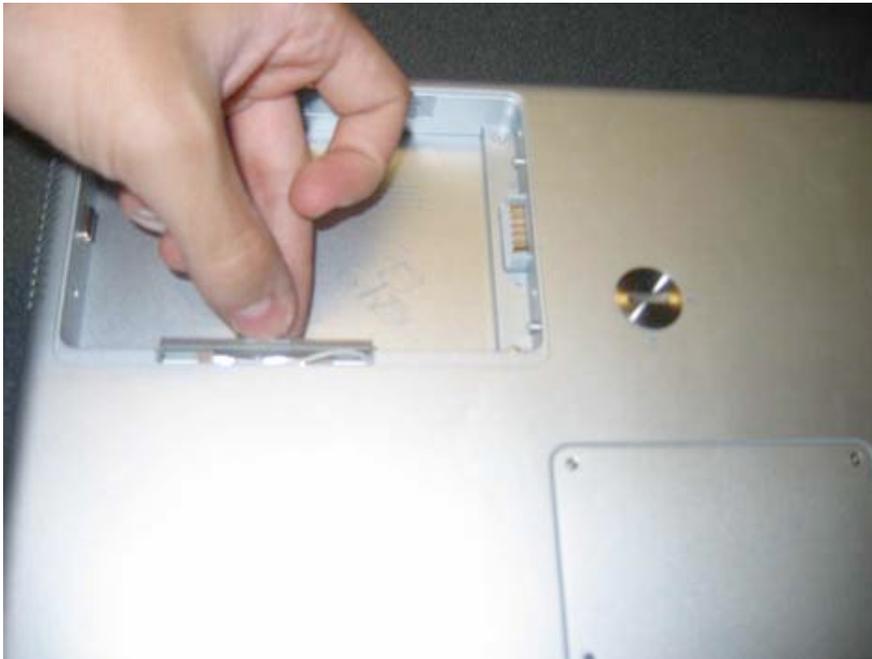
Next, loosen the clear plastic tab so that you can put both fingers on it as shown in the picture below, and then pull the card less than half an inch out as shown.DO NOT TRY TO PULL THE CARD OUT ENTIRELY YET.

Now you need to undo the airport connector from the airport extreme card. This is most easily accomplished by grasping the connector with pliers and pulling out gently, but can also be accomplished with your fingers as shown in the picture below. You need to be as careful as possible with this cable.
Once the cable is free from the card, you can pull the card out and replace as necessary.

Trackpad / Palmrest Removal

Before proceeding, you must first remove:

Battery

Begin by opening up your unit and removing the two Torx T8 silver 1/8" screws as shown in the locations marked in red. These are in the top left and right hand corners.

Next, shut the lid of the computer, and turn it around to the back. Remove the four Philips head 1/4" silver screws as shown. (Note: If you only need to remove the trackpad, it is only necessary to remove the top screw on each side. The bottom screws anchors the display.)

Now, make sure the display on your unit is closed, and flip the unit over with the display side on your work area. Remove all of the screws in the locations shown. The screws are as follows: 2 Philips silver 1/8" screws inside battery bay, 4 Philips 5/8" screws on the top lined in a row, and 4 Philips 1/8" screws on the ram cover.

Lift the ram door cover off, and remove the two Philips head silver 3/8" screws in the locations shown. These screws will require a larger Philips head screwdriver than used for the screws in previous steps.

Remove the 3 Philips head silver 1/8" screws from both sides (port sides) of the unit as shown in the two pictures below.
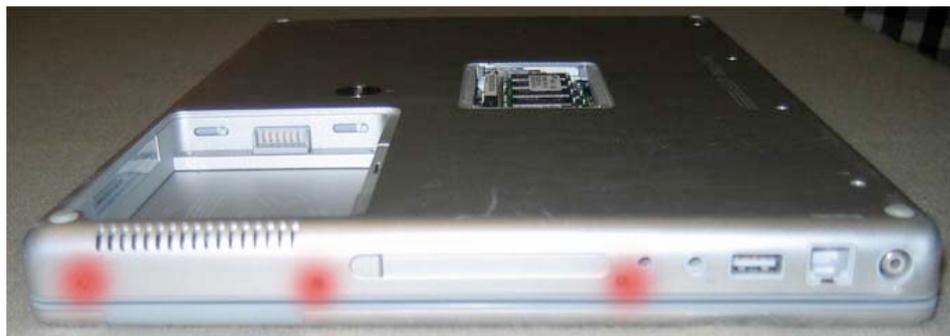
Next, pull the trackpad up by first pulling on the two back corners. (You may have to do this one corner at a time, and you might need to use your fingernails to pry the corners up.)

When the two back corners are freed, work around to the bottom left hand corner, and pry it up in the same manner as the back two corners.

Now lift up on the right hand corner of the palmrest, and the whole assembly should easily lift up.

If you are having problems with the bottom right hand corner, then you may need to unlatch 3 latches located in the drive bay. You unlatch these by placing a flat plastic tool in the latch locations and then pulling the latch towards you. You can notice the locations of the latches by the slits in the drive bay dust shield (the gray cloth) The locations are shown below as well.

Flip the Palmrest assembly up and back, and gently rest it on the LCD

Undo the keyboard connector and trackpad connector by carefully pulling them out of their logic board connectors. They are located in the middle of the logic board as shown in the picture below.
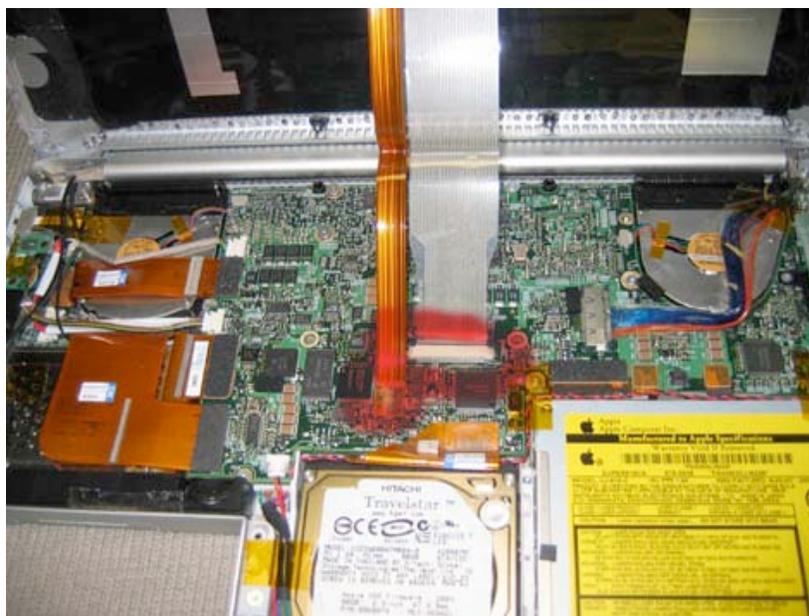
Lift the palmrest up and out of the unit, and place on a static free surface.

Keyboard Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest

Begin by flipping the trackpad / palmrest upside down as shown in the picture below. Then, pull the keyboard ribbon back as shown. At the base of the cable there is a weak glue adhesive. Gently pull the cable free from the adhesive. (Your replacement keyboard will have adhesive tape.)

Next, remove the two Philips small 1/16" large head screws in the locations marked by red in the picture below.
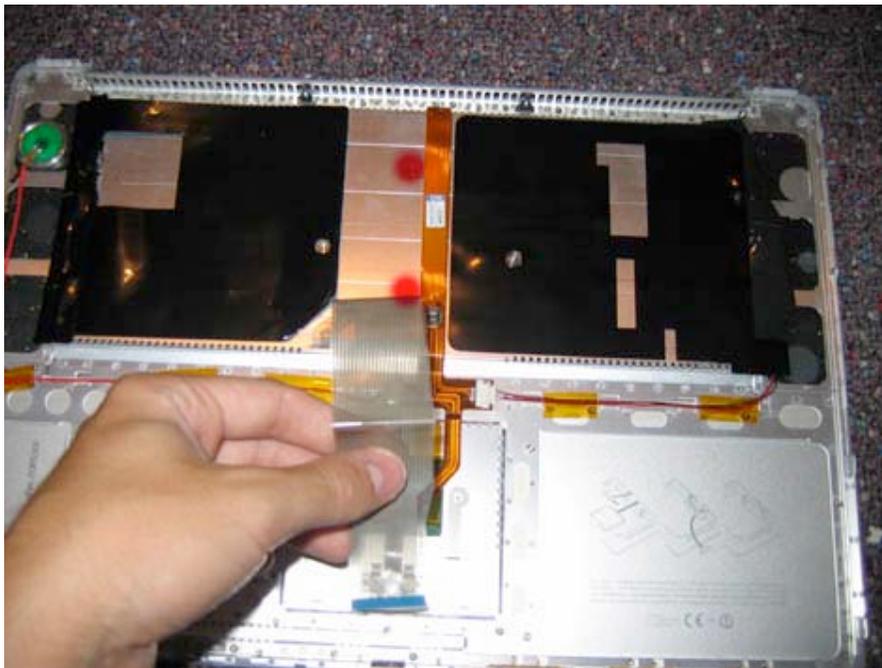
Next, lift up the dust cover on the right hand side of the keyboard as shown below. The dust cover will come completely off. Place it in a clean location aside the unit.
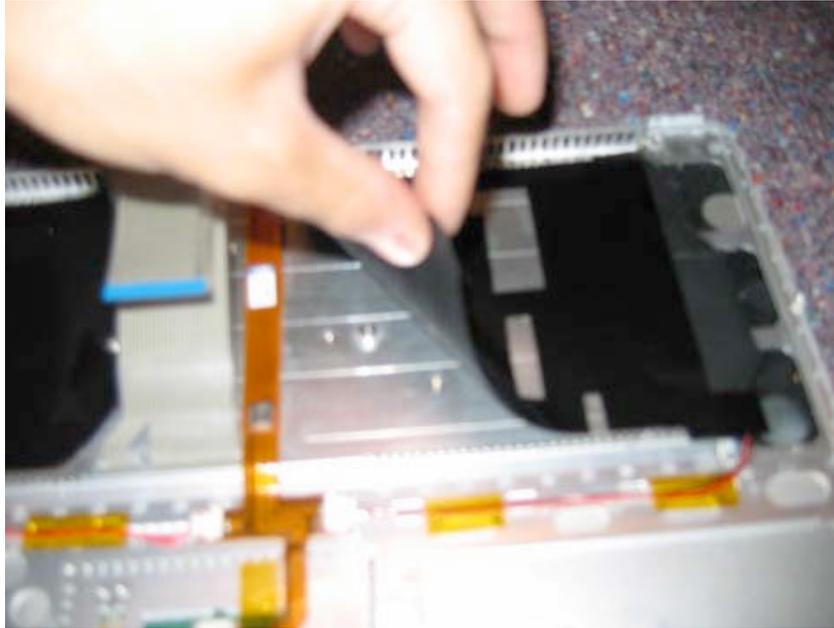
Now, with the dust cover removed, remove the 6 Philips head screws from the 6 locations marked by red in the picture below.
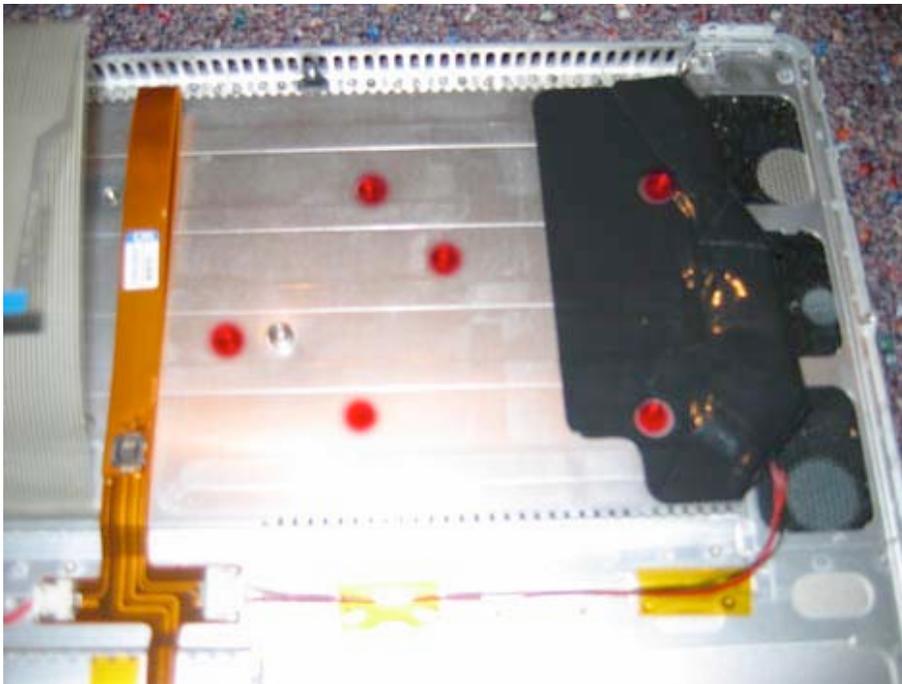
On the left hand side of the keyboard, lift the dust cover from the corner and pull up. This dust cover will not come off, so you will have to hold it back.
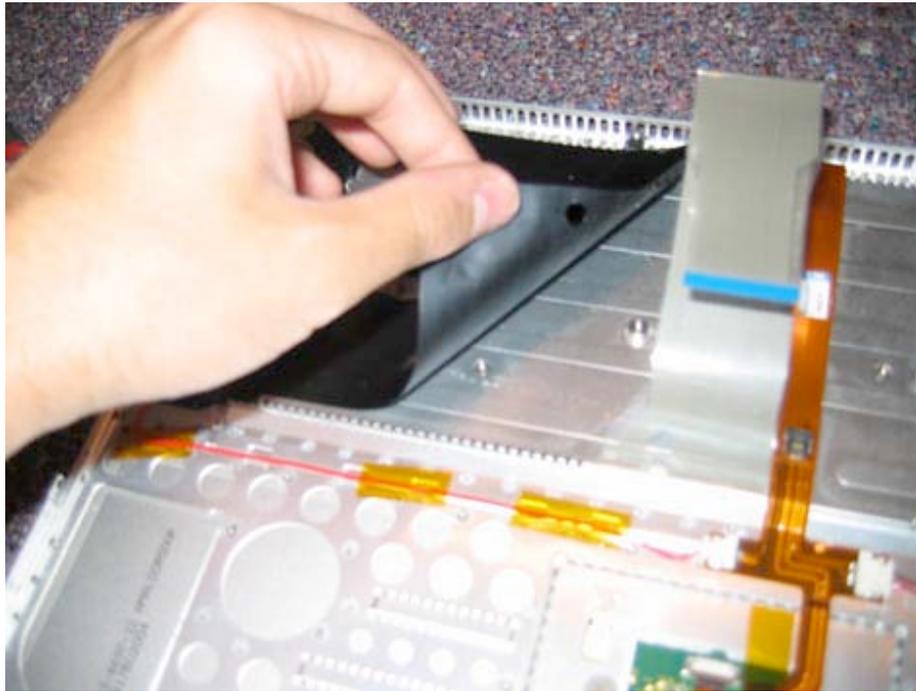
Now, remove the 5 Philips head screws in in the locations marked in red below. Note that for the screw in the top left of the picture (next to the finger) you will have to move black electrical tape slightly back off of the screw.
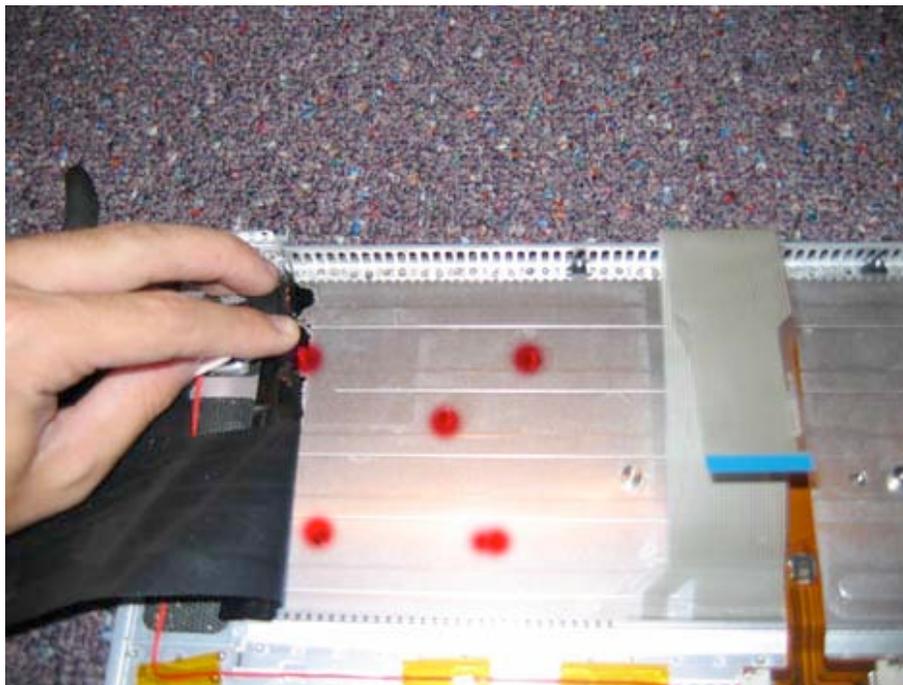
The keyboard is now ready to come out. Flip the trackpad / palmrest over. There is a weak sticker adhesive on the bottom of the keyboard, so you will need to either use a flat head tool to pry up the keyboard from a corner, or you can use a screwdriver and push through one of the screw holes on the opposite side of the trackpad to push the keyboard out so you can get a hold of it. After you have a hold of the keyboard, just pull up and the keyboard will break the adhesive and come out as shown in the picture below.

Lastly, feed the keyboard connector through the slot on the trackpad and remove the keyboard from the trackpad / palmrest.

Hard Drive Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly

Begin by unplugging the hard drive connector from the logic board (shown in red) To do this, use a plastic nylon tool or your fingernails to gently pry up on the connector.
Then, remove the two Philips head silver 1/4" screws on the right hand side of the drive in the locations shown by the red dots. After the screws are remove, lift the plastic divider piece up and out.
Then, on the left hand side of the drive, notice the orange piece of tape holding down the battery connector cable. You will need to remove this piece of tape.
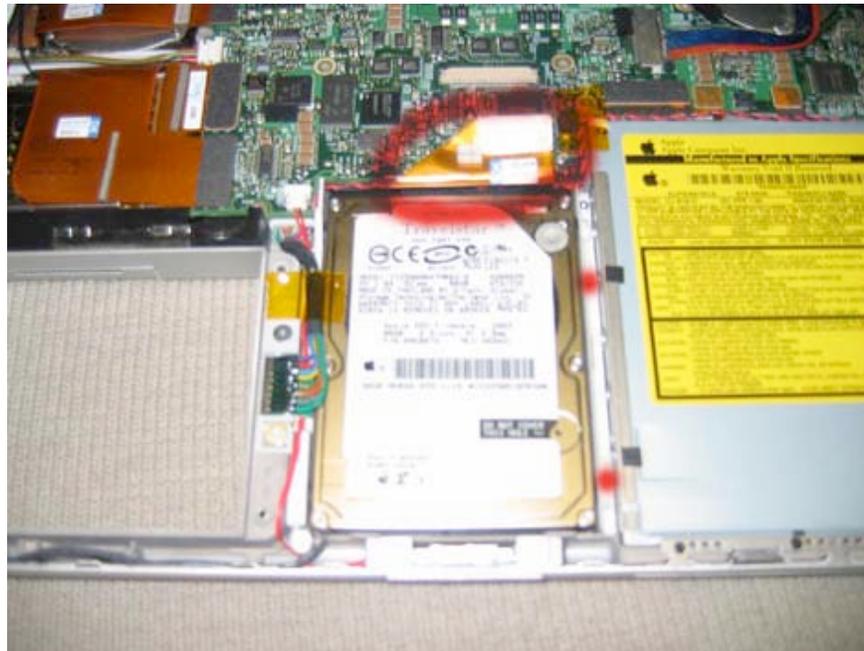
Next, remove the two silver 1/8" Philips head screws (large heads) on the left hand side of the hard drive next to the battery bay in the locations marked by red dots

Pull the battery connector cable up and out of the way as shown in the picture. This will reveal two silver Philips head 1/8" screws in the locations shown by red dots in the picture. Remove these two screws.

Carefully lift up on the hard drive and the plastic divider that you just remove the screws from. Guide the hard drive cable UNDER the speaker wire cable as shown in the picture. The drive should come out easily after the cable is guided under the speaker cable. If the drive does not come easily, do not force it as it is probably caught on the speaker cable.

To replace the hard drive, you will need to carefully remove the orange cable from the hard drive you removed and place it on your replacement drive. You will also need to remove the T8 screws (2 on both sides) of the hard drive and put them on your replacement drive. Then reassemble.
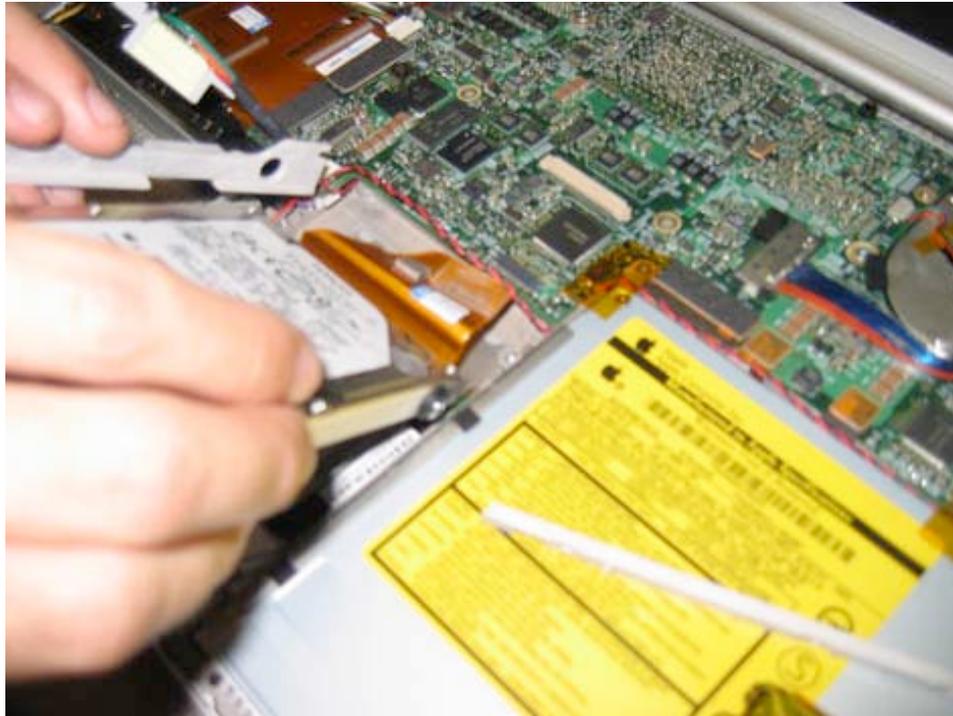
Modem Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
Hard Drive

Remove the two black Philips head 1/8" screws in the corners of the modem as marked by red dots in the picture below.
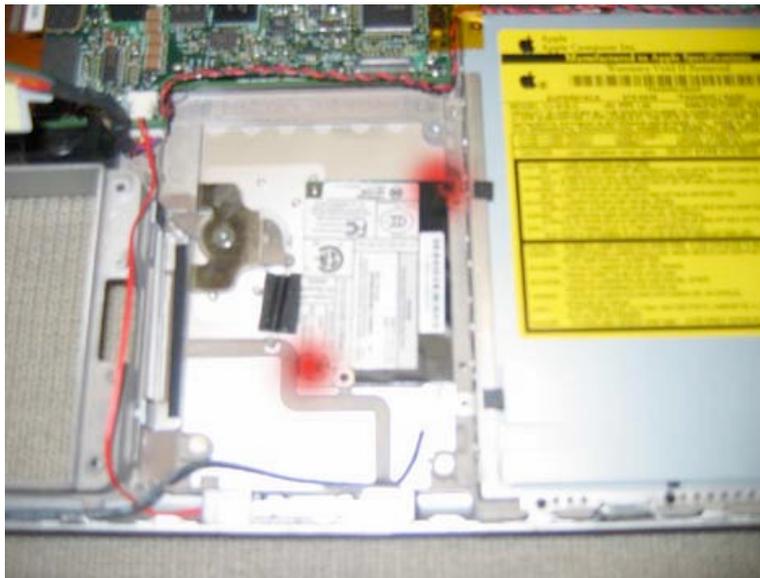
Lift the modem up from the side as shown. This will expose an orange cable connected to the modem. Unplug the connection by using a flat nylon tool or your fingernail to pry the connector down towards the casing. It should come off easily.
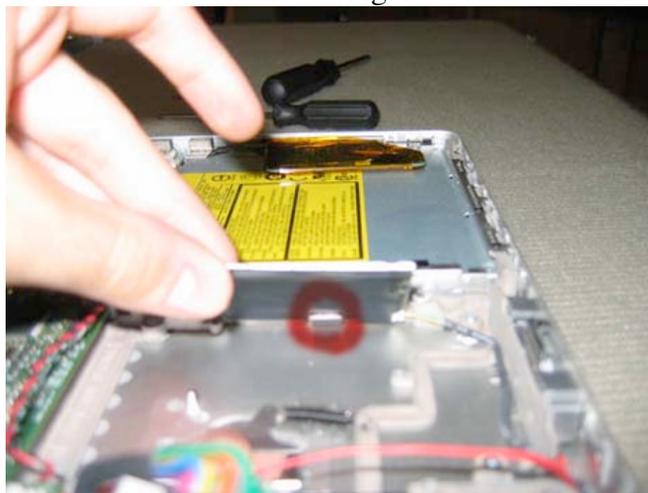
Lift the modem up as shown. Then, undo the cable going into the modem by simply gently pulling the cable and modem away from each other as shown.
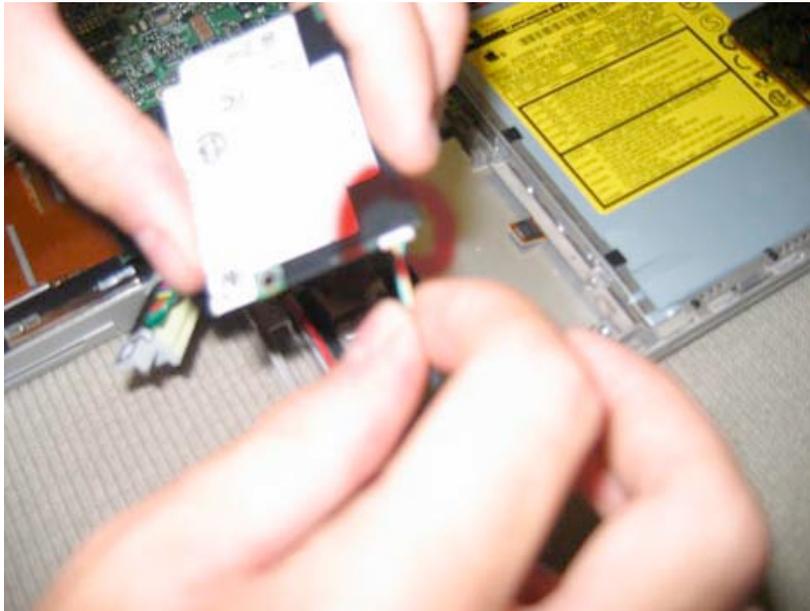
Pram Backup Battery Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly

Replacing the PRAM battery is very simple. Grasp a corner of the PRAM battery as shown in the picture, and then just gently pry up on the battery. It should come up very easily. Then gently unplug the PRAM connector from the logic board at the location shown in red in the picture below.
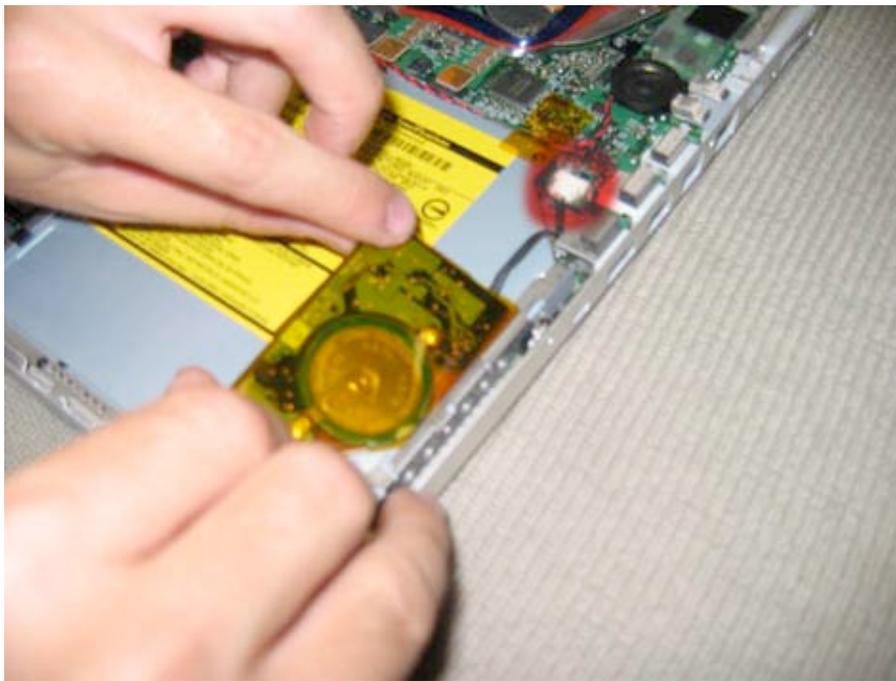
Optical Drive / Superdrive Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
PRAM Backup Battery

Begin by removing the two pieces of orange static tape from the drive. (There is one piece on the back left and right hand sides of the drive.)

Then, using a flat nylon tool or your fingernail, gently pry the orange connector cable (circled in red next to tape on left hand side of the picture below) from the logic board.

Next, remove the two black 1/8" Philips head screws from the side of the drive (casing side) in the locations shown by red circles in the picture below.

Grasp the drive from the back left hand corner, and gently lift the drive up and out and place it on a static free surface. The drive should come out very easily.

Display LCD Screen TFT Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly

Special Note: Be very careful when working with any component related to the logic board or display. These are the most expensive components on the laptop, and damaging these components will set your wallet back.

To remove the display, you will need to remove cables on both the left and right hand side of the laptop. We will begin on the right hand side.

First, remove the orange piece of tape that holds the display cable to the fan. It is circled in red in the picture below in the top right hand corner.

Then, undo the display cable from its logic board connection. You will need to do this putting your fingernails on either side of the connector, and gently wiggle it out. It should come out easily without forcing it. Be very careful with this cable!

Next, locate the two torx T8 screws on the display hinge as shown in the picture below, and remove both of them. The hinge in the back is 3/8", and the hinge in the front is 1/2".

On the left hand side, begin by removing the two pieces of orange static tape in the locations shown in the picture below.

Now, follow the black cables around the corner of the battery bay and notice that in the crevice there is a green circuit board covered in clear plastic. This board is the Bluetooth connector board, and it will easily pry out by placing a screwdriver underneath the board and lifting up as shown in the picture.

Next, find the thin wire going into the board with the gold connector on the end. This is the Bluetooth cable. Pull up on the connector away from the green board, and it will easily come off.
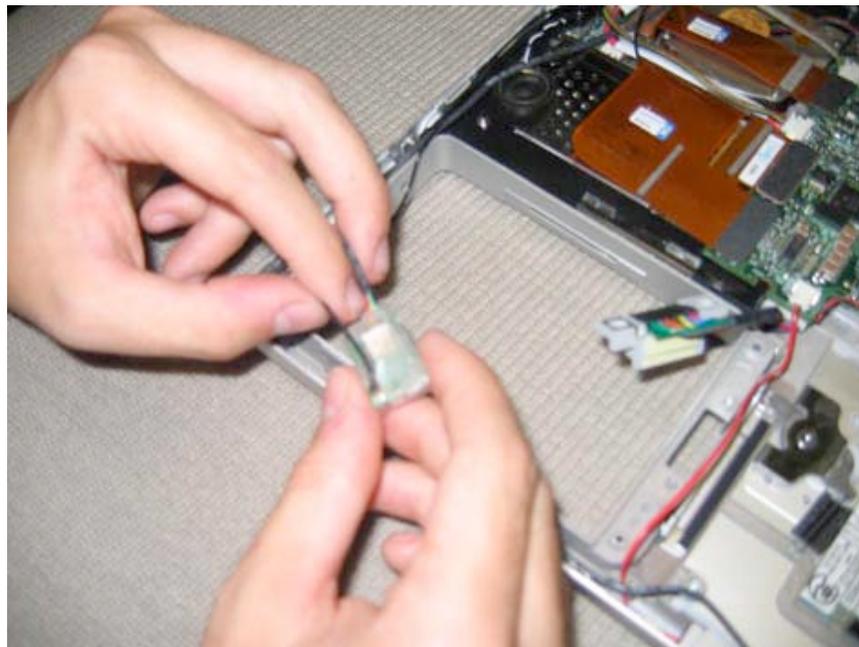
Next, disconnect the inverter cable from the logic board (circled in red at the top in the picture below) by placing your fingernails at each end of the connector and gently wiggling it out of the connector.

Then, using a flat head nylon tool or your fingernail, gently pry up the orange L shaped cable to undo the connector from the logic board.

Next, pull back the orange cable as shown in the picture below to reveal the airport cable connection. You'll notice a fat spot in the cable. This is where the two airport cables connect. Pull on either side of the fatter spot in the cable to undo the cable.
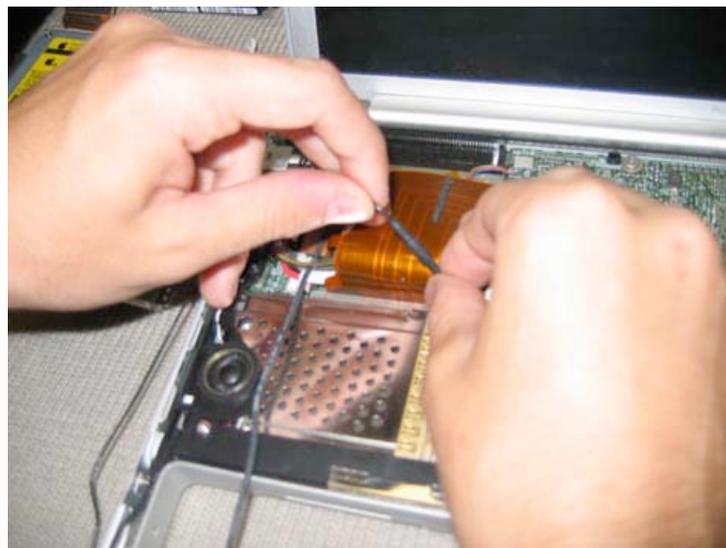
Locate the two torx T8 screws on the display hinge as shown in the picture below, and remove both of them. The hinge in the back is 3/8", and the hinge in the front is 1/2".
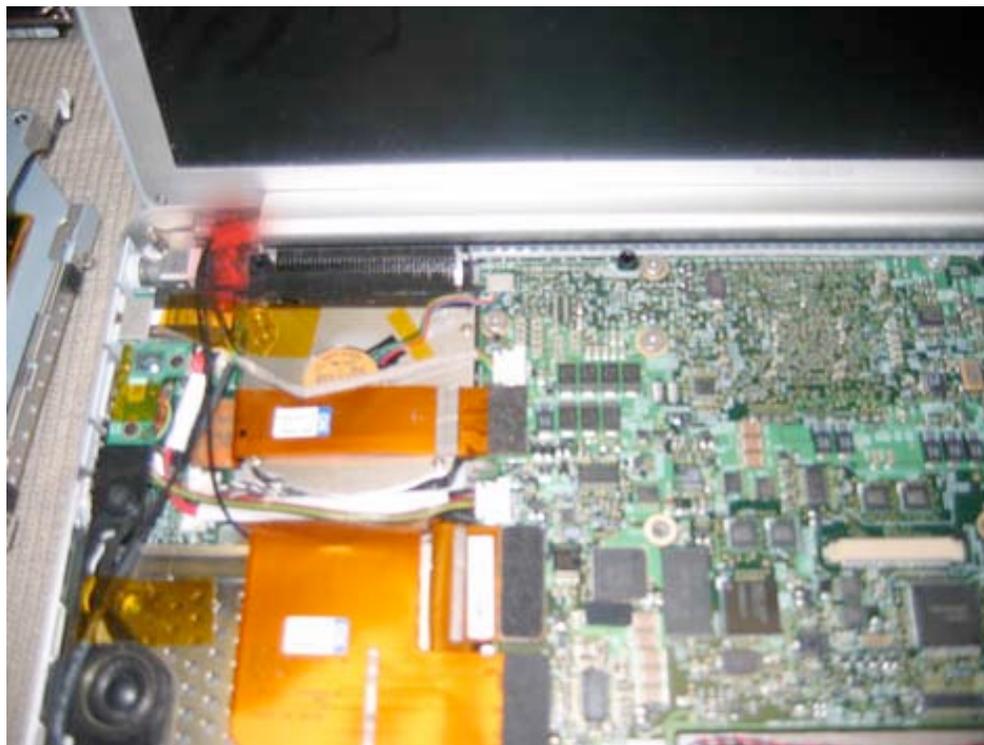
Lift the display up and out and set on a smooth surface that will not scratch the casing such as a cloth.

Display LCD Screen TFT Removal Continued…

Before proceeding, you must first remove:
Battery
Trackpad / Palmrest
Display
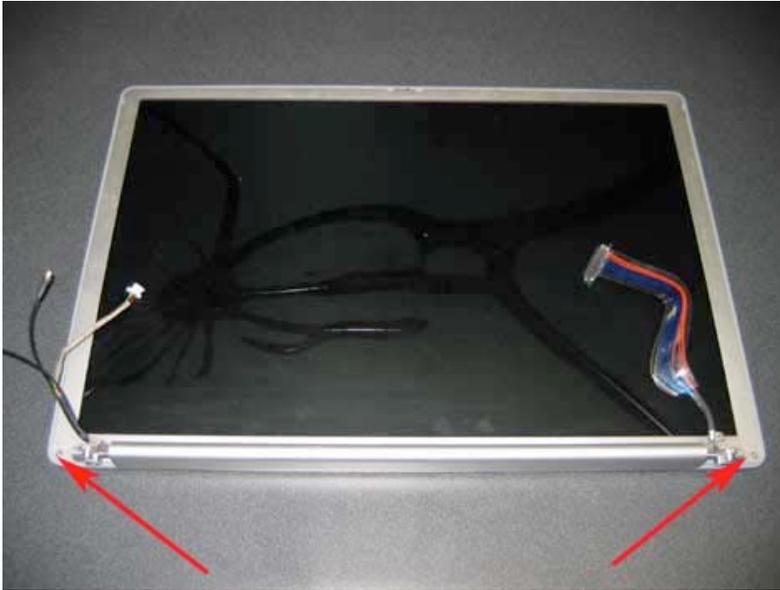
Remove the two torx T6 screws from the front of the unit in the locations shown (bottom left and right corners)
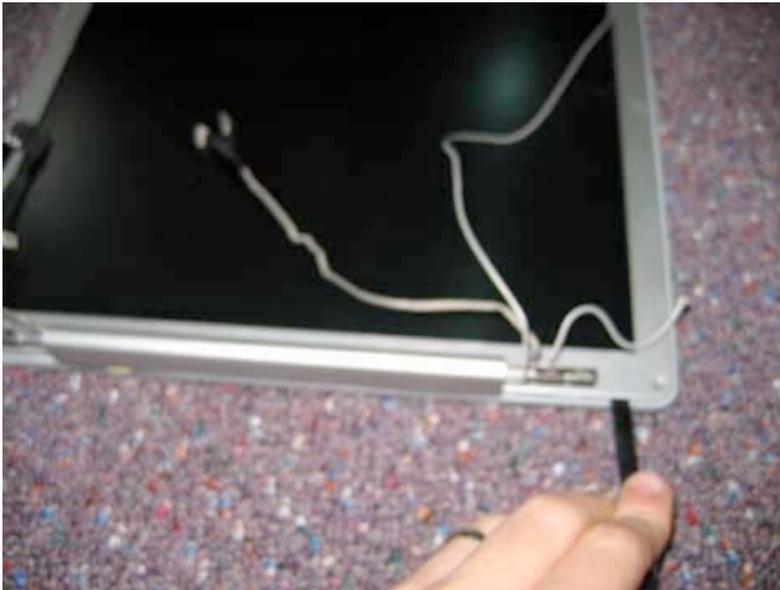
Use a flat tool to pry up on the front bezel to separate the back casing. NOTE – Pry above the grey plastic lining. The grey plastic lining is part of the back casing!

Also note that this picture is from the 12" model (hence the different cables in the picture)

Display Back Casing Removal

Before proceeding, you must first remove:
Battery
Trackpad / Palmrest
Display

Once you separate the back case from the front bezel, lift the display off of the back bezel as shown, and flip it over. The grey cable and black cable will still be holding the two pieces together.

Follow the black and grey cables along the sides of the display, lifting them up and removing any tape holding them in place. Disconnect all cables from the back case so that it is by itself and not connected to the rest of the display. The cables will be help in place by one small Philips head screw on both sides. Remove these two screws.

Display Inverter / LCD / Cables Removal

Before proceeding, you must first remove:
Battery
Trackpad / Palmrest
Display

Remove the piece of orange static tape holding the display cable in place.

Undo the display cable from its connector by gently pulling it towards you. It should come out very easily.
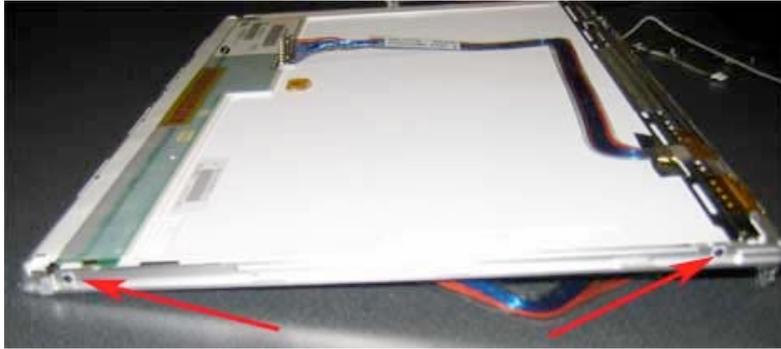
Remove the two black Philips head screws from both sides of the display in the locations shown.
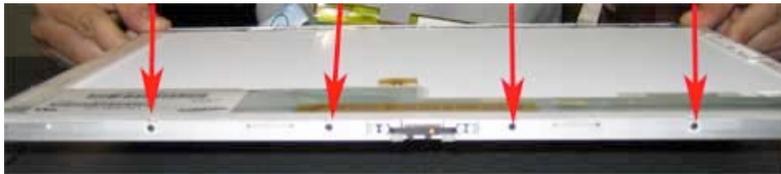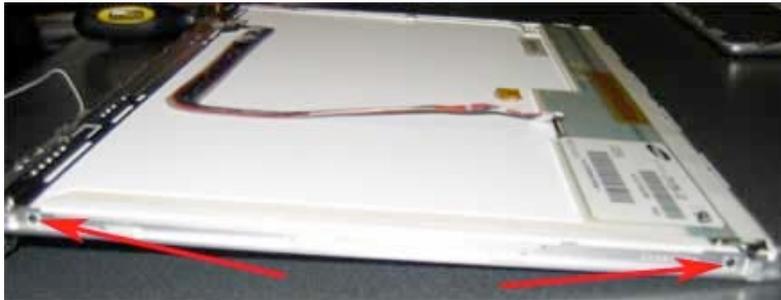
Then remove the four black screws at the top of the display.
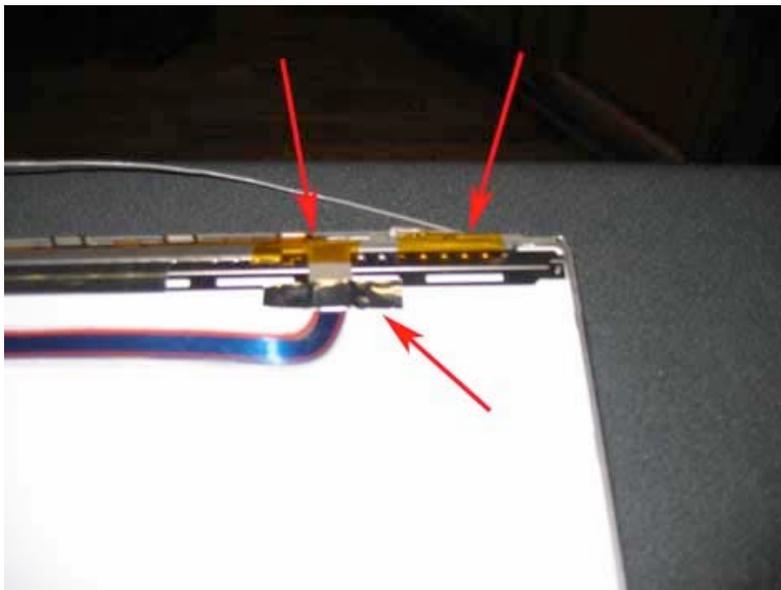
Remove the three pieces of tape from the bottom corner of the display with the display cable. There is on piece of aluminum tape on the display cable, and two orange pieces of tape.

In the groove in the bottom of display is a long green board (the inverter board) Lift the inverter board out of the groove as shown.
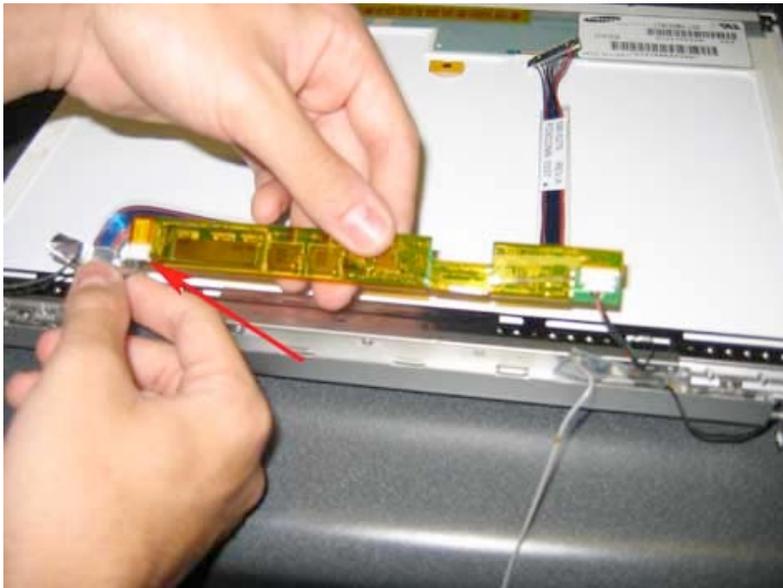
Disconnect the inverter cable from the inverter board as shown. Pull the cable towards you while holding the board to disconnect the cable.
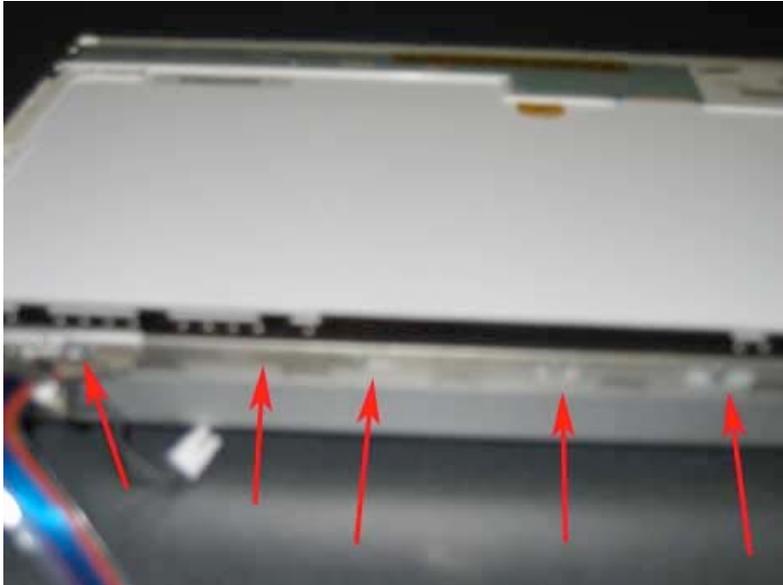
There are 5 Philips head screws that hold the metal "frieze" on the unit. Remove these screws.
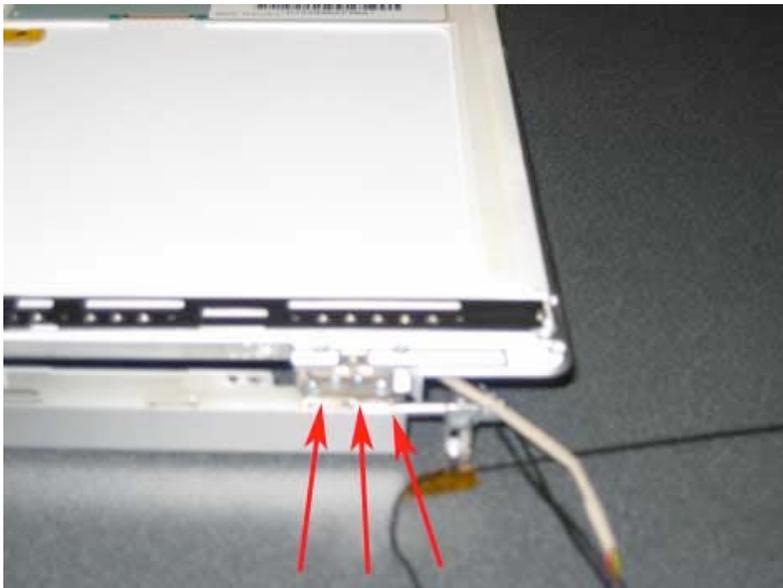
Remove the three torx T8 screws from the hinge area on both sides of the frieze.

Lift the frieze on hinges away from the LCD module. The hinges should slip out of the frieze from the sides.

Now you must remove the display front bezel from the LCD. The bezel is held on by a semi-strong adhesive. You have to pull up on the bezel with slight force to remove it from the LCD.

QuickerTek Antenna Assembly

To increase the reception of your airport wireless Internet, you can install a QuickerTek antenna. These are available from our online store.

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest

First you will need to locate the "L" shaped orange cable on the left hand side of the powerbook and undo the orange ribbon cable connection from the logic board by using either your fingernail or a flat nylon tool. The connector you need to unplug is circled in red in the picture below.
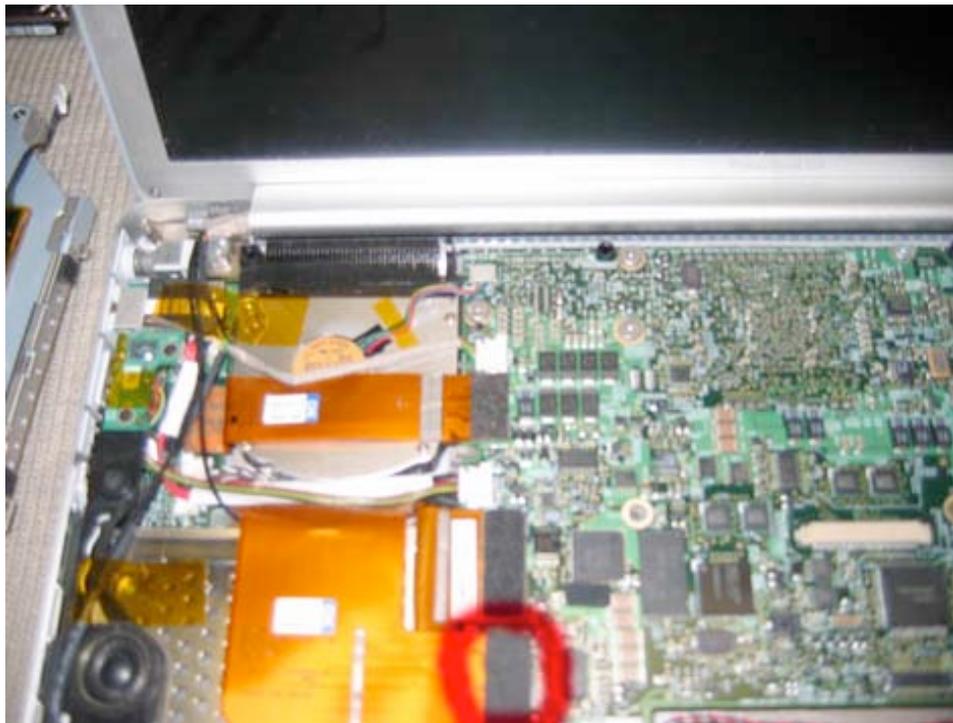
Next, pull back the orange cable as shown in the picture below to reveal the airport cable connection. You'll notice a fat spot in the cable. This is where the two airport cables connect. Pull on either side of the fatter spot in the cable to undo the two cables.

Now, from your QuickerTek package, remove the shorter of the two cables. (The one with a connector on each end, and feed the cable through the PCMCIA slot on the far left hand side as shown in the picture. It may help to hold the PCMCIA door flat with a screwdriver. If you need to remove the cable, then holding the door down helps incredibly. Make sure you feed the proper connector end through the PCMCIA door! You are connecting the cable to the airport cable from the right hand side of the two you disconnected in the previous step.

Reattach the orange cable to the logic board, and you should be looking at a similar picture to the one below.

Connect the other cable in the QuickerTek Package to the one you just installed. (The connection is circled in red in the picture below.) Then adhere the antenna to the top corner of your display as shown in the picture below. Close up your unit, and you're ready to boost your reception!
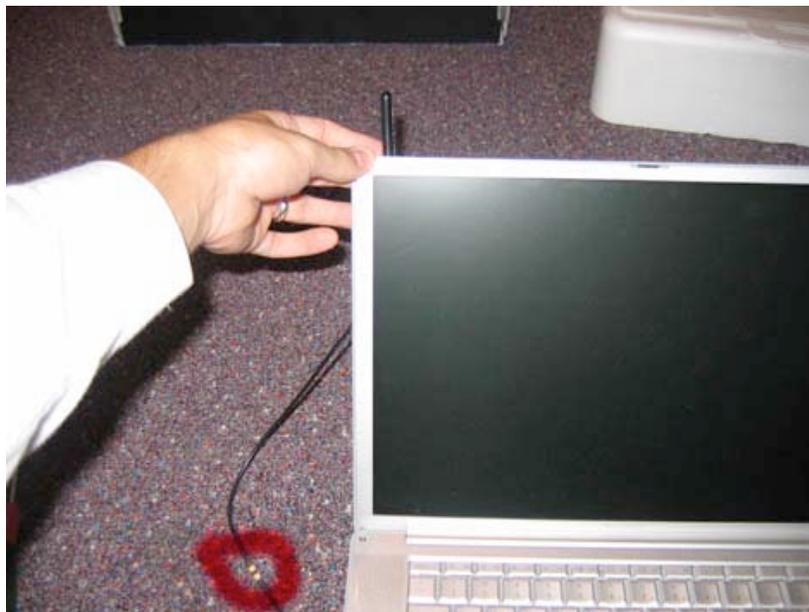
Logic Board / Mother Board Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
Hard Drive (Connector Cable)
Optical Drive (Connector Cable)
PRAM Battery (Connector Cable)
Display

Special Note: Be very careful when working with any component related to the logic board or display. These are the most expensive components on the laptop, and damaging these components will set your wallet back.

To begin, start on the left hand side of the logic board. Remove the two remaining orange connector cables by using a flat head nylon tool or your fingernail and gently prying up.

Next, undo the remaining cable connections to the logic board. Specifically the red green yellow black wire, and the double red wire on the corner of the battery bay (not shown in picture.)

Lastly. Unplug the fan connector from the logic board. The location of all of these cables is shown in red in the picture below.
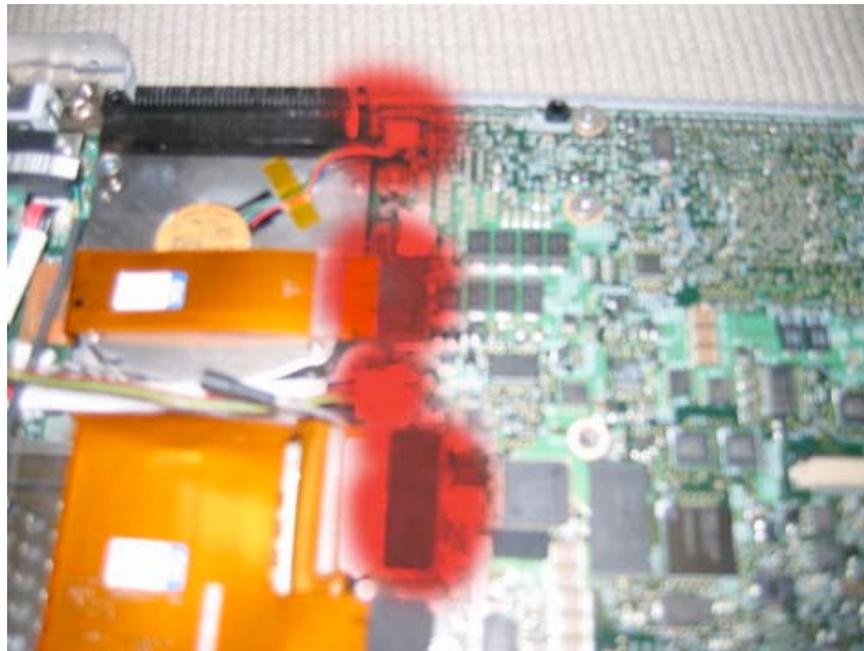
Now, on the right hand slide, remove the two smaller orange connector cables by using a flat head nylon tool or your fingernail and gently prying up. Next undo the right hand side fan connector from the logic board. These locations are shown in red in the picture below.

Now for the screw removal. Remove the 3 Philips 1/4" large head screws in the top left hand corner, one 1/8" silver Philips head screw in the bottom left corner, one 1/8" silver screw in the middle bottom and one in the middle top, one next to the right hand side fan, one in bottom right hand corner, one 3/8"silver screw in the top right corner, and one 1/4" silver Philips screw on the right hand side of the logic board next to the speaker. There should be 10 screws in total.
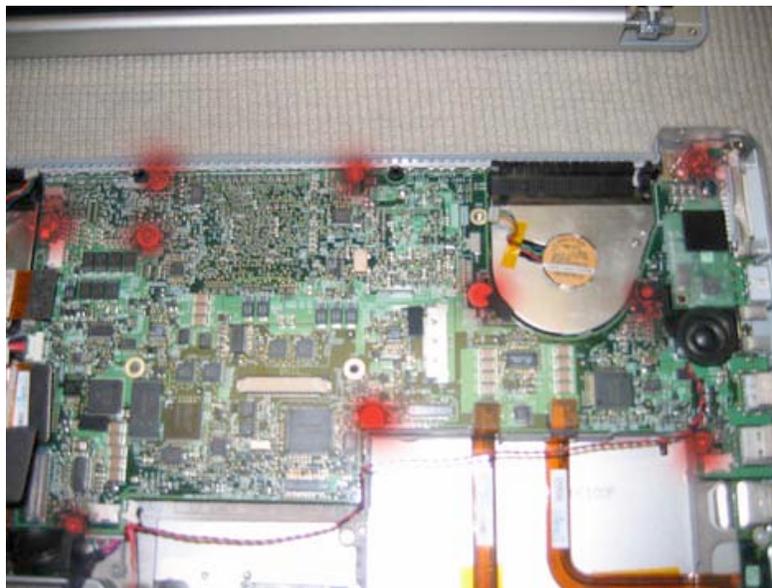
Next, remove the 1/8" black screw on the green board with the speaker. The location is shown in the picture. Lift this part up off logic board. This will reveal a screw underneath the board that is holding the speaker and logic board to casing. Remove this screw.

Now, on the left hand side of the logic board, unplug the double black and double red wire from the DC in board. It isn't necessary to undo this cable from the logic board.
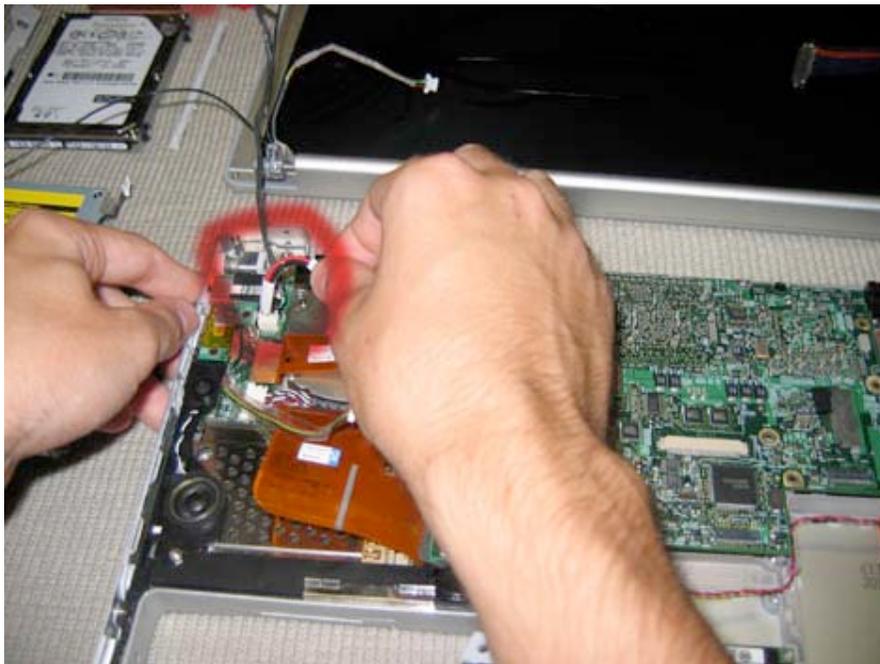
Lift the logic board up and out of the shell of the unit as shown, and place it on a static free surface. The board should come out very easily, and if you meet any resistance, then it is likely you forgot to unplug a connector along the way.
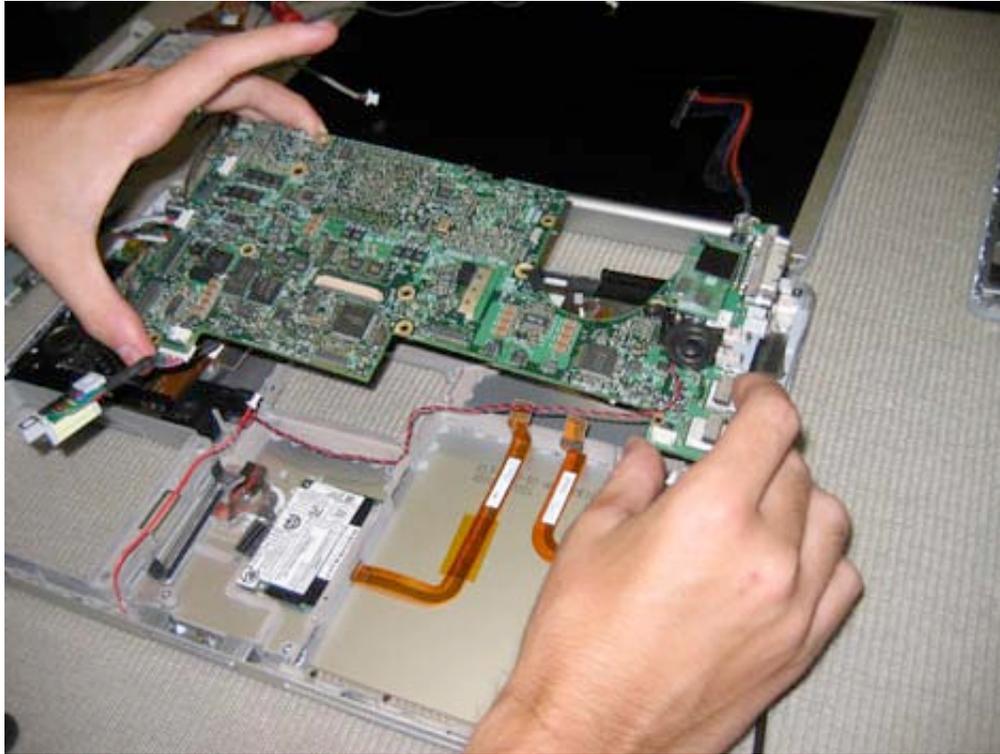
Speaker Assembly Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
Hard Drive
Optical Drive
PRAM Battery
Display
Logic Board

Begin by removing the Torx T8 screw on top of the modem jack board. Secondly, on the green board next to the modem jack board, remove the two black Philips 1/8" screws. Next, using a hex wrench or pliers, remove the hex nut near the speaker. Lastly, remove the black Philips head screw on the black plastic next to the battery bay. (This screw is cut off in the picture.)
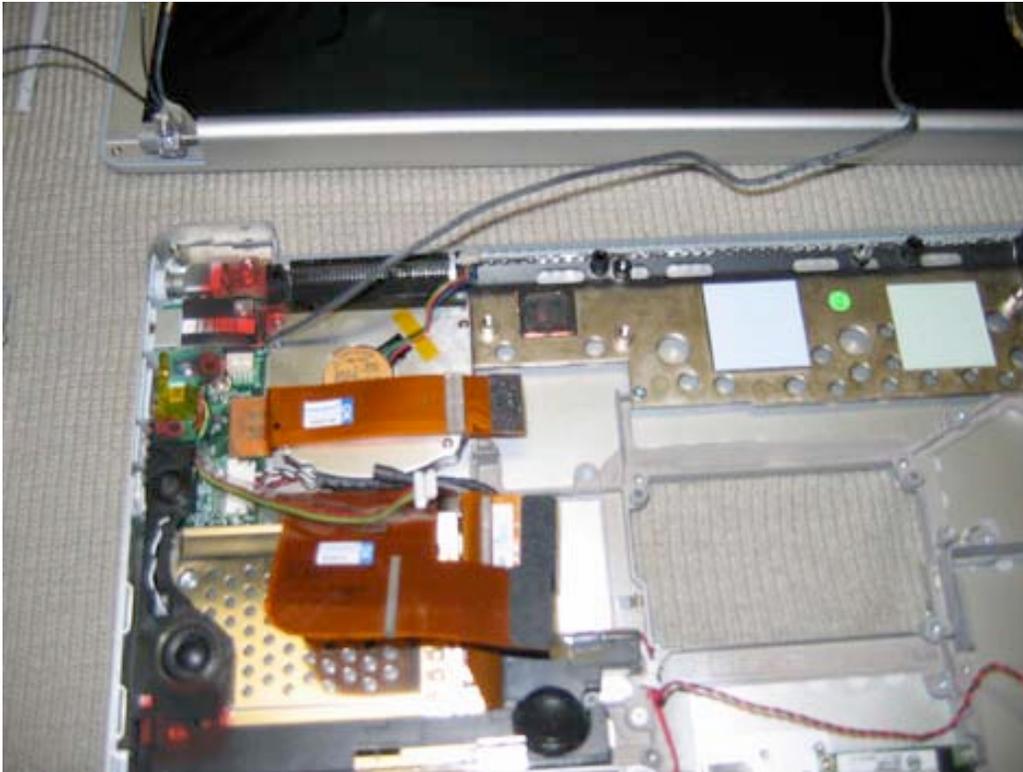
Lift the speaker assembly up, and undo the connector to the DC board as shown in the picture below.
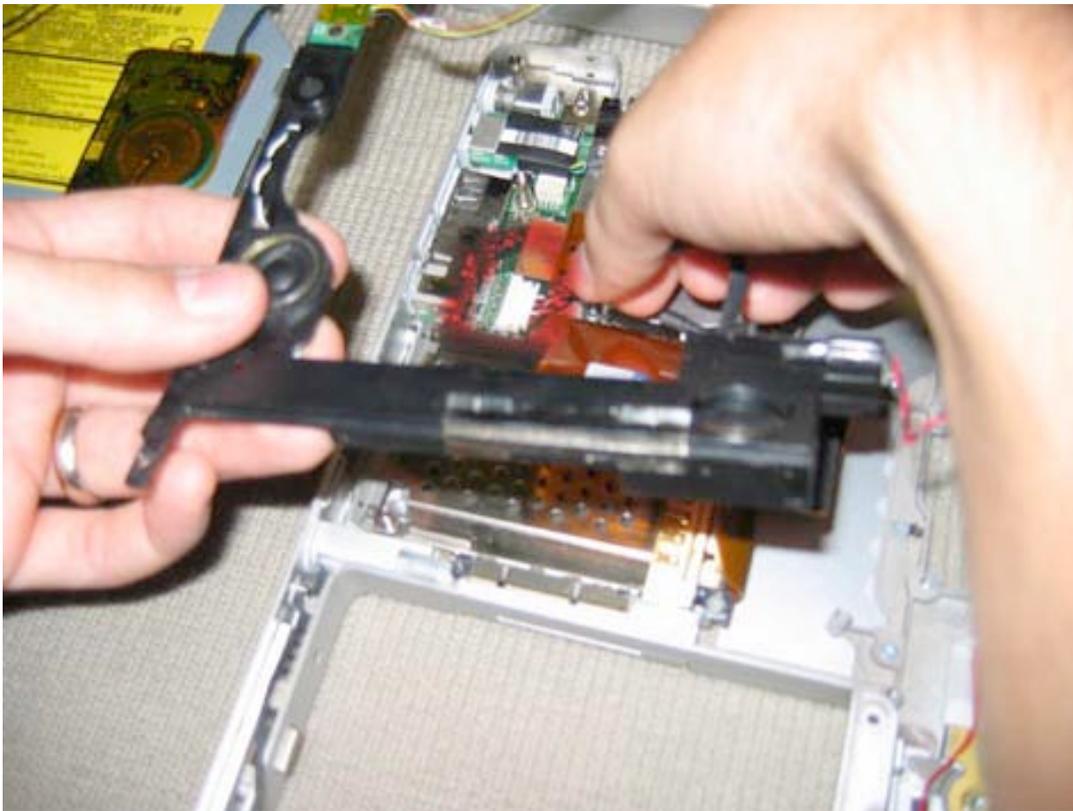
PCMCIA Mechanism Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
Hard Drive
Optical Drive
PRAM Battery
Display
Logic Board
Speaker Assembly

To remove the PCMCIA mechanism, you will need to first remove the orange connector cable. You can hold the cable back and locate the two Philips head screws securing it in place. Remove the four Philips head screws securing the PCMCIA mechanism. The locations of the screws are shown in the picture below. (Note that in the picture the orange L cable has not yet been removed.) Then lift the PCMCIA mechanism up and out of the bottom casing.
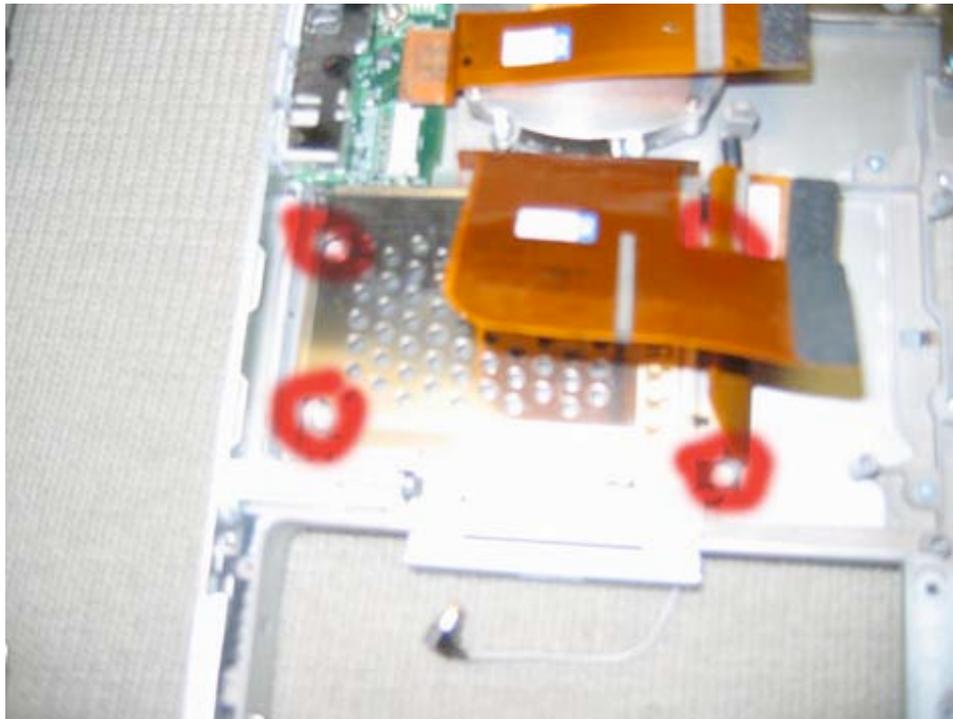
Fan Assembly / Heat Sync Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
Hard Drive
Optical Drive
PRAM Battery
Display
Logic Board
Speaker Assembly
PCMCIA Mechanism

Remove the 3 screws on perimeter of left fan (The long screw is in the top left) Remove one on the corner of the heat sync, and then 3 in a diagonal line along the perimeter on the right hand fan assembly.

The assembly will now lift out easily.
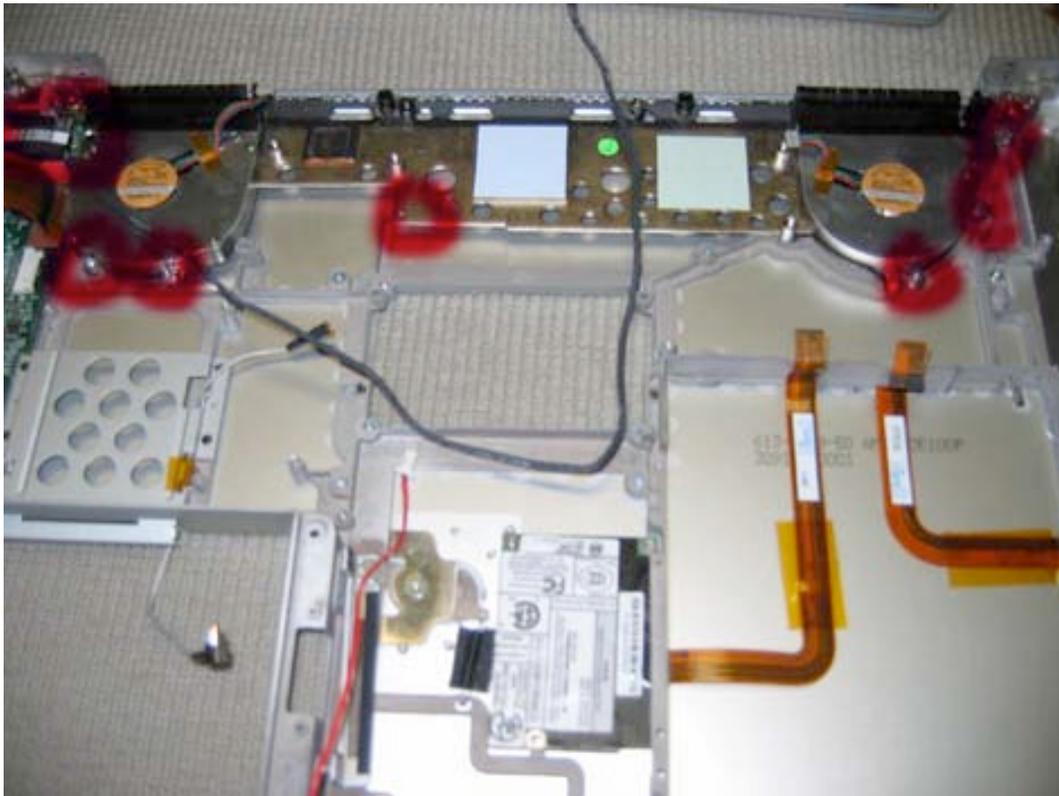
DC-IN Board Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
Hard Drive
Optical Drive
PRAM Battery
Display
Logic Board
Speaker Assembly
PCMCIA Mechanism
Fan Assembly

Remove the hex screw circled in red in the picture below with either the appropriate hex tool or by getting your T6 screwdriver, placing it inside the screw, pressing down and turning like a screwdriver. Pliers are another alternative.

Now, lift the DC board up, and rotate it so you can view and remove the connector cable attached to it as shown in the picture.
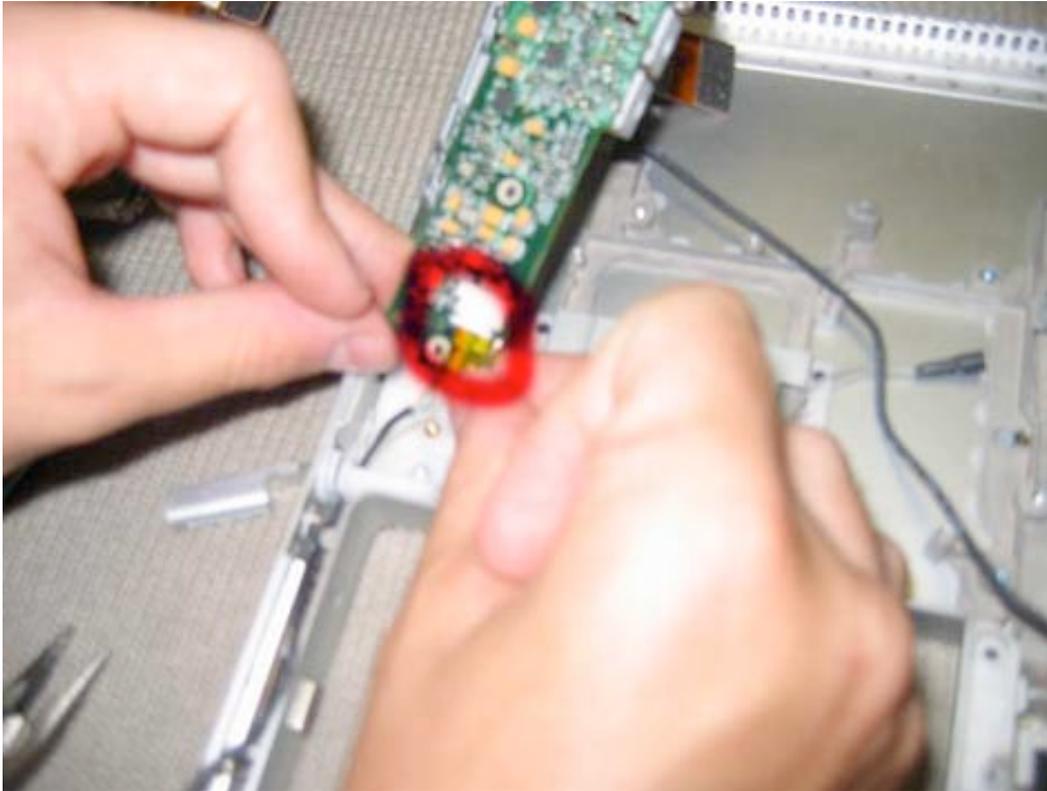
USB Port (Right Hand Side) Removal

Before proceeding, you must first remove:

Battery
Trackpad / Palmrest Assembly
Hard Drive
Optical Drive
PRAM Battery
Display
Logic Board

To remove the right hand side USB port, begin by removing the piece of orange static tape in the location circled in red in the picture below. Next, remove the two Philips head screws from the USB board at the locations shown below in red. Lastly, lift the board up and out and place on a static free surface.
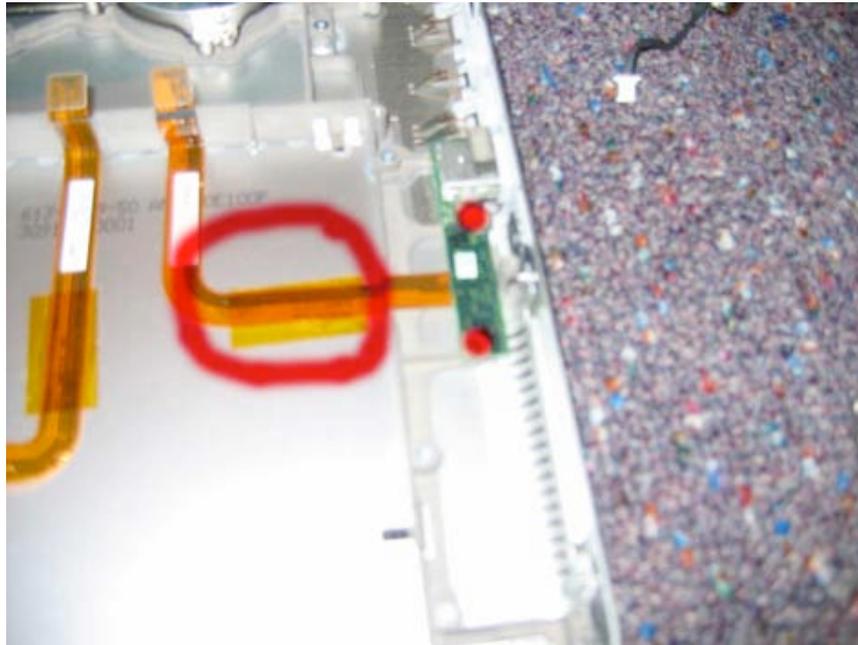
Bottom Pan / Casing Removal

Before proceeding, you must first remove:

Battery
Airport Extreme Card
Trackpad / Palmrest Assembly
Hard Drive
Optical Drive
PRAM Battery
Display
Logic Board
Speaker Assembly
PCMCIA Mechanism
Fan Assembly
DC-IN Board
USB Port (Right Hand Side)

To replace the bottom pan, you will need to remove every component from the powerbook as shown in the steps above, and then reassemble all of the components in the new bottom pan.

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