



## iMac G5, 17-inch (Ambient Light Sensor )

Updated 1 October 2007





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 Service Source

Take Apart

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iMac G5, 17-inch, Ambient Light  
Sensor



# General Information

## What's New

### October 2007

Updated Logic Board replacement procedure. A "caution" was added to notify service providers not to twist, flex, or bend the iMac G5 logic board as you install it into the chassis. Flexing the board may jeopardize the thermal interface between the heatsink and the processor. Refer to the iMac logic board inbox notice 073-1158 for additional information.

### July 2006

A diecut piece of microfoam (922-7671) is included with all replacement optical drives and display bezels. It should be installed in between the disc drive and the display bezel to prevent optical media from ejecting out of the system and dropping to the desktop. Only one diecut of microfoam should be used per system. Refer to the replacement procedures in Take Apart for either the optical drive, display bezel, or microfoam shim for more information.

### Display/Bezel Assembly Elimination

Effective July 24, 2006, the Display and Bezel assembly module will no longer be available as a single service part for the iMac G5 (17- and 20-inch models). The Display and Bezel are now available as two separate service parts (see below) to simplify inventory and reduce repair costs.

- 922-7275 Front Cover Assy,w/Optical Slot,iMac G5 17"
- 661-3626 Panel,Display w/Brackets,iMac G5 17"

### May 2005: New Procedures and Service Parts

- Fans, Upper
- Fan, Lower
- Logic board
- Speakers
- Microphone
- AirPort/Bluetooth Combo card
- Soft modem
- Chassis
- Antennas

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- LED light pipe

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## Tools Required

The following tools are required to service the computer:

- Phillips #2 screwdriver
- Phillips #1 screwdriver
- Flat-blade screwdriver
- Torx T6, T8, and T10 screwdriver
- Jeweler's flat-blade screwdriver
- Nylon probe tool (black stick 922-5065)
- Needlenose pliers
- Soft cloth (to protect removed parts from scratches)

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## Important Things to Know

1. These instructions cover the iMac G5, 17-inch, Ambient Light Sensor model; however, the procedures from the original 17-inch model are very similar. In some steps graphics from the original model may be used.
2. All customer removable screws are brass colored (except for some fan screws on earlier units which use torx screws). Do not remove screws unless they are brass colored, or you will void your warranty.
3. Ground yourself when working on the computer. The procedure will show you how to ground yourself.
4. A magnetized “L”-shaped Phillips screwdriver is included with the replacement part.
5. The midplane is no longer offered as a service part or as a Do-it-Yourself repair. Most parts on the midplane are now available as individual service parts.
6. Additional items are included with these service parts:

### **Back Cover**

- Two blank labels are included with the replacement back cover. Copy the serial number and Ethernet number off the bottom of the computer’s foot and attach the new labels to the bottom of the replacement foot. The back cover take apart procedure will show you where to attach the labels.
7. Do not pull on individual wires when disconnecting a part; pull on the connector.
  8. A screw chart is attached at the end of this document. Use the chart to identify screw type and screw locations.

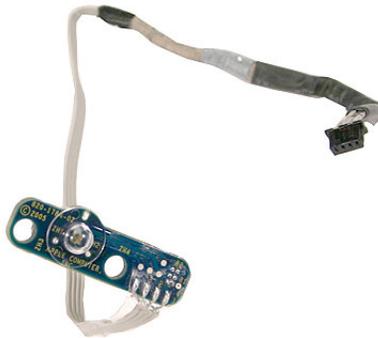
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## Ambient Light Sensor

The new iMac G5 has an ambient light sensor. It's located on the bottom of the display bezel, near the case screws. Look at the picture below. Next to the middle screw is a small bump protruding from the case. This is the ambient light sensor.



The ambient light sensor attaches to the power supply with two plastic rivets.



The ambient light sensor cable runs under the power supply and attaches to the logic board.





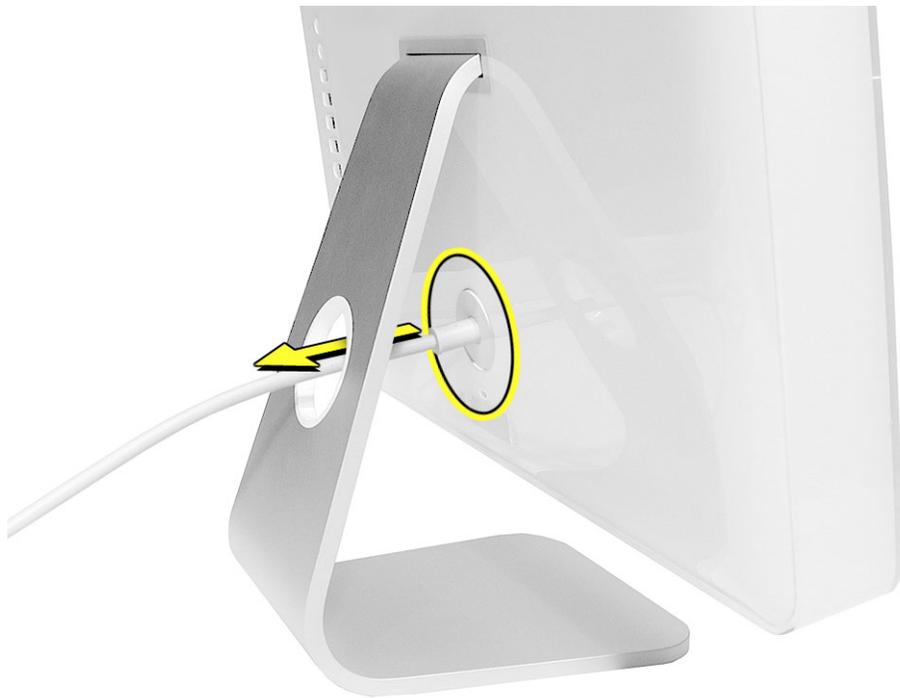
# Removing the Back Cover

## Tools Required

Use the screwdriver provided, or a Phillips #2 screwdriver

## Procedure

1. Turn your computer off by choosing Shut down from the Apple () menu.
2. Disconnect all cables, and unplug the power cord from your computer. Put on your ESD Wrist strap.



3. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of the computer and slowly lay the computer face down as shown.

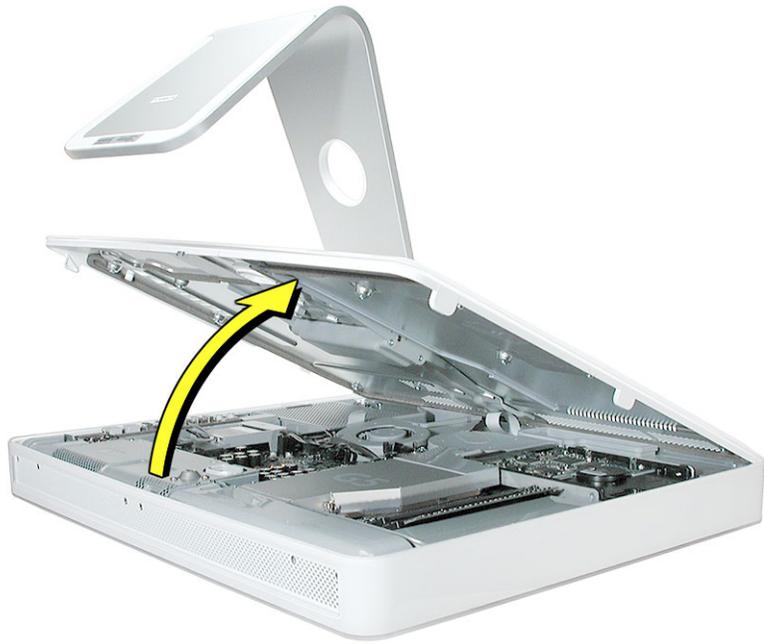


4. Locate the three silver case screws circled below. You may have to lift the stand to locate the middle case screw. **Note:** These screws are captive; they are part of the display/bezel assembly and cannot be removed.

Using the tool provided, or a Phillips #2 screwdriver, loosen the three captive screws. Turn the screws to the left until they stop turning. **Don't force the screws once they stop turning.**



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5. Holding the back cover by the metal stand, tilt the cover up and lift it off the computer. Set the back cover aside.





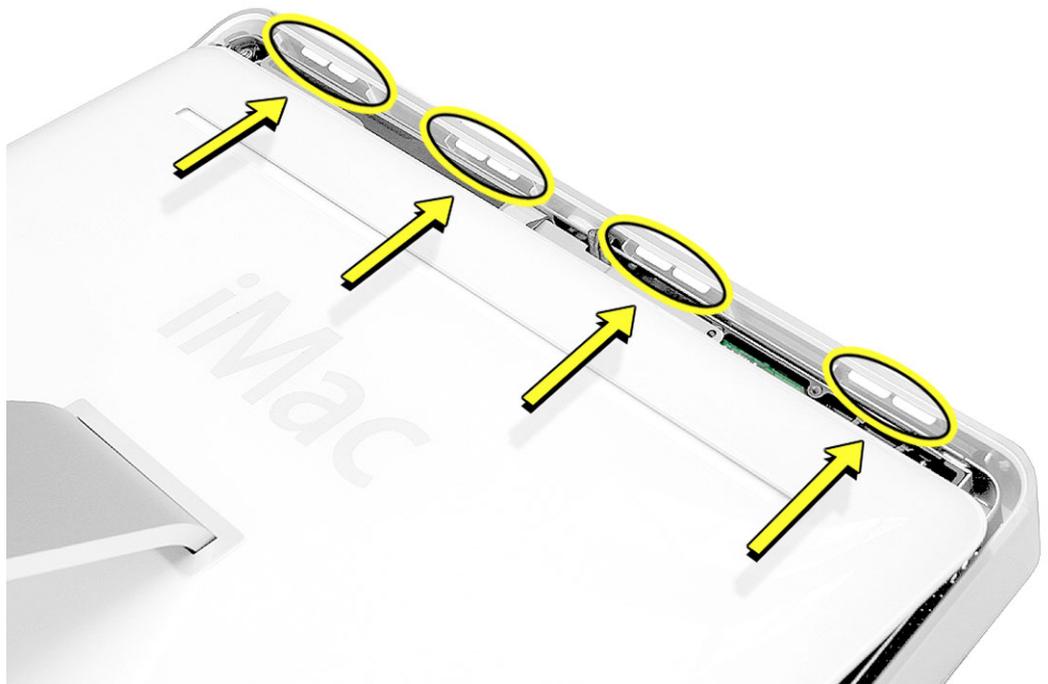
# Replacing the Back Cover

## Tools Required

Use the screwdriver provided, or a Phillips #2 screwdriver

## Procedure

1. Remove the replacement back cover and foot from its packaging.
2. Replace the cover so that the slots on the top edge of the back cover mate with the tabs on the display housing.



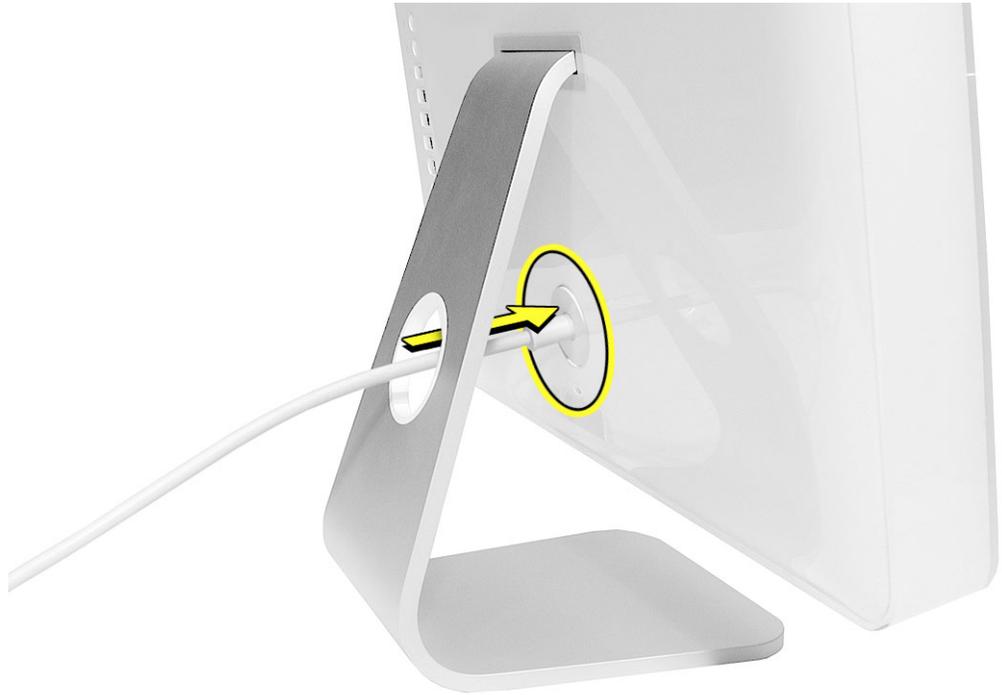
3. Lower and press the cover into place until it fits snugly on the computer.



4. Tighten the three captive case screws by turning them to the right. Don't overtighten the screws.



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5. Make sure the case is not bowing along the bottom or sides. If it is, check that the optical drive and cables are seated properly. There should be no gaps around the edges when the screws are tightened.
  6. Position the computer in the upright position. Reconnect the power cord and remaining cables. Turn on the computer.





# Hard Drive

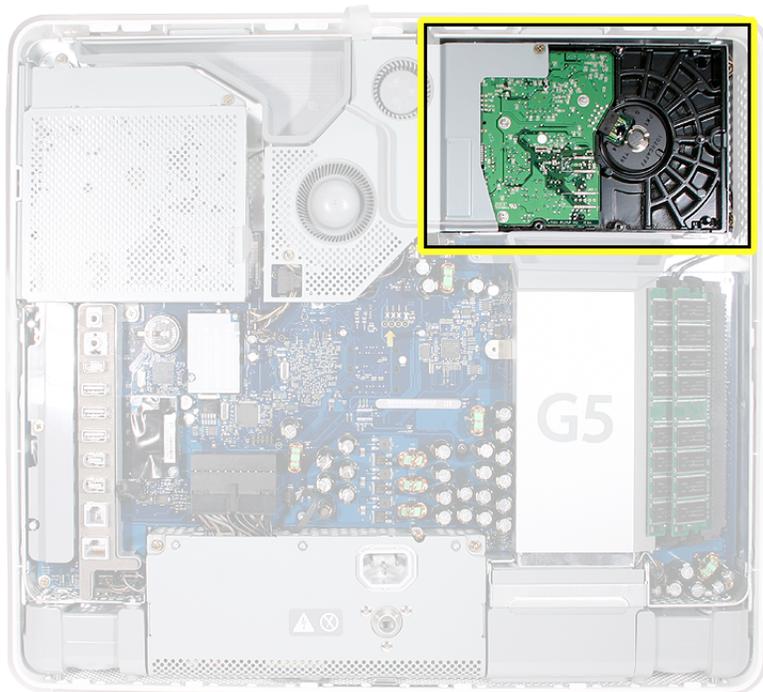
## Tools Required

- Use the screwdriver provided, or a Phillips #2 screwdriver, preferably with a magnetized tip
- Flat-blade screwdriver
- Screw tray or something equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



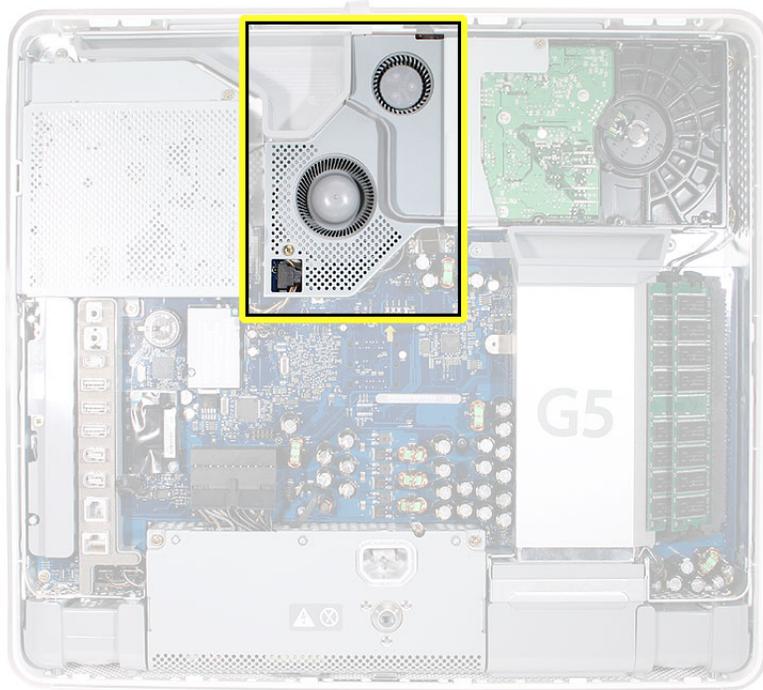
## Removing the Hard Drive

1. To access the hard drive you must first remove other service modules. This procedure will show you how to remove and replace these modules. **Note:** As you remove each module, set it aside, along with the screws for that module.
2. Ground yourself. Touch the metal surface (as shown below) on the inside of the computer to discharge any static electricity.

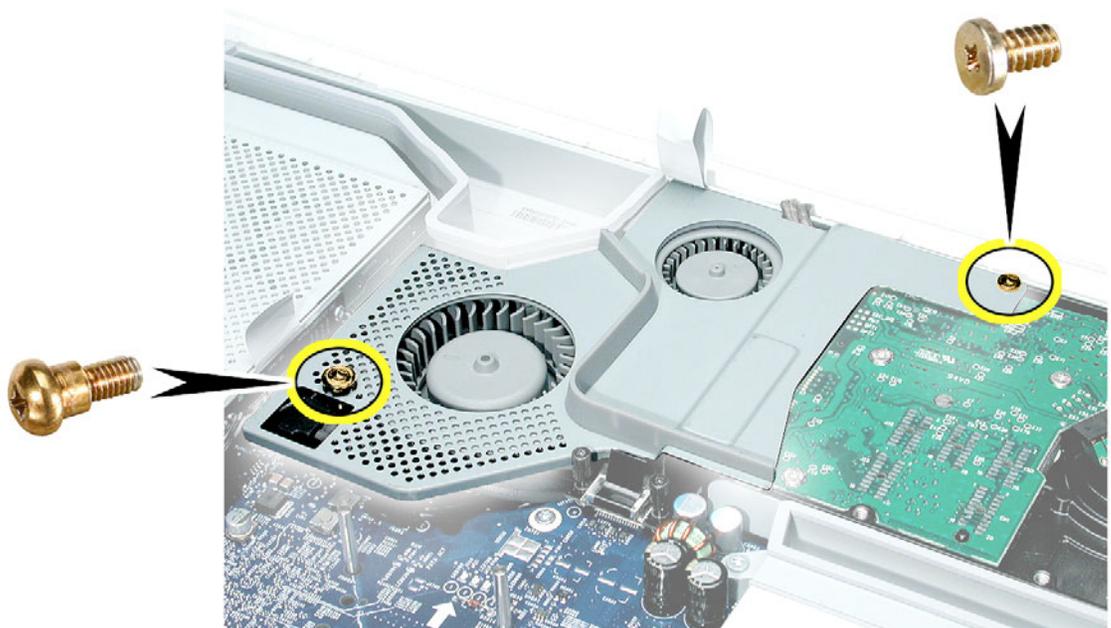
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



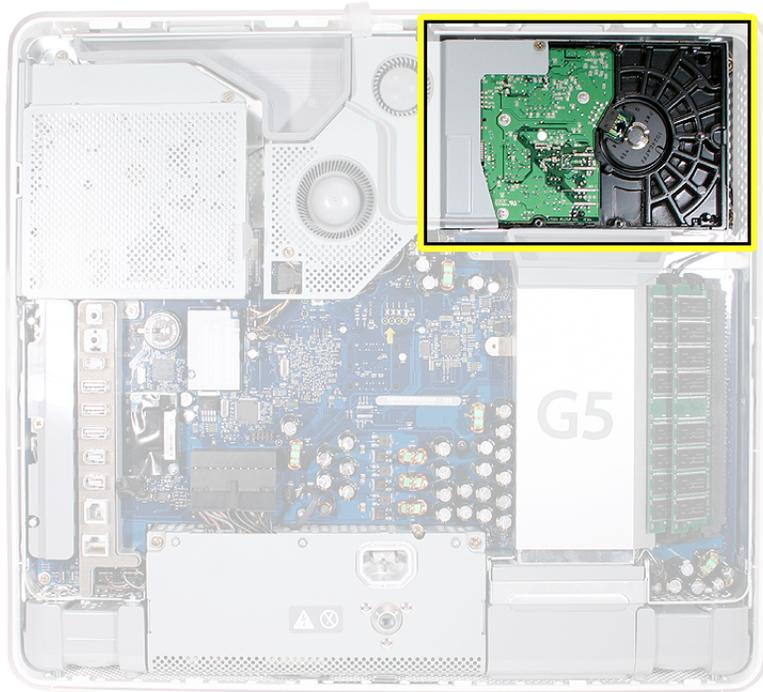
3. Locate the fan cover near the top of the computer.



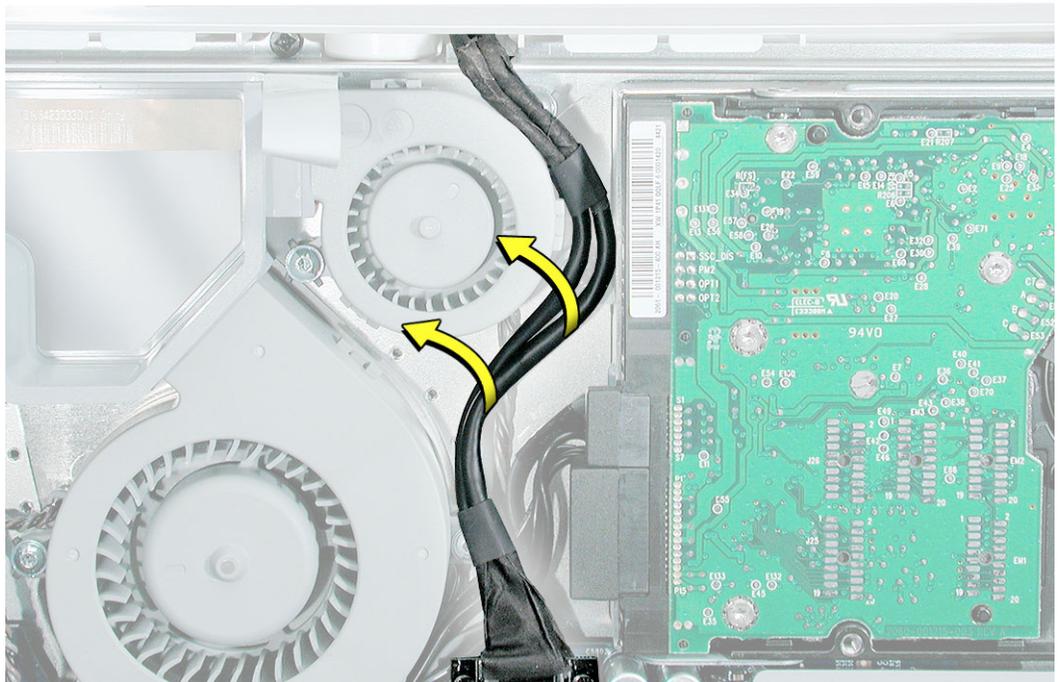
4. Using the tool provided, or a Phillips #2 screwdriver, remove the two fan cover screws. Lift the fan cover off the computer. Set the screws and fan cover aside.



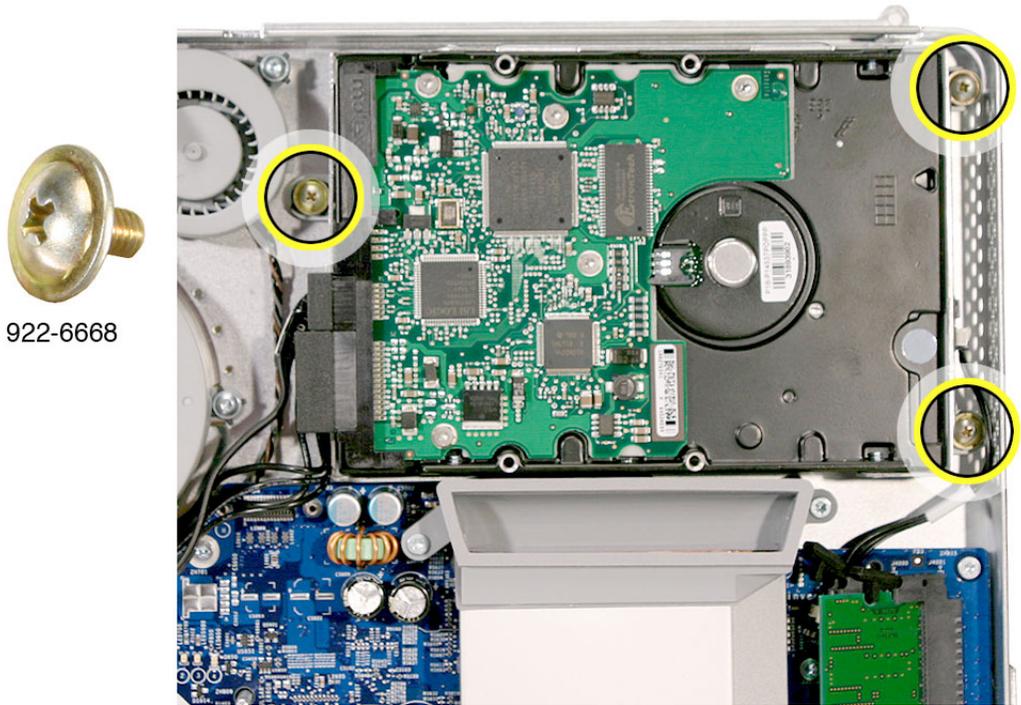
5. Locate the hard drive in the top right corner.



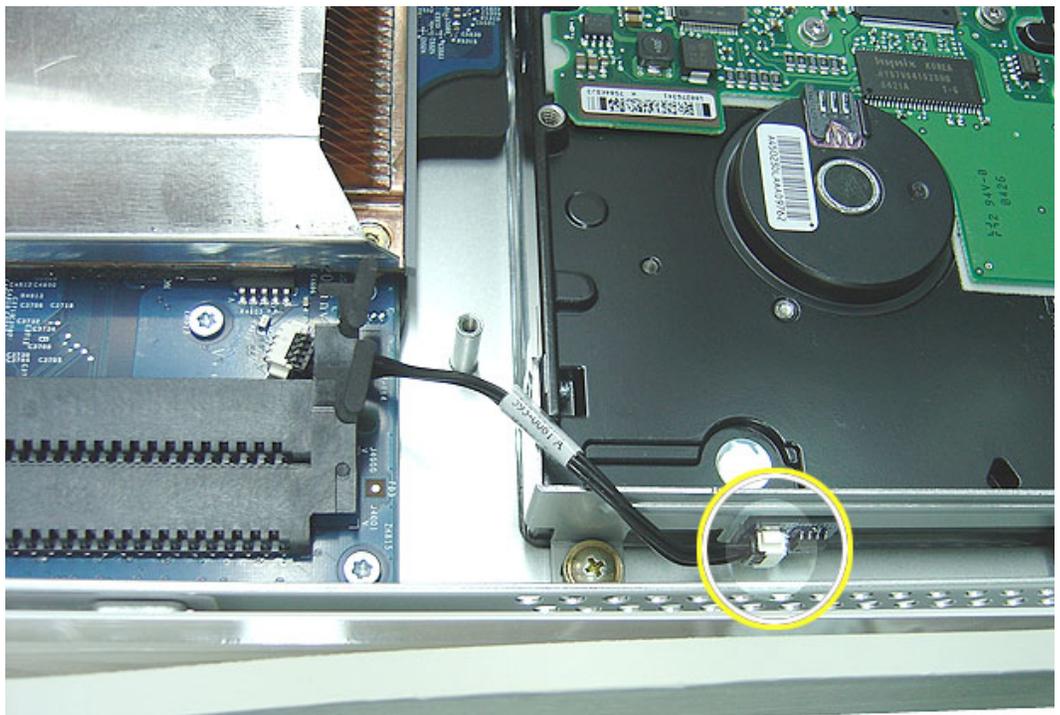
6. Move the black video cable (located to the left of the hard drive) out of the way to access a hard drive screw.



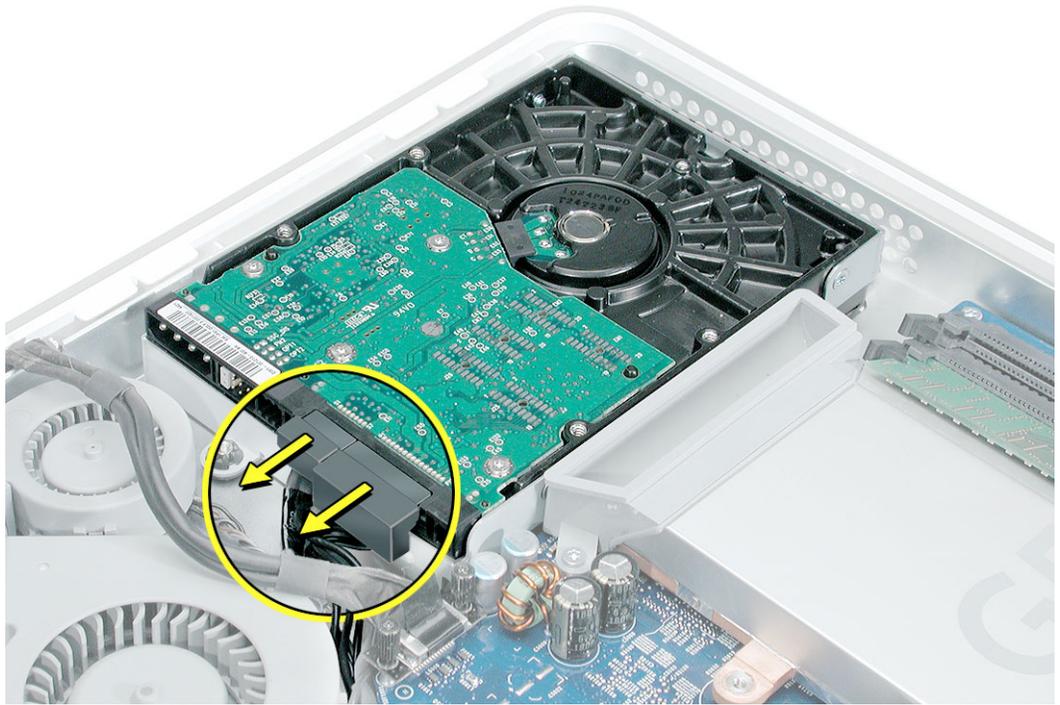
4. Remove the three hard drive screws. Set the screws aside.



5. Carefully lift the hard drive straight up, about one inch, and disconnect the black cable from the white connector on the hard drive. **Note:** Leave the other end of the cable attached to the logic board.



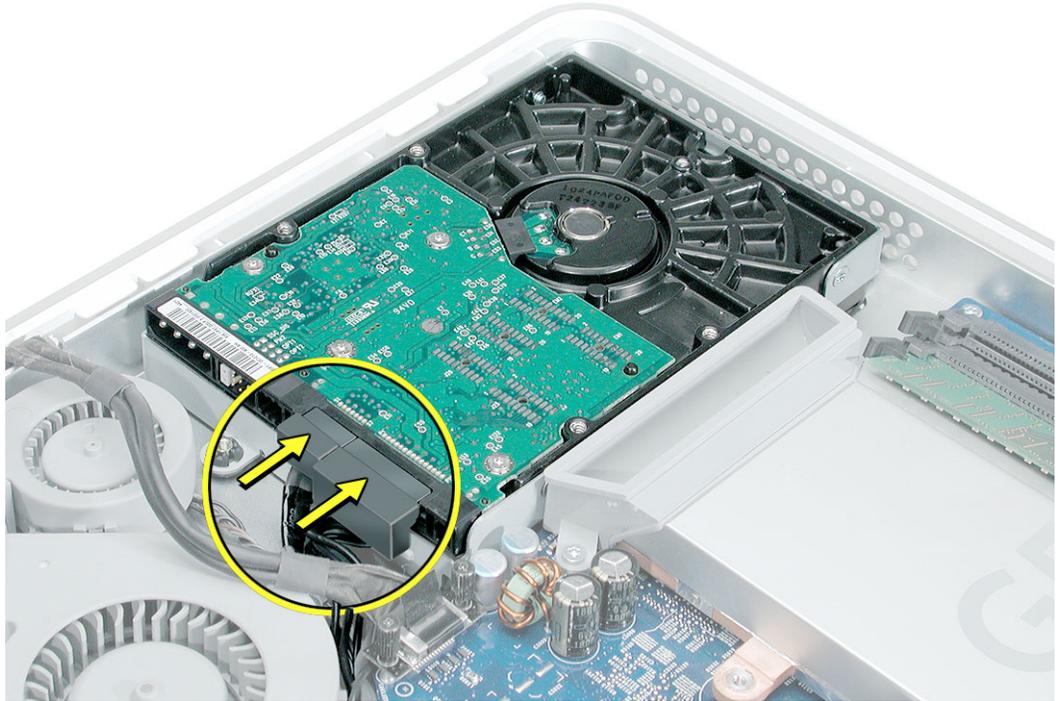
- Using your fingers, or a flat-blade screwdriver, disconnect the drive data cable and power cable from the hard drive.



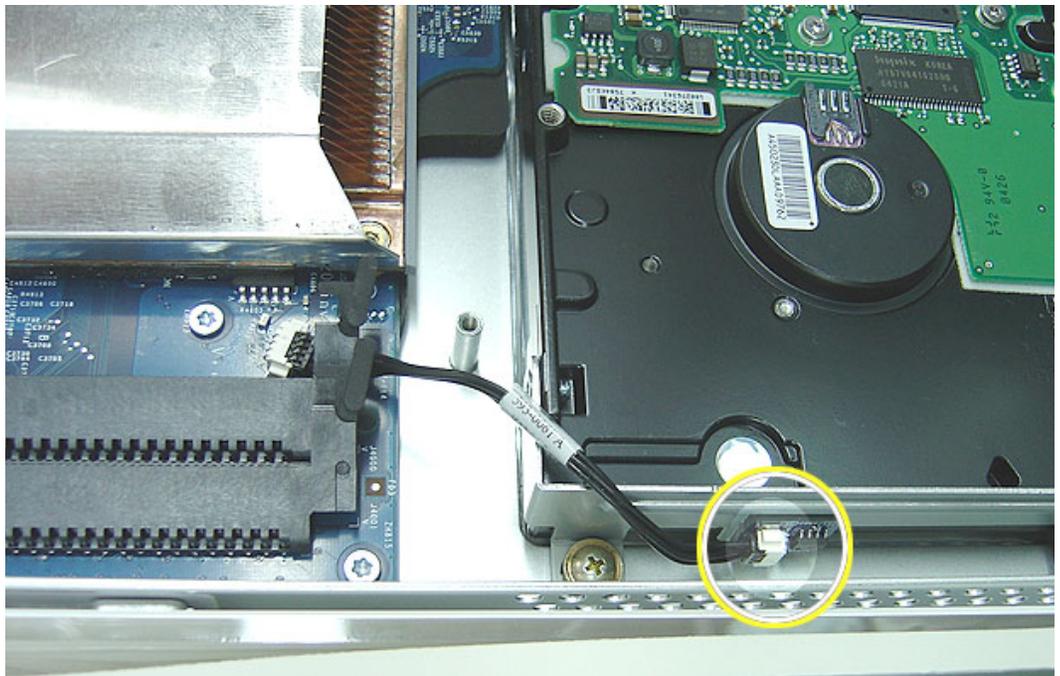
- Lift the hard drive up and out of the midplane assembly. **Important:** Return this hard drive to Apple in the packaging provided.

## Replacing the Hard Drive

1. Remove the replacement hard drive from its packaging.
2. Connect the drive data cable and power cable to the hard drive. Lower the hard drive into place on the midplane.



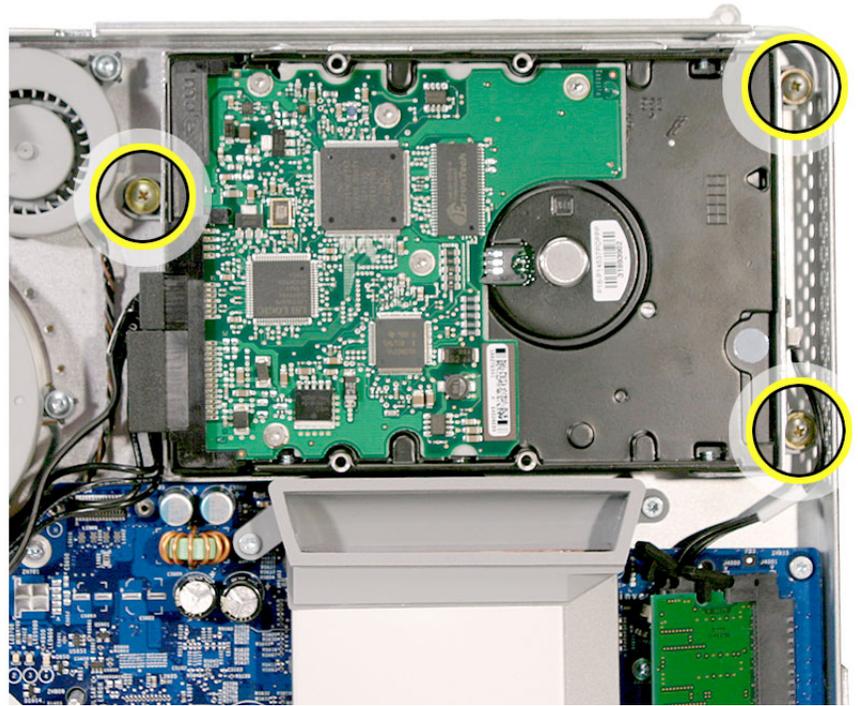
3. Connect the black cable to the white connector on end of the hard drive.



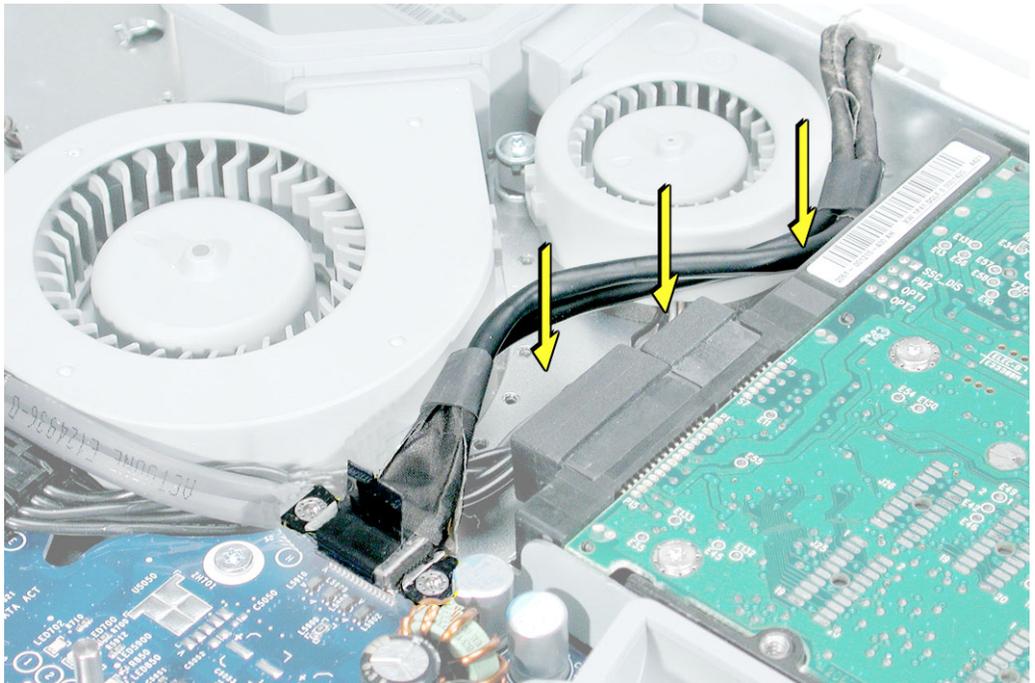
4. Replace the three hard drive screws.



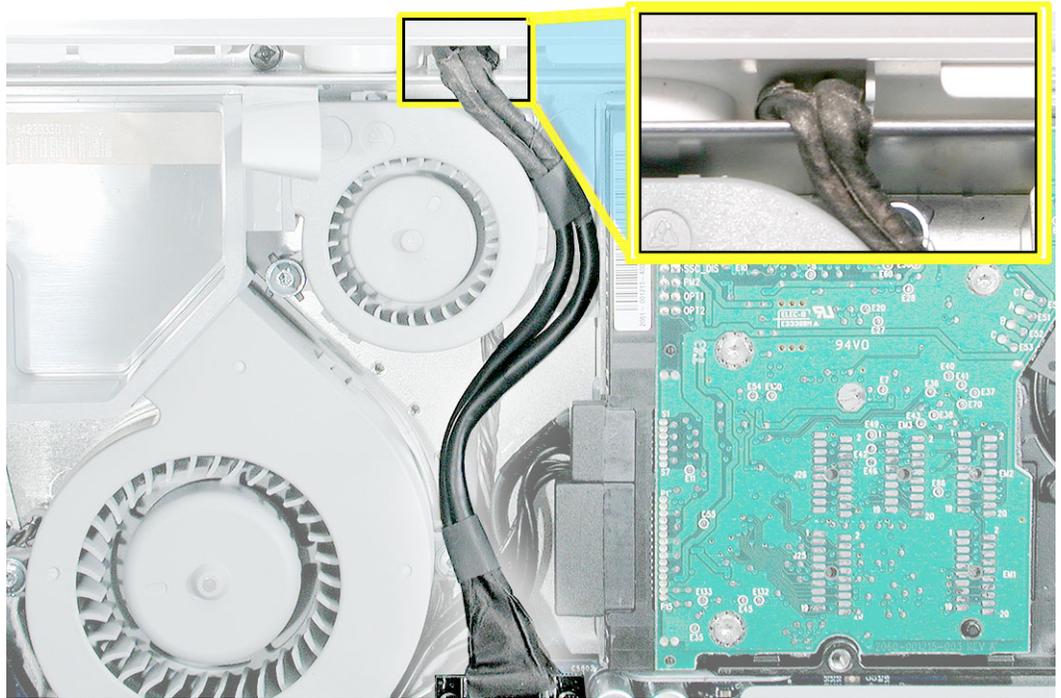
922-6668



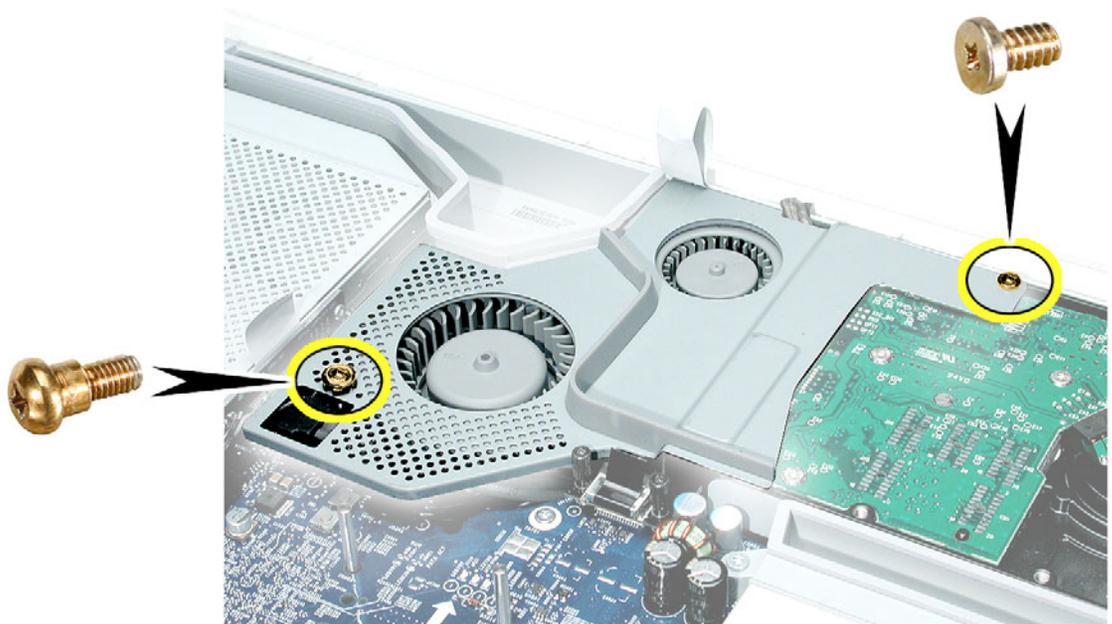
5. Tuck the black video cable into the area shown by the arrows.



6. Press the video cable into the notch on the midplane chassis.



4. Replace the two fan cover screws. The larger screw attaches on the left. **Note:** Make sure the pull tab is sticking up as shown





# Optical Drive

## Tools Required

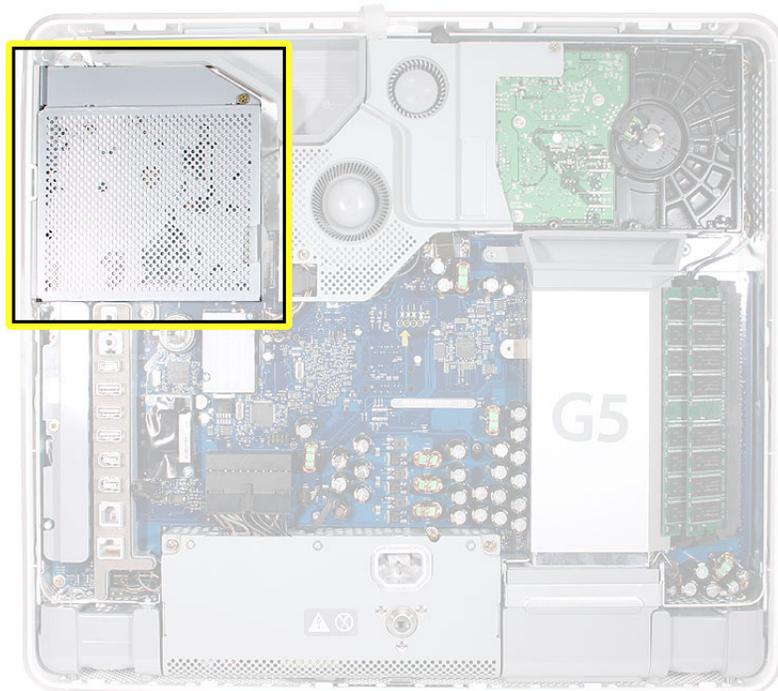
- Use the screwdriver provided, or a Phillips #2 screwdriver, preferably with a magnetized tip
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location

**Note:** The education models do not have an optical drive.



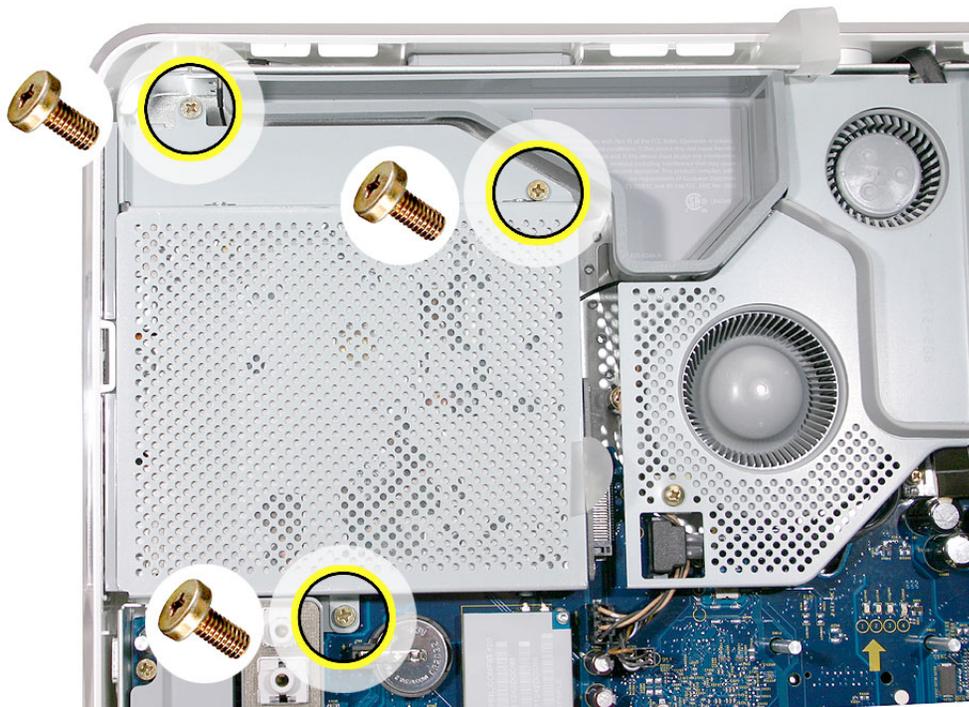
## Removing the Optical Drive

1. Ground yourself. Touch the metal surface (as shown below) on the inside of the computer to discharge any static electricity.

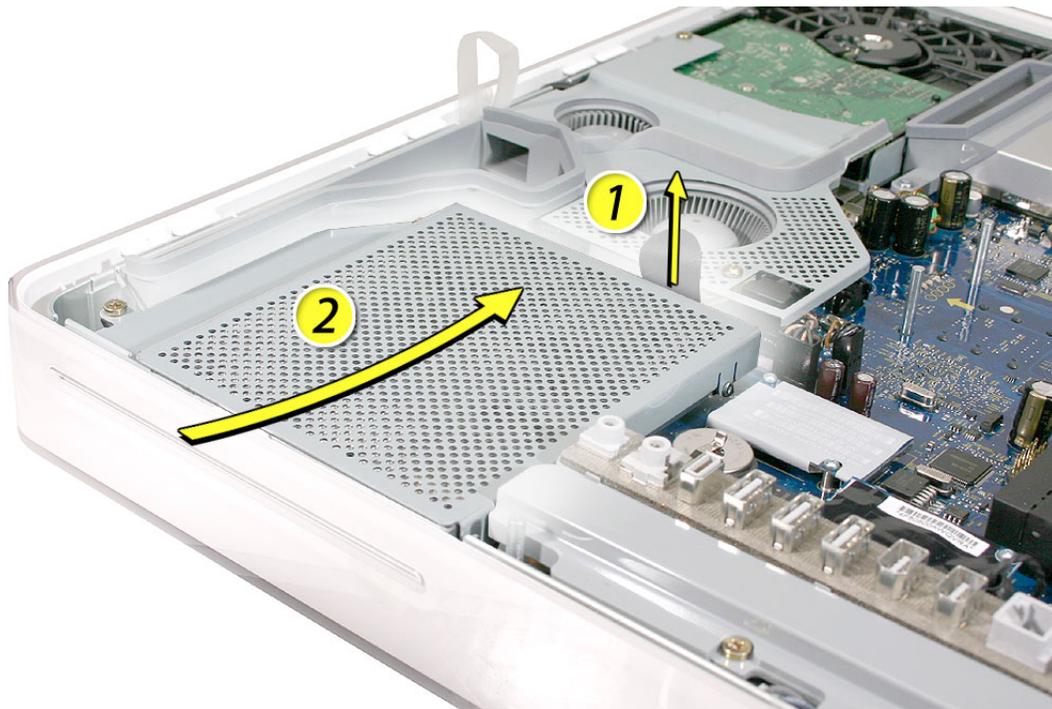
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



- Using a Phillips #2 screwdriver, remove the three optical drive screws circled below. Set the screws aside.

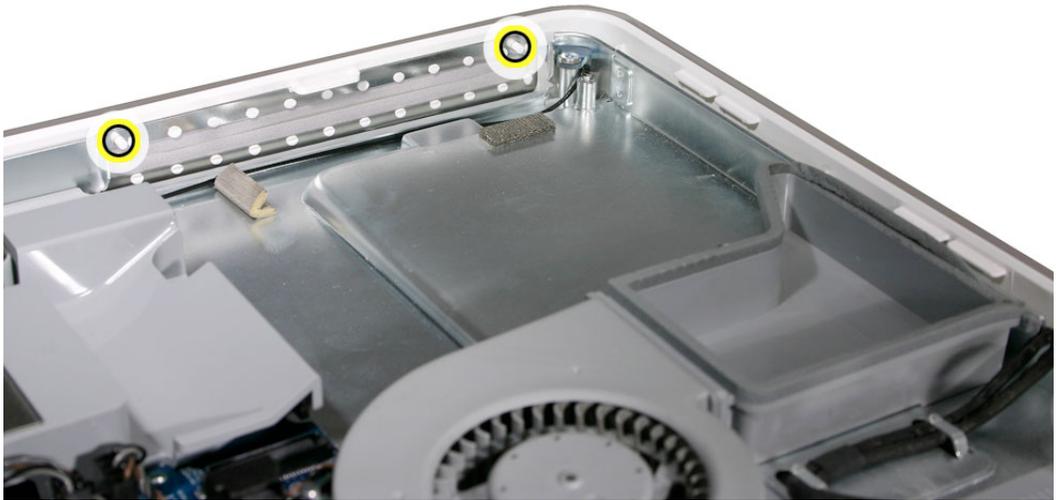


- Pull the optical drive tab straight up and then to the right. Set the optical drive aside.

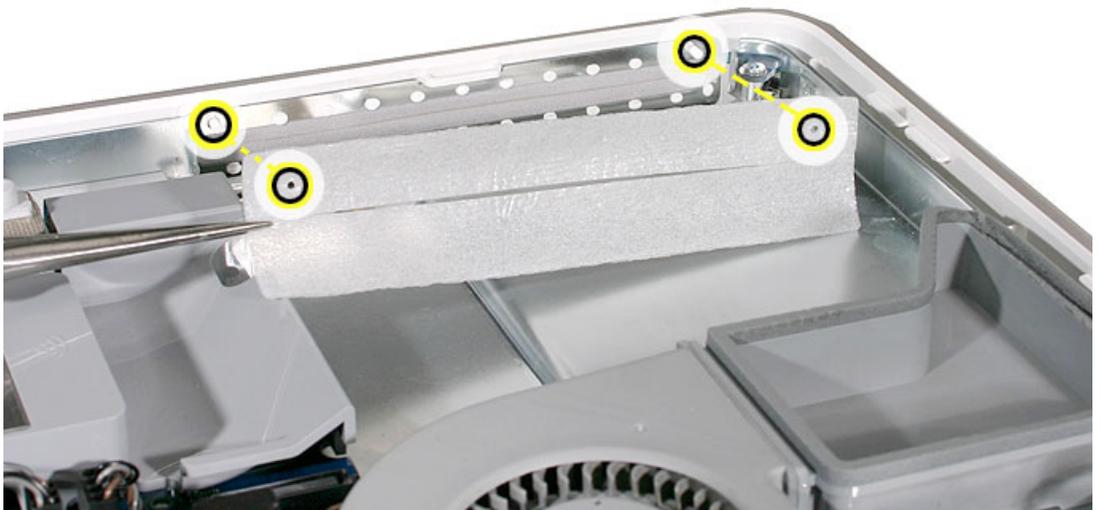


## Replacing the Optical Drive

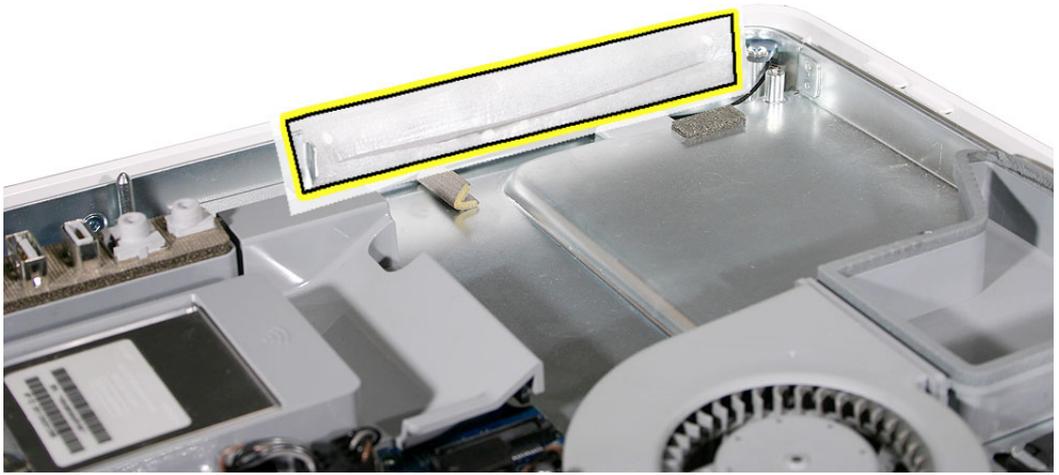
1. **Note:** A microfoam insert is included with the replacement optical drive and should be installed using the instructions included below. The microfoam insert will prevent optical media from ejecting out of the system and dropping to the desktop. Only one microfoam insert should be used per system
2. Locate the enclosed piece of white microfoam and the two white posts (circled) on the bezel.



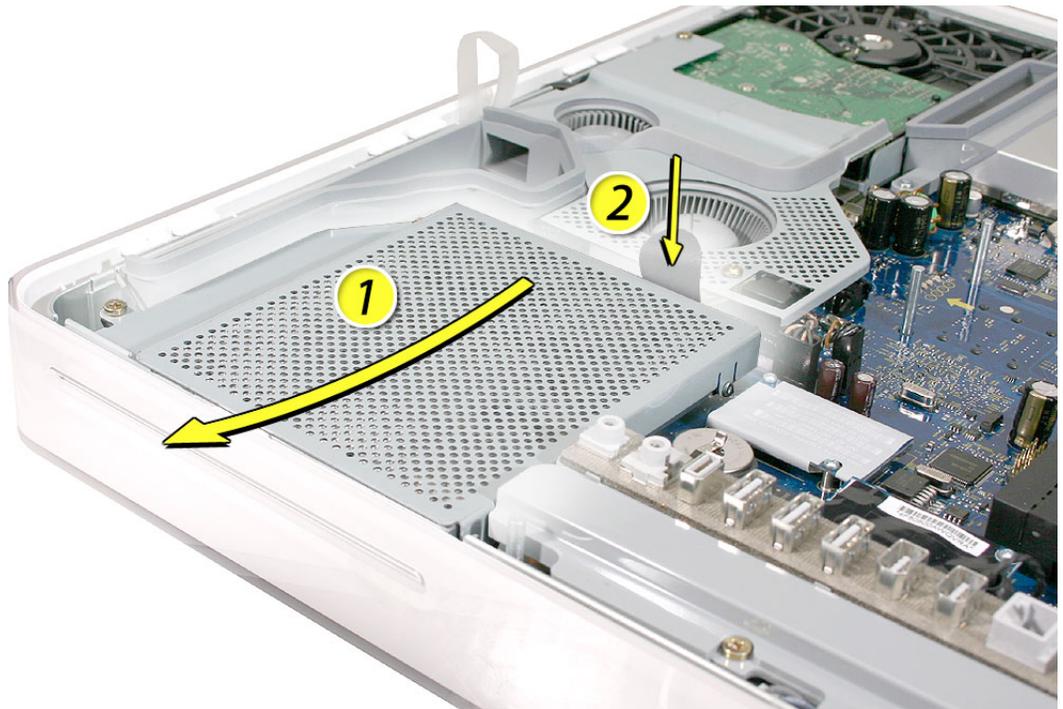
3. With the shiny side of the microfoam facing the bezel, slide the holes of the microfoam onto the two white posts on the bezel.



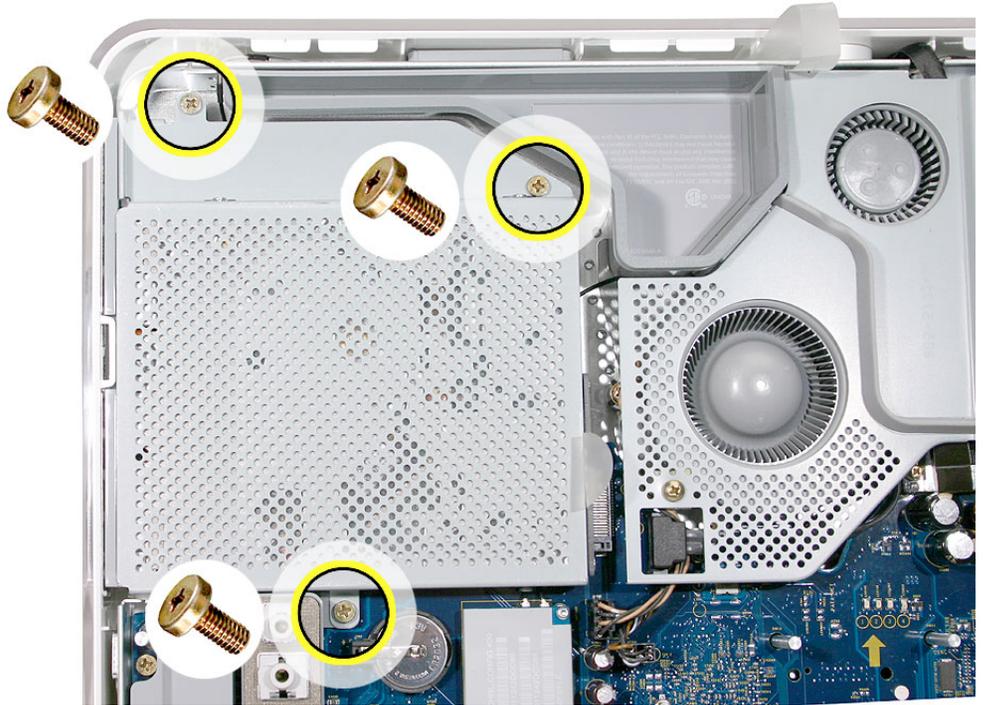
4. Tuck the microfoam into place before installing the optical drive.



5. Remove the replacement optical drive from its packaging.
6. Holding the optical drive by the back end (near the tab), insert the drive at an angle to mate the bezel with the optical drive.



7. Replace the three optical drive screws.



8. Make sure no microfoam is sticking out of the bezel. **Note:** Before reassembling the computer, partially insert an optical disc to make sure it inserts smoothly.





# Microfoam Shim

## Tools Required

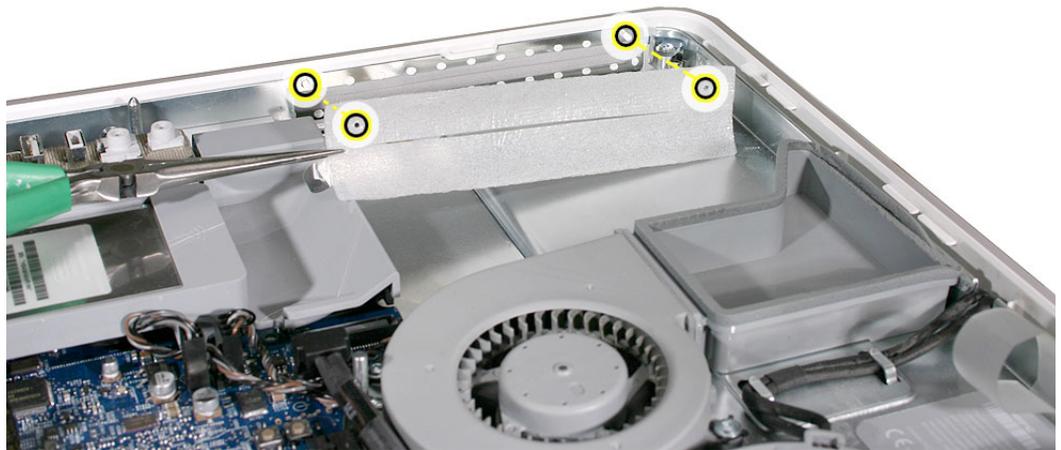
- Use the screwdriver provided, or a Phillips #2 screwdriver, preferably with a magnetized tip
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover and the optical drive.

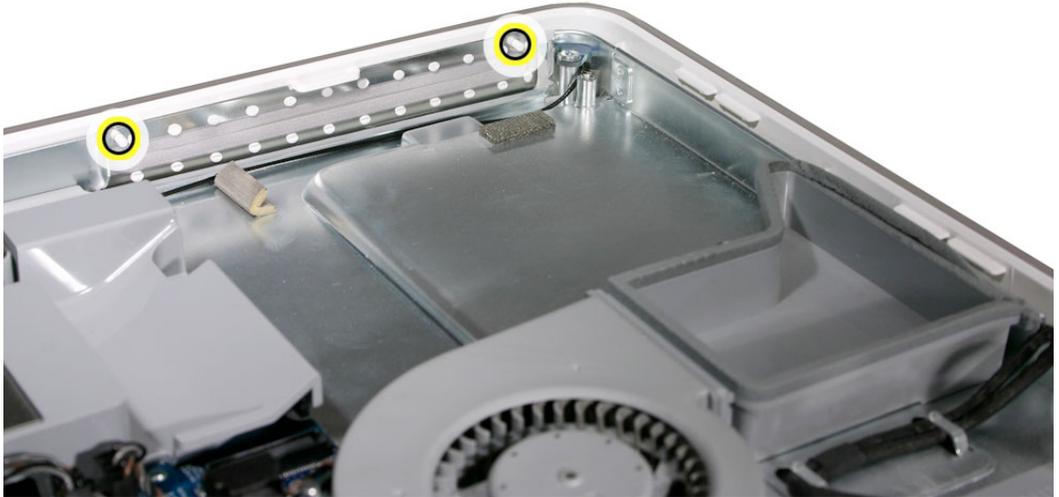
## Part Location

**Note:** The education models do not have an optical drive.

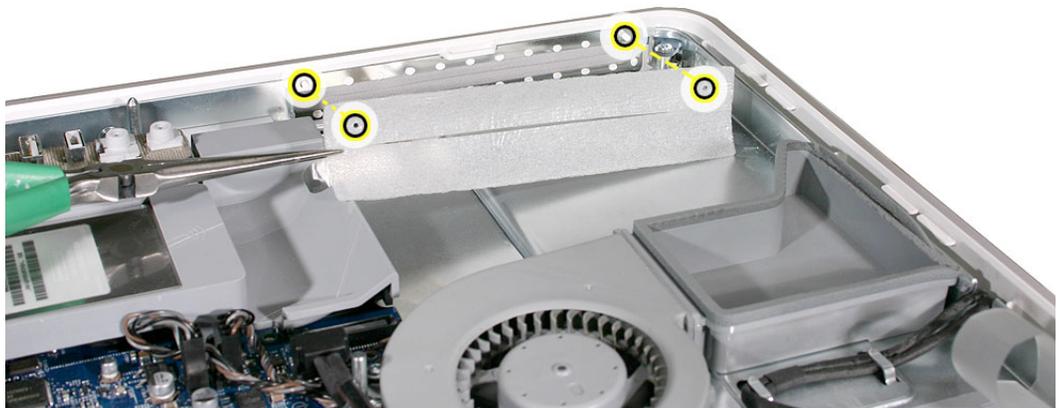


## Installing the Microfoam onto the Bezel

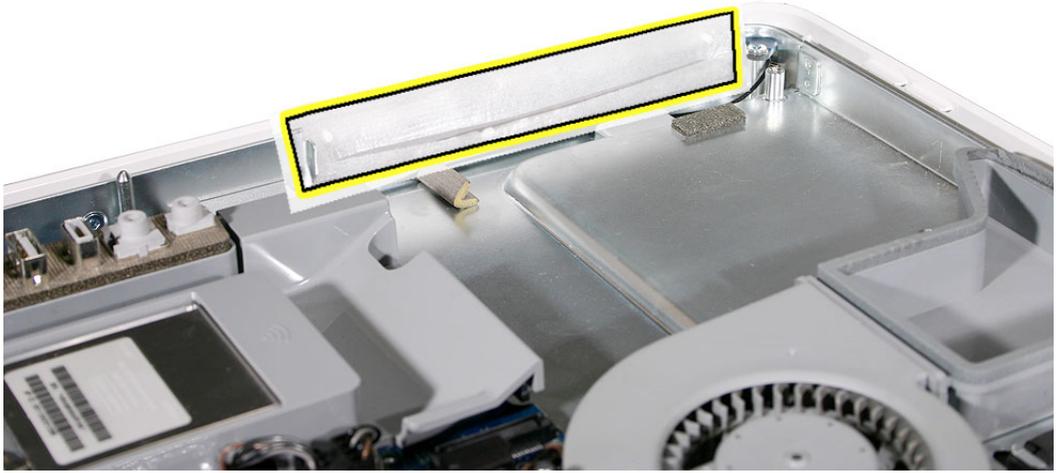
1. Steps 2-7 show photos of the microfoam on the iMac G5 20-inch computer. The installation procedure is the same for the 17-inch computer. Go on to the next step.
2. Locate the piece of microfoam and the two white posts (circled) on the bezel.



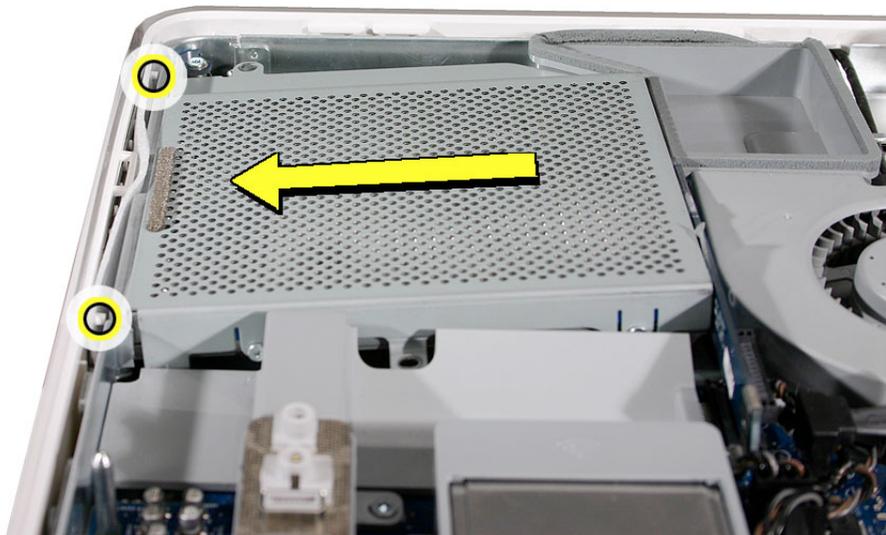
3. With the shiny side of the microfoam facing the bezel, slide the holes of the microfoam onto the two white posts on the bezel.



4. Tuck the microfoam into place before installing the optical drive.



5. Replace the optical drive in the direction of the arrow, lining up the white posts on the bezel with the holes on the optical drive bezel.



- Slide the optical drive into place and press down near the tab to reconnect the drive.
- Make sure no microfoam is sticking out of the bezel. **Note:** Before reassembling the computer, partially insert an optical disc to make sure it inserts smoothly.



- Replace the optical drive screws.



# Fan Cover

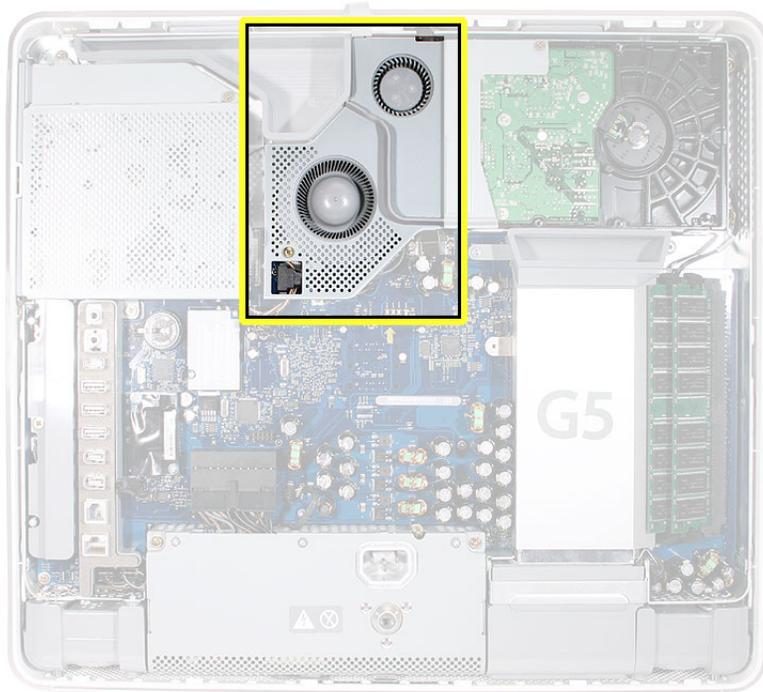
## Tools Required

- Use the screwdriver provided, and a Phillips #2 screwdriver, preferably with a magnetized tip
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

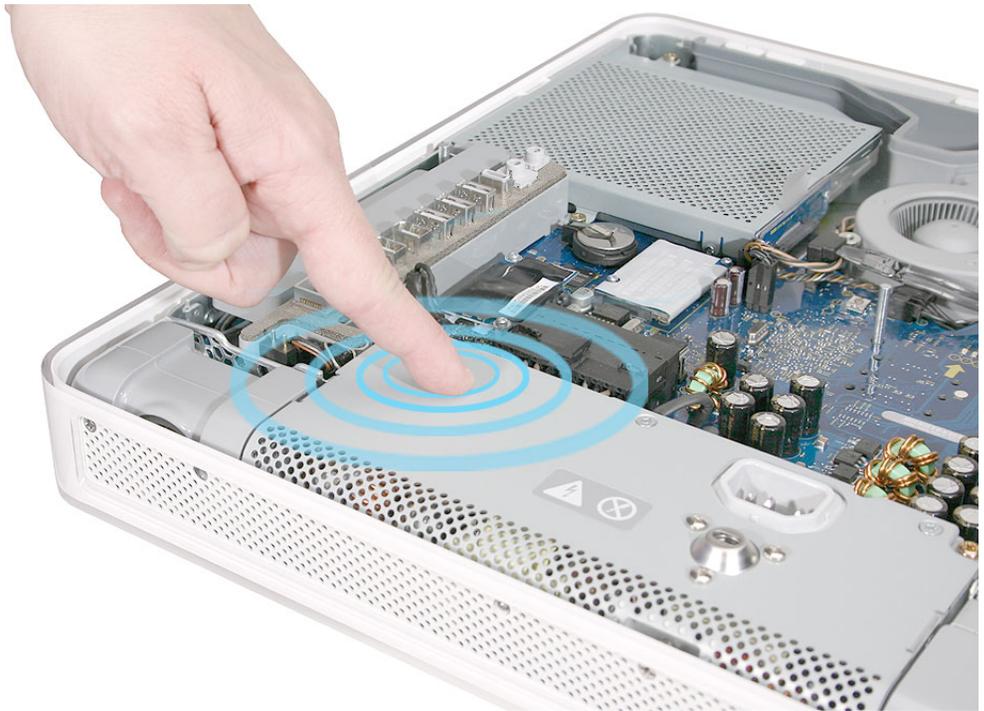
## Part Location



## Removing the Fan Cover

1. Ground yourself. Touch the metal surface (as shown below) on the inside of the computer to discharge any static electricity.

**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



4. Using a Phillips #2 for the screw on the left and a Phillips #2 for the screw on the right, remove the two screws. Lift the fan cover off the midplane and set the fan cover aside.



## Replacing the Fan Cover

1. Replace the two fan cover screws. The larger screw attaches on the left. **Note:** Make sure the pull tab is sticking up as shown.





# Fans, Upper

## Tools Required

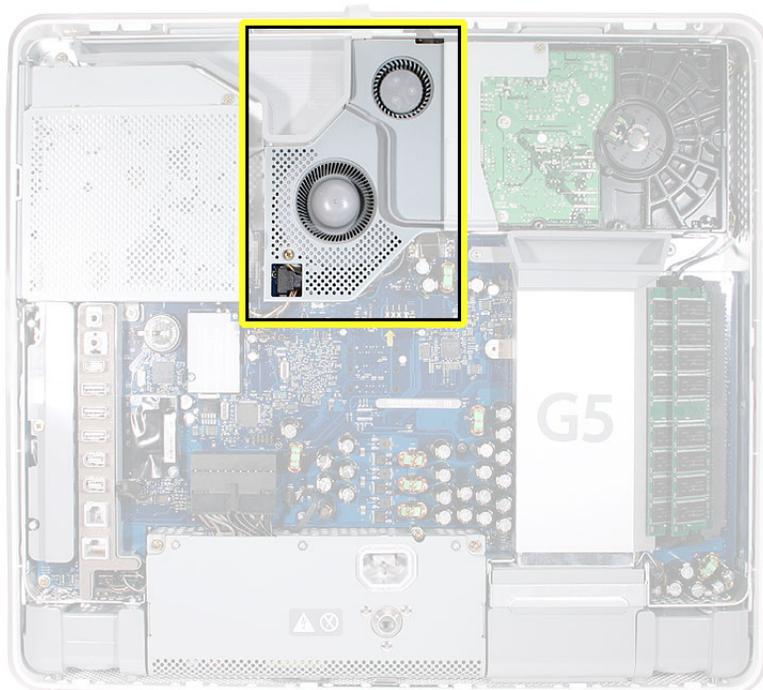
- Phillips #2 screwdriver or Torx T8 (some models have torx screws on the fan)
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover and the fan cover.

**Note:** The fans are under the fan cover

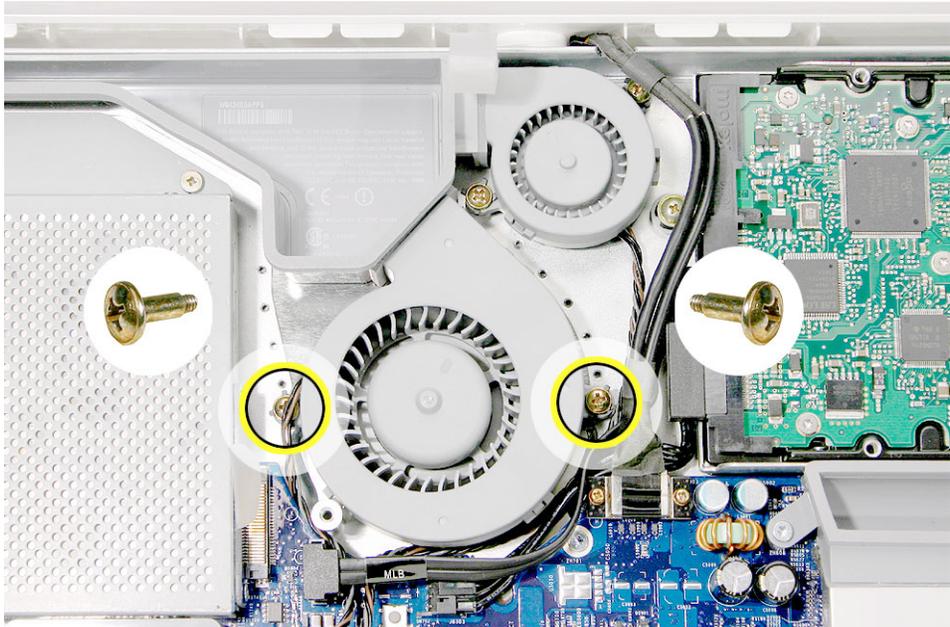
## Part Location



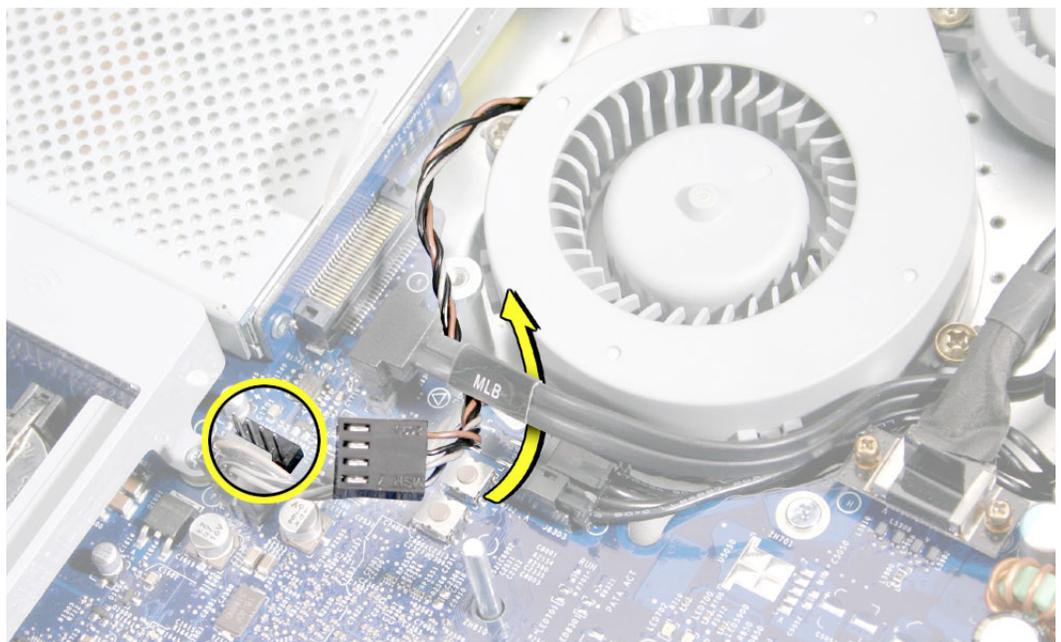
## Removing the Fans

**Note:** Pictures from the original iMac G5 are used in this procedure. The take-apart steps are very similar.

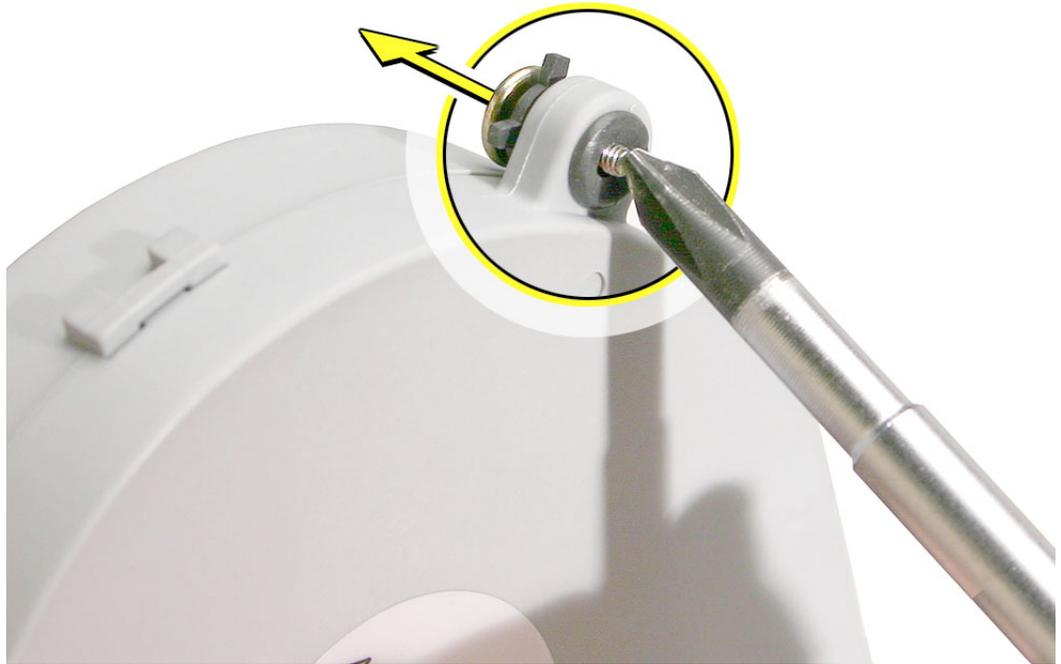
1. Using Phillips #2, loosen the two fan screws. **Note:** You don't have to remove the screws from the rubber grommets to remove the fan, just loosen the screws.



2. Disconnect the fan cable from the connector on the logic board. Pull on the black connector, not on the cable. Route the fan cable under the black cable (as shown).

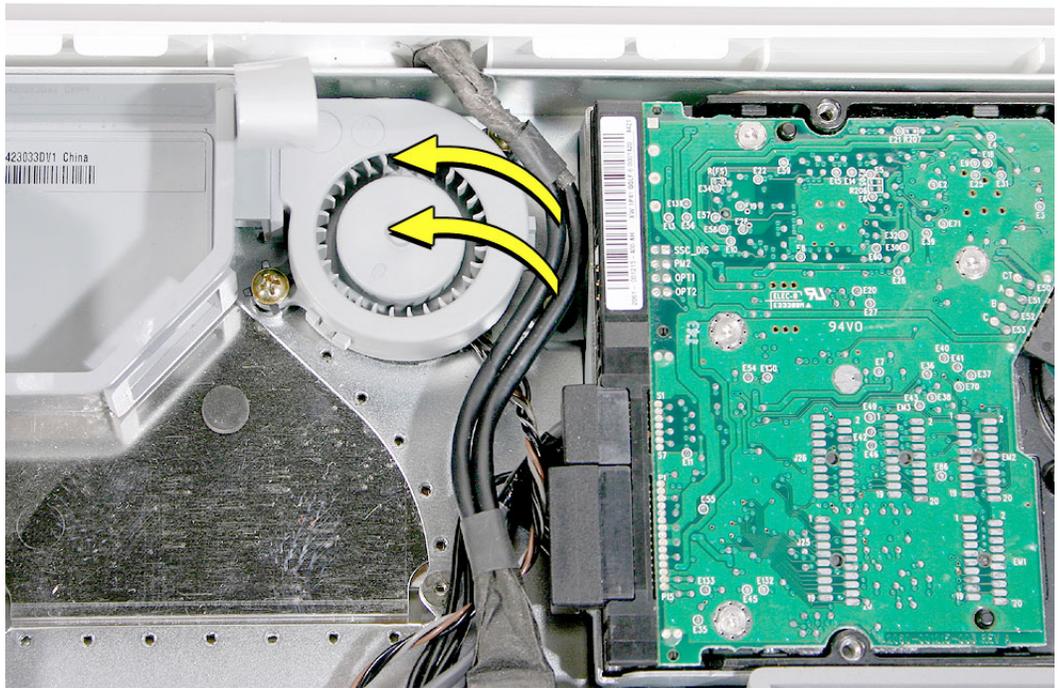


3. Lift the fan out of the computer.
4. If you are replacing the fan, remove the screws from the fan grommets. Using a screwdriver, push the fan screws out of the grommets and set them aside. Use these screws on the replacement fan.

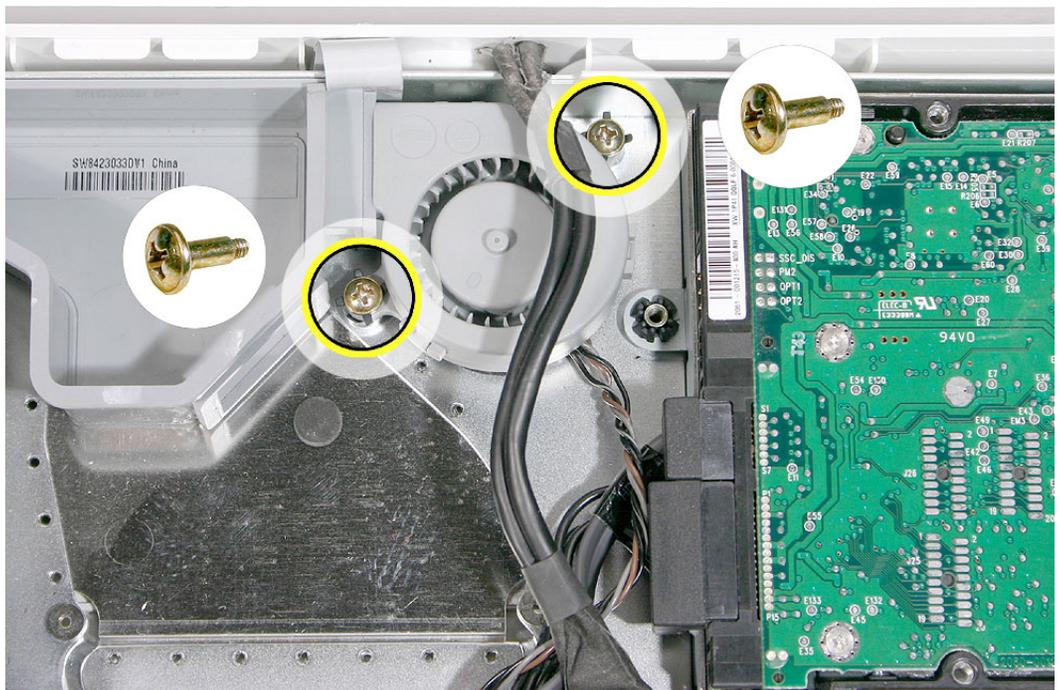


5. Go on to the next step to remove the second fan.

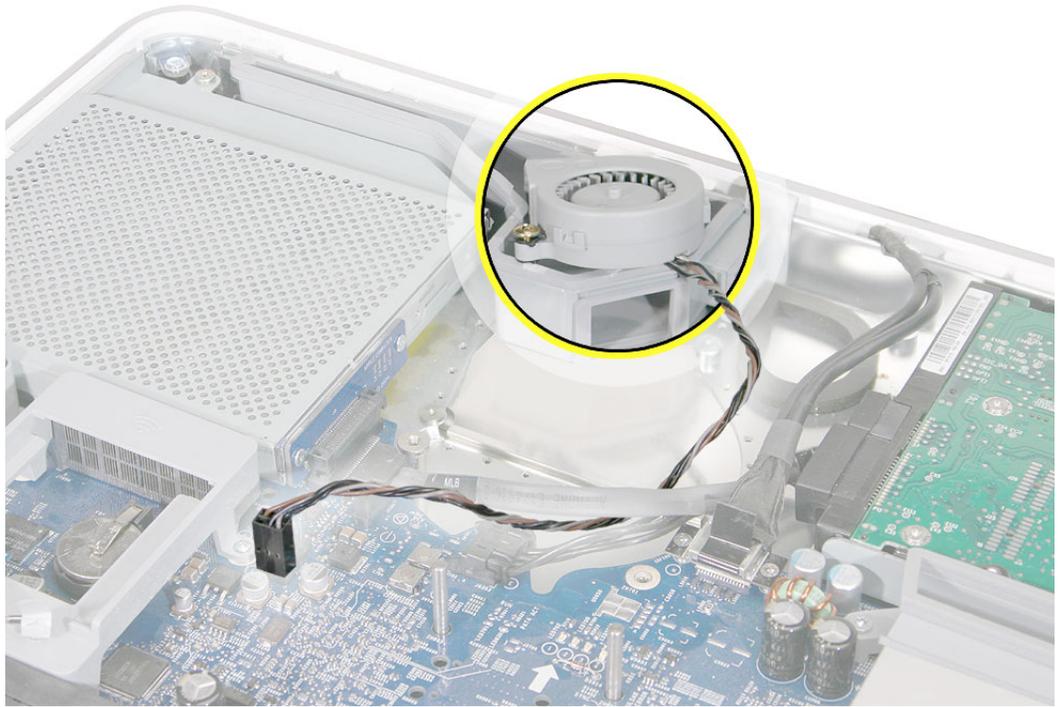
6. Move the video cable to the left to access the fan screw near the top of the computer



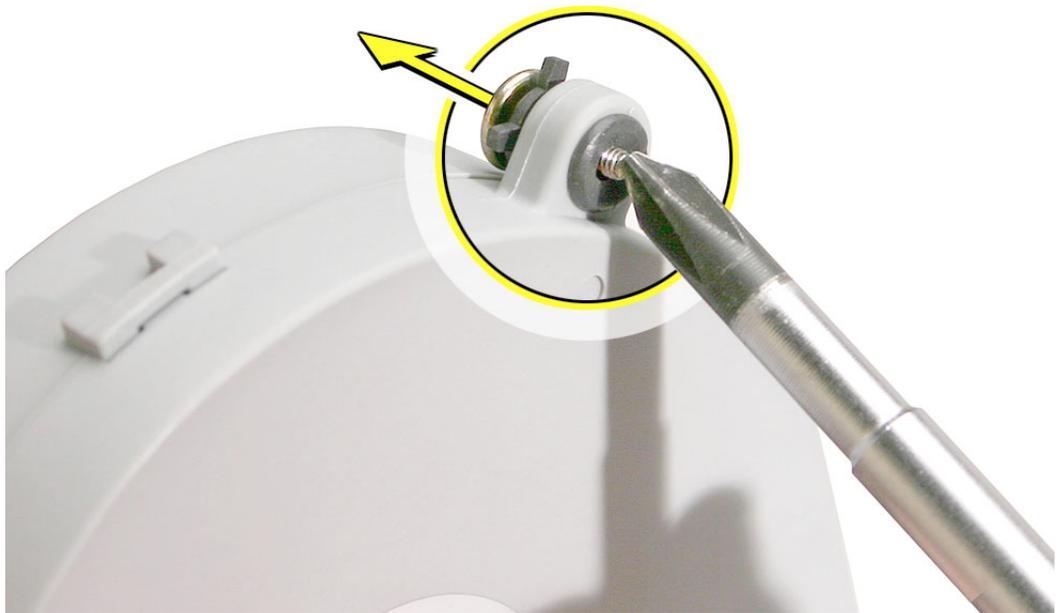
7. Using a Phillips #2, loosen the two fan screws. **Note:** You don't have to remove the screws from the rubber grommets to remove the fan, just loosen the screws



8. Lift the fan out of the computer and disconnect the fan cable from the connector on the logic board. Pull on the black connector, not on the cable.



9. If you are replacing the fan, remove the screws from the fan grommets. Using a screwdriver, push the fan screws out of the grommets and set them aside.

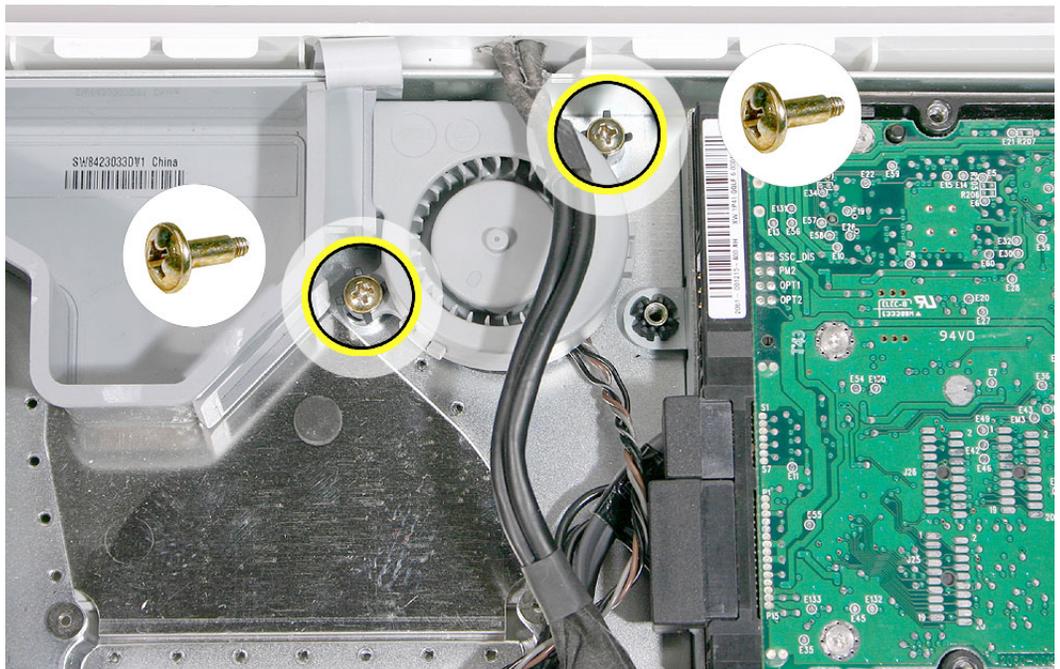


## Replacing the Fans

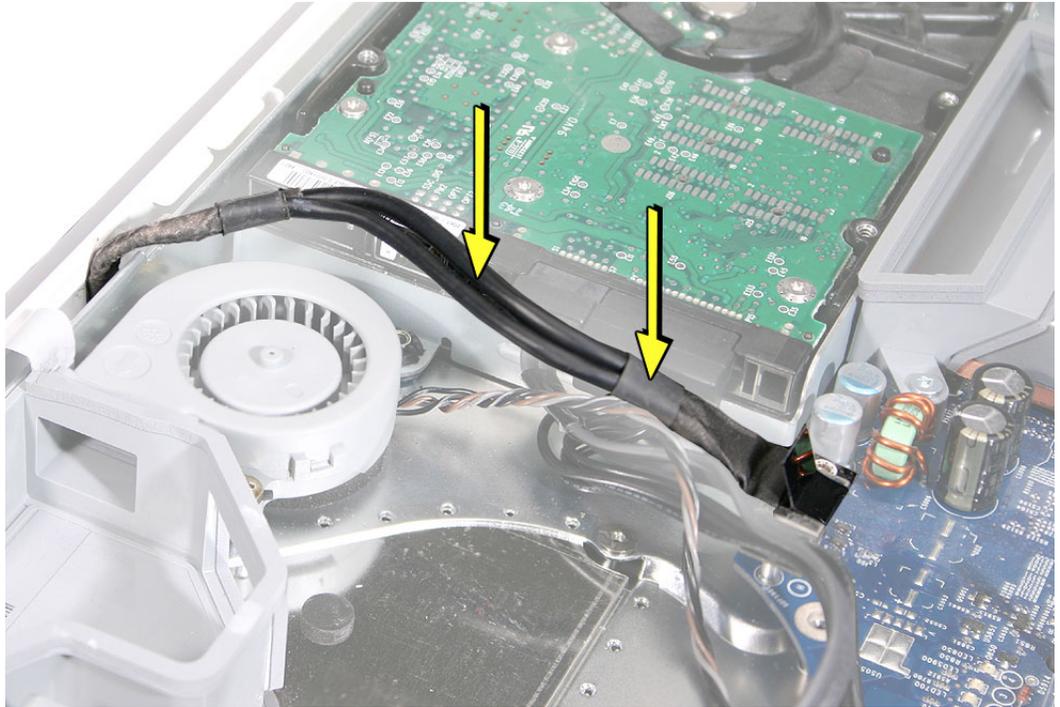
1. Route the fan cable under the black hard drive cable. Connect the fan cable to the connector on the logic board. **Note:** The fan cables are keyed.



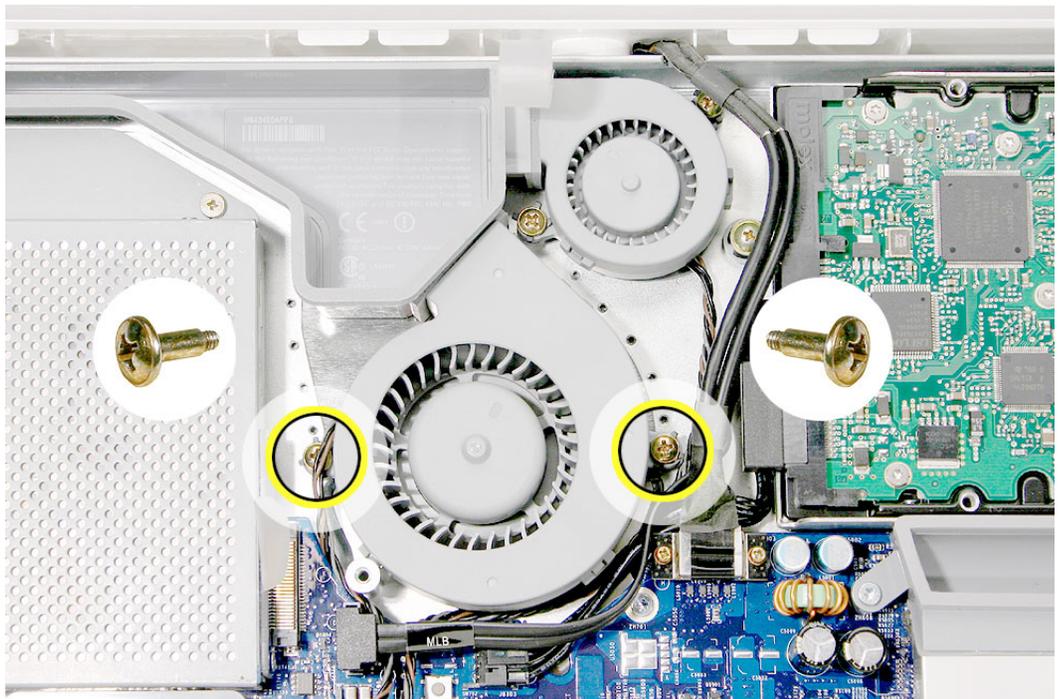
2. Place the two screws into the grommets on the replacement fan. Position the fan into place and tighten the two fan screws



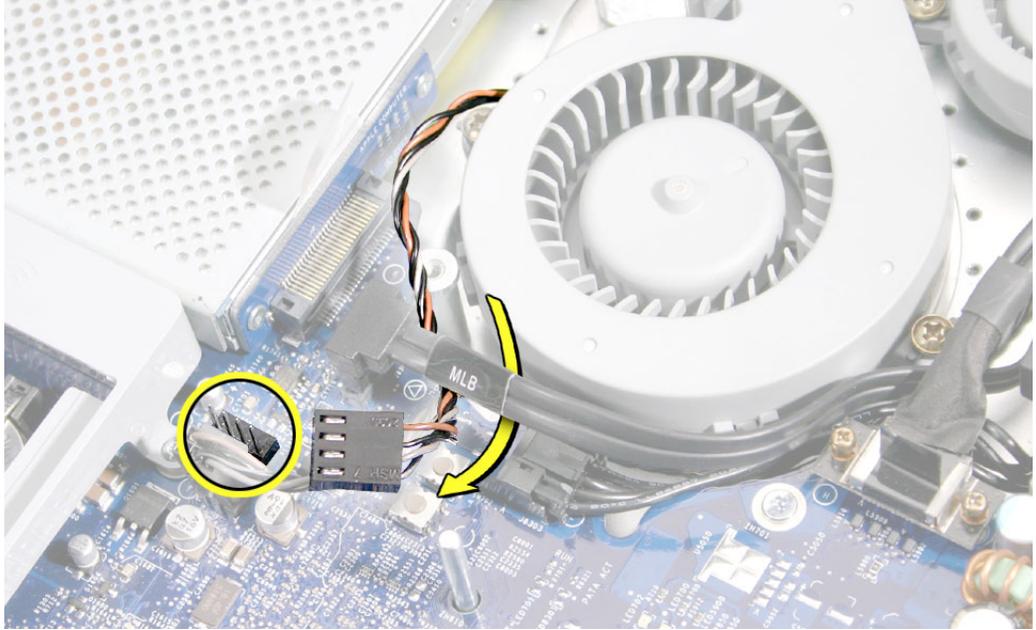
3. Tuck the video cable into the space between the fan and the hard drive.



4. Lower the larger fan into the chassis, lining up the screws with the screw holes.  
**Caution:** Move the fan cable (from the smaller fan) out from under the larger fan as you lower the fan into the chassis. Tighten the two fan screws.



5. Route the fan cable under the black cable. Connect the fan cable to the logic board.



6. Replace the two fan cover screws. The larger screw attaches on the left. **Note:** Make sure the pull tab at the top of the case is sticking up as shown.



7. Replace the back cover.



## Fan, Lower

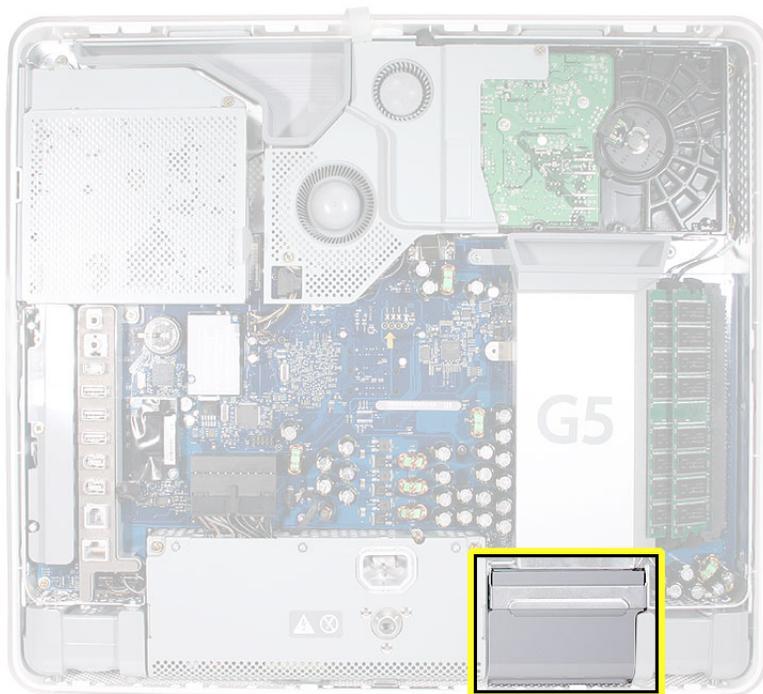
### Tools Required

The only tool required is a flat-blade screwdriver.

### Preliminary Steps

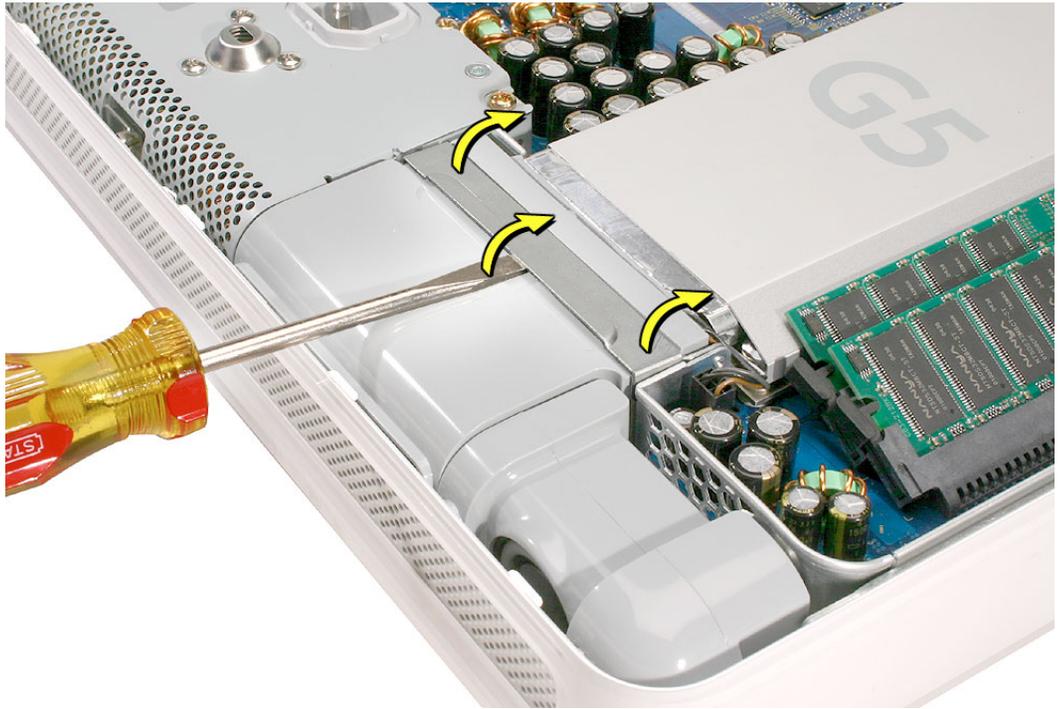
Before you begin, remove the back cover.

### Part Location

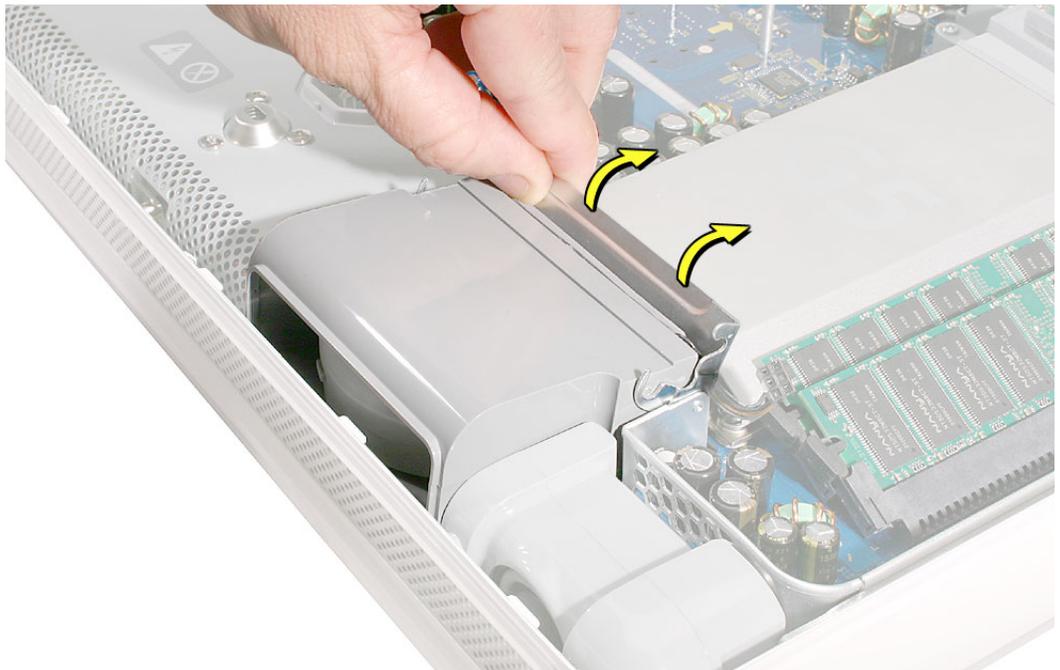


## Removing the Lower Fan

1. With a flat-blade screwdriver, pry the metal bracket up.



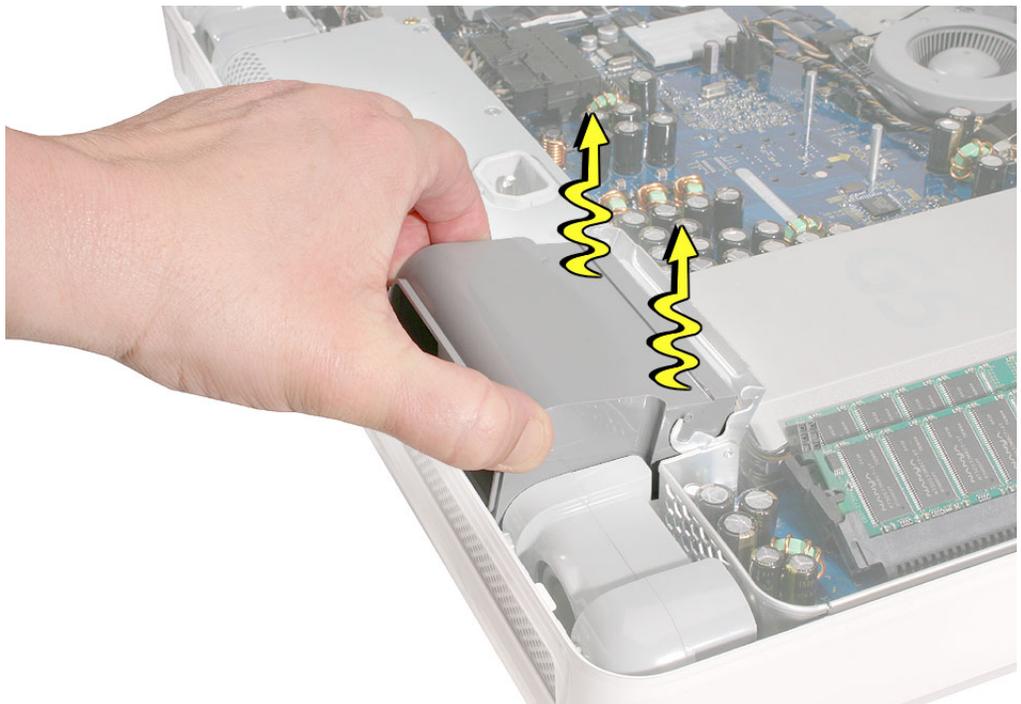
2. Pull the bracket back so the fan begins to lift up.



3. Disconnect the fan connector on the logic board. Pull on the black connector not the cable.



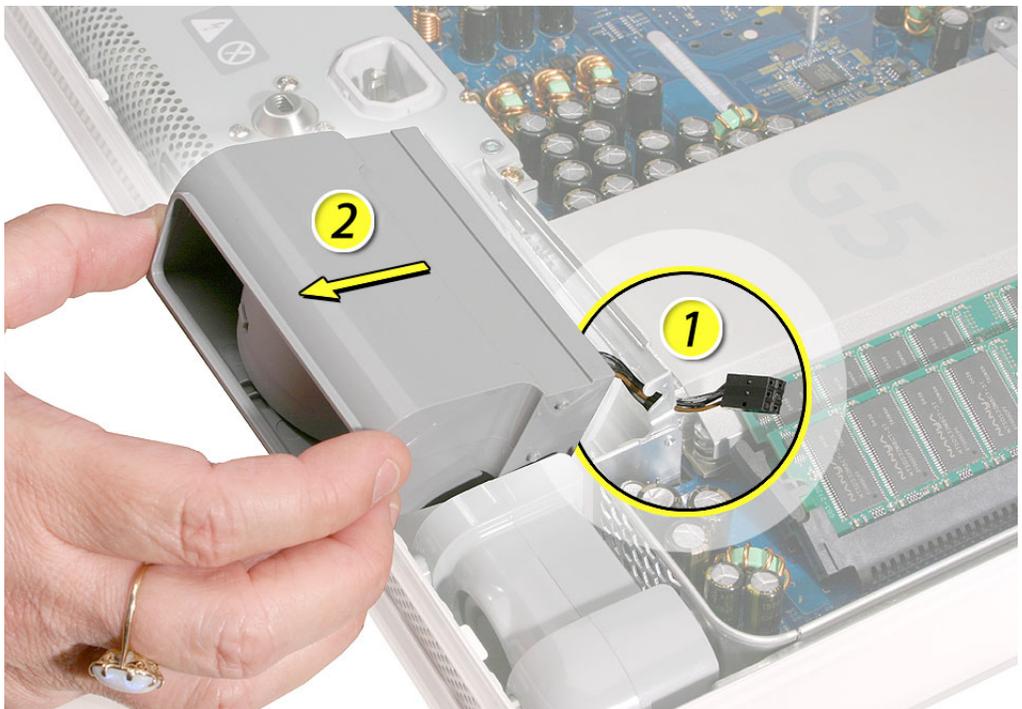
4. Grab the fan by the sides and wiggle the fan upward. As the fan comes up, it will bump into a tab on the front bezel. See the next step.



5. Push the fan into the computer and at the same time, tilt the fan so that it clears the tab on the bezel.



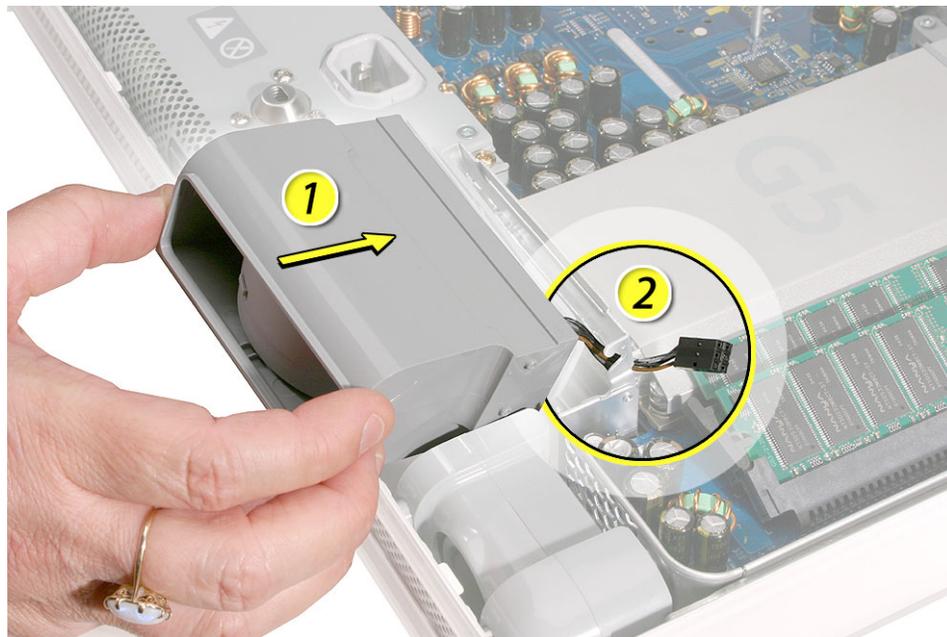
6. Pull the fan cable through the metal bracket (1) as you pull the fan forward (2).



## Installing the Lower Fan

1. Push the lower fan into the computer, aligning the fan with the metal bracket. Notice the location of the two gray bumps on the right side of the fan. These plastic bumps should be in this position for this step.

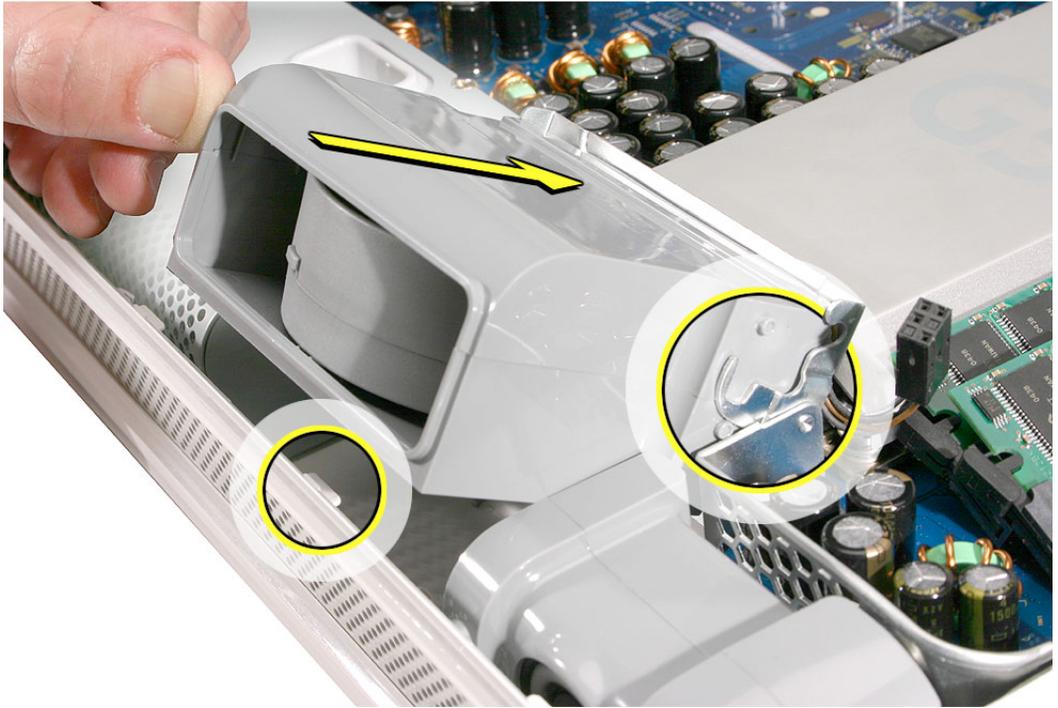
Pull the fan cable through the metal bracket.



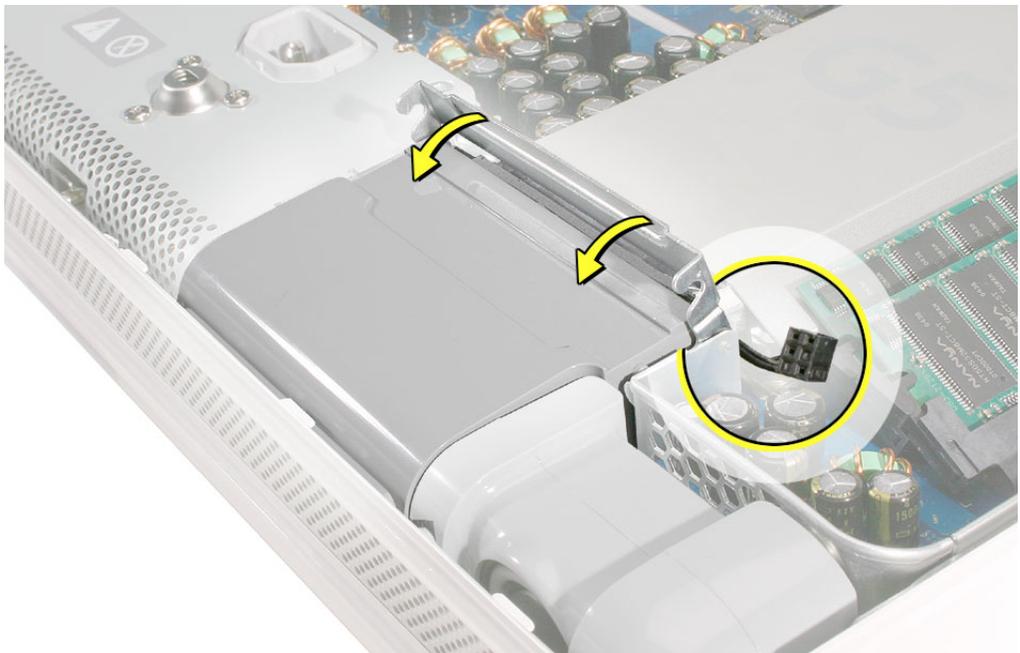
2. The edge of the fan (circled) has to clear the speaker. Push the fan into the computer until the edge of the fan clears the speaker.



3. As you push the fan, make sure it clears the white tab on the display bezel.  
**Important:** Notice the position of the gray bumps on the side of the fan. This is the correct position for this step.



4. Lower the fan into the chassis. Pull the metal locking clip down onto the fan making sure it secures the fan.
5. Connect the fan cable to the logic board and replace the back cover





# Inverter

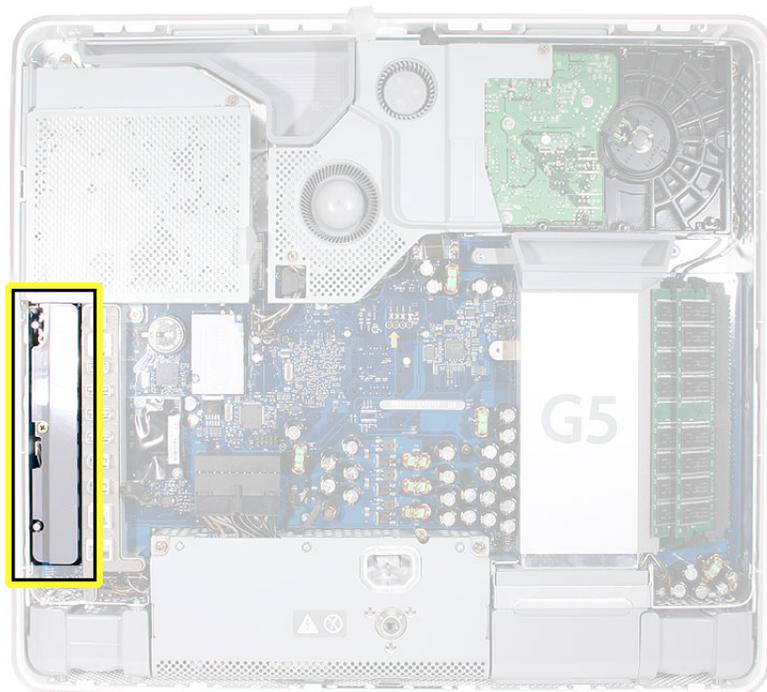
## Tools Required

- Phillips #2 screwdriver, preferably with a magnetized tip
- Screw tray or something equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



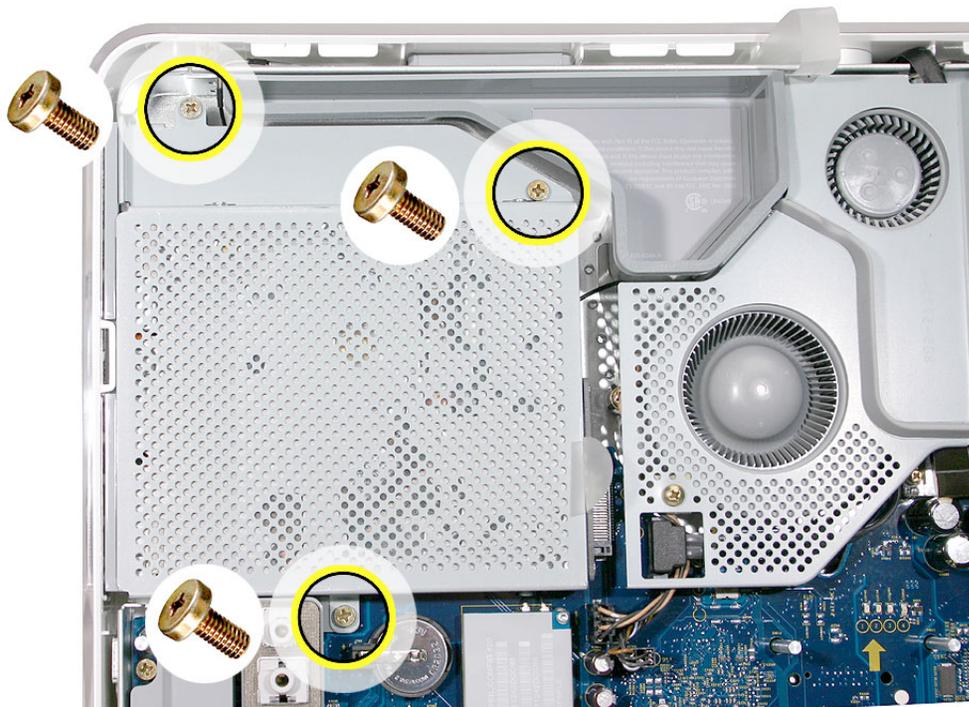
## Removing the Inverter

1. To access the inverter assembly other service modules have to be removed. This procedure will show you how to remove and replace each module. As you remove each module, set it aside, along with the screws for that module.
2. **Important:** Ground yourself. Touch the metal surface (as shown below) on the inside of the computer to discharge any static electricity.

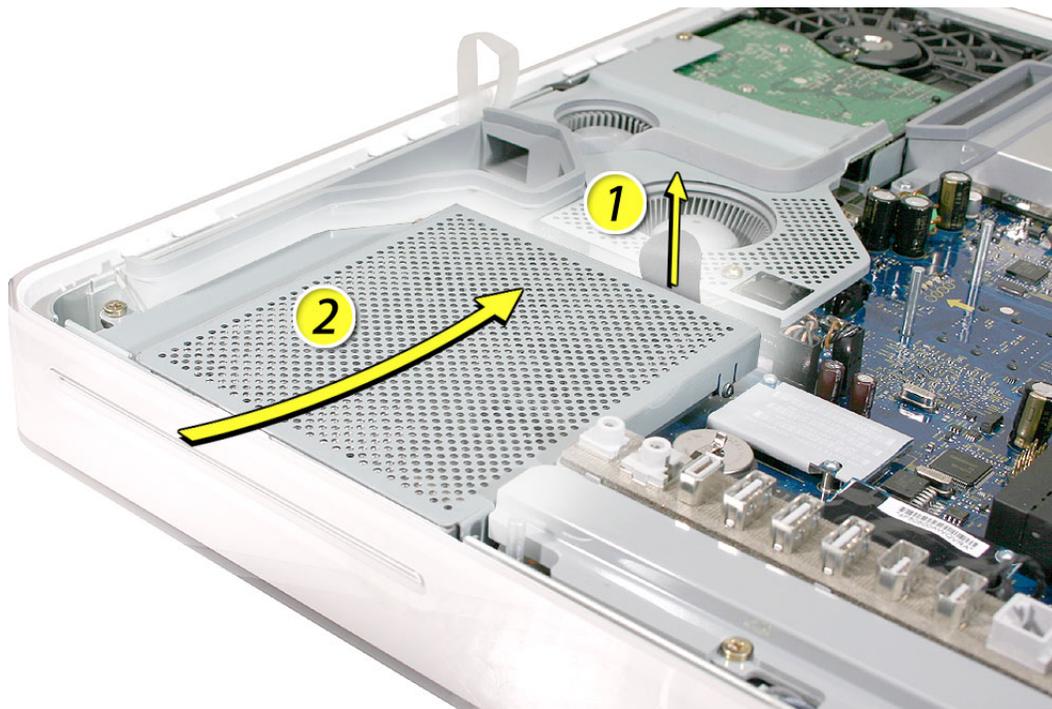
**Warning:** Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.



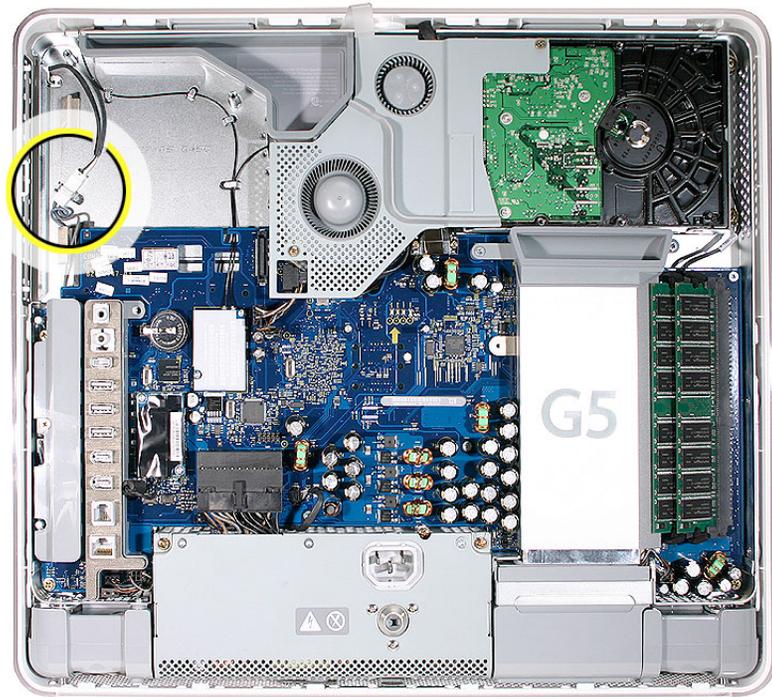
- Using a Phillips #2 screwdriver, remove the three optical drive screws circled below. Set the screws aside.



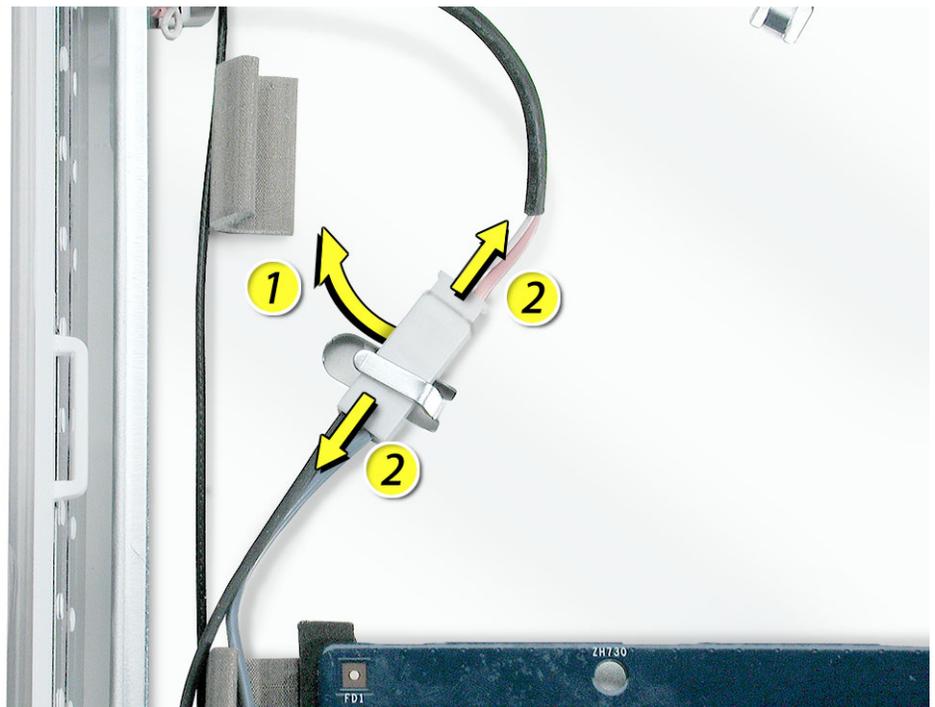
- Pull the optical drive tab straight up and then to the right. Set the optical drive aside.



6. Locate the inverter-to-display panel cable connector.



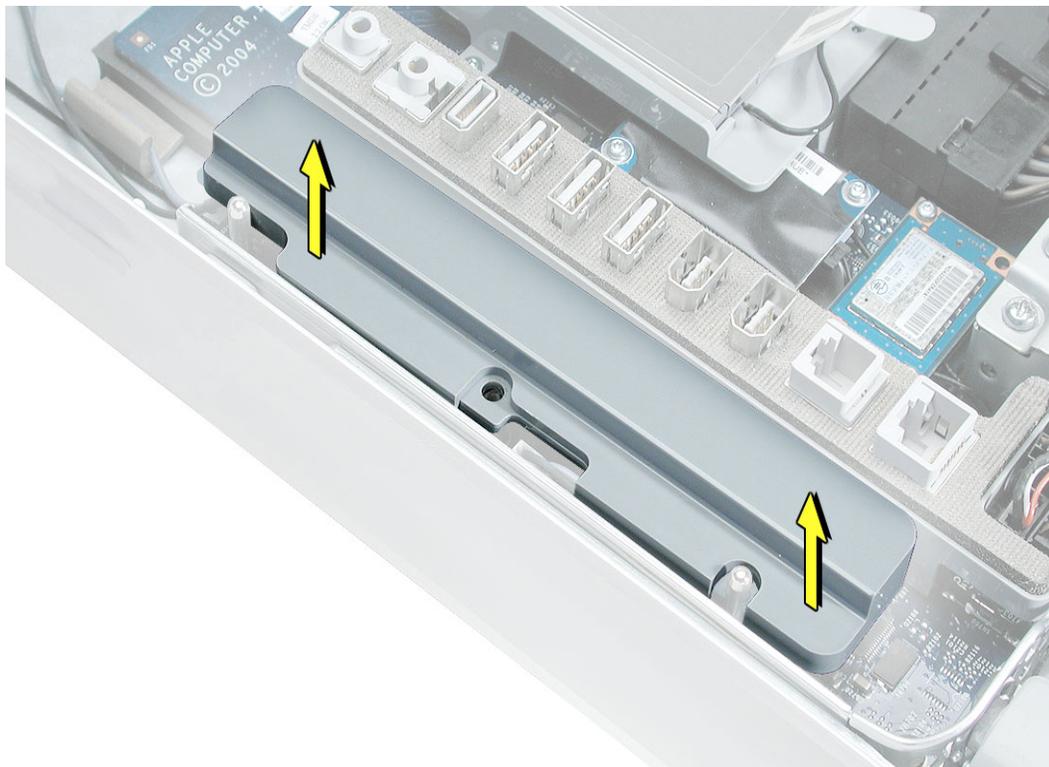
7. Release the cable from the clip. Disconnect the cable.



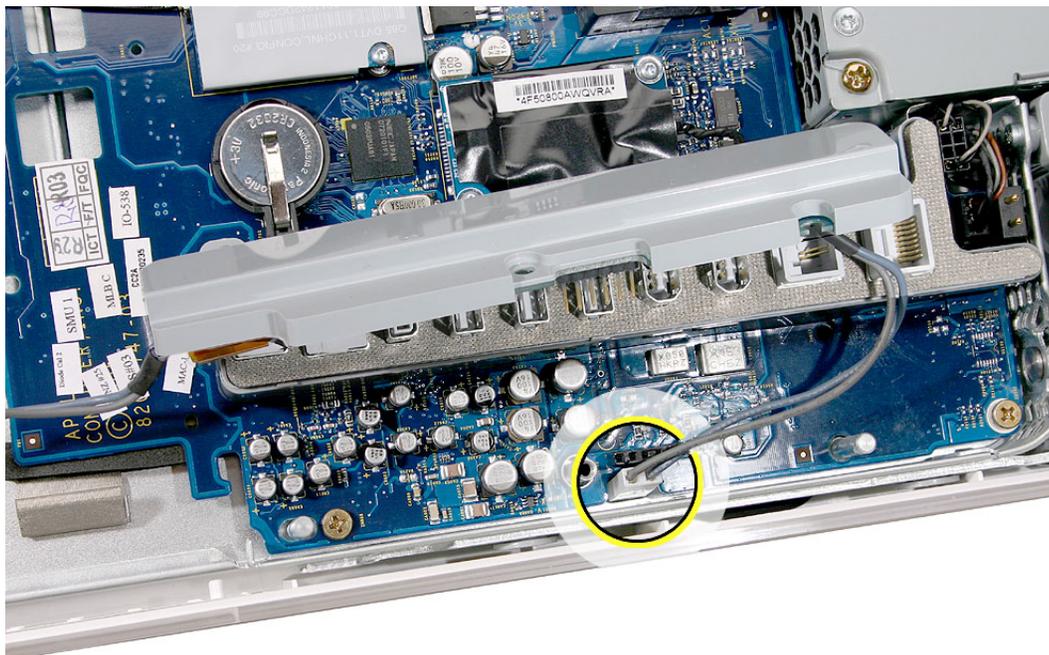
- Using a Phillips #2 screwdriver, remove the brass colored inverter screw.



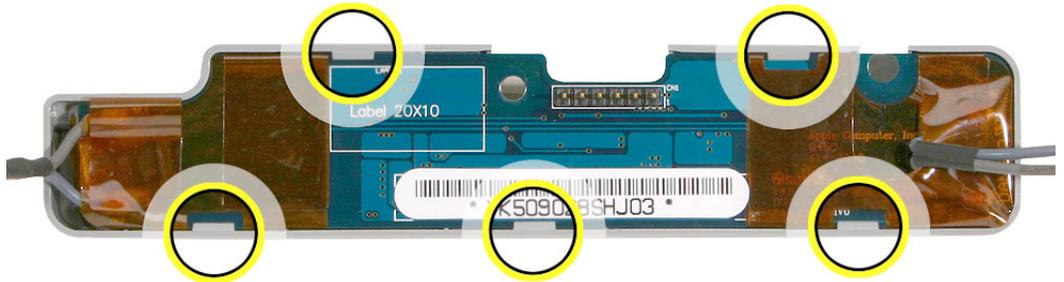
5. Lift the inverter straight up to disconnect the inverter board.



6. Disconnect the white connector (circled below) by pulling it straight up. Lift the inverter out of the computer.



7. If you are installing a new inverter continue with the procedure. Turn over the inverter as shown. Using your fingers or a flat-blade screwdriver, carefully remove the gray plastic inverter cover by gently prying the tabs (circled below) away from the board. Set the plastic cover aside.



8. This cover will be attached to the replacement inverter board.



- 
- Return the inverter board to Apple in the packaging provided.



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## Replacing the Inverter

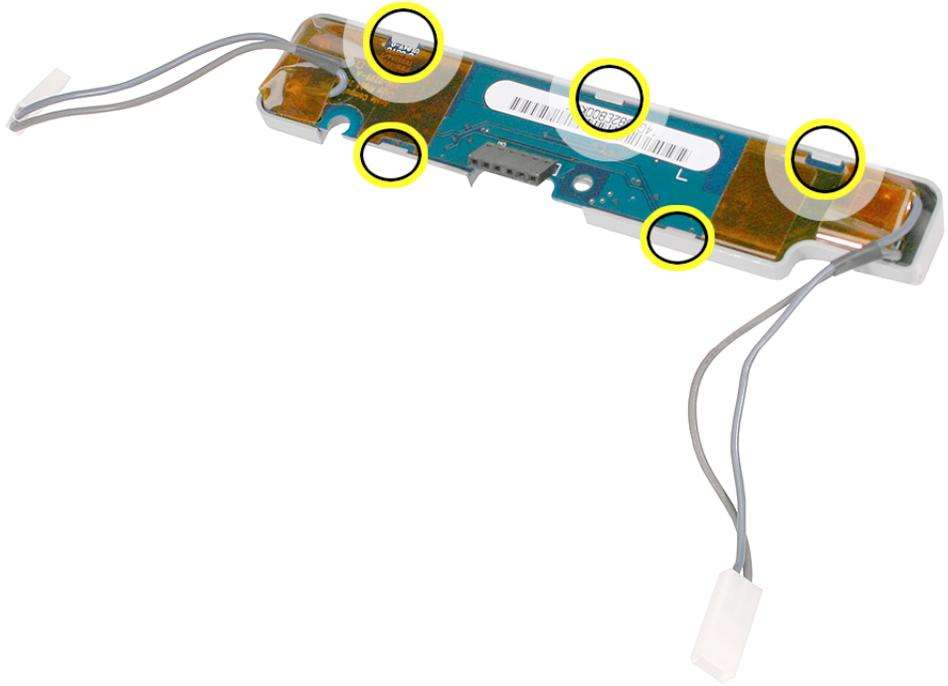
1. Remove the replacement inverter from its packaging.



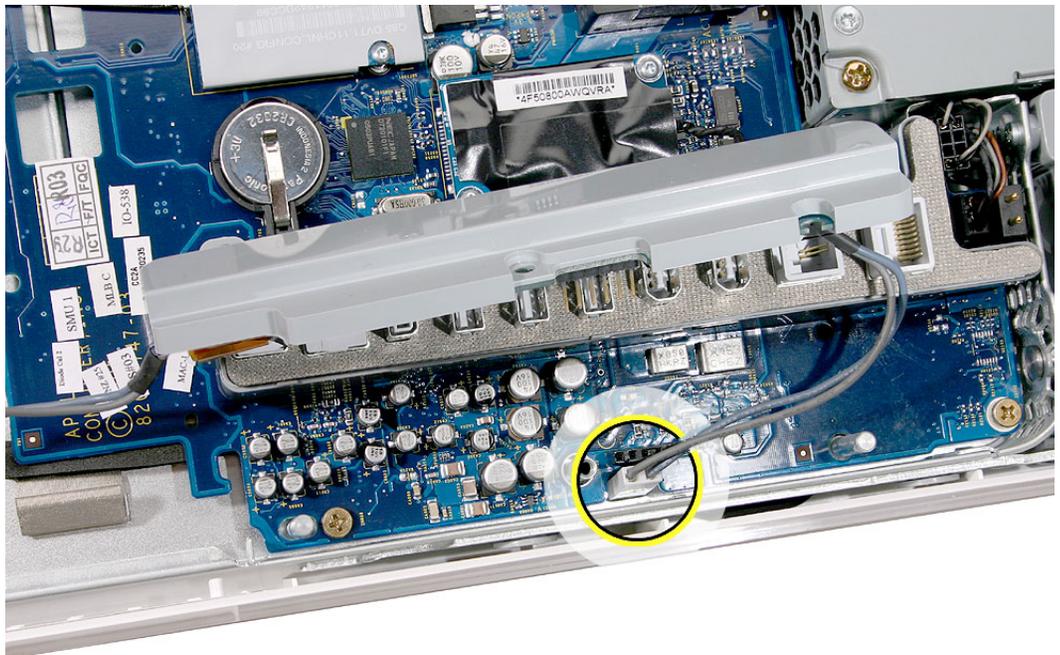
2. Locate the gray plastic cover you set aside.



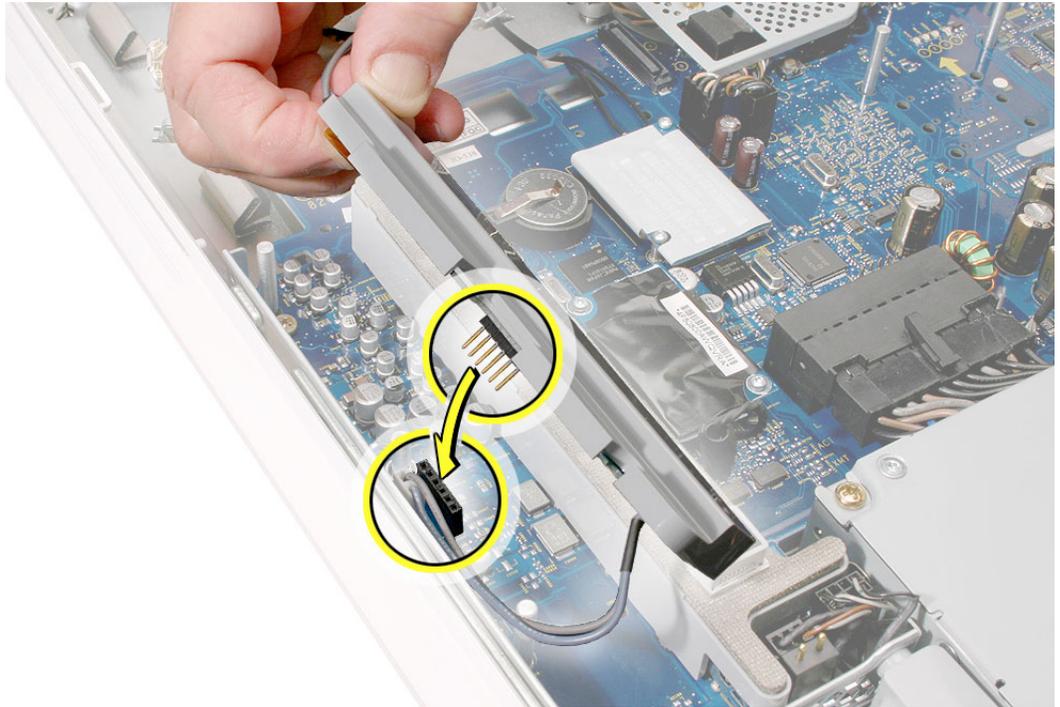
3. Install the plastic cover on the replacement inverter board. Gently squeeze the board near each tab (circled) until all five tabs snap onto the board.



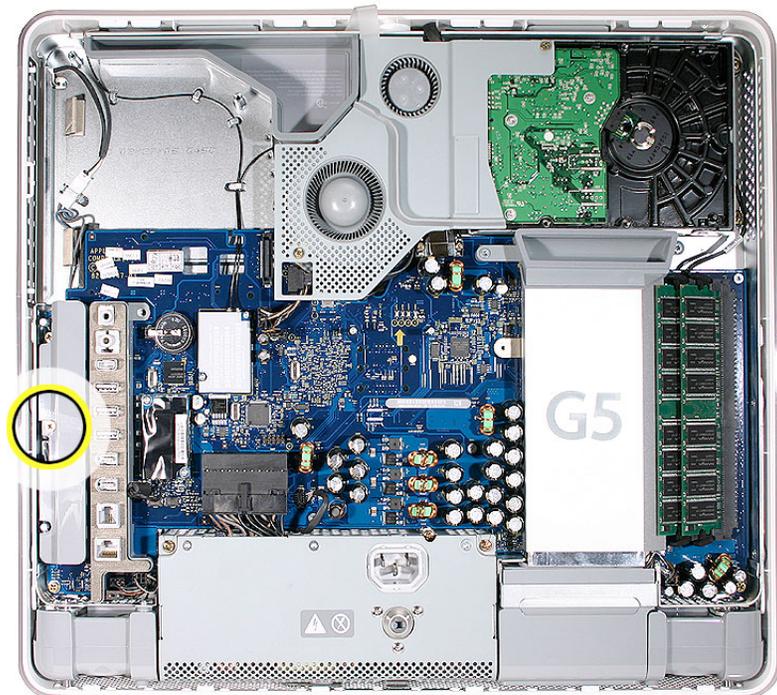
4. Connect the white connector on the inverter board to the panel. The connector is keyed, which means it can connect only one way. Route this cable around the silver post (to the right of the cable). **Important:** If the connector is not inserted correctly there will be no video on the display



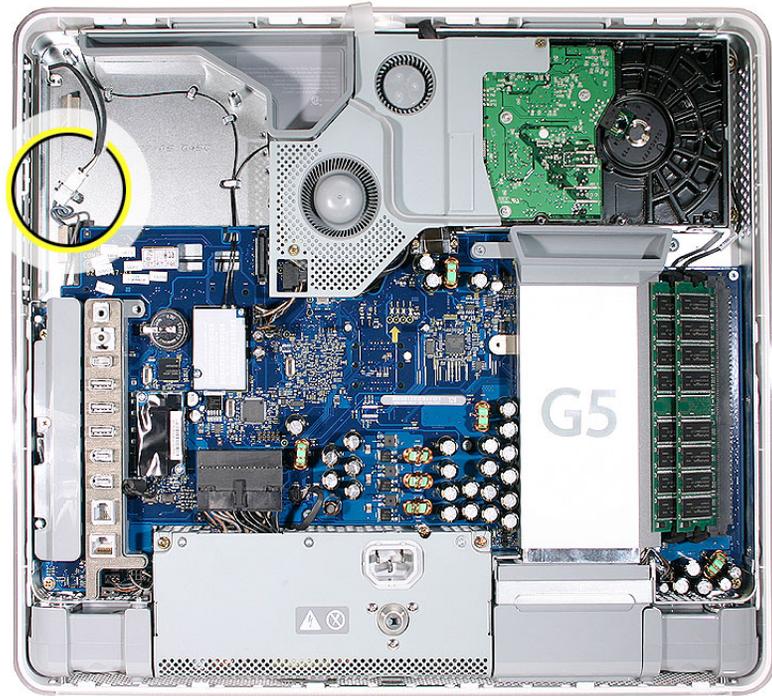
5. As you lower the inverter into place, connect the pins on the inverter to the black connector on the board. Use the tall silver pins as guides to align the inverter.  
**Important:** Make sure the connector mates with the pins. Double check that it's connected.



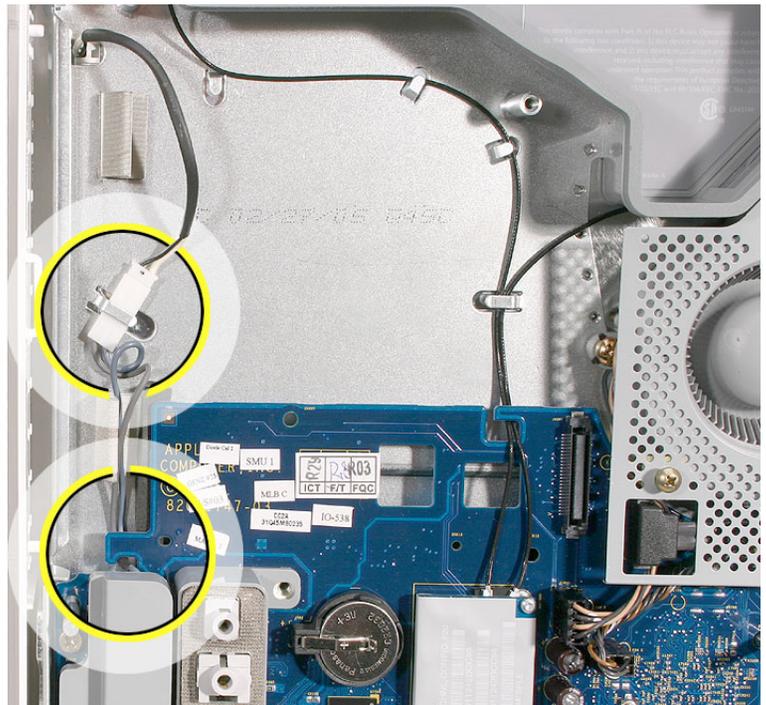
6. Replace the inverter screw.



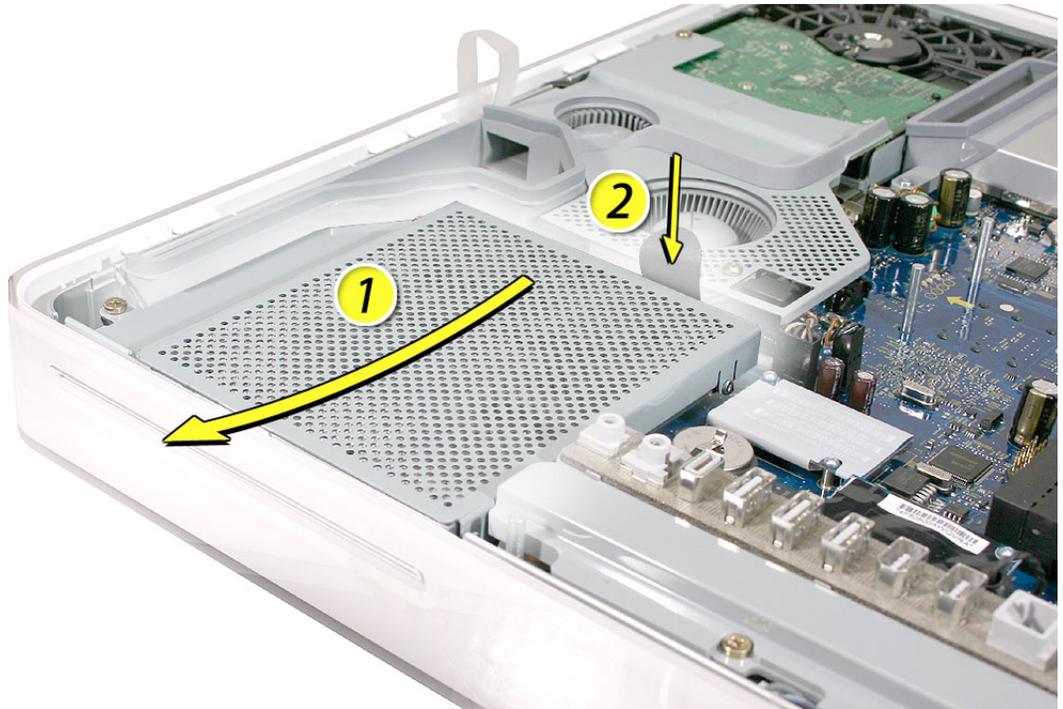
4. Reconnect the inverter-to-display panel cable. **Important:** The connector is keyed (it fits together only one way)



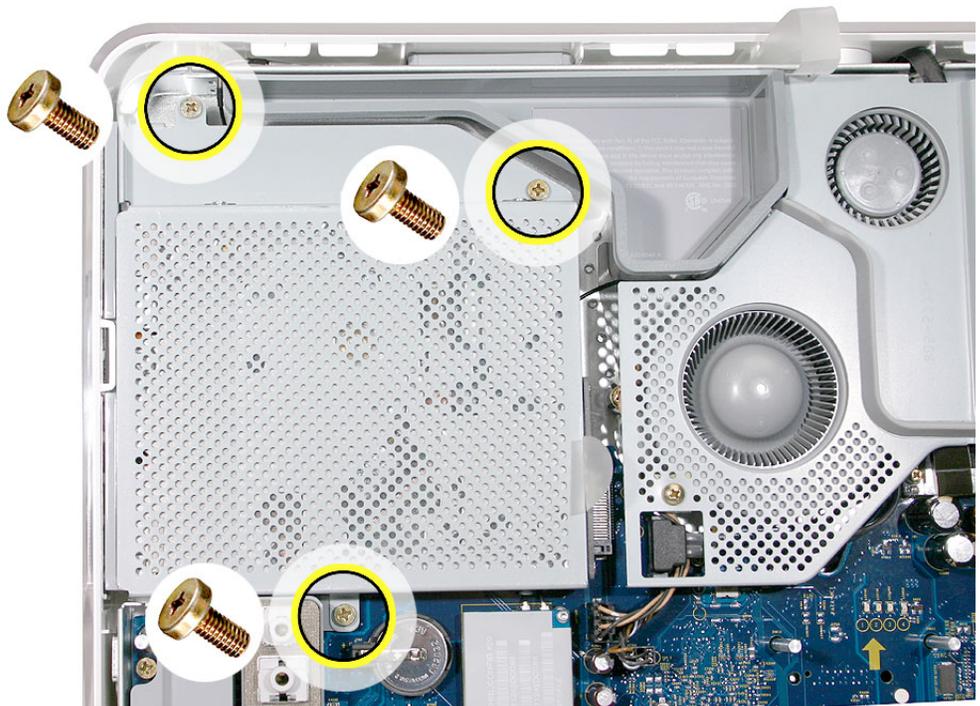
5. Secure the white connector under the metal tab and tuck the lower end of the cable under the logic board.



6. Replace the optical drive.



7. Replace the optical drive screws.



8. Replace the back cover.



# Memory (DIMMs)

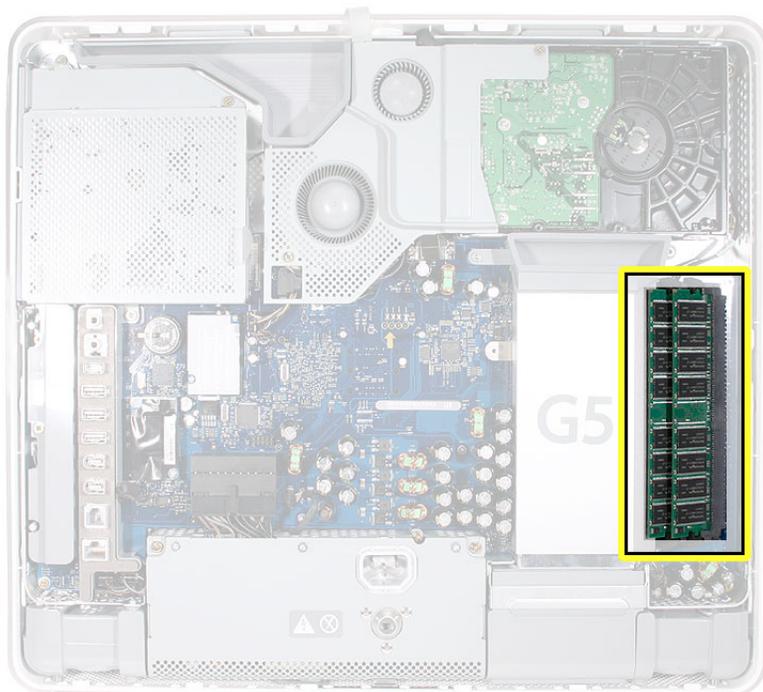
## Tools Required

Use the screwdriver provided, or a Phillips #2 screwdriver to open the back cover.

## Preliminary Steps

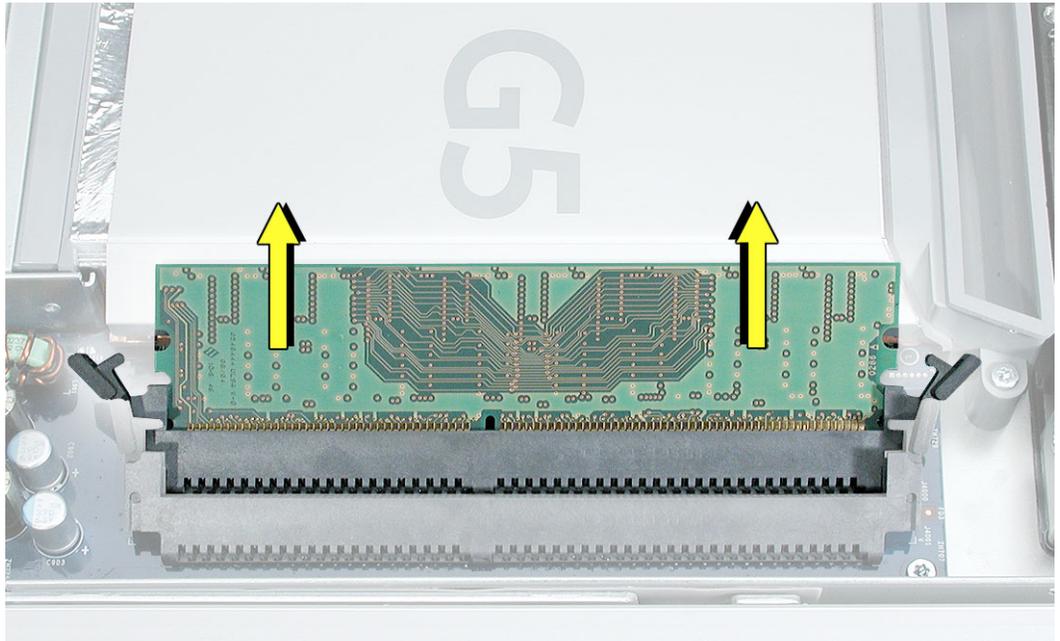
Before you begin, remove the back cover.

## Part Location



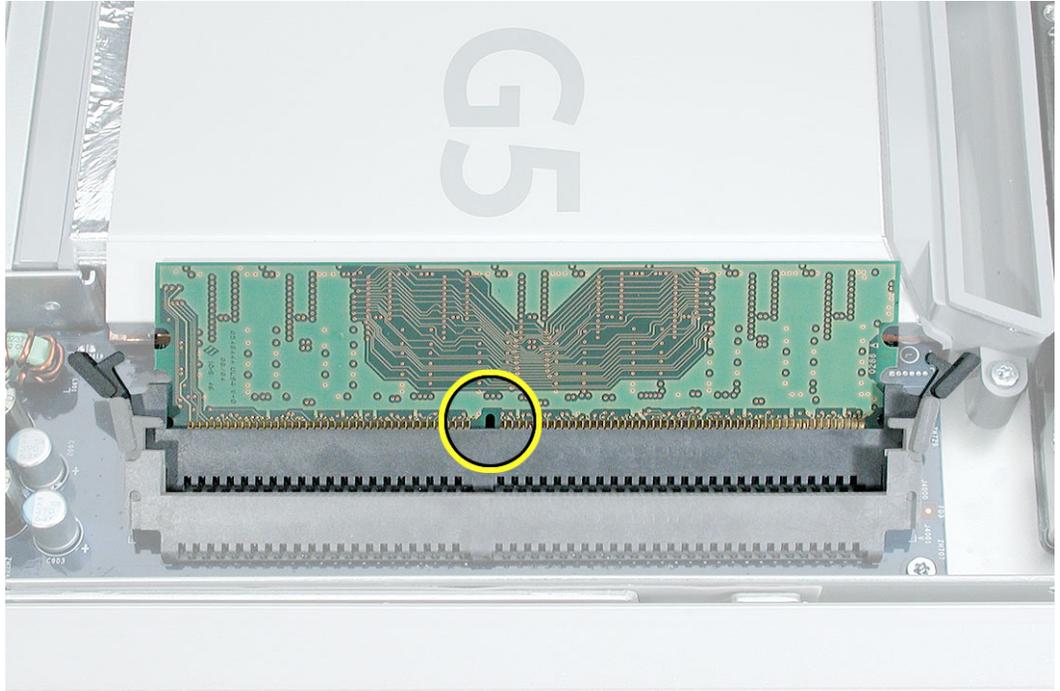
## Removing the Memory

1. Rotate the computer to the right so the memory is in the position shown below.
2. To release the memory from its slot, push down on the two side latches. Then pull the memory module out of the slot. Repeat this step if you have a second memory module. **Important:** Return the memory to Apple in the packaging provided.

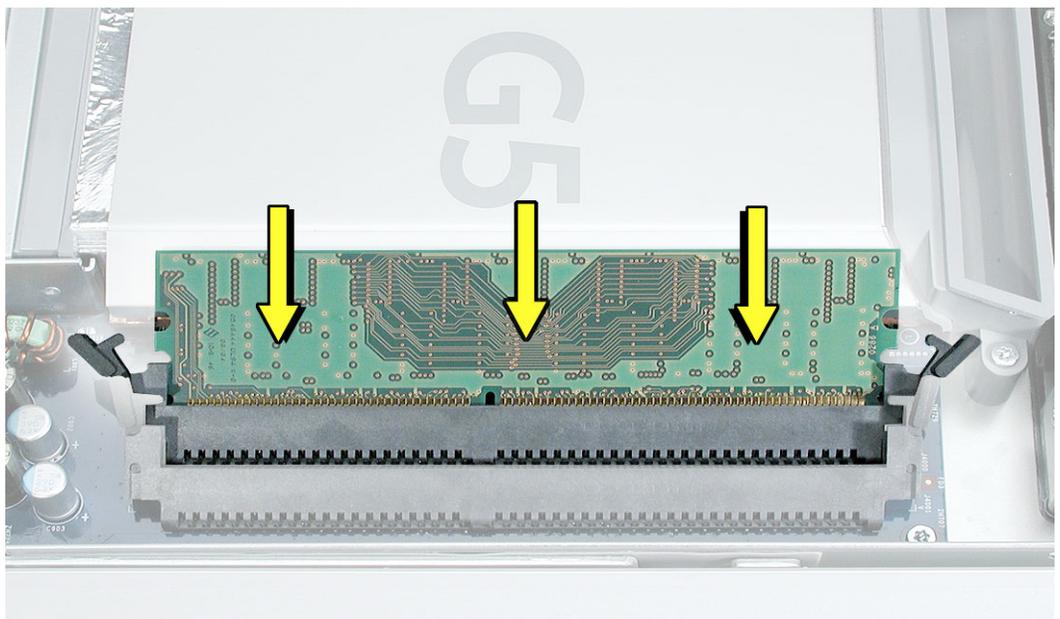


## Replacing the Memory

1. Remove the replacement memory module from its packaging.
2. Replace the memory module(s) by lining up the notch on the module with the notch on the slot.



3. Press firmly on the memory module until it clicks into place. Use your thumb and index finger to push the module into the slot.





# Power Supply

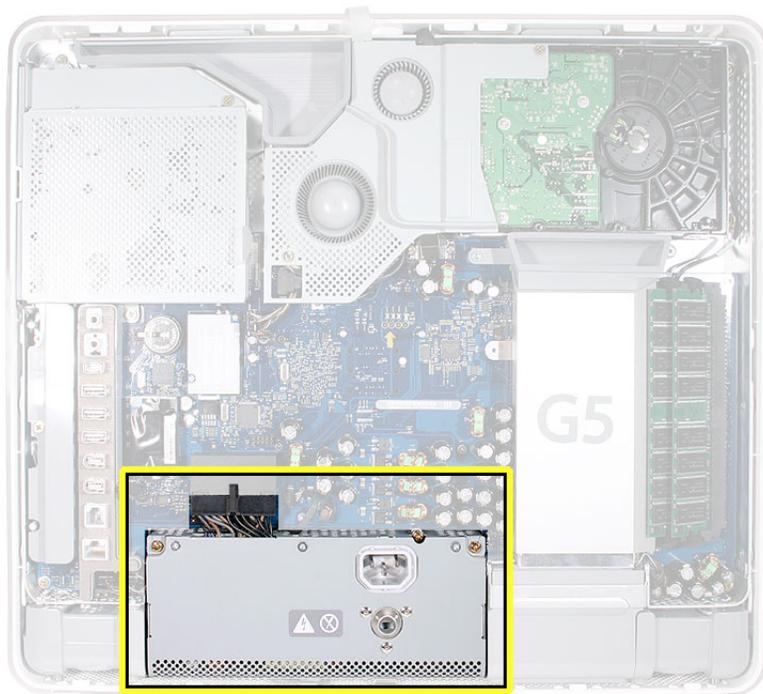
## Tools Required

- Use a Phillips #2 screwdriver
- Flat-blade screwdriver

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



## Removing the Power Supply

1. Loosen the two captive screws (circled below). The screws are captive; they cannot be removed.



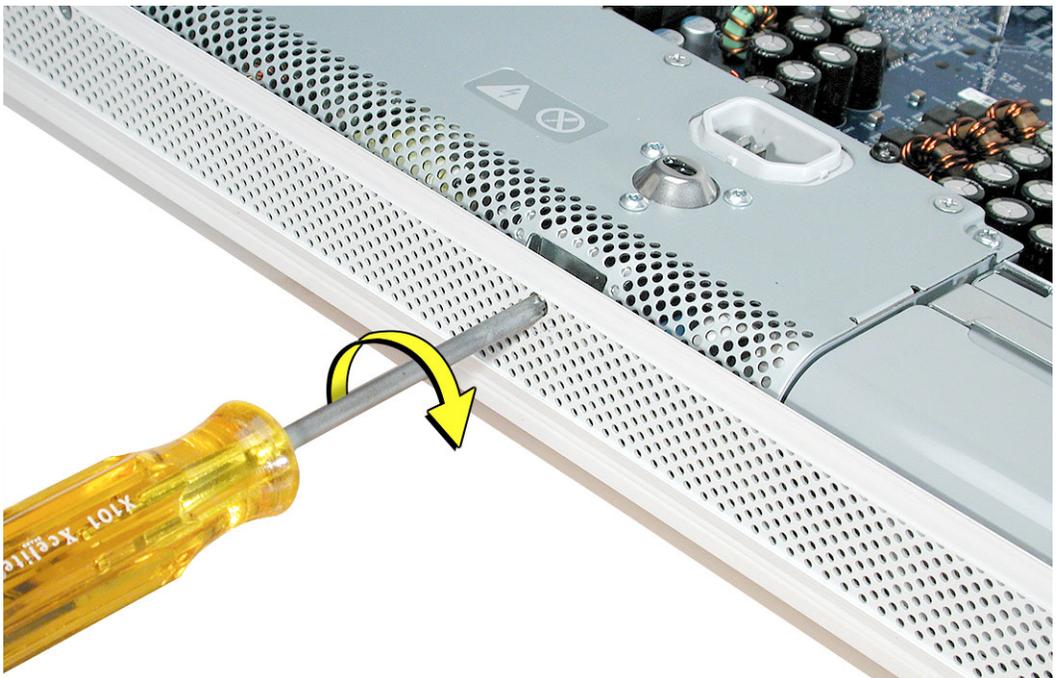
2. Loosen the middle captive screw (circled) until it's flush with the top of the power supply. This screw attaches to the display bezel; make sure to loosen it all the way.



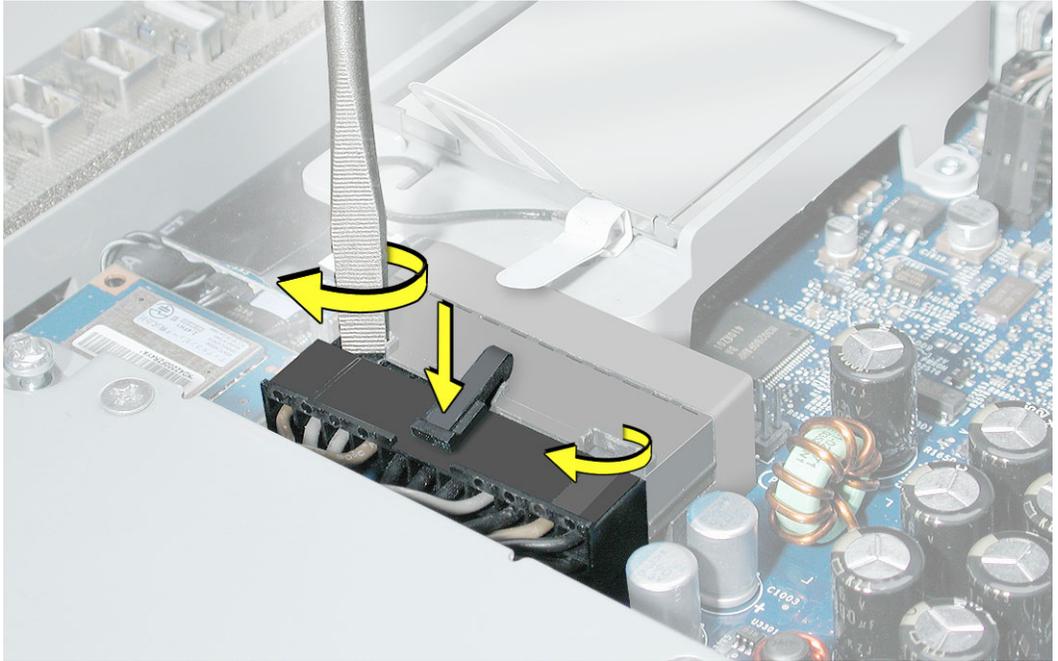
3. Disconnect the ambient light sensor from the logic board.



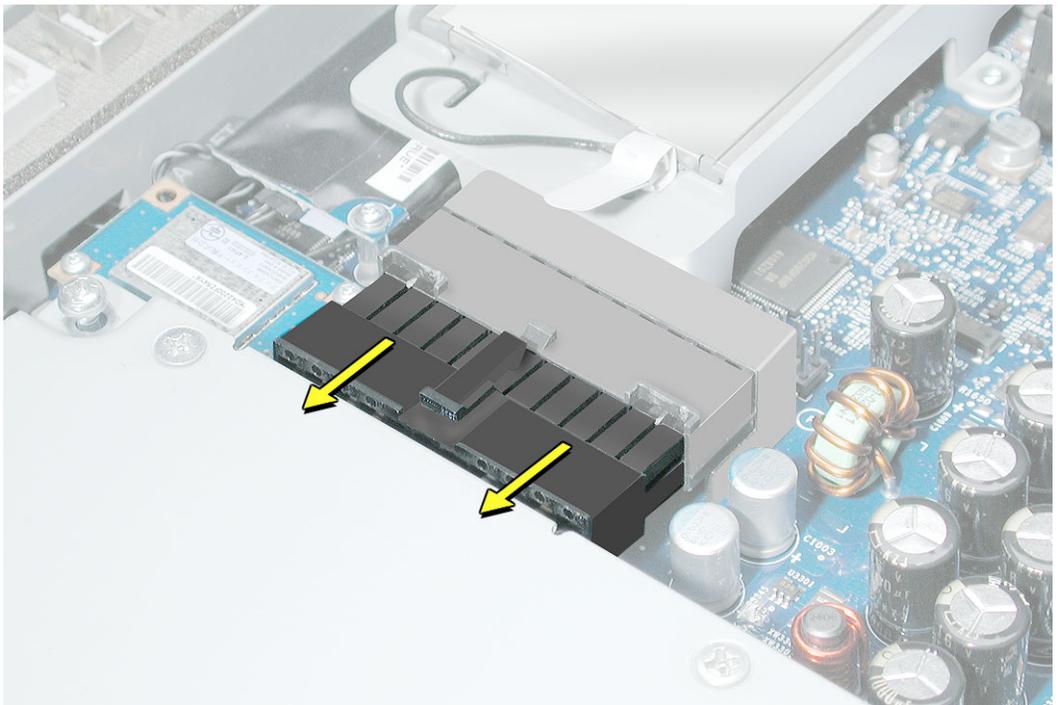
4. Turn the middle case screw clockwise about five revolutions. This releases the back cover clamp screw.



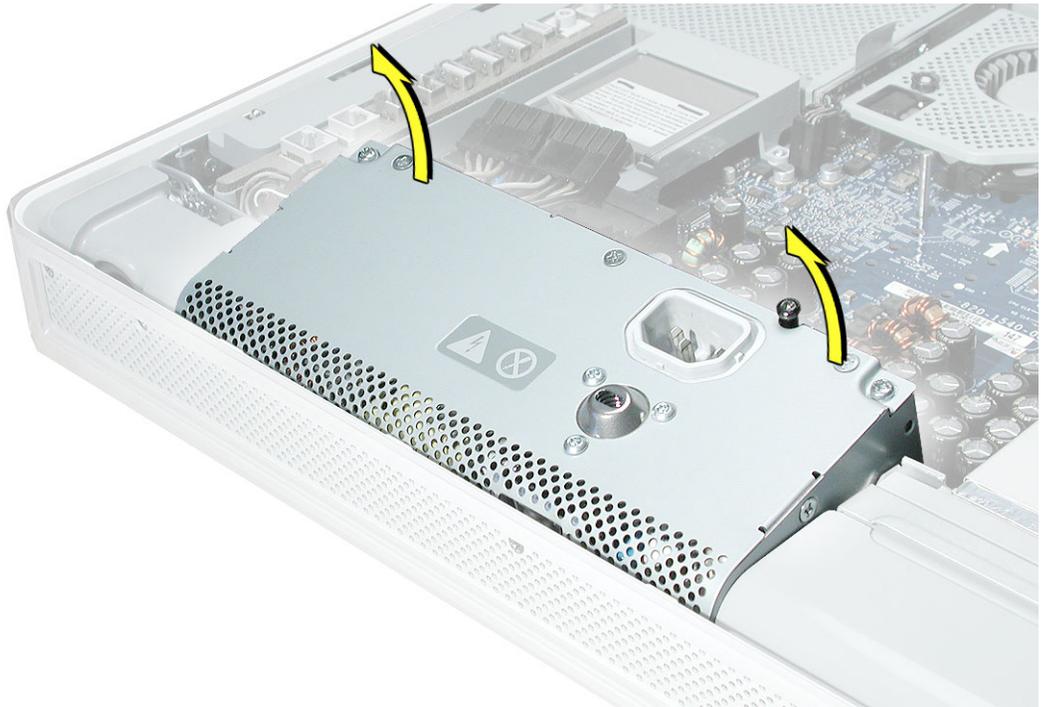
5. Disconnect the power supply connector with a flat-blade screwdriver. Loosen the connector enough so that you can remove it with your fingers.



6. Pull the power supply cable out of the connector by rocking it back and forth with your hands and pulling it toward the power supply.



7. Tilt the power supply toward you until it clears the edge of the logic board. Lift it out of the display bezel.



8. Return the power supply with the ambient light sensor to Apple in the packaging provided.

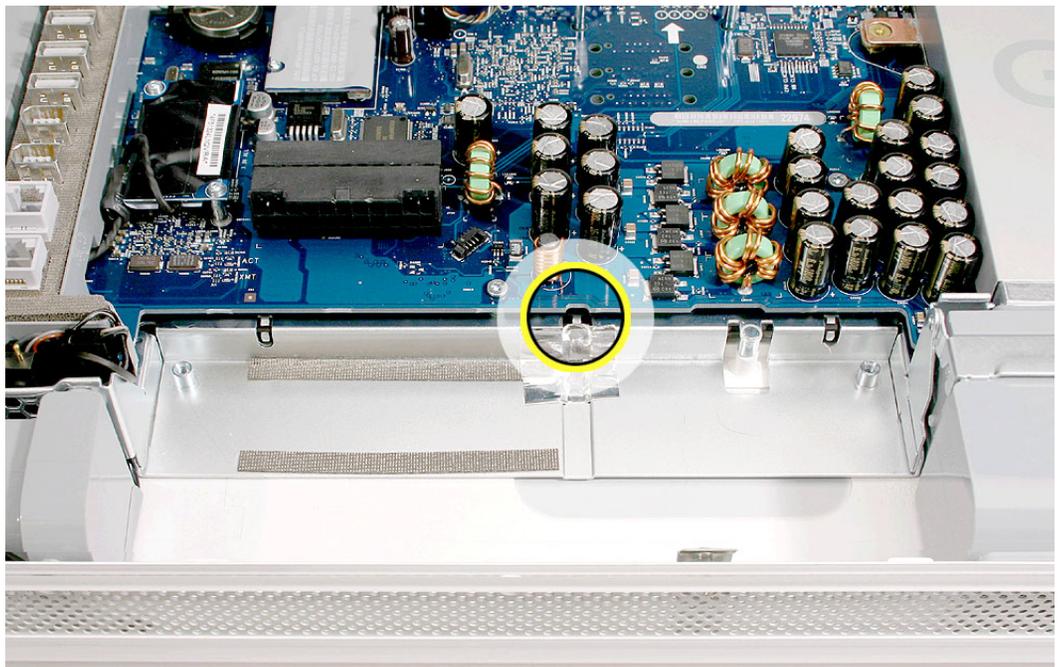


## Replacing Power Supply

1. Remove the replacement power supply from its packaging.
2. The replacement power supply has an ambient light sensor attached with two plastic rivets. Route the ambient light sensor under the power supply.



3. Locate the notched-out area (circled) on the logic board. As you lower the power supply into the chassis, make sure the ambient light sensor cable lines up with notch.  
**Note:** With the cable positioned correctly, the power supply will be easier to remove.



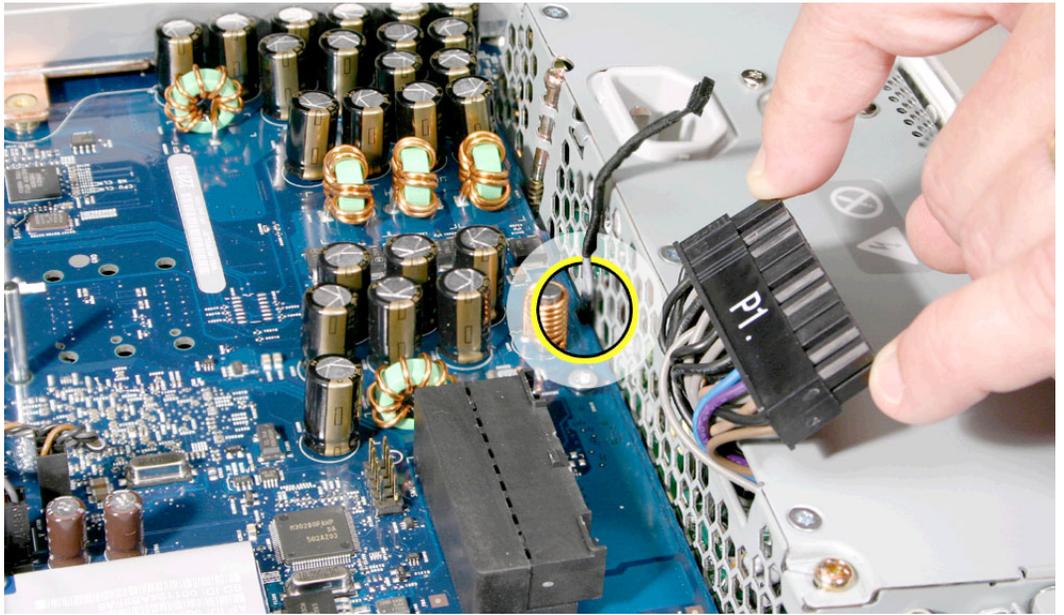
4. Before installing the power supply, push the center screw up with a flat-blade screwdriver. **Note:** It will be easier to install the power supply with the screw pushed up and out of the way.



5. Tilting the power supply, line up the ambient light sensor with the opening on the display bezel. Lower the power supply into place.



6. Once the power supply is installed, check that the ambient light sensor cable is positioned in the notched-out area on the board.



7. Connect the black power supply cable and the ambient light sensor.



8. Tighten the two outer captive screws.



9. Tighten the last captive screw (circled) that attaches to the display bezel.



10. Turn the middle case screw to the left about five revolutions. This step prepares the back cover for installation.



11. Replace the back cover.



# AirPort/Bluetooth Card

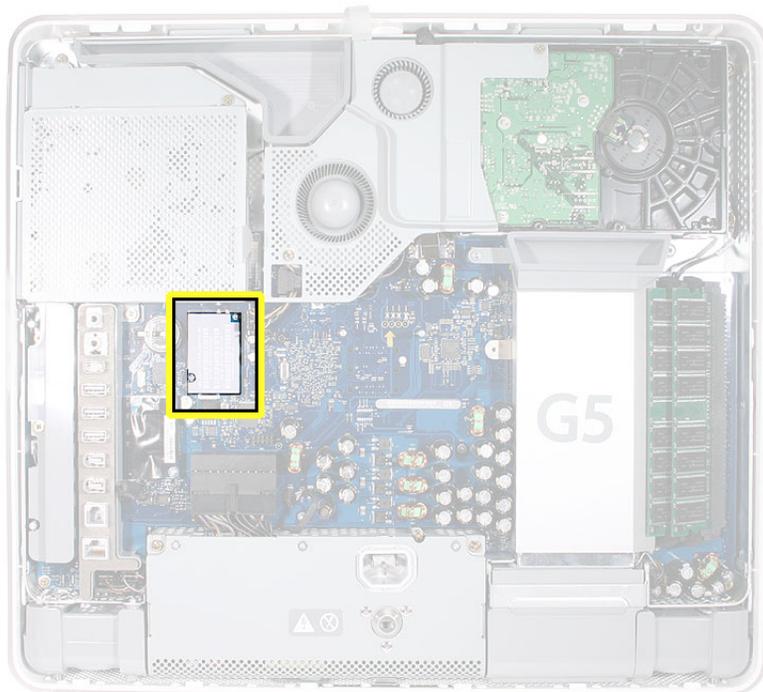
## Tools Required

- T-6 screwdriver

## Preliminary Steps

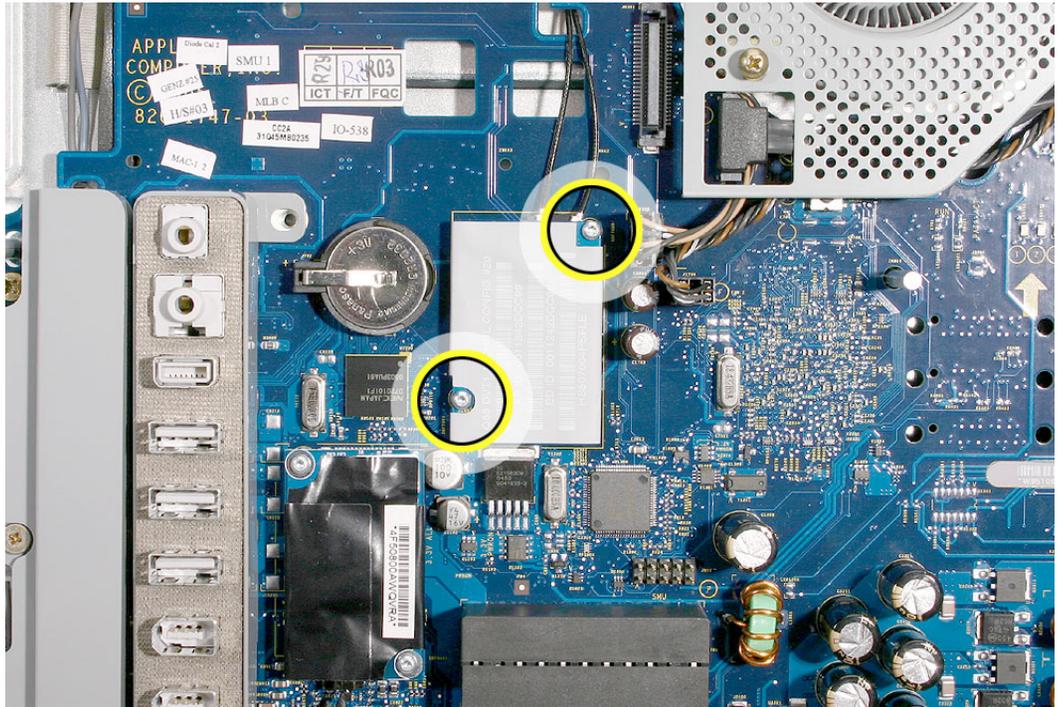
Before you begin, remove the back cover.

## Part Location

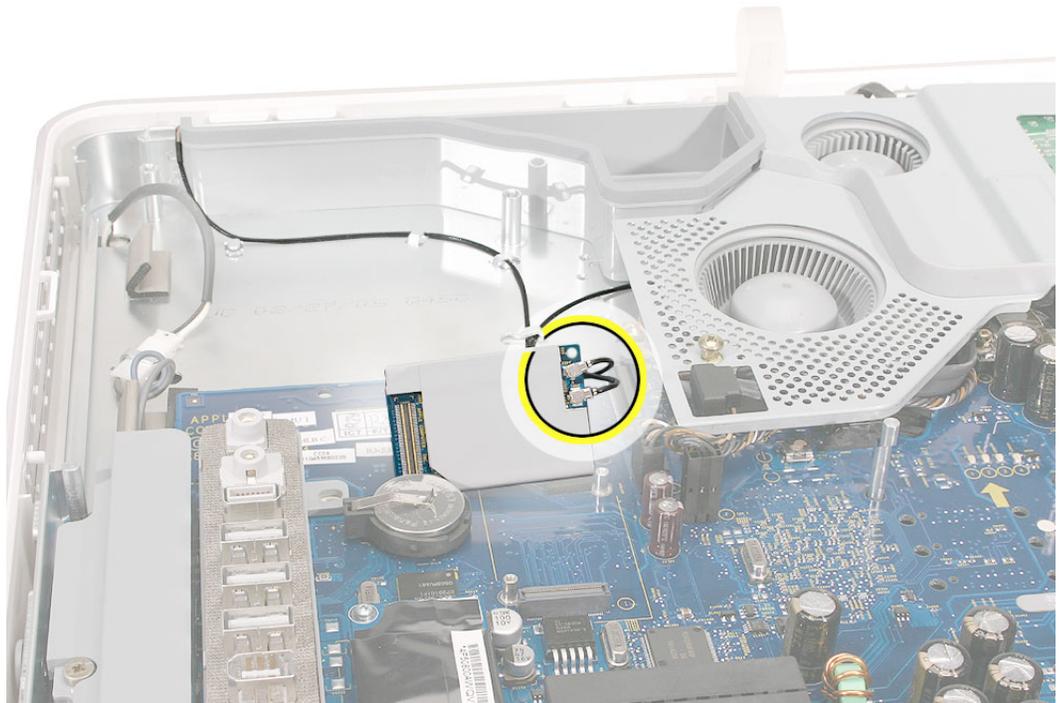


## Removing the AirPort and Bluetooth Combo Card

1. Remove the two T-6 screws from the card.

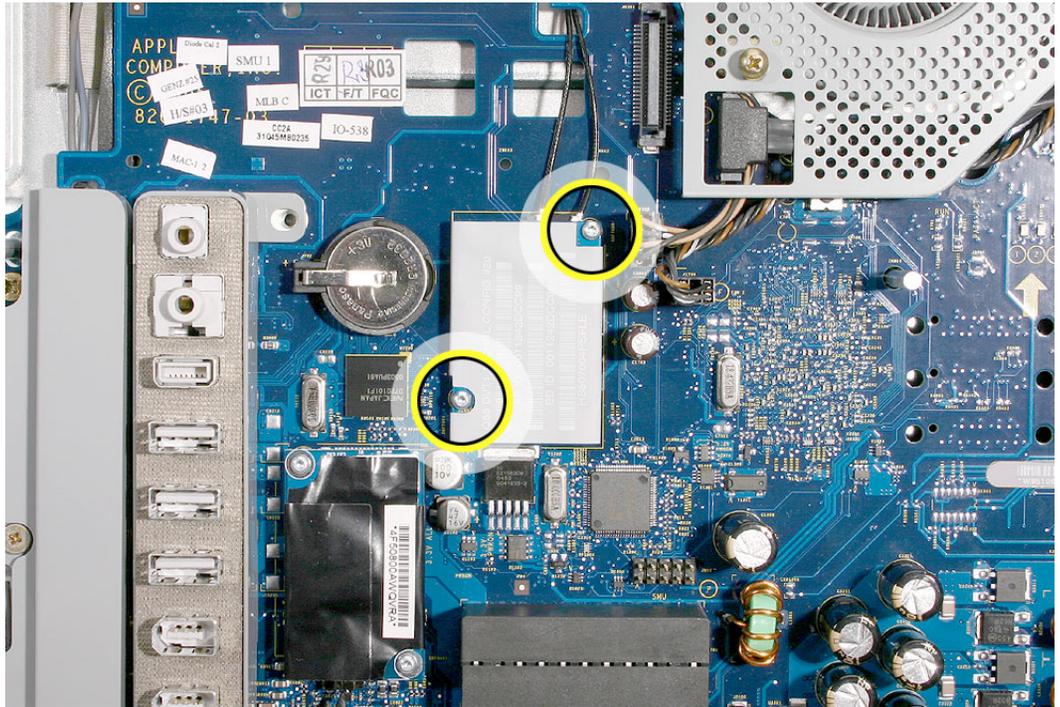


2. Lift the card off the logic board connector. Gently disconnect the antennas from the card.

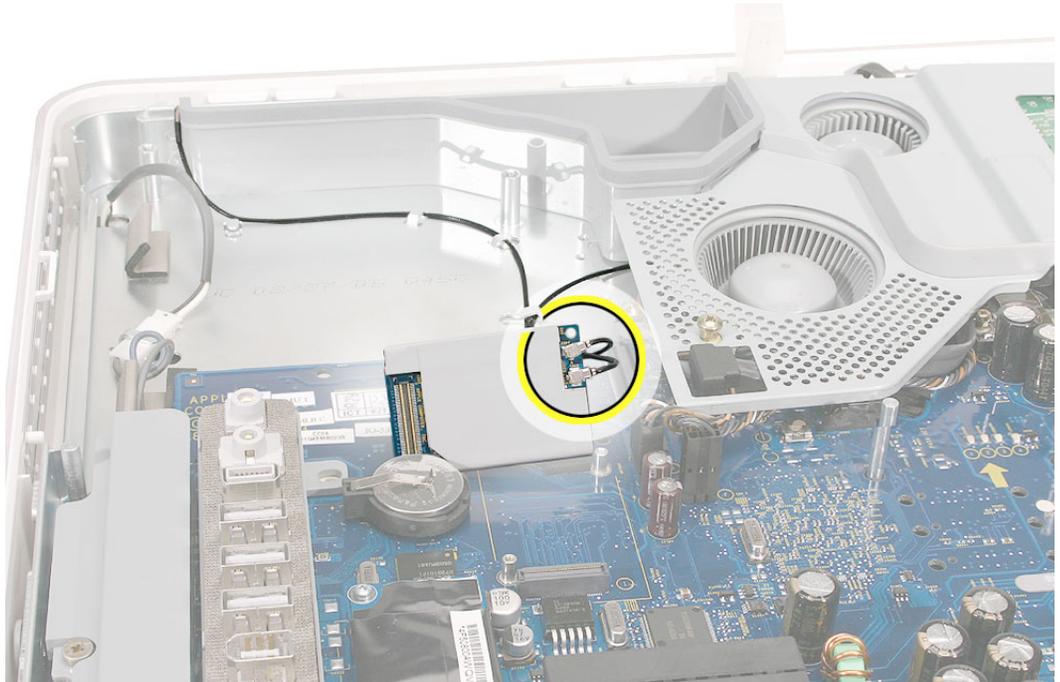


## Replacing the AirPort and Bluetooth Combo Card

1. Replace the two T-6 screws.



2. Gently attach the antennas to the card. Attach the card to the connector on the logic board.





# Modem Board

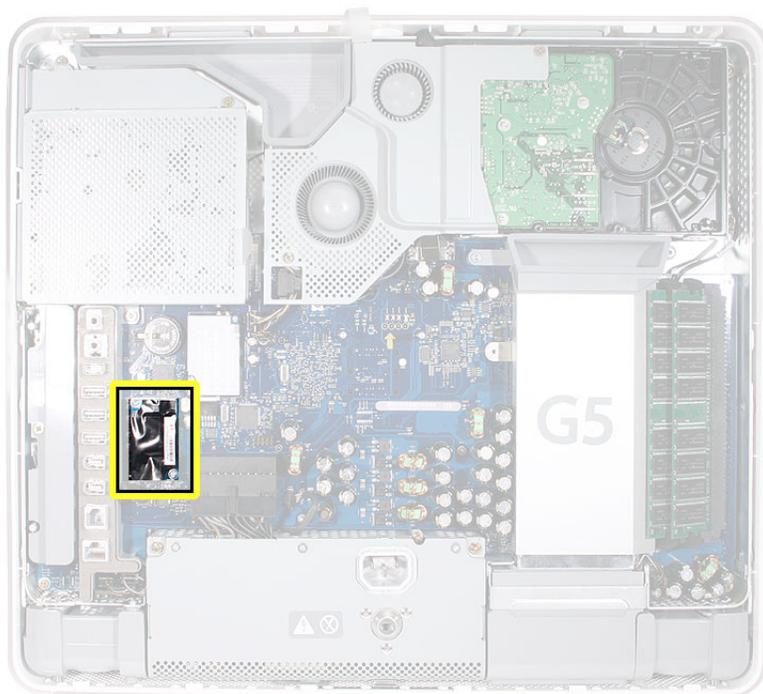
## Tools Required

- T-6 screwdriver

## Preliminary Steps

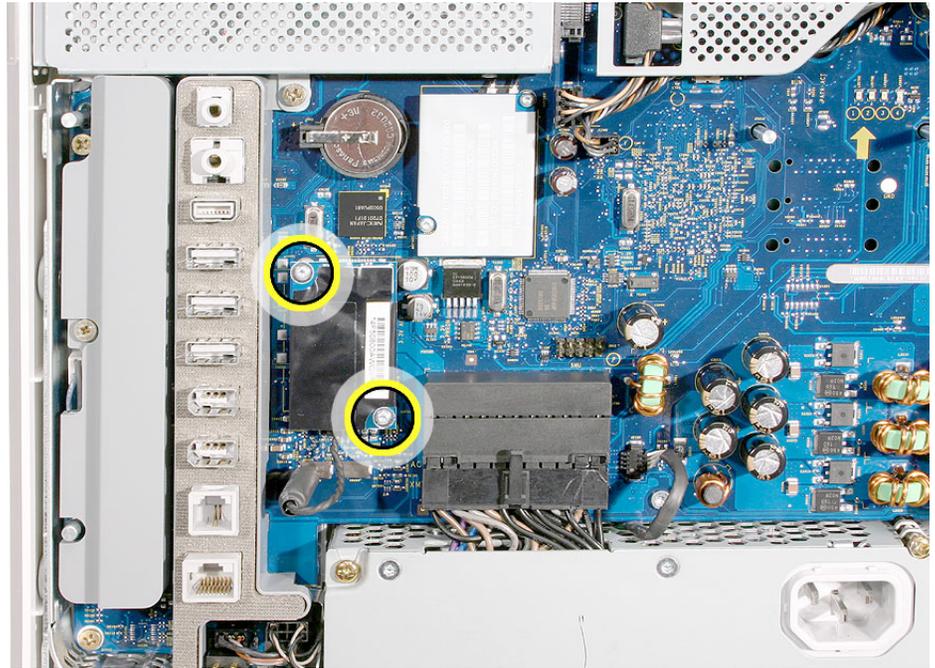
Before you begin, remove the back cover.

## Part Location



## Removing the Modem Board

1. Remove the two T-6 screws from the card.



2. Disconnect the modem cable from the modem board.

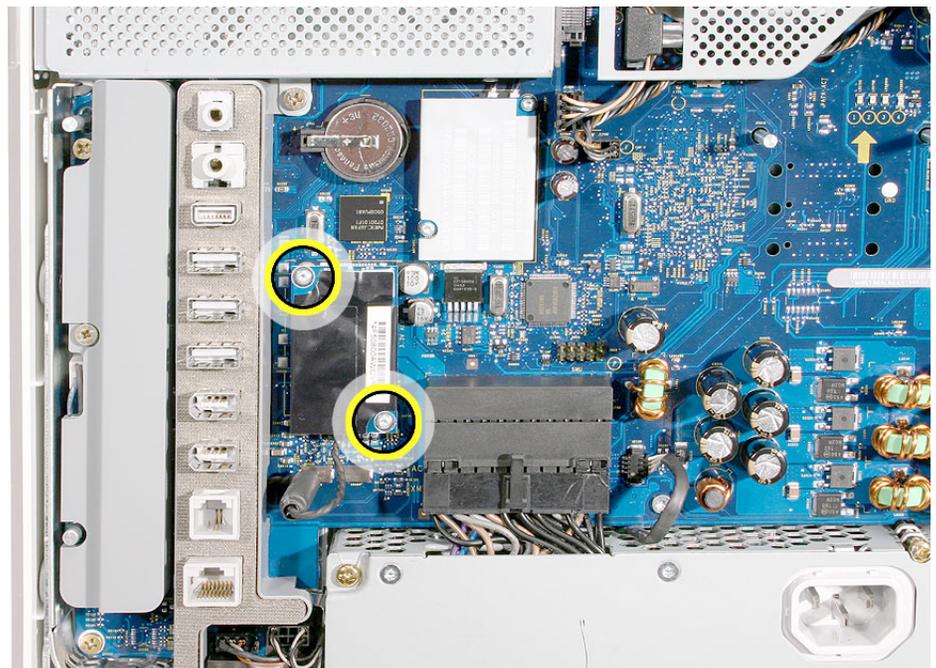


## Removing the Modem Board

1. Connect the modem cable to the board.



2. Press the board onto the connector. Replace the two T-6 screws on the board.



3. Replace the back cover.



# Battery

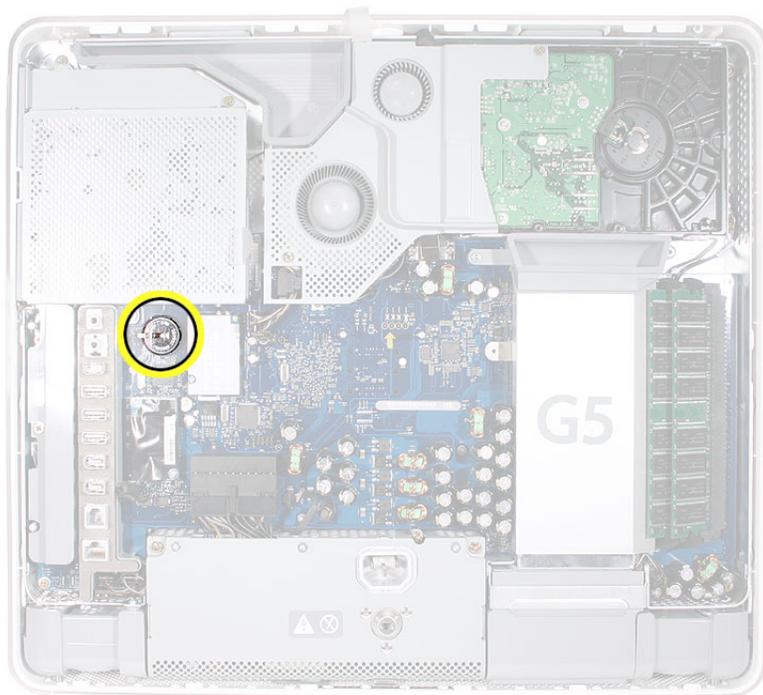
## Tools Required

- Flat-blade screwdriver or the nylon probe tool

## Preliminary Steps

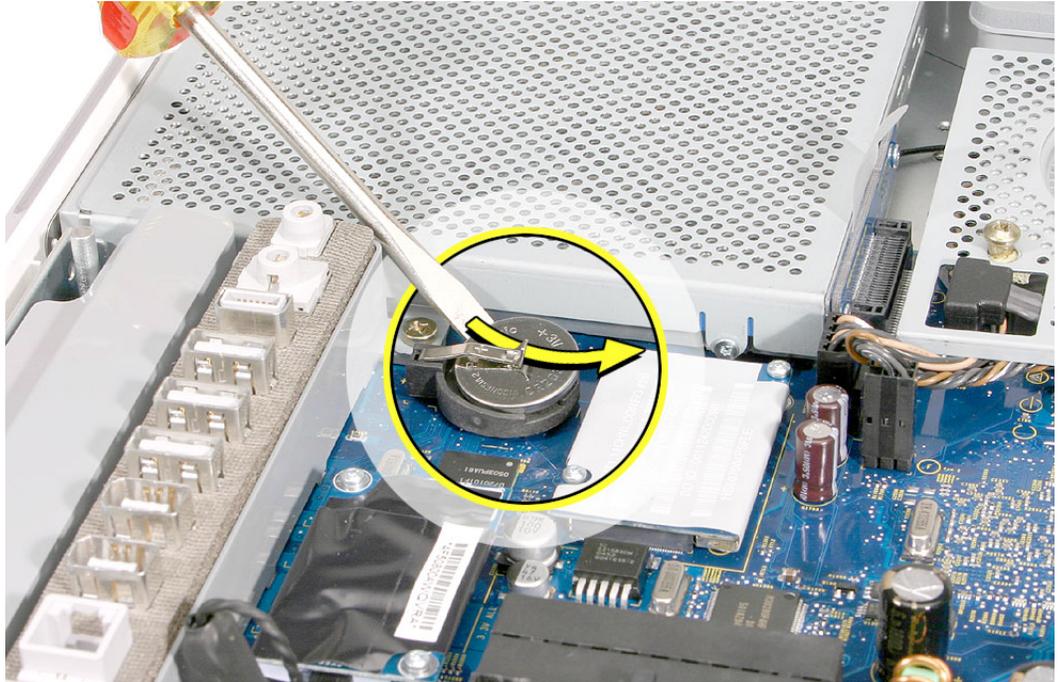
Before you begin, remove the back cover.

## Part Location



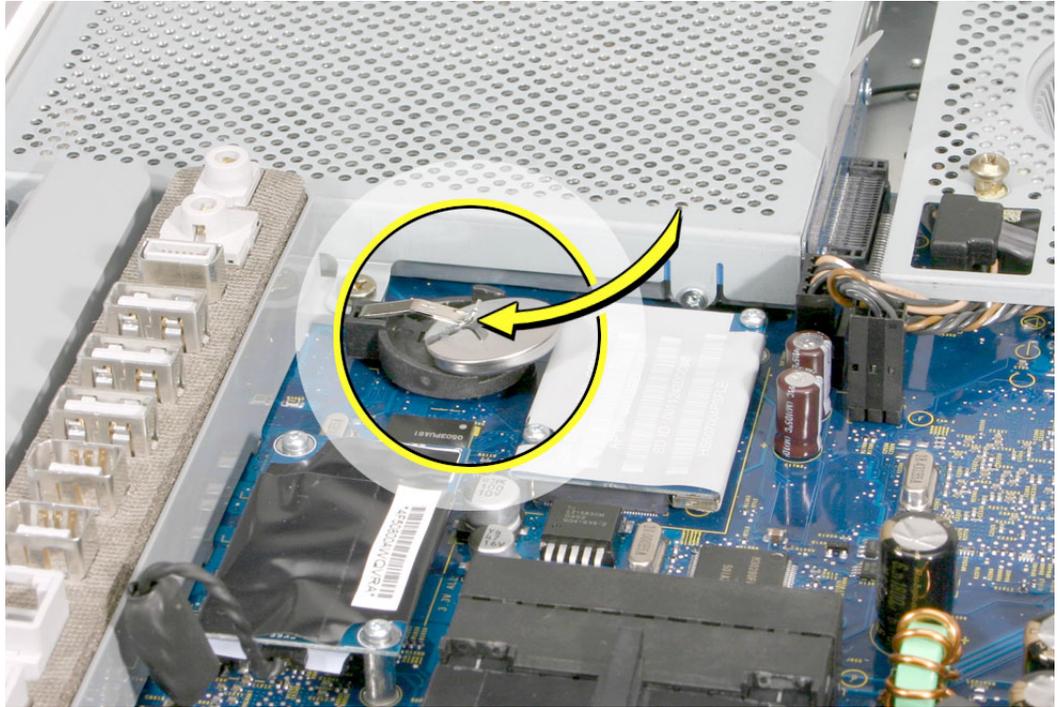
## Removing the Battery

1. With a flat-blade screwdriver, plastic tool, thumb, or finger, push the battery in the direction of the arrow to free the battery from the metal clip.



## Replacing the Battery

1. Holding the battery positive side up, push the battery (in the direction of the arrow) under the metal clip. The battery should slip into place under the clip.
2. Replace the back cover.





# Midplane

## Tools Required

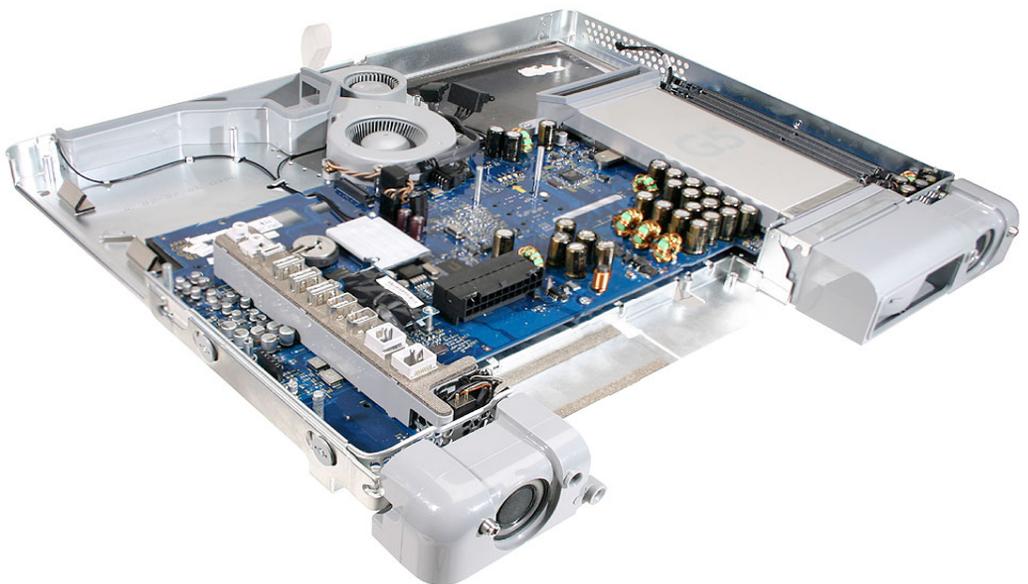
- Phillips #1 and #2 screwdriver
- Flat-blade screwdriver
- Screw tray or equivalent to hold the screws

## Preliminary Steps

- Before you begin, remove the following:
- Back cover
- Optical drive
- Inverter
- Fan cover

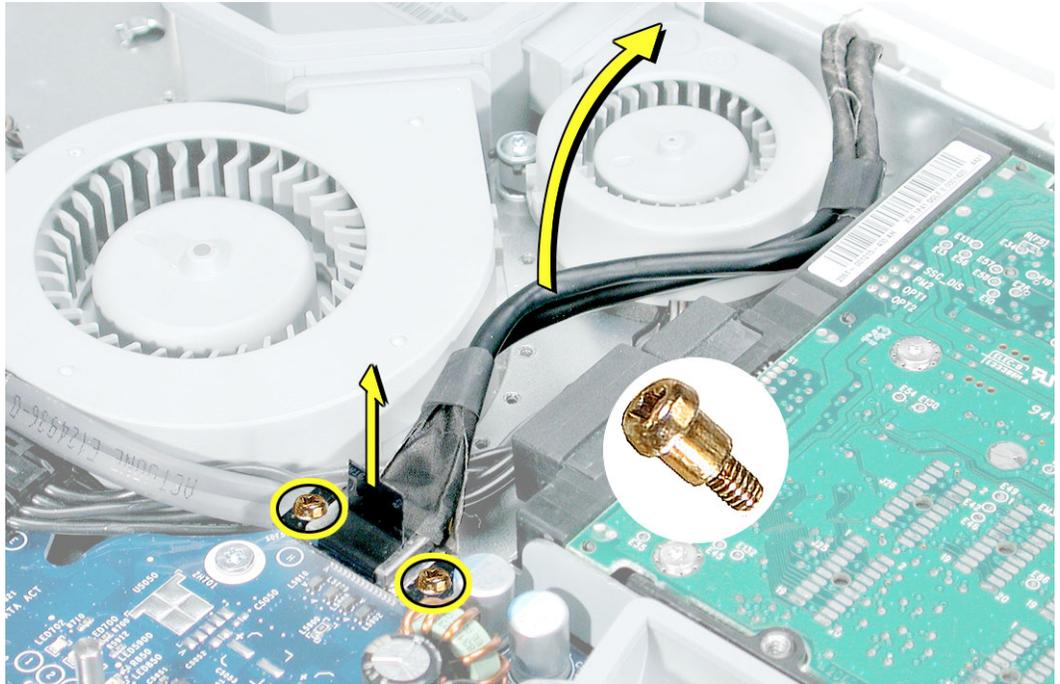
## Part Location

**Note: The midplane is no longer offered as a service module. Order the components on the midplane individually.**

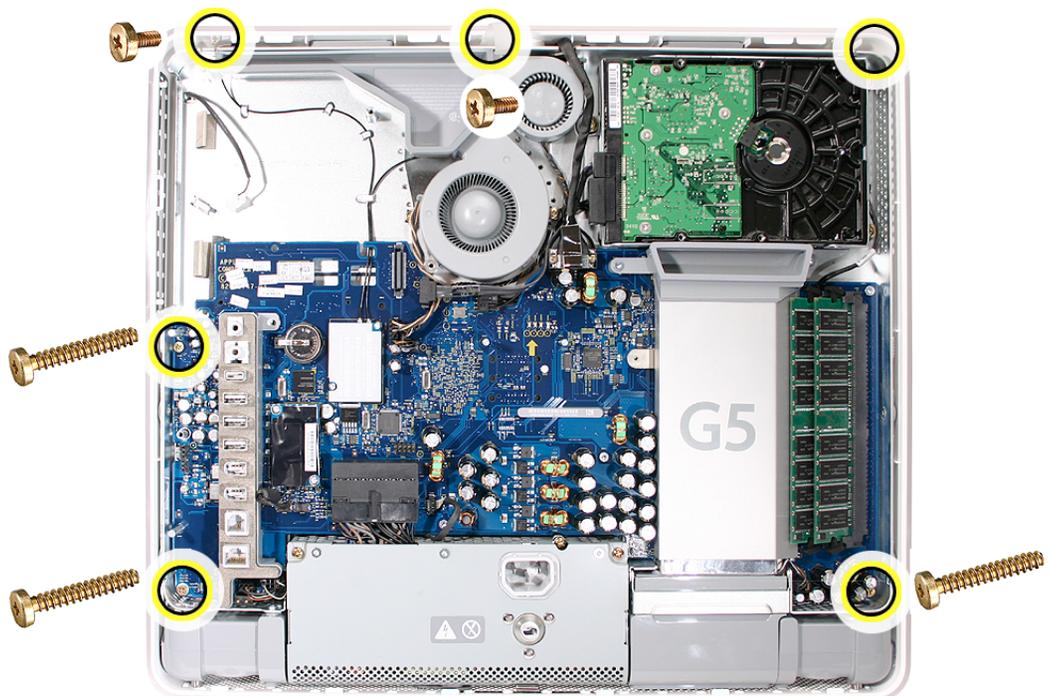


## Removing the Midplane Assembly

1. Locate the black video cable next to the fans. Using a Phillips #1 screw. Remove the two screws and set them aside. Pull up on the black tab to disconnect the cable. Flip the cable back, so it is out of the way.



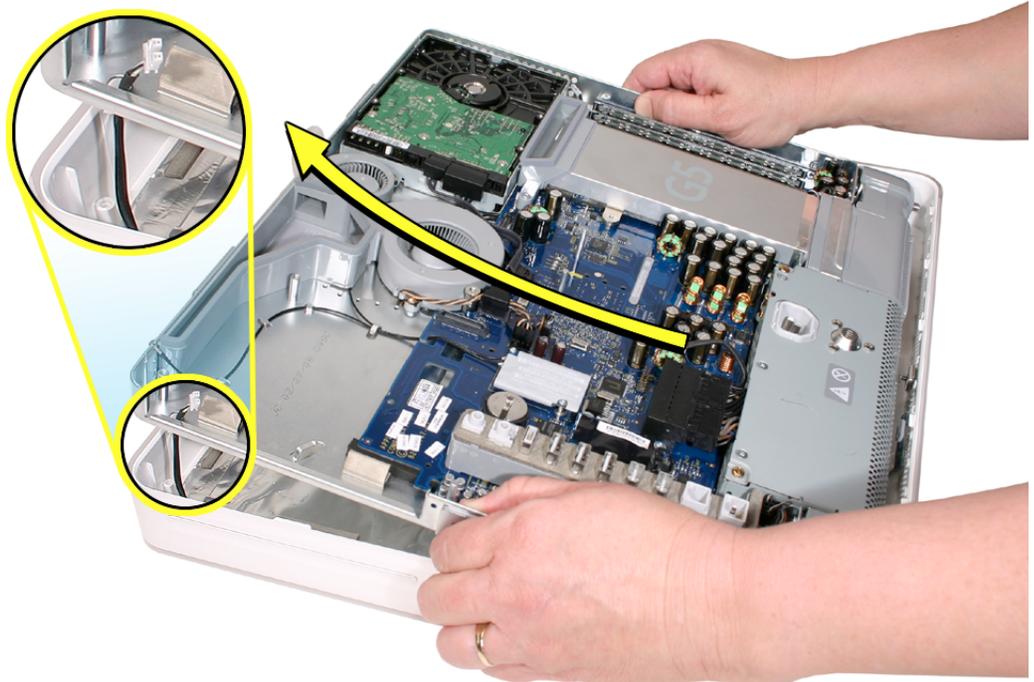
4. Using a Phillips #2 screwdriver, remove six screws. Three short screws are located in the channel along the top of the case and the longer screws attach to the chassis.



5. Loosen the middle power supply screw (a captive screwiest screw attaches the power supply to the display bezel; make sure to loosen the screw all the way).



6. Locate the pull tab at the top of the computer. Lift the midplane assembly by the tab and then grab the midplane by its sides. As you pull in the direction of the arrow, push the cable (in the top left corner) down through the opening in the midplane.

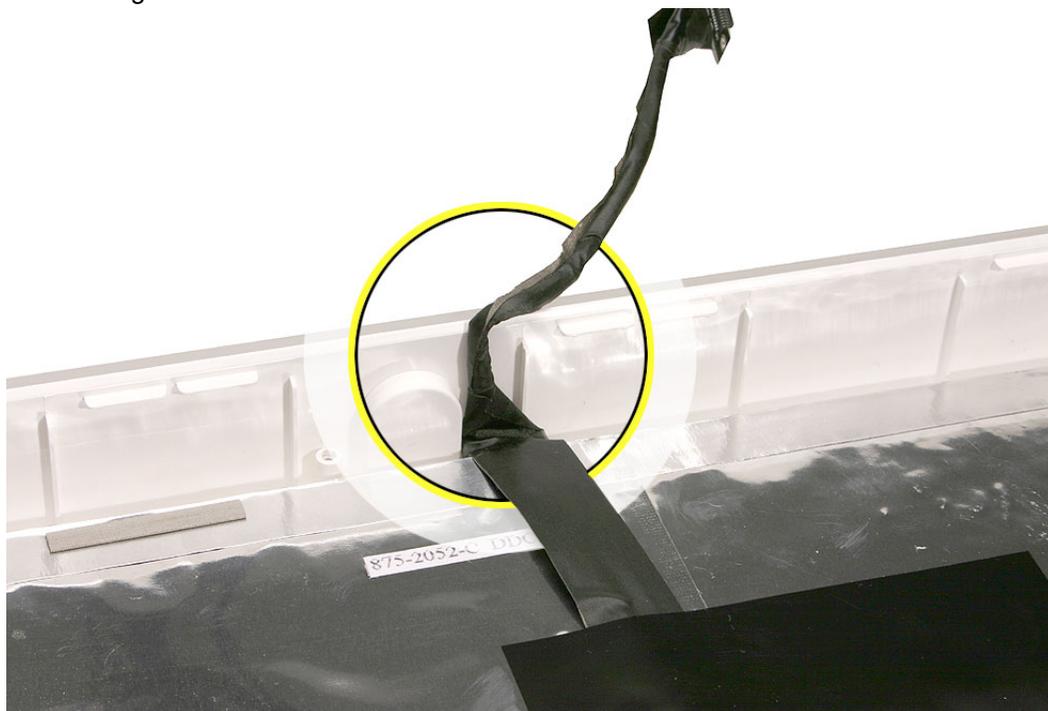


## Replacing the Midplane

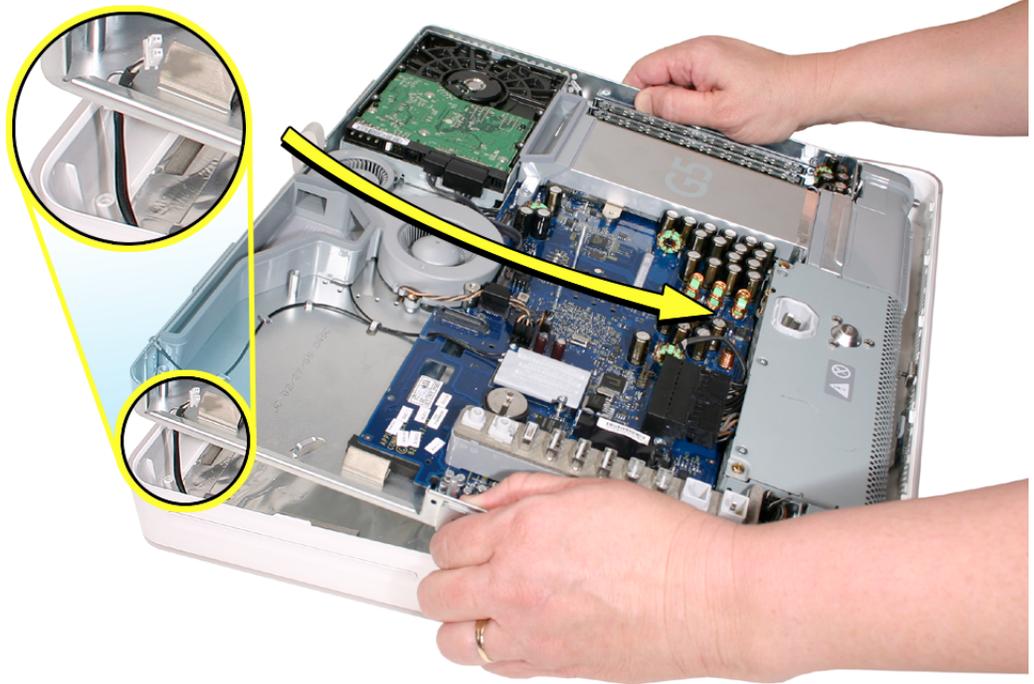
1. Position the display/bezel assembly with the display face down on a clean soft cloth.



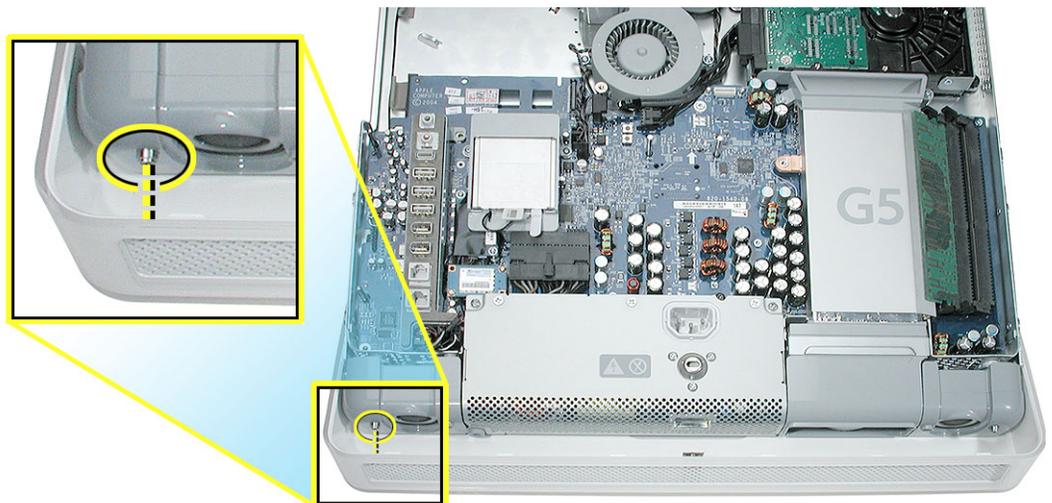
2. Make sure that the TMDS cable is tucked into the groove on the bezel as shown. A cutout on the midplane chassis lines up with the groove on the display/bezel assembly housing



3. Lower the midplane into the display/bezel assembly housing. Pull the inverter cable through the opening in the chassis.



4. Line up the jackscrews on the right and left sides of the midplane with the holes in the display/bezel assembly.



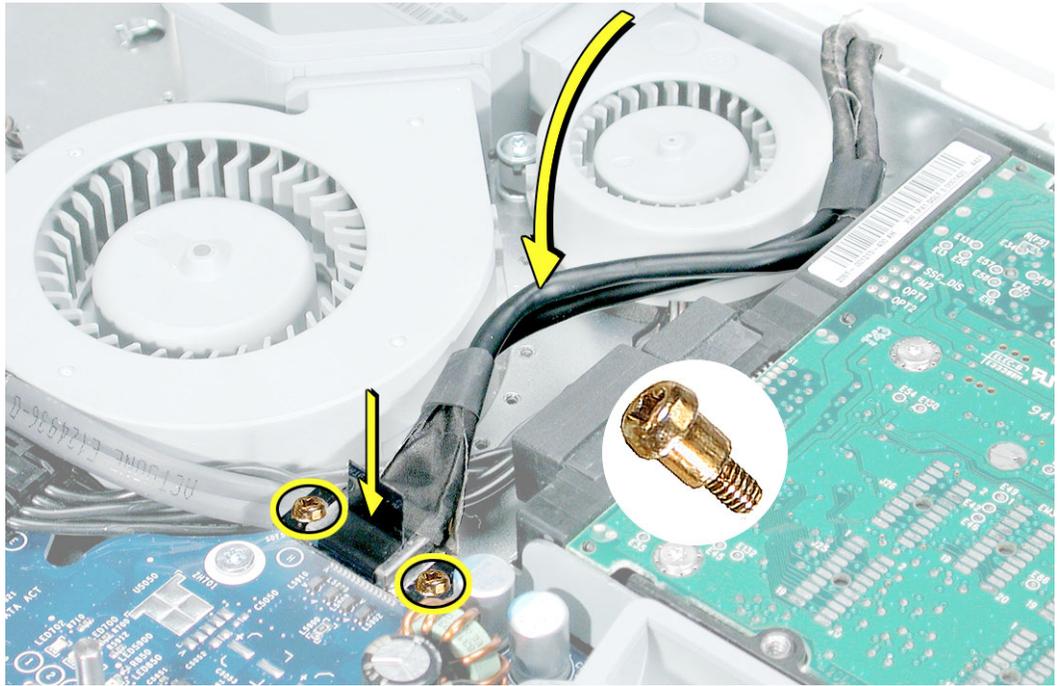
5. Tighten the middle power supply screw (a captive screwiest screw attaches the power supply to the display bezel; make sure to tighten the screw all the way.



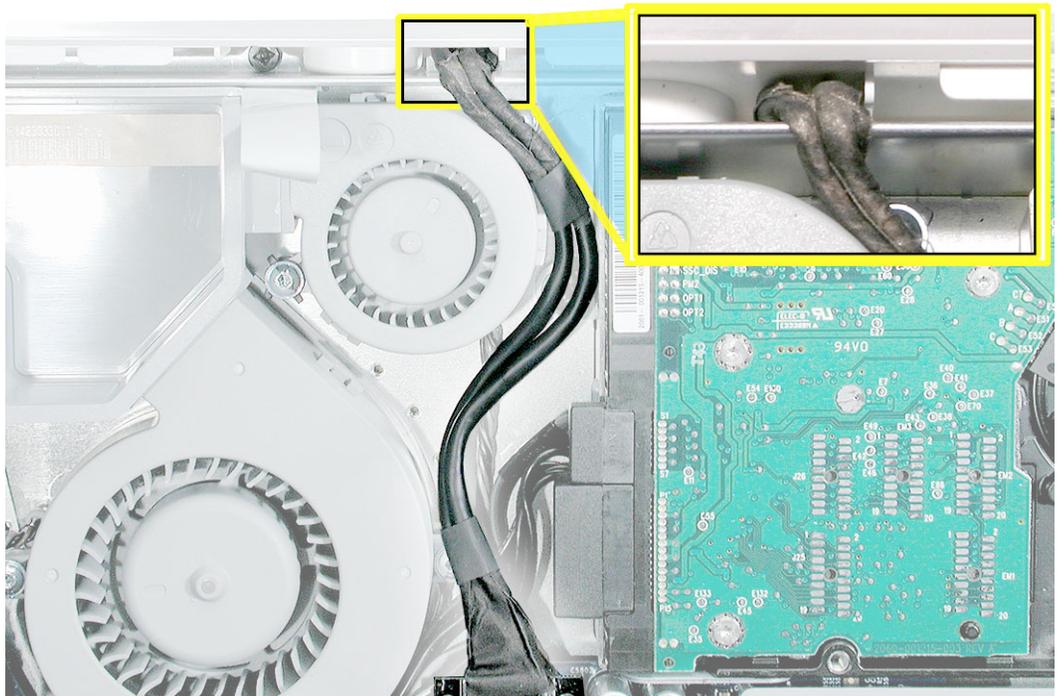
6. Make sure the ambient light sensor on the power supply is seated into the hole on the display bezel. You should be able to feel a bump (circled) when you run your finger across the bottom of the display bezel. If it's not in position, reset the midplane and check again.



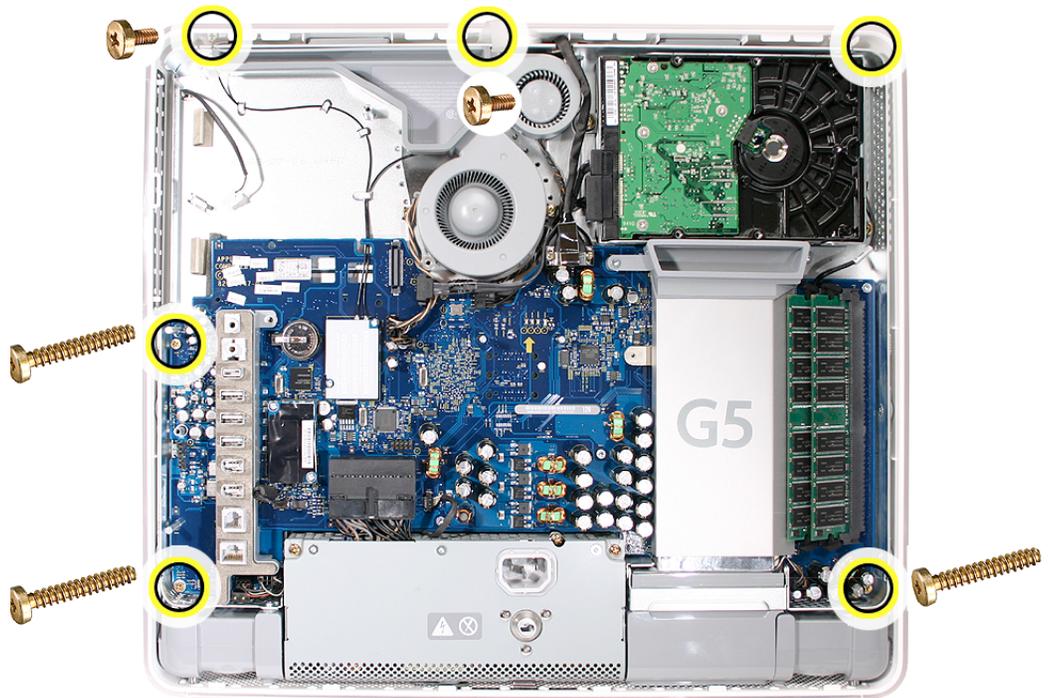
7. Reconnect the video cable and replace the two video cable screws. Tuck the video cable into the area next to the fans.



8. Press the top end of the video cable into the notch on the midplane chassis.



4. Replace the six case screws. (The shorter screws attach along the top.)



5. Replace the inverter board
6. Replace the optical drive.
7. Replace the fan cover.
8. Replace the back cover.



# Logic Board

## Tools Required

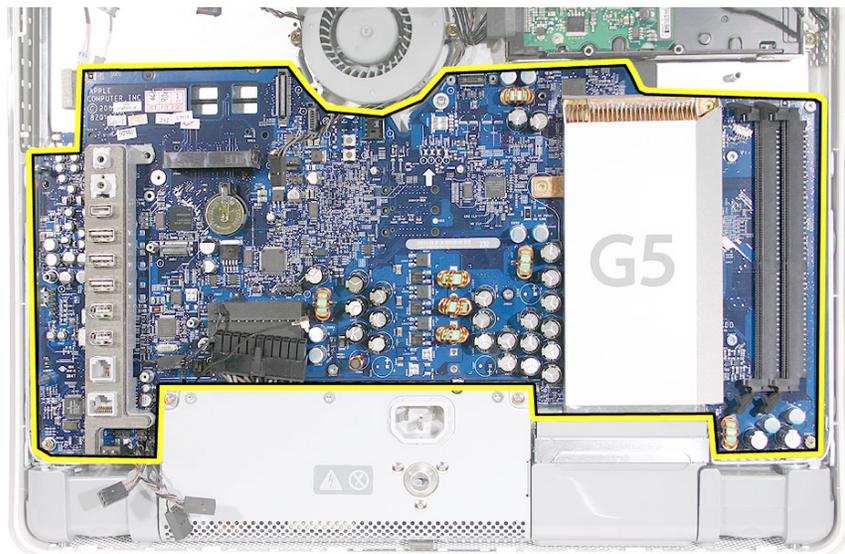
- Phillips #2 screwdriver
- Torx T10 flat-blade
- Torx T6
- Flat-blade screwdriver
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the following:

- Back cover
- Optical drive
- Fan cover
- Inverter
- AirPort/Bluetooth card and disconnect the antennas
- Modem card
- Memory

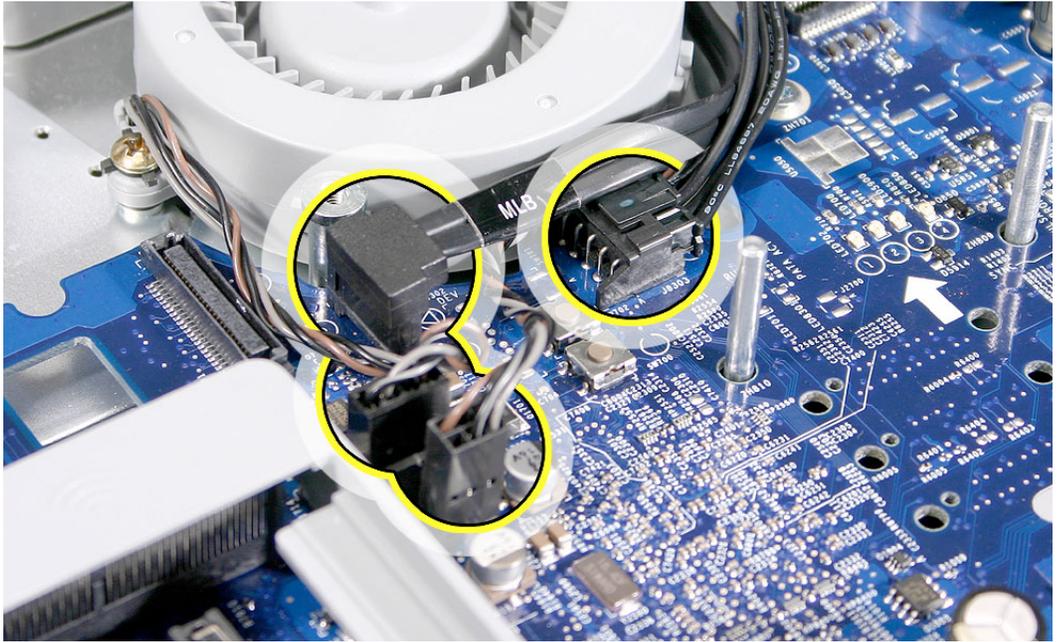
## Part Location



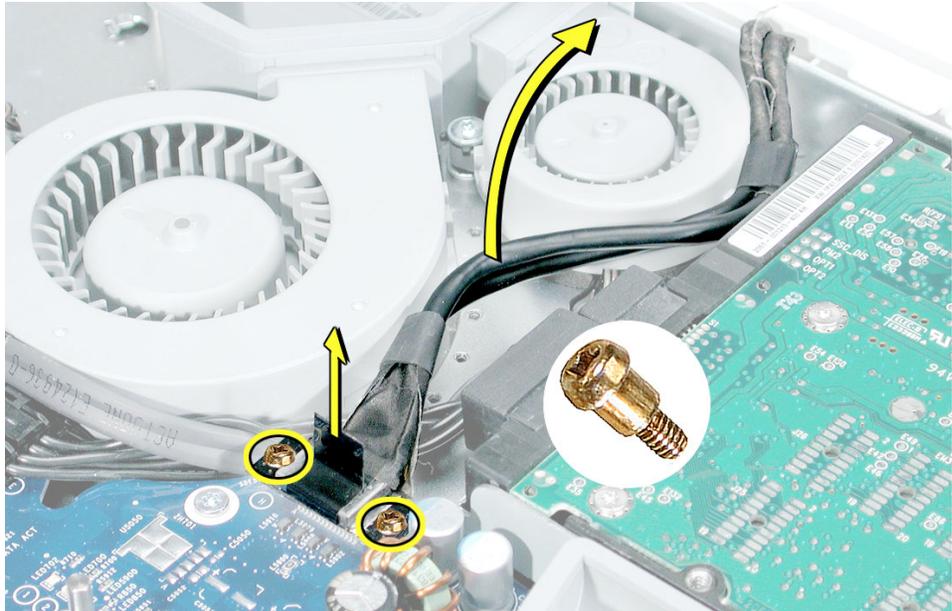
## Removing the Logic Board

**Note:** Some of these photos are taken from the original iMac G5 logic board take apart since the procedure is very similar.

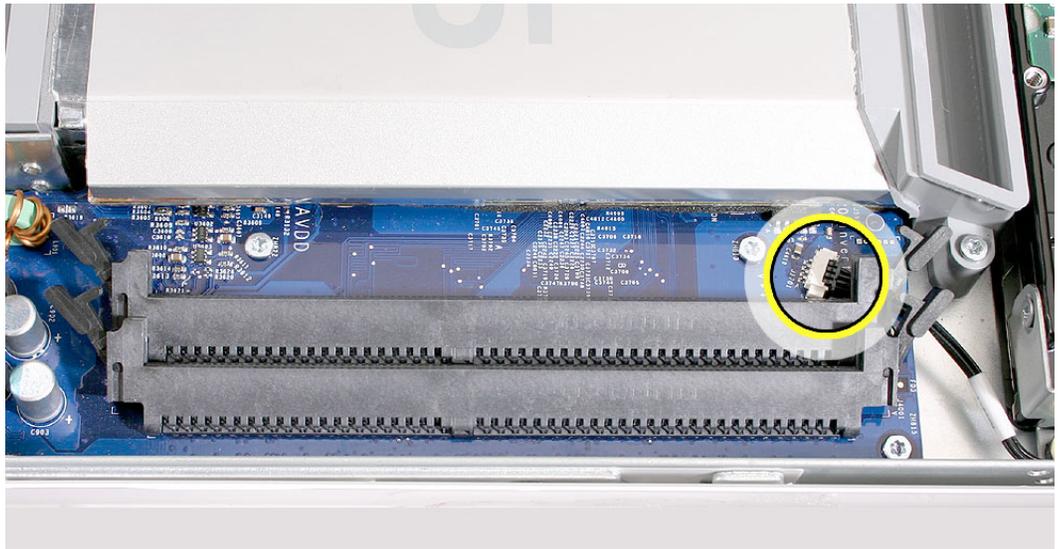
1. At the top of the logic board, near the fan, disconnect the two fan cables and the two hard drive connectors.



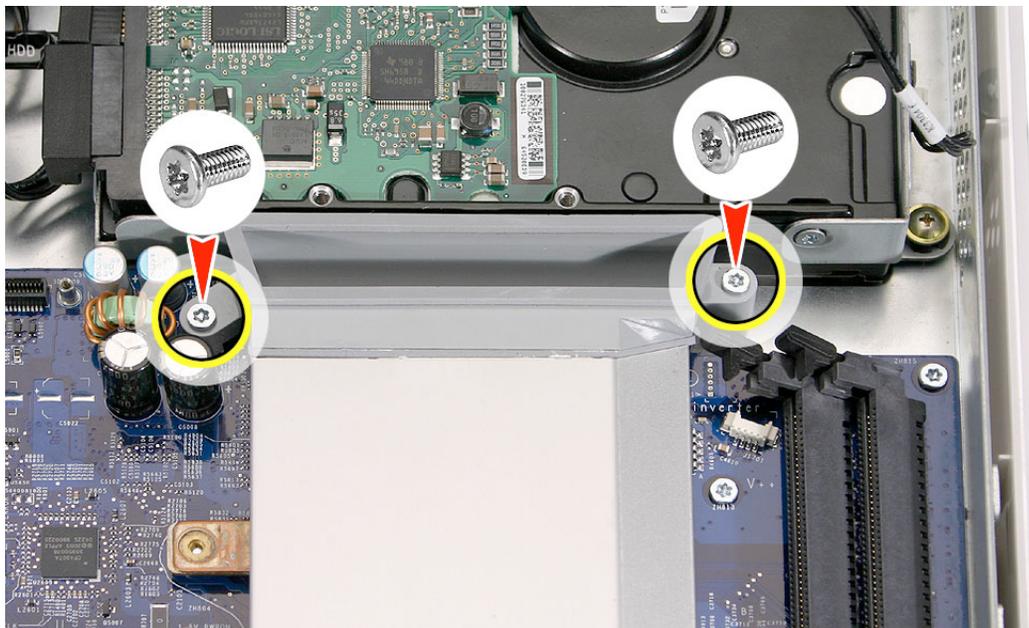
2. Remove the two video cable screws and disconnect the video cable.



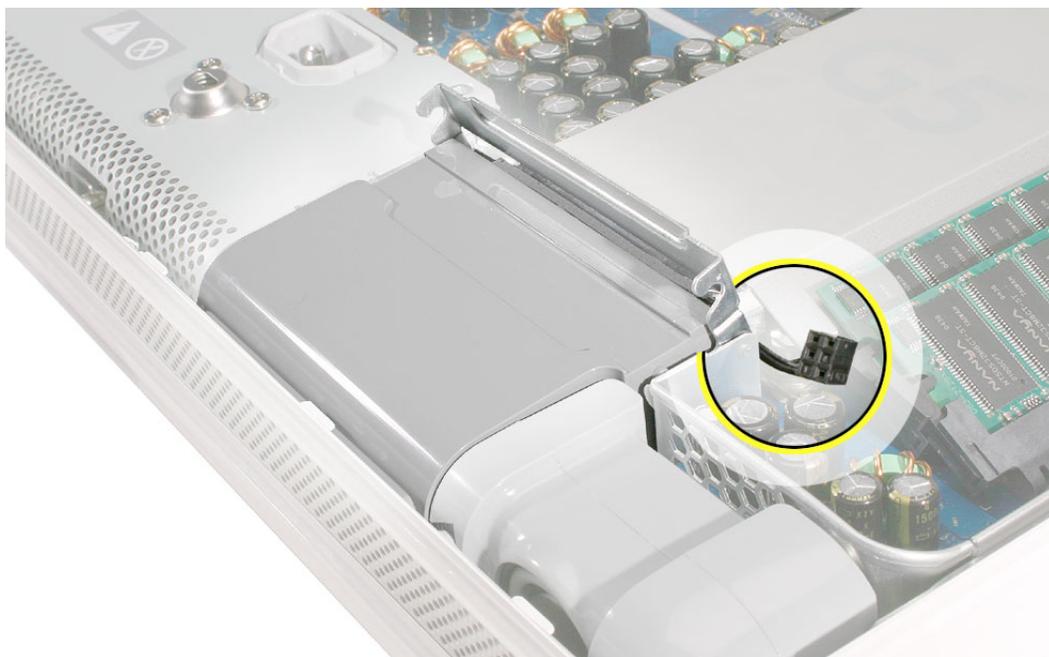
3. Disconnect the hard drive thermal sensor (near the memory slots) from the logic board. Leave the other end of the thermal sensor attached to the hard drive.



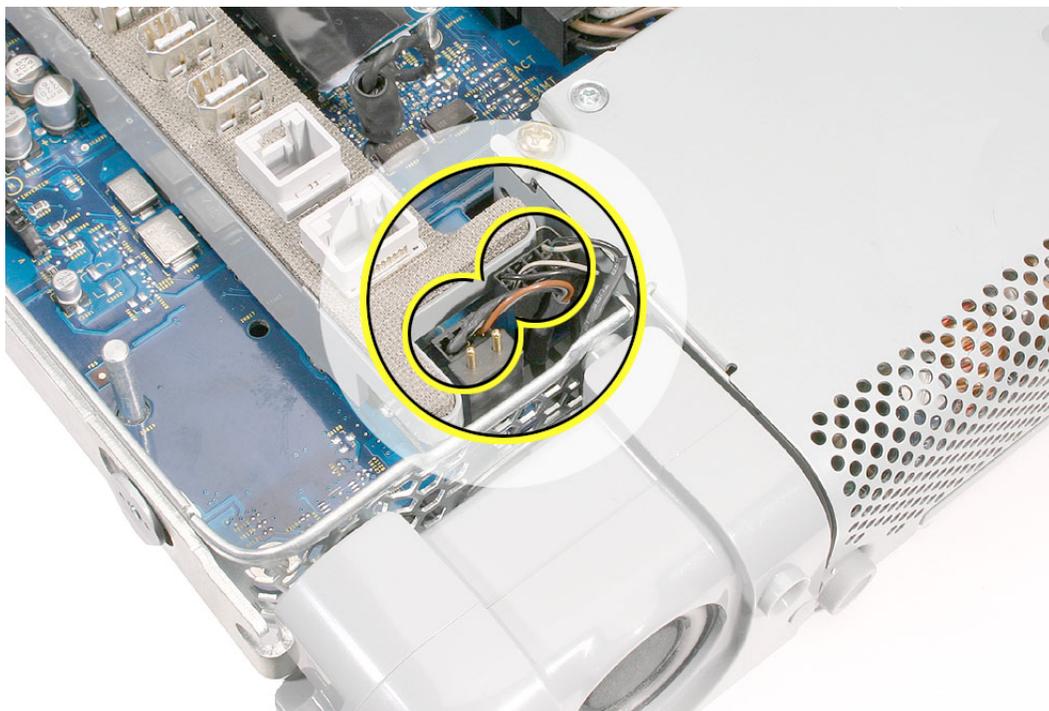
4. Using a T-8 screwdriver, disconnect the two fan duct screws and lift the duct off the logic board. **Note:** These two screws are longer than the other silver screws securing the logic board to the midplane chassis.



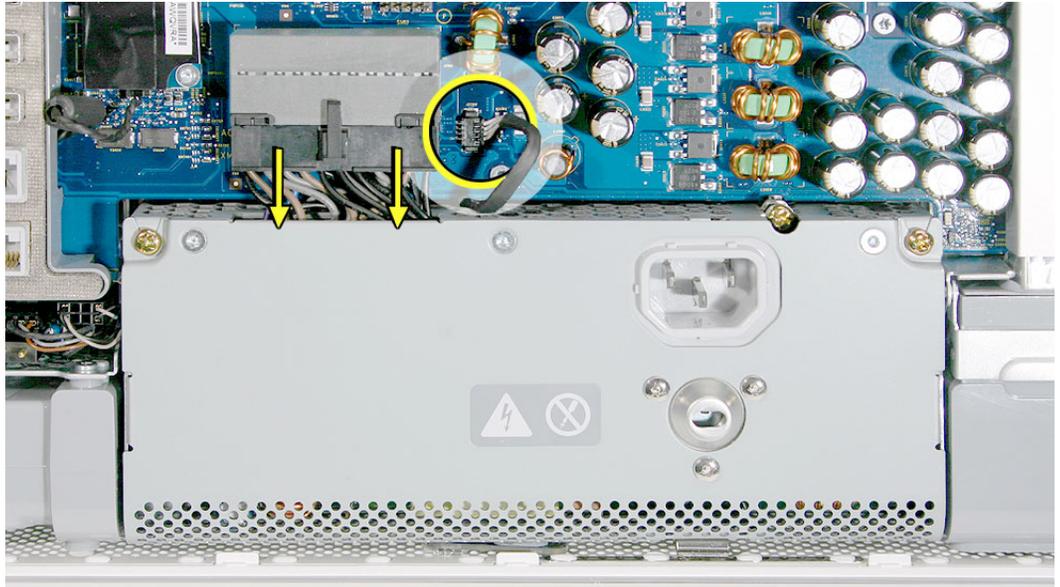
5. Disconnect the lower fan cable.



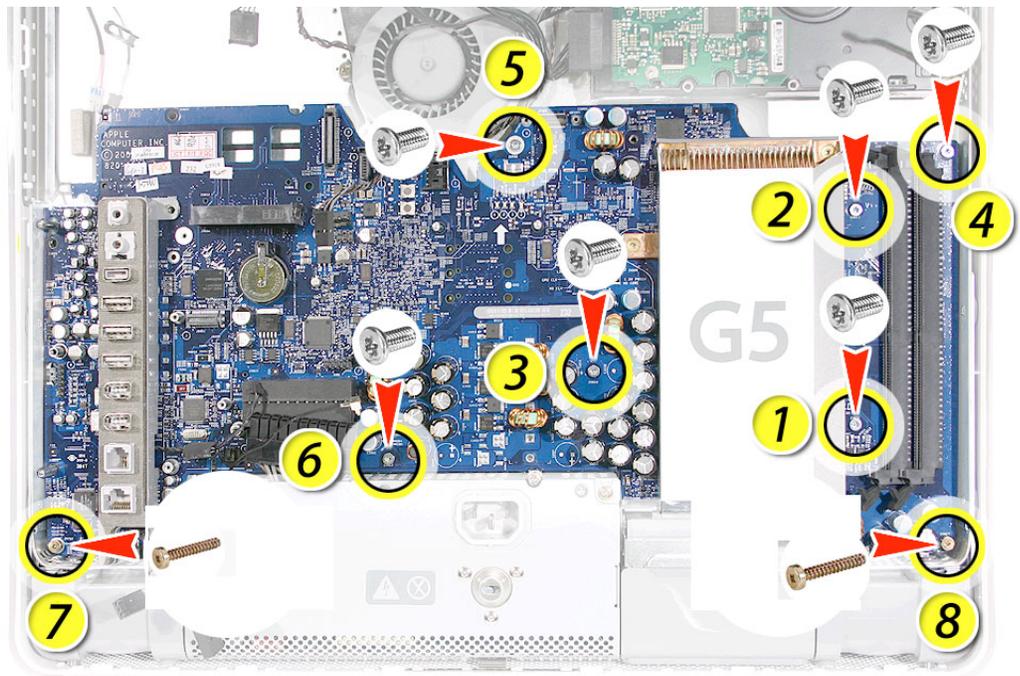
6. Disconnect the two connectors (microphone and speakers). **Note:** Pull on the connector, not the cables.



7. Disconnect the power supply cable and the ambient light sensor.

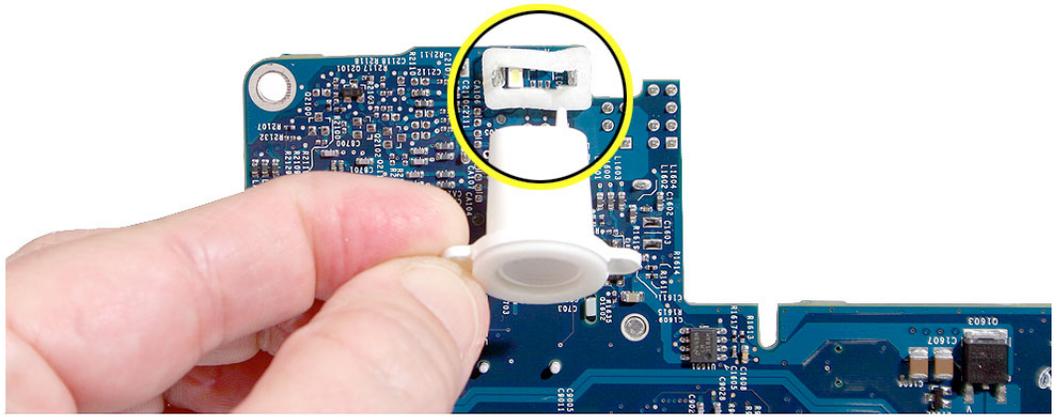


8. Using a T-10 screwdriver, remove six silver logic board screws and with a Phillips #2 screwdriver, remove the three brass screws on the logic board. **Note:** The numbers are for replacement order, disregard for take-apart.

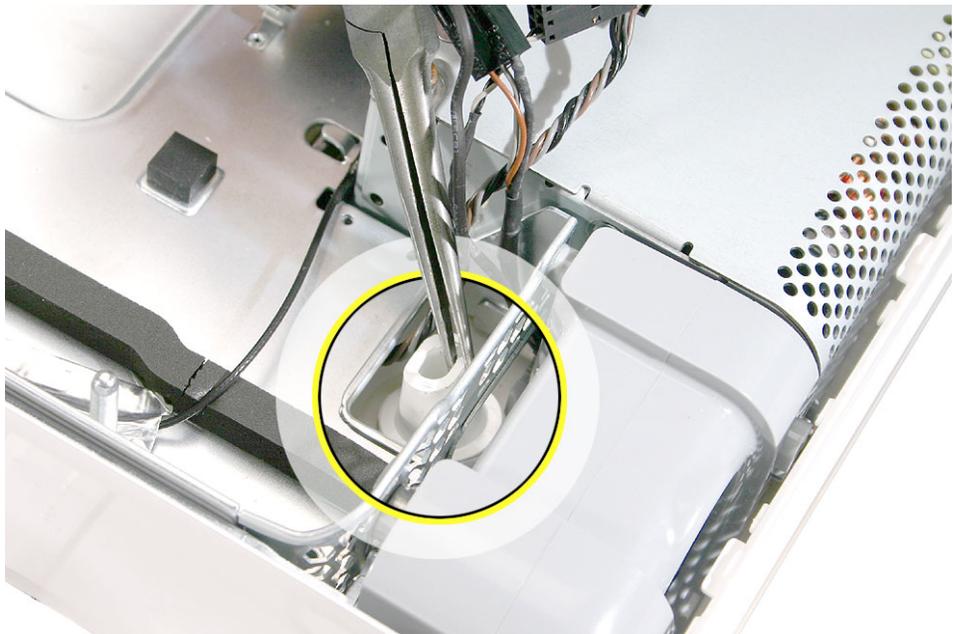


9. Carefully lift the logic board out of the midplane chassis.

10. Look on the back side of the logic board for the light pipe. Remove the light pipe and place it on the replacement logic board.



11. If you don't see the light pipe on the back of the logic board, it may be stuck in the chassis (shown below). Use a needlenose pliers to remove the light pipe.



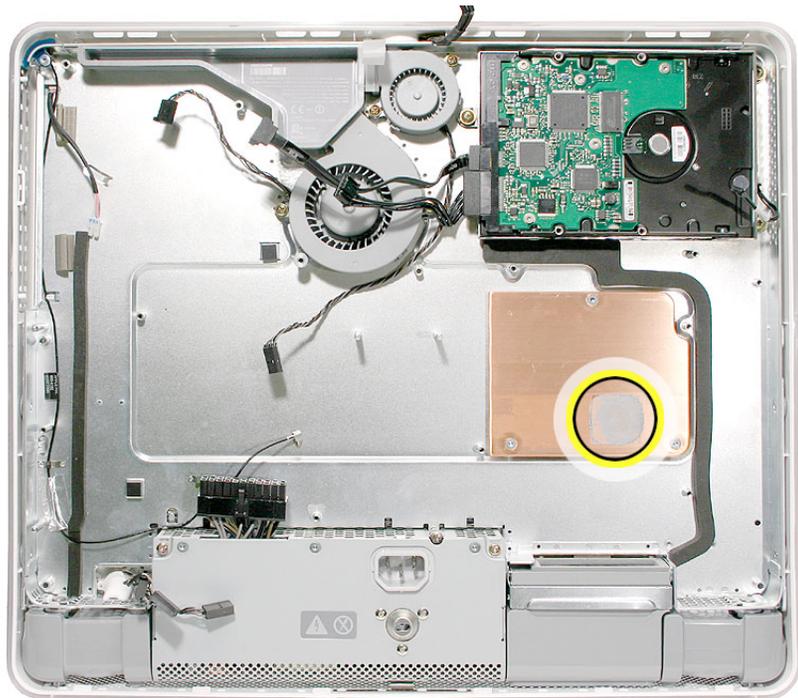
12. Return the logic board to Apple in the packaging provided.

## Replacing the Logic Board

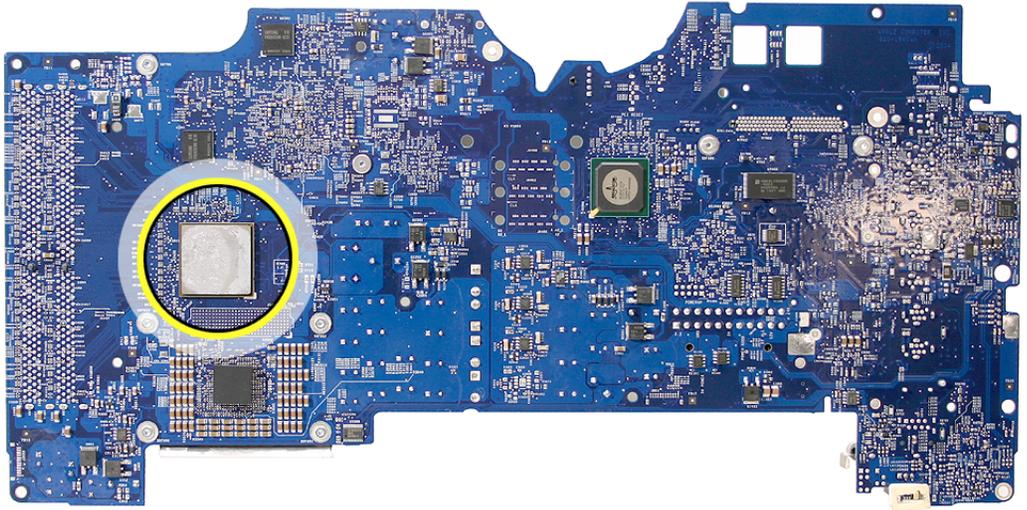
1. Locate the cleaning wipe and syringe in the replacement logic board box.



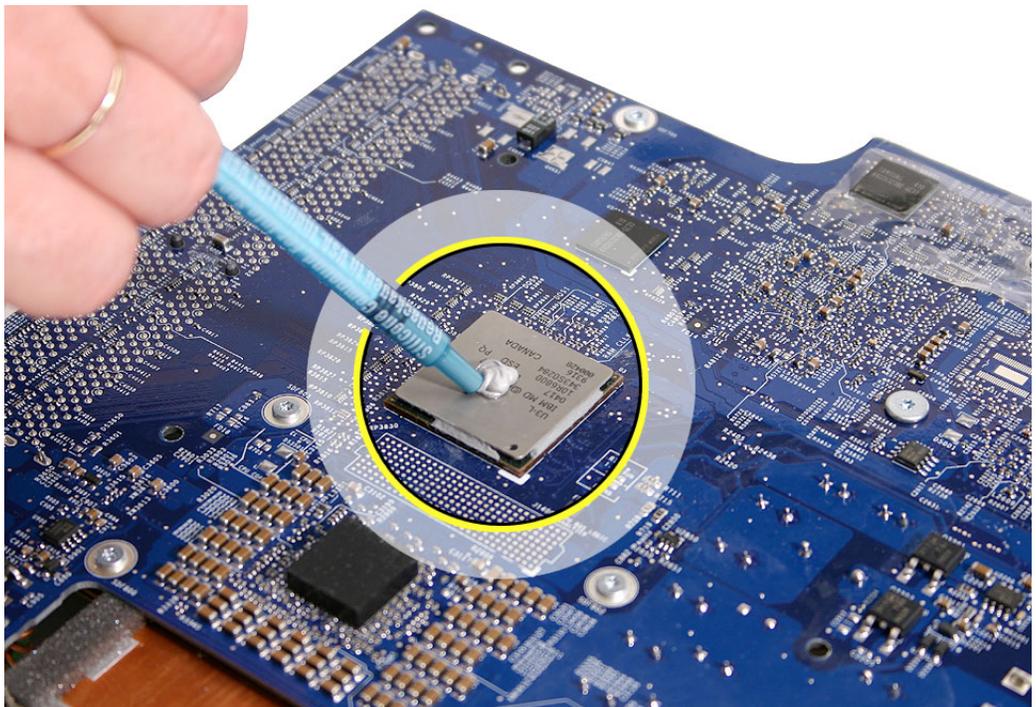
2. Clean the copper heatpad (circled). Use the alcohol wipe to clean the copper heatpad.



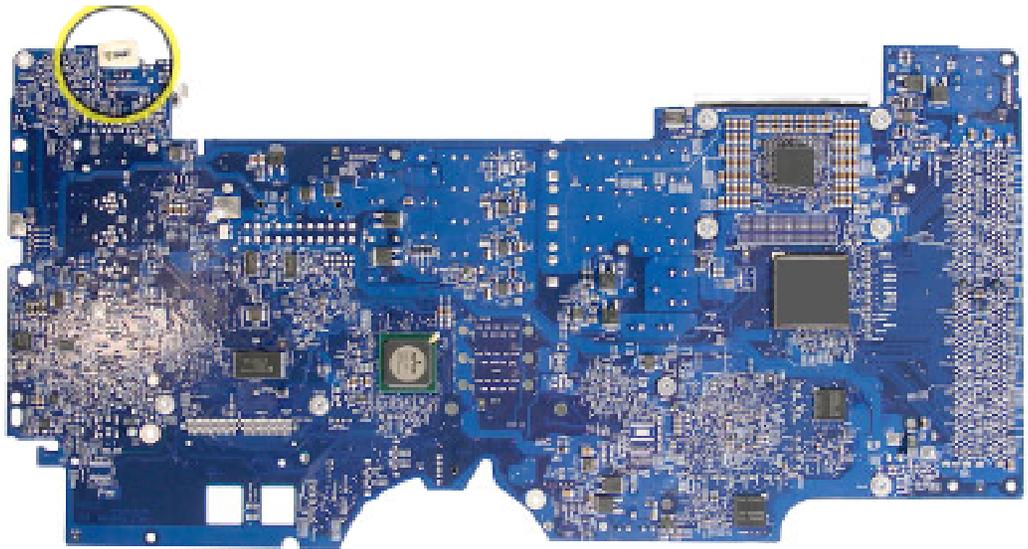
3. Whenever you remove the logic board clean the U3 chip (circled) and reapply thermal grease.



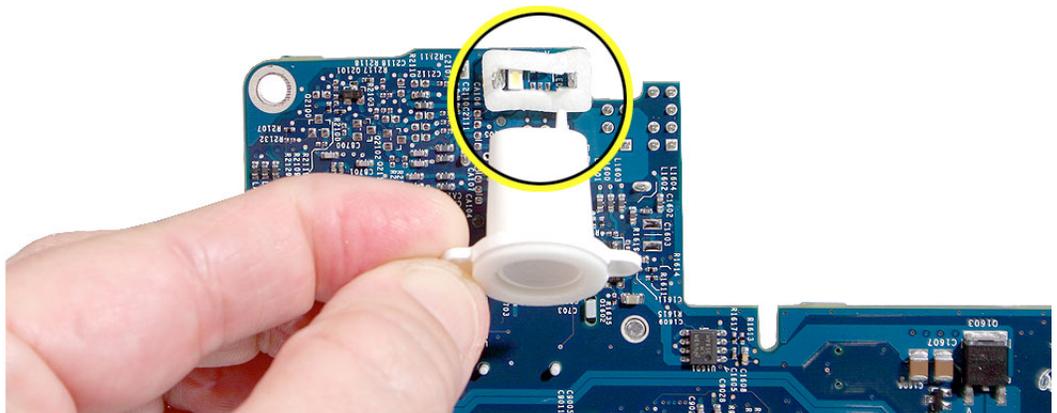
4. Add 1 1/2 to 2 syringes of thermal grease to the U3 chip to ensure sufficient cooling. Spread the paste evenly across the surface of the chip.



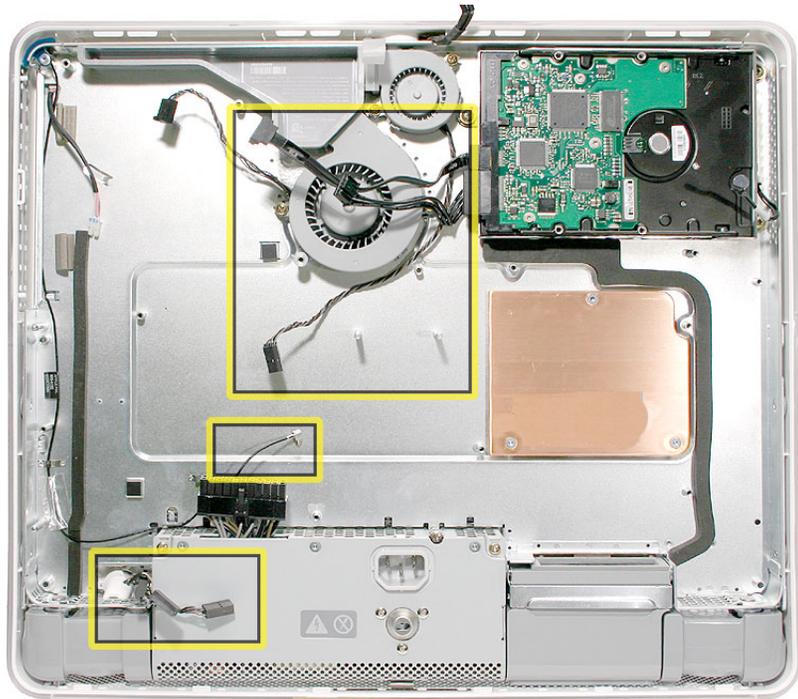
5. Locate the light pipe gasket on the replacement board. Peel the adhesive backing off of the gasket.



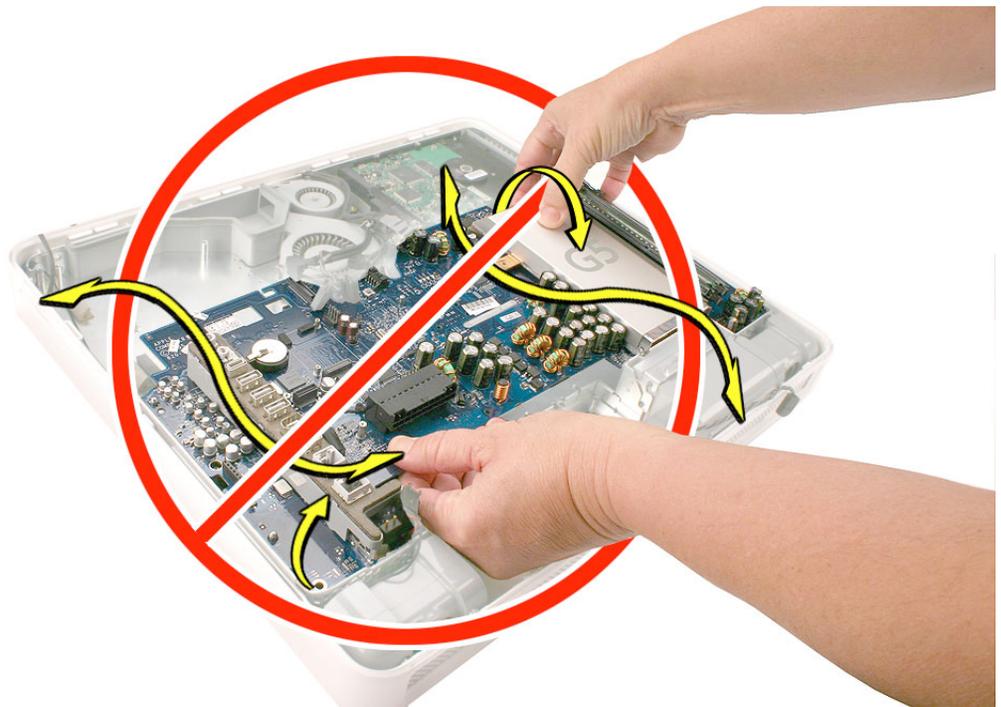
6. Position the light pipe over the logic board so that the pin on the light pipe aligns with the hole in the logic board. Press the light pipe onto the gasket.



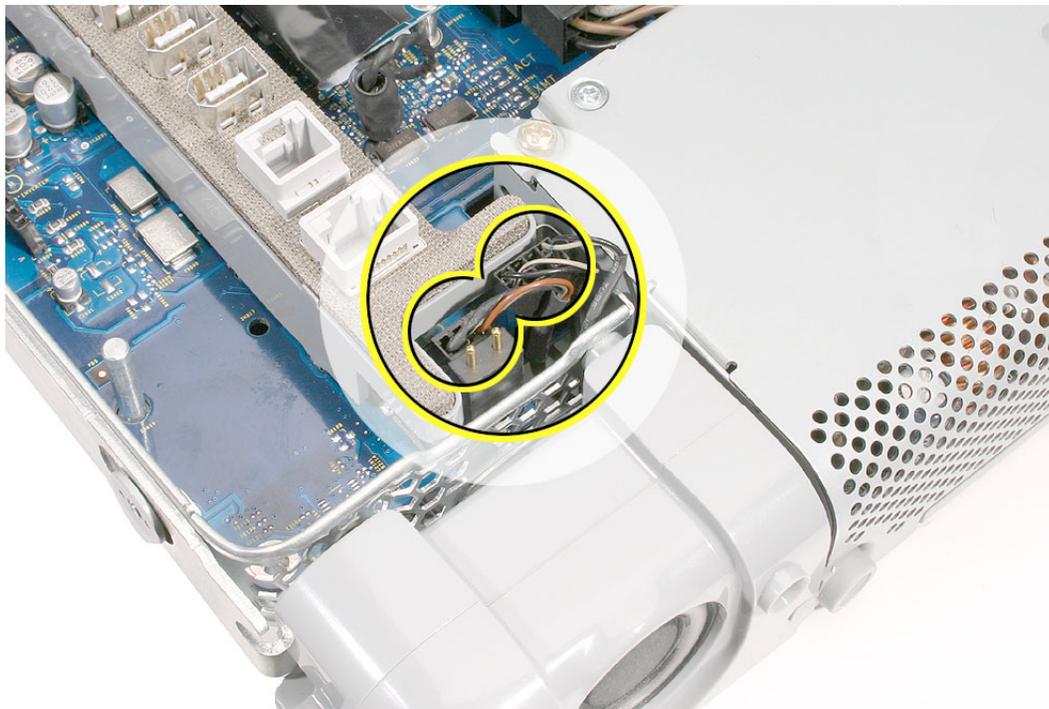
7. Before placing the logic board into the midplane chassis, move or tape the cables (shown below) out of the way.



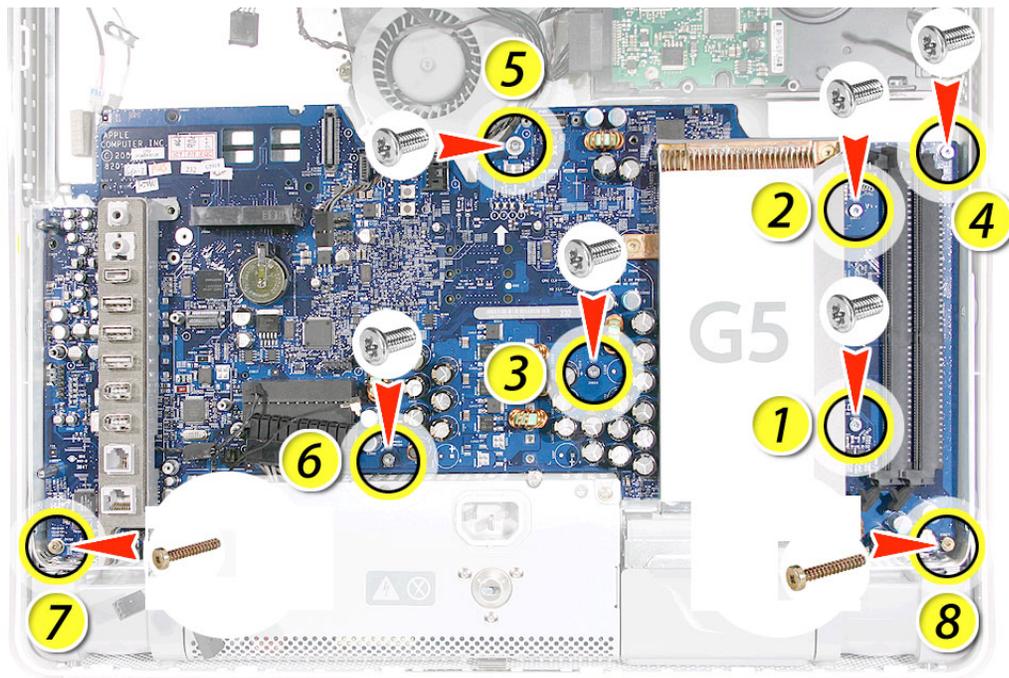
8. Lower the logic board into the chassis. **Caution:** Do not twist, bend or flex the board as you lower it into the chassis. Flexing the board may jeopardize the thermal interface between the heatsink and the processor. Make sure the light pipe seats properly into the bottom left corner and that the cables are not caught under the board.



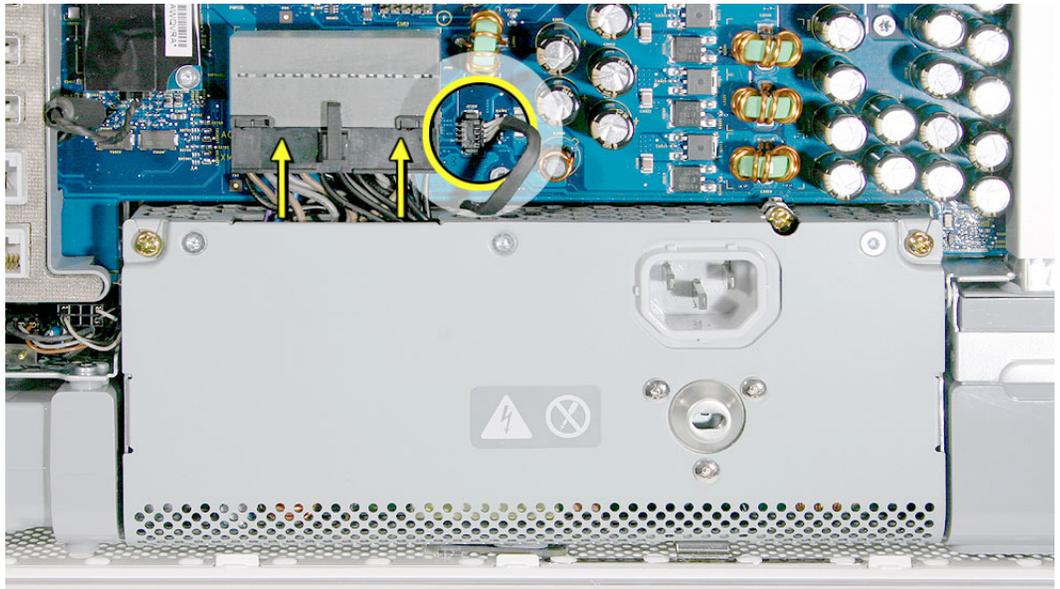
9. Connect the microphone and speaker cables to the logic board.



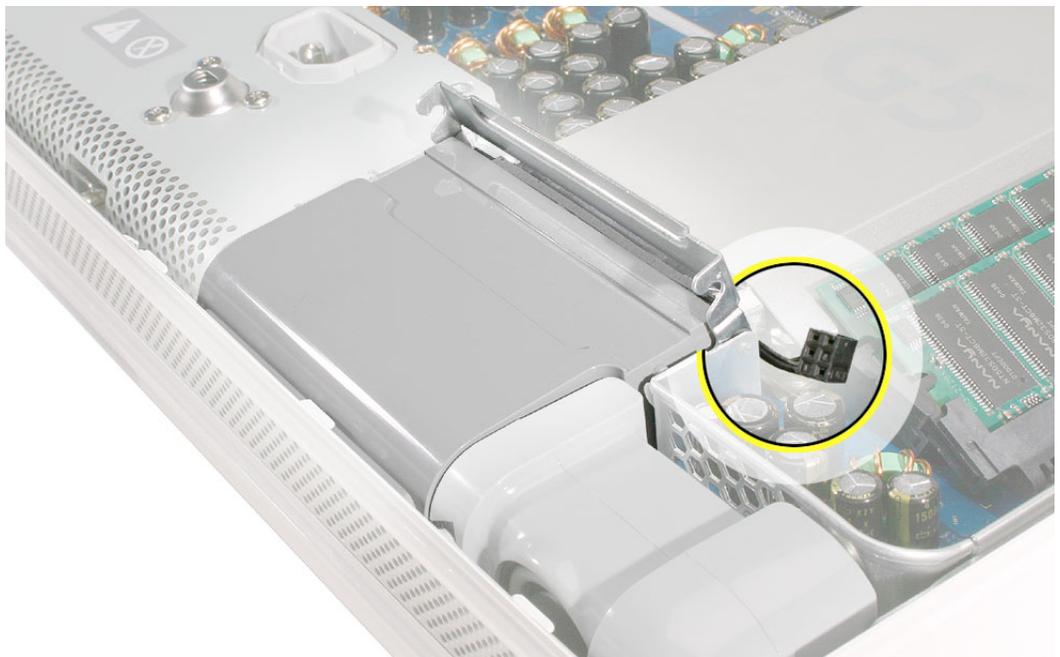
10. Using a T-10 screwdriver, replace the six silver torx logic board screws. Use a Phillips #2 to replace the three brass screws. **Note:** Make sure the hard drive cables are not obstructing the screw hole at the top of the logic board.



11. Connect the power supply cable and the ambient light sensor.



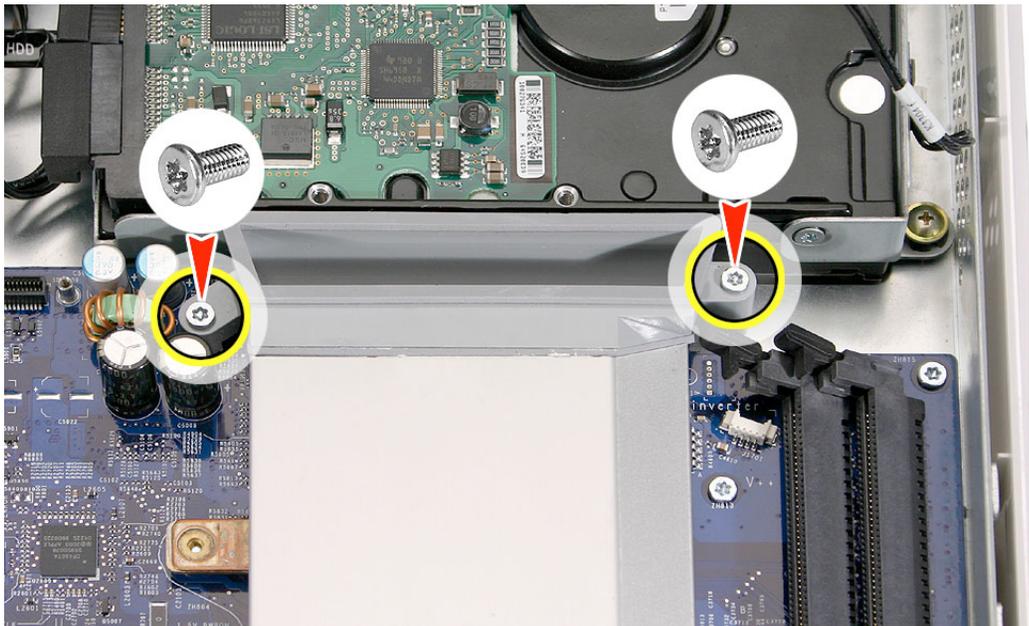
12. Connect the lower fan cable.



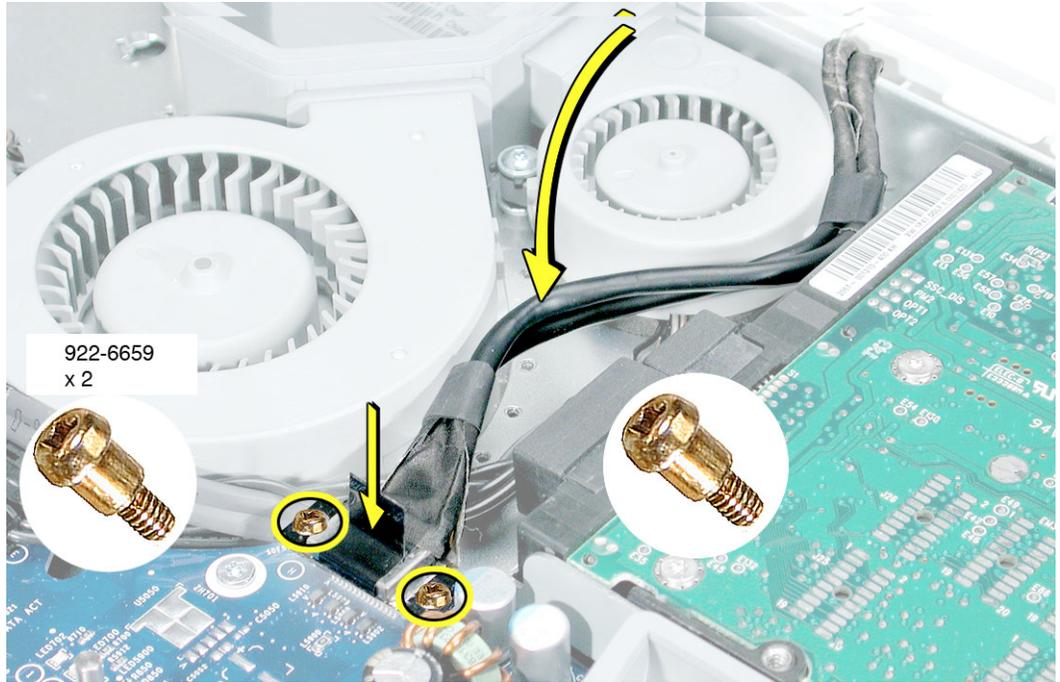
13. Connect the hard drive thermal sensor (near the memory slots) to the logic board.



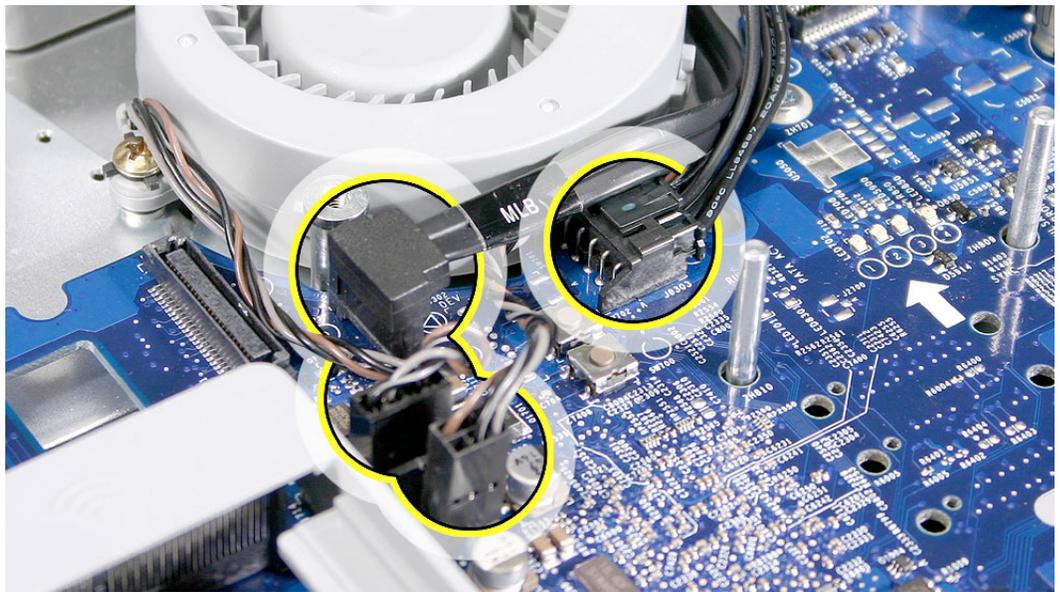
14. Using a T-8 screwdriver, connect the two fan duct screws. **Note:** These two screws are longer than the other silver screws securing the logic board to the midplane chassis.



15. Connect the video cable to the logic board and replace the two screws.



16. Reconnect the hard drive and fan cables to the logic board.



17. Replace the memory.

18. Replace the inverter.

19. Replace the optical drive.

20. Replace the AirPort and Bluetooth card and connect the antennas.

21. Replace the modem.

- 
22. Replace the fan cover.
  23. Replace the back cover.



# Antenna Cable, Right

## Tools Required

- Nylon probe tool
- Flat-blade jeweler's screwdriver

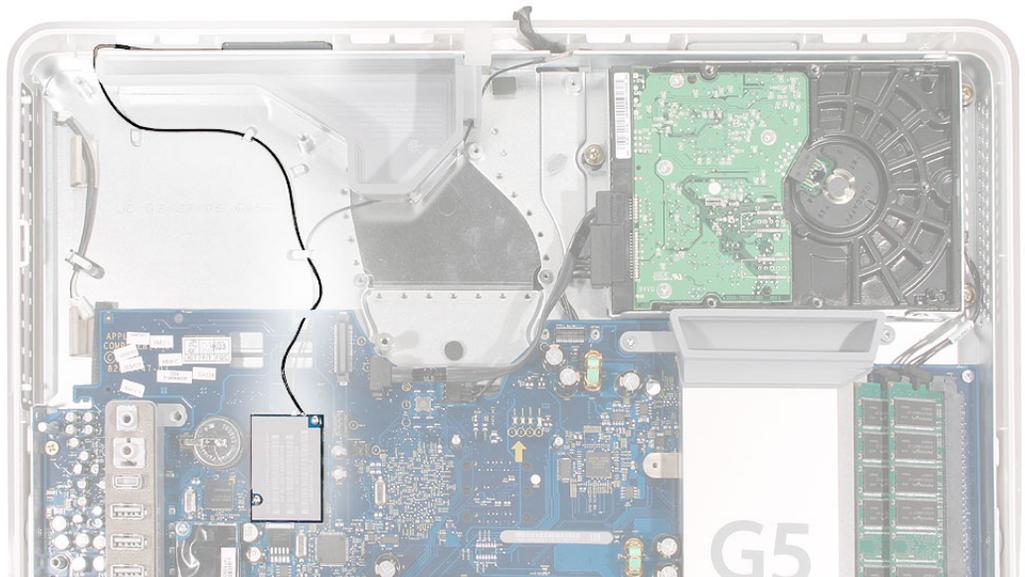
## Preliminary Steps

Before you begin, remove the following:

- Back cover
- Optical drive
- AirPort and Bluetooth combo card

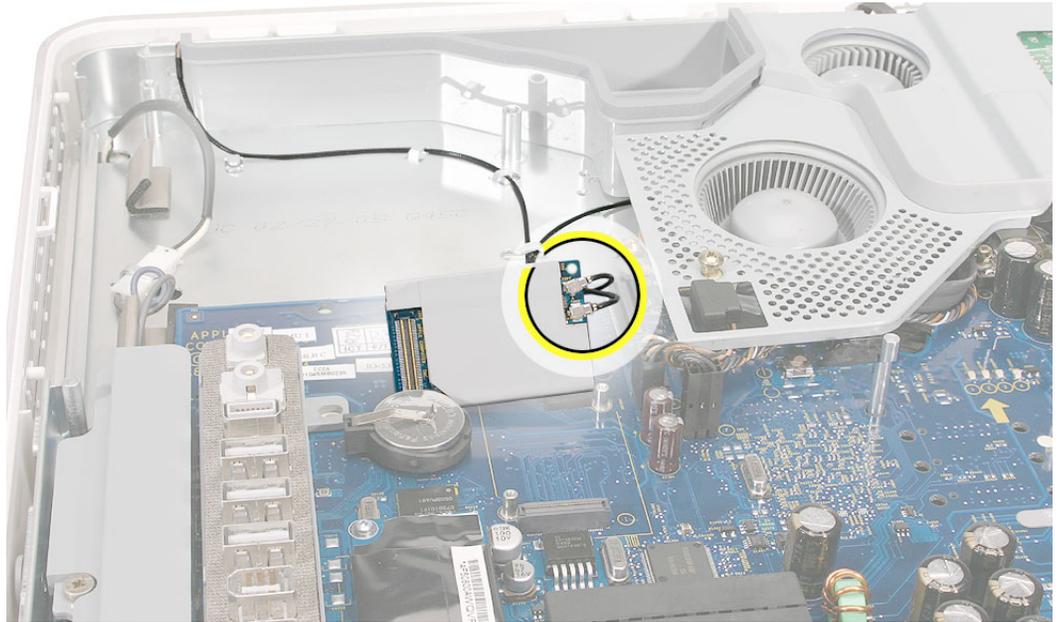
**Note:** The antenna cables are identified left and right from a frontal orientation, as if you were looking at the screen.

## Part Location

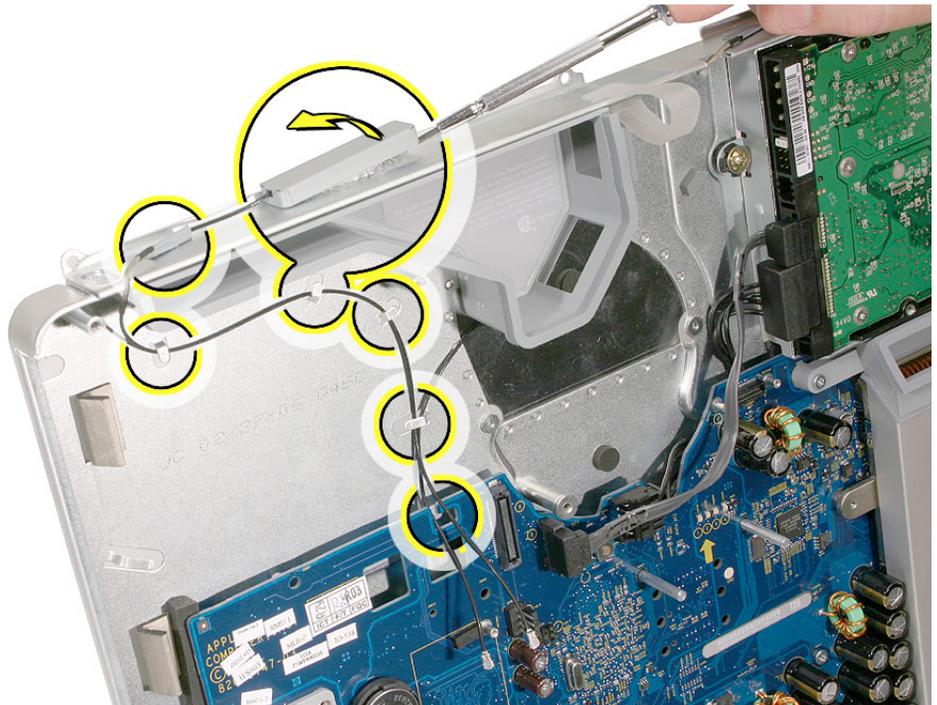


## Removing the Right Antenna Cable

1. Disconnect the antenna cable from the AirPort/Bluetooth board.



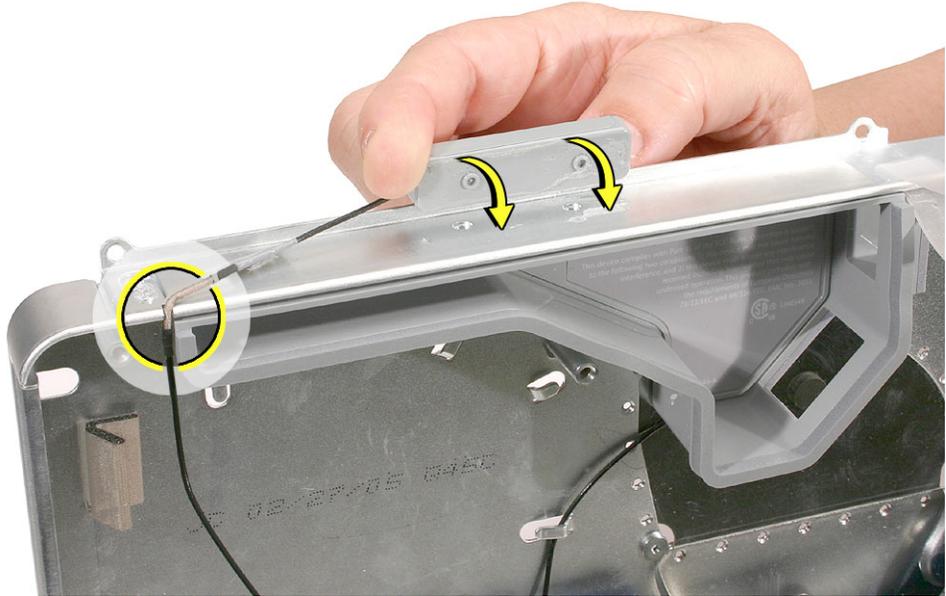
2. Release the right antenna from the metal tabs on the chassis. Use a nylon probe tool to pry up the antenna holder from its adhesive on the chassis.



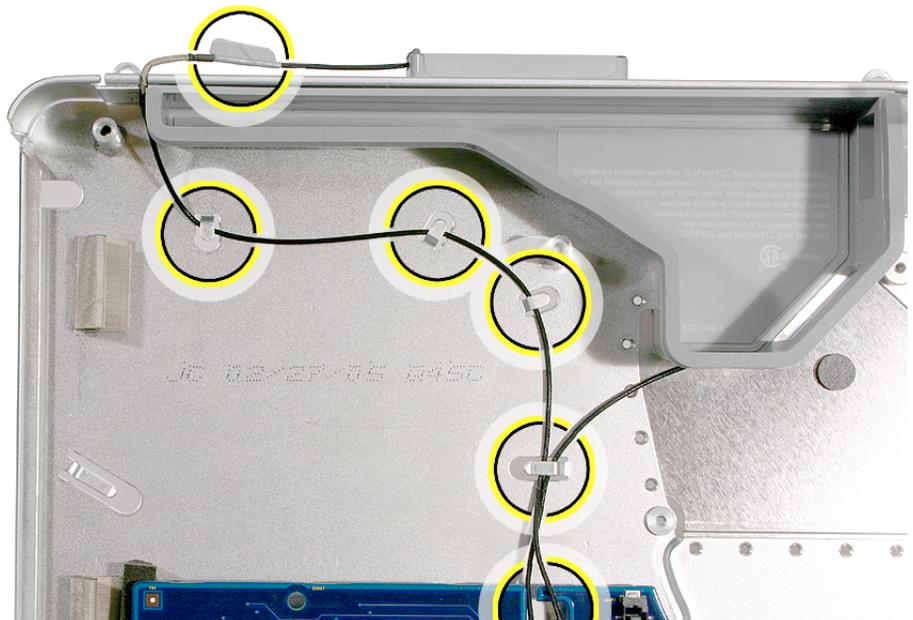
## Replacing the Right Antenna Cable

1. Route the exposed part of the antenna (top left side of the chassis) into the cut out on the chassis.

If you are replacing the right antenna cable with a new one, rub away any remaining adhesive on the top of the midplane chassis. Peel off the backing on the replacement antenna cable, and press the antenna holder onto the chassis. Line up the two bumps on the antenna holder with the indents on the chassis.



2. Route the antenna cable under the metal tabs on the chassis. On the top of the chassis, secure the antenna label/tape to the chassis.



- 
3. Connect the AirPort and Bluetooth antennas to the AirPort/Bluetooth board.
  4. Replace the AirPort/Bluetooth board.
  5. Replace the optical drive.
  6. Replace the back cover.



# Antenna Cable, Left

## Tools Required

- Nylon probe tool
- Flat-blade jeweler's screwdriver

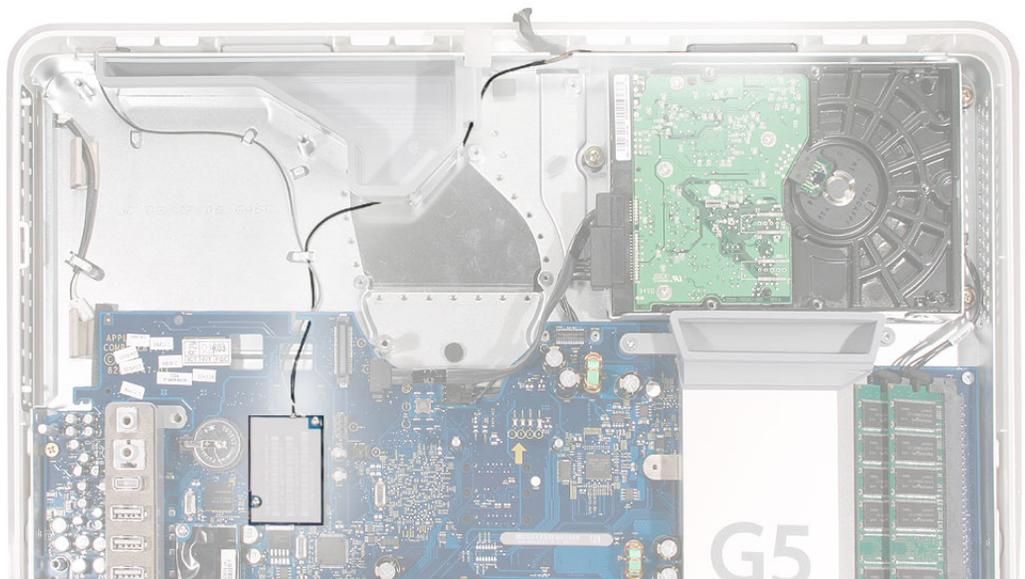
## Preliminary Steps

Before you begin, remove the following:

- Back cover
- Optical drive
- AirPort and Bluetooth combo card
- Fan cover
- Upper fans

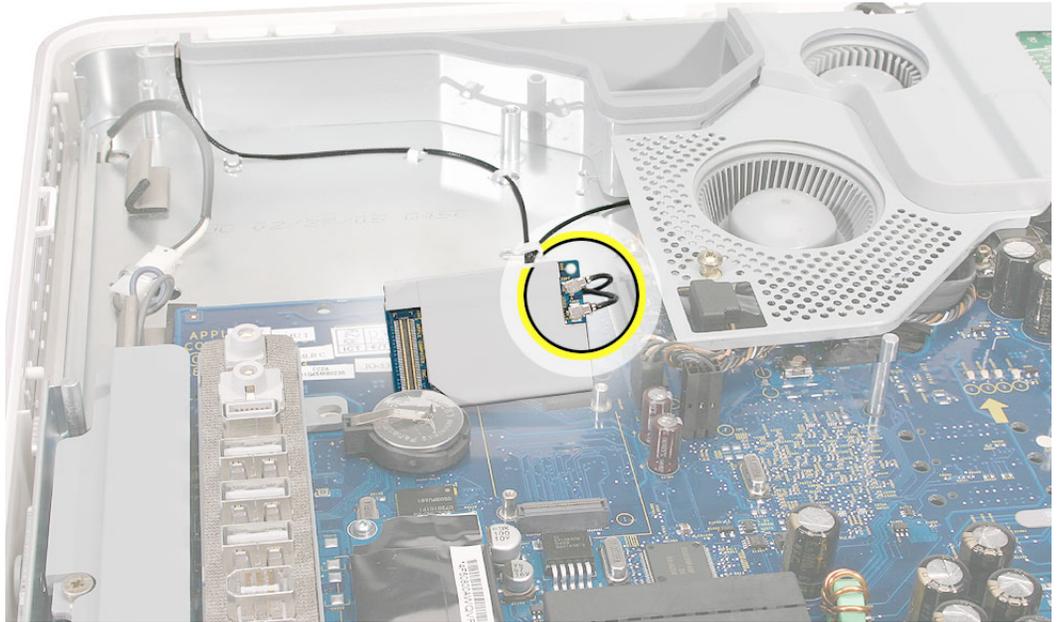
**Note:** The antenna cables are identified left and right from a frontal orientation, as if you were looking at the screen.

## Part Location

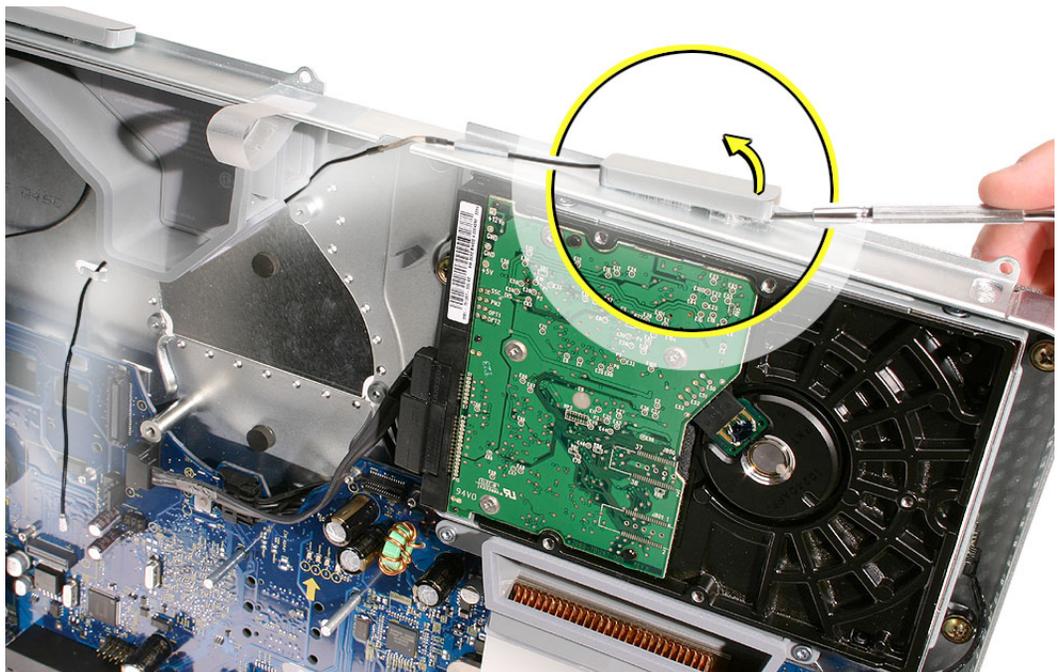


## Removing the Left Antenna Cable

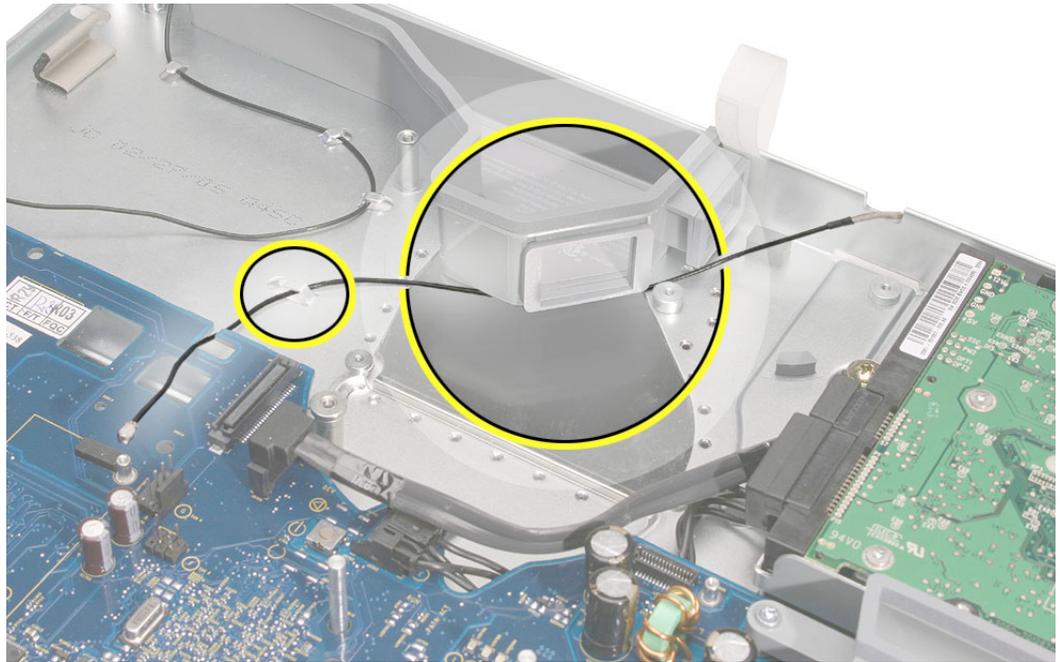
1. Disconnect the antenna cable from the AirPort/Bluetooth board.



2. Use a jeweler's screwdriver or a nylon probe tool to pry up the antenna holder from its adhesive on the chassis.



3. Gently free the antenna from the metal tab on the chassis and pull the antenna out from under the fan duct.

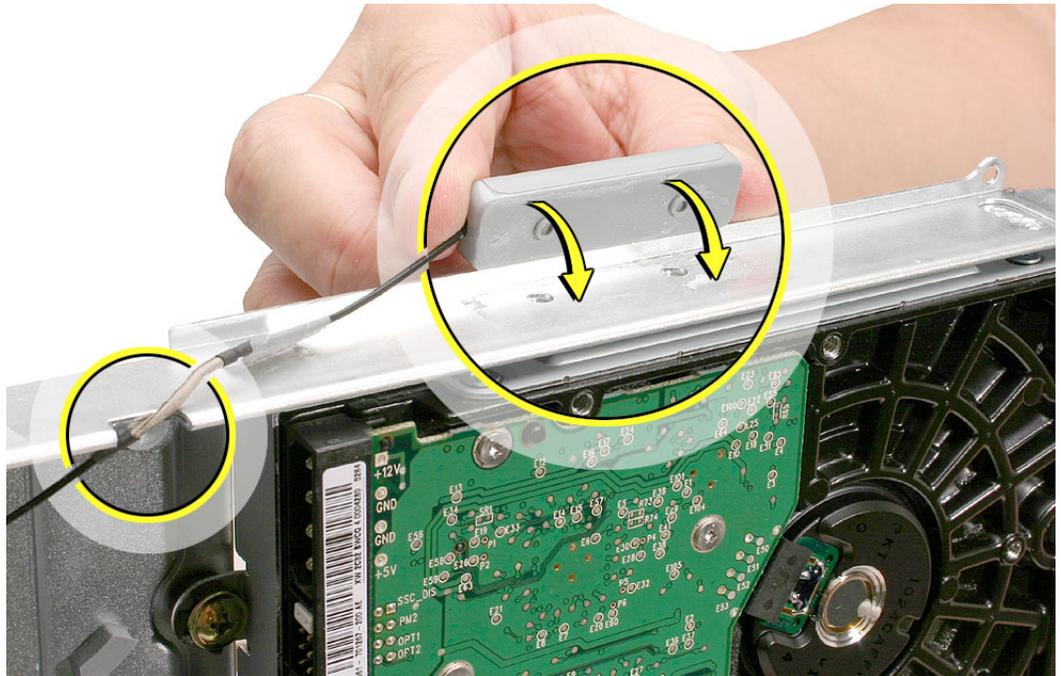


## Replacing the Left Antenna Cable

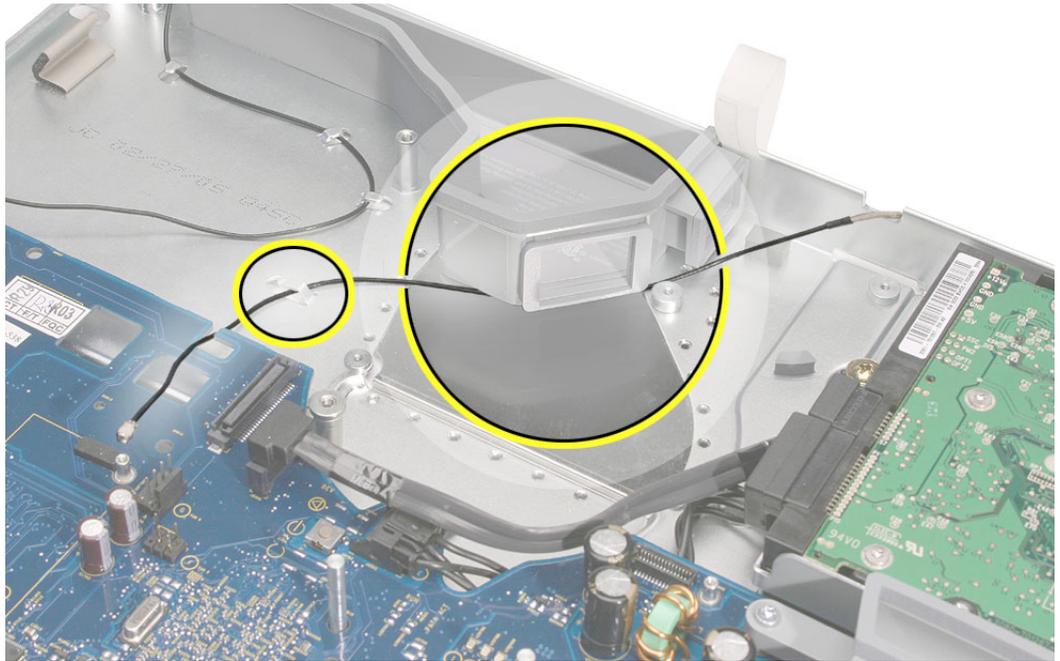
1. Route the exposed part of the antenna (right side of the chassis) into the cut out (circled) on the chassis.

If you are replacing the left antenna cable with a new one, rub away any remaining adhesive on the top of the midplane chassis. Peel off the backing on the replacement antenna cable, and press the antenna holder onto the chassis. Line up the two bumps on the antenna holder with the indents on the chassis.

Press the gray label/tape on the antenna to the top of the chassis.



2. Route the antenna cable under the fan duct and secure the antenna under the metal tab on the chassis.



3. Replace the upper fans.
4. Connect the AirPort and Bluetooth antennas to the AirPort/Bluetooth board.
5. Replace the AirPort/Bluetooth board.
6. Replace the optical drive.
7. Replace the fan cover.
8. Replace the back cover.



# Light Pipe with Gasket

## Tools Required

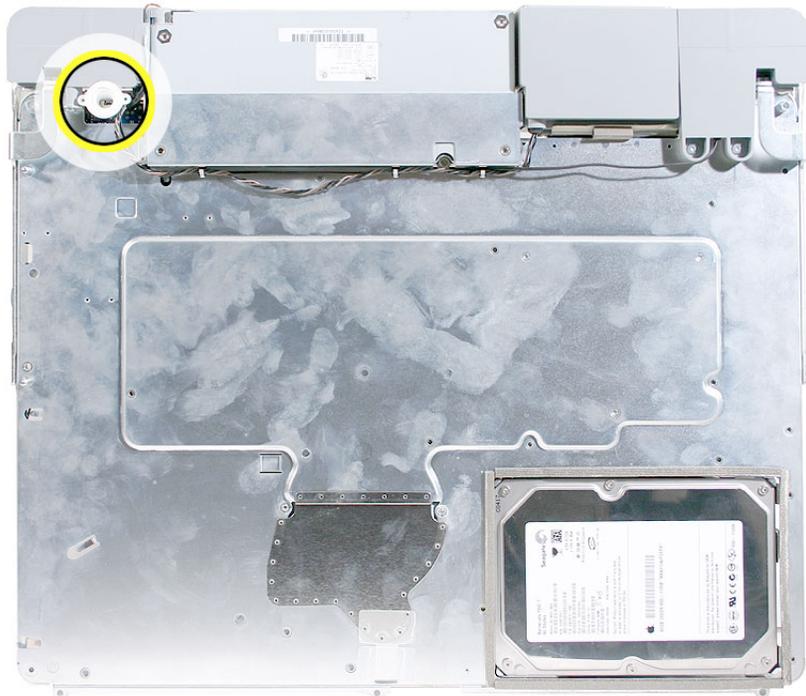
No tools are required for this procedure.

## Preliminary Steps

Before you begin, remove the following:

- Back cover
- Midplane

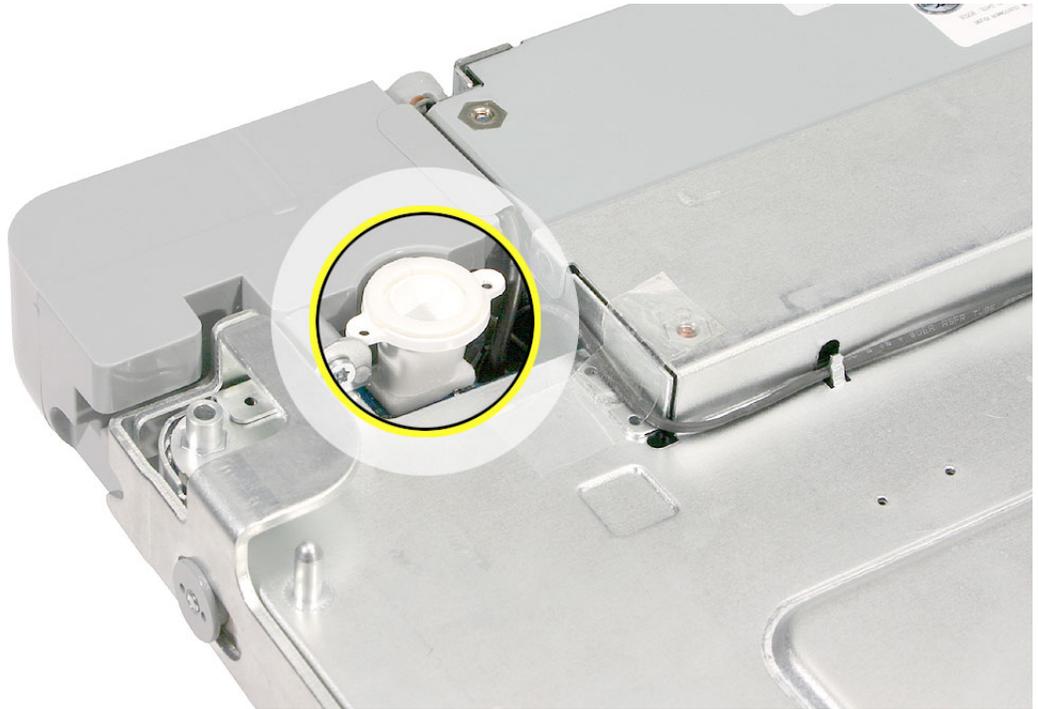
## Part Location



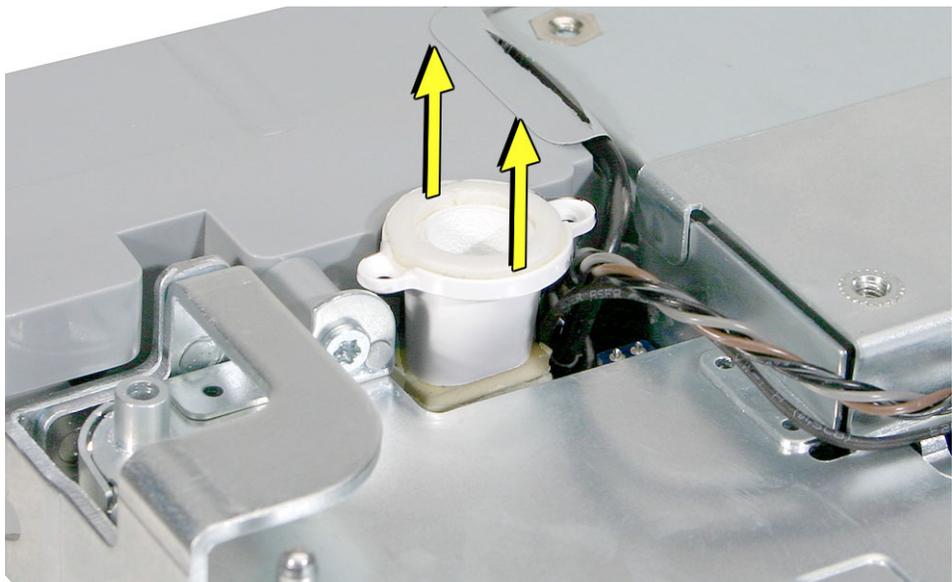
## Removing the Light Pipe with Gasket

**Note:** These instructions are from the original iMac G5 (17-inch) model. The model may look slightly different from iMac G5, 17-inch, Ambient Light Sensor model; however, the following procedure applies to both models.

1. On the underside of the midplane chassis, locate the light pipe.

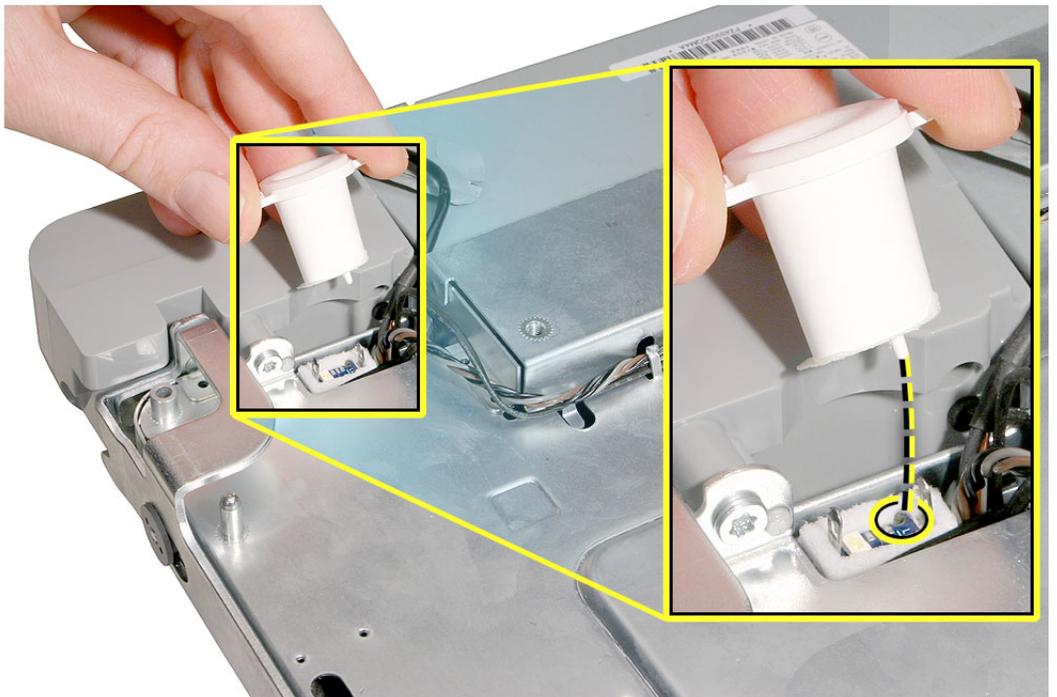
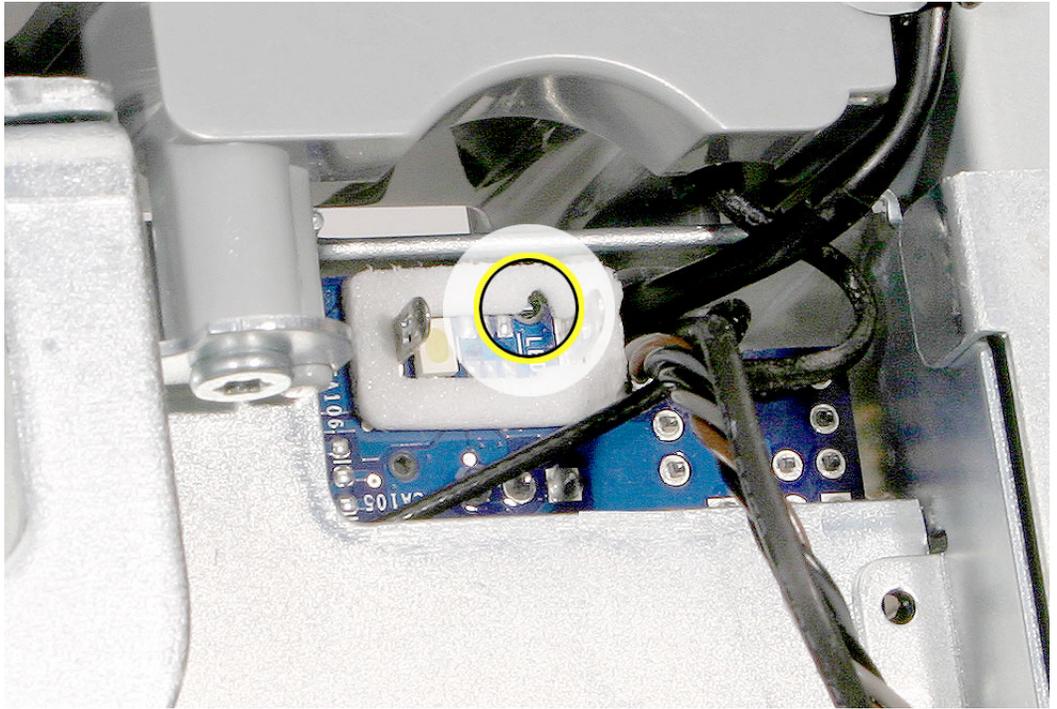


2. Grasping the outer ring of the light pipe, pull it straight off the connector.

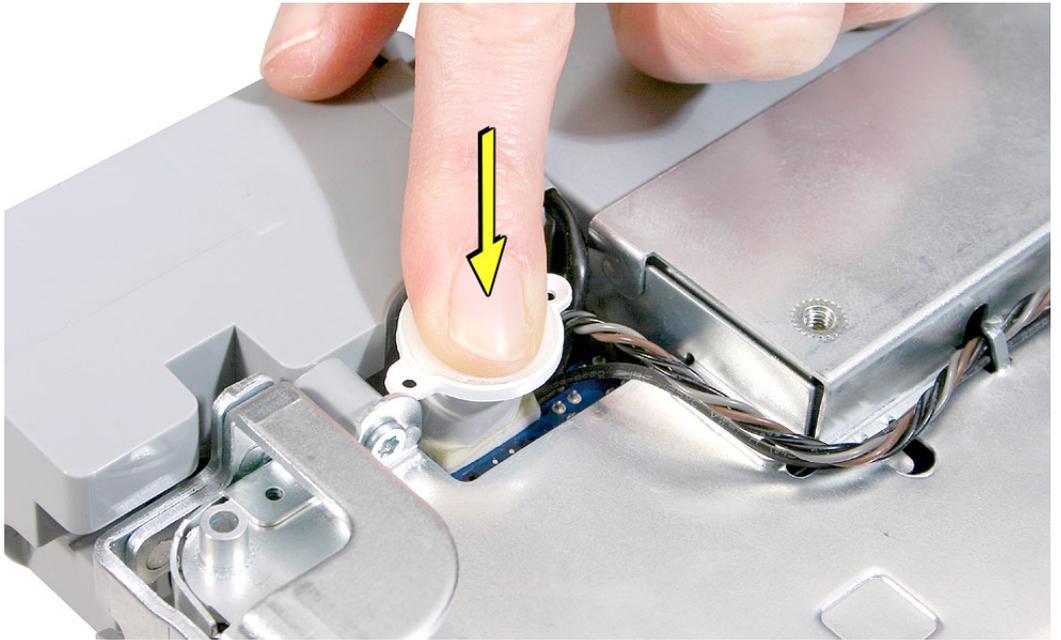


## Replacing the Light Pipe with Gasket

1. Peel the adhesive backing off of the narrower end of the light pipe.
2. Note the small plastic pin on the outer ring of the light pipe. Position the light pipe over the logic board so that the pin aligns with the hole in the logic board.



3. Press the light pipe with gasket into place.



4. Replace the midplane.
5. Replace the back cover.



# Microphone Cable

## Tools Required

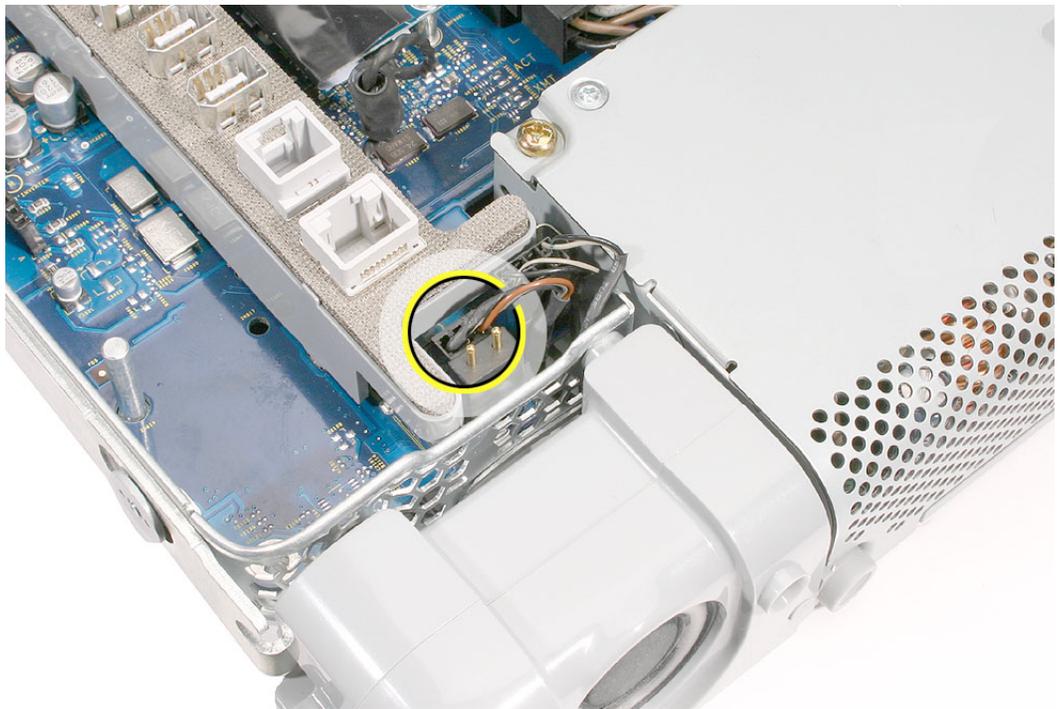
- Needlenose pliers
- Torx T10 screwdriver

## Preliminary Steps

Before you begin, remove the following:

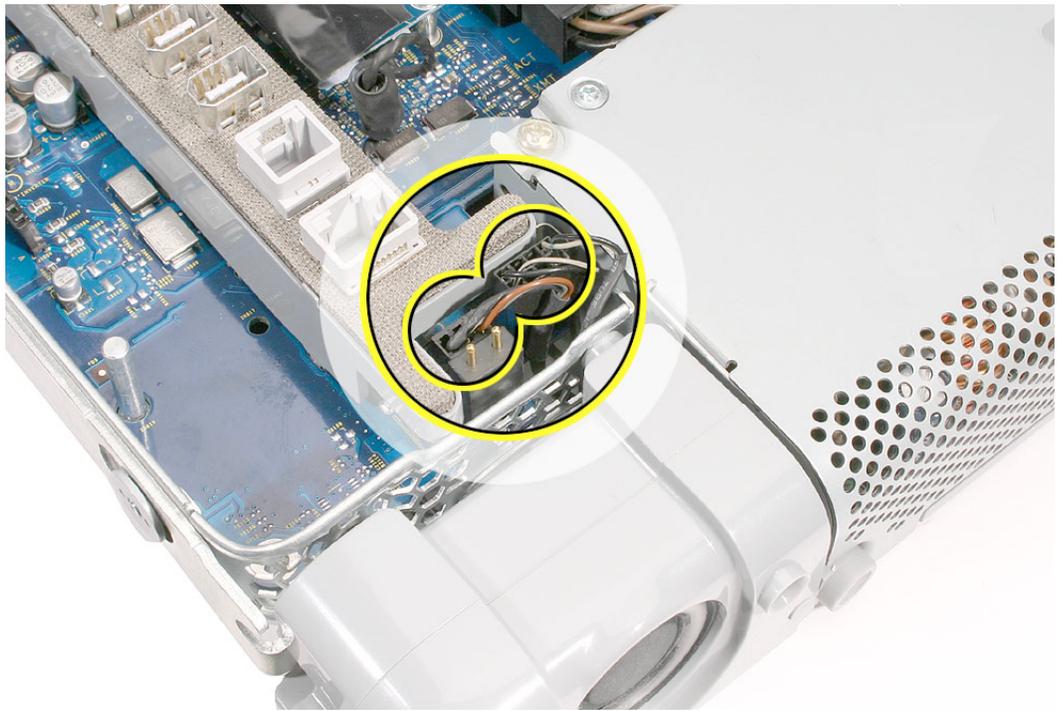
- Back cover
- Midplane
- Light pipe

## Part Location

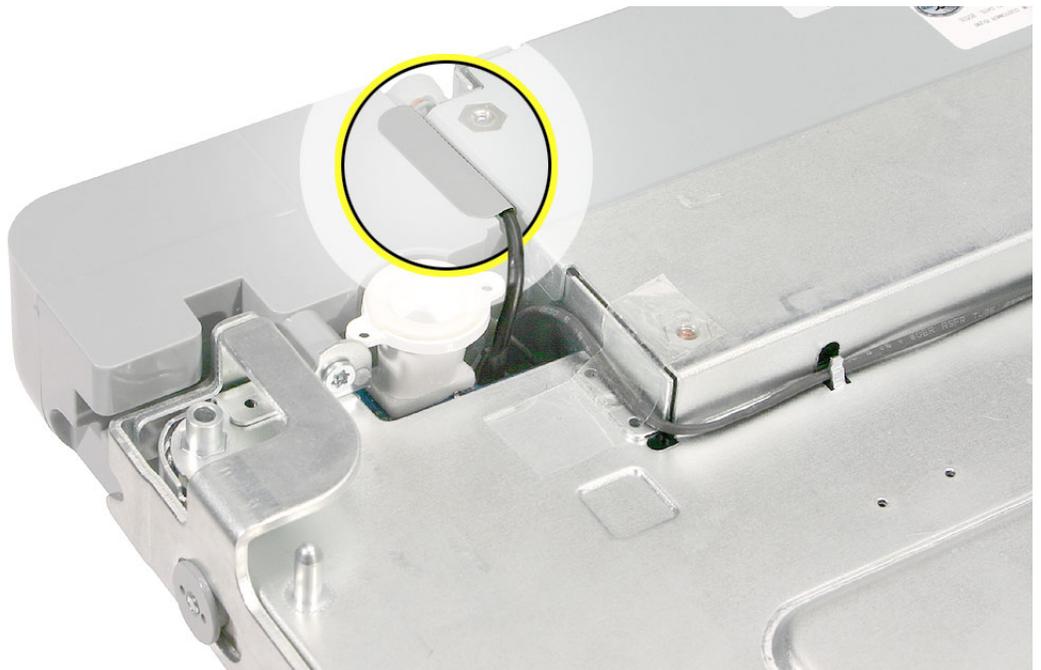


## Removing the Microphone Cable

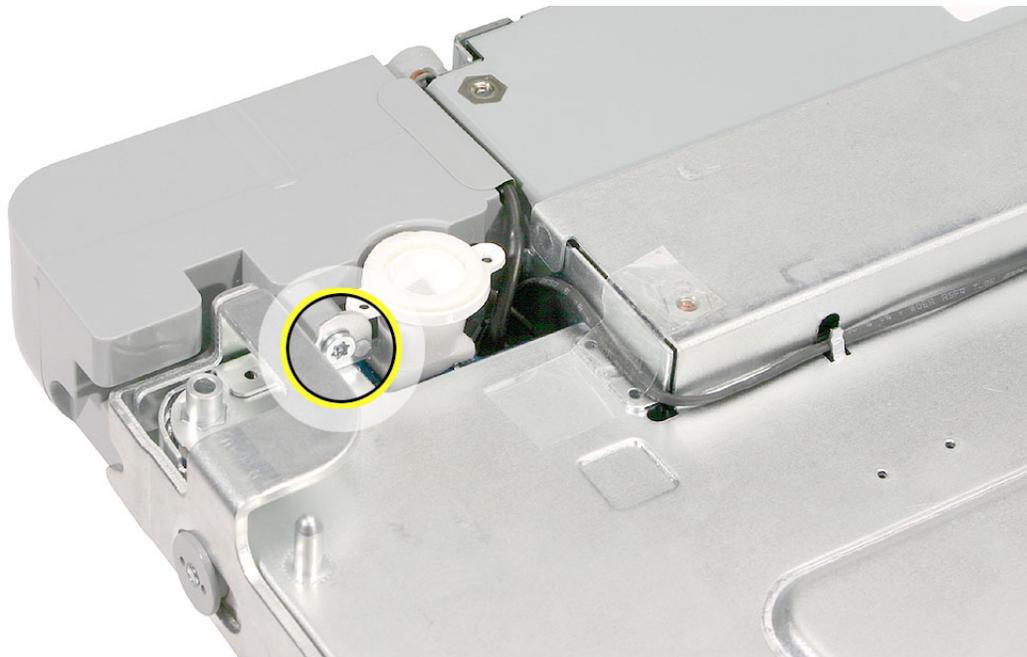
1. From the top of the logic board at the bottom of the port bank, use a needlenose pliers to disconnect the 3-pin microphone cable (left) and the speaker cable (right).



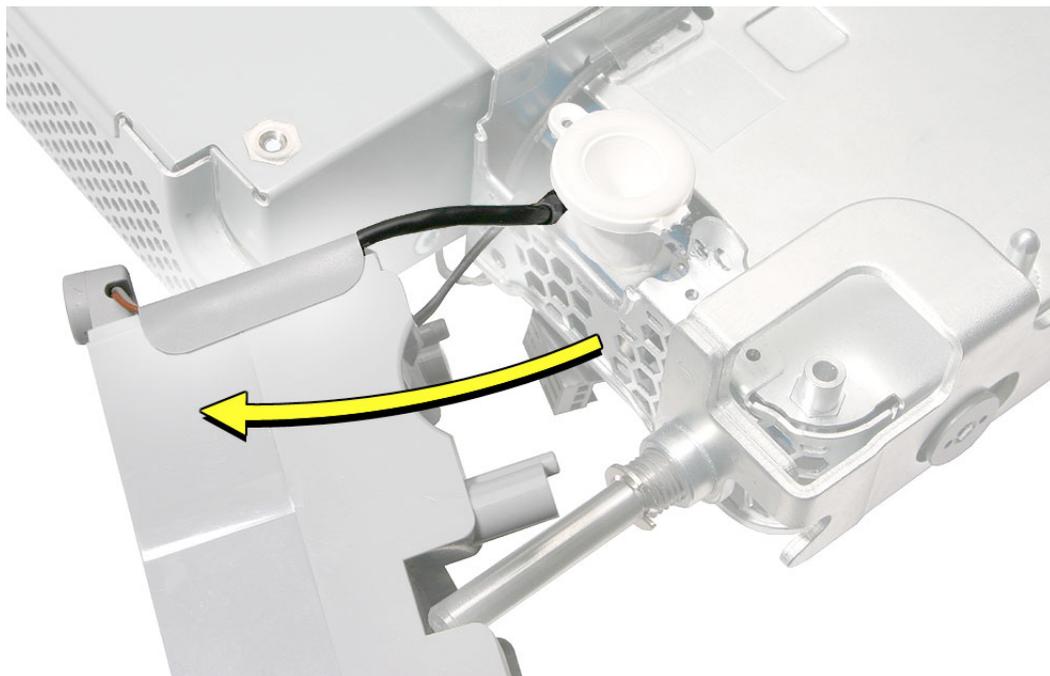
2. Turn over the midplane. Locate the microphone.



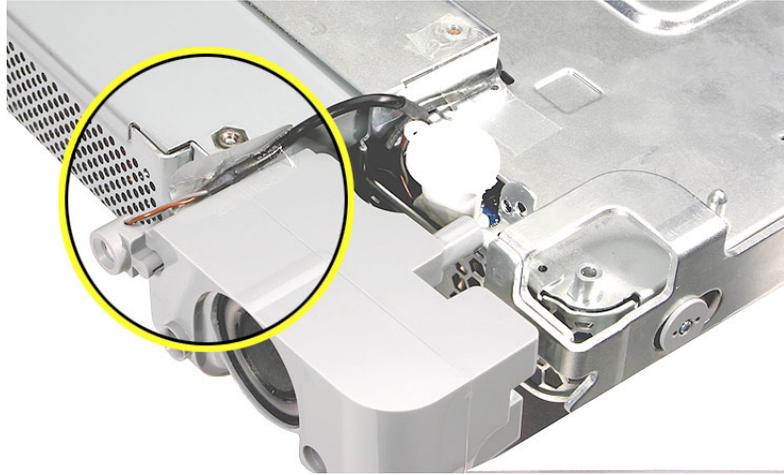
3. Remove the speaker screw (Torx T8) to access the microphone.



4. Pull the speaker forward a bit to access the microphone. Pull the microphone cable through the midplane chassis.



5. Note the routing of the microphone cable. Peel up the speaker tape, and lift up the microphone cable from the speaker channel. Slide the microphone off the speaker.

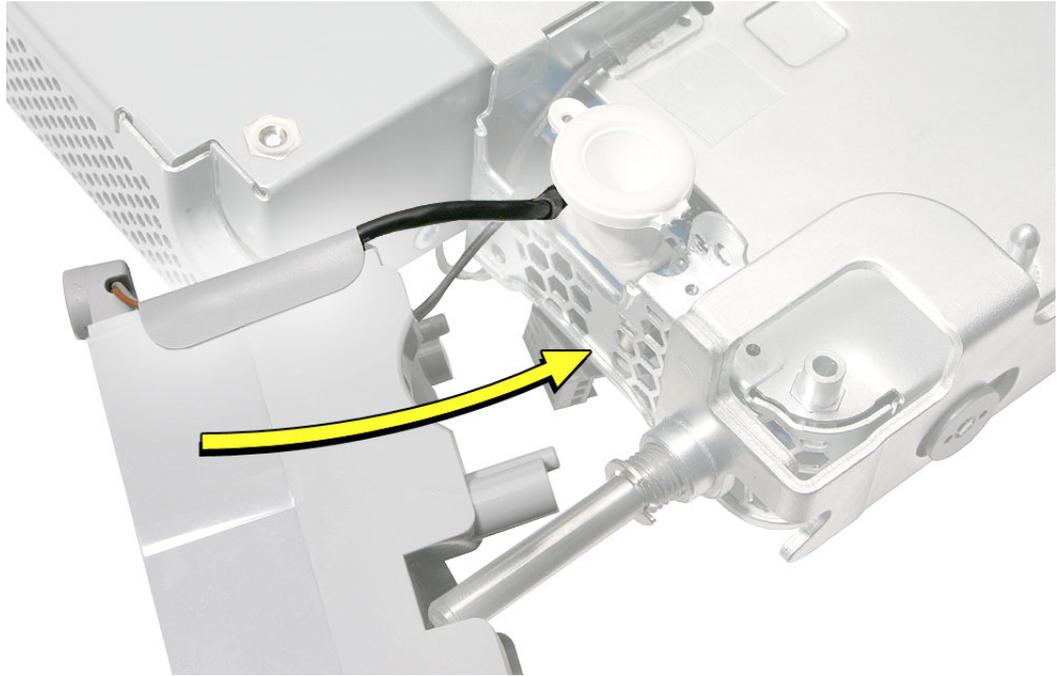


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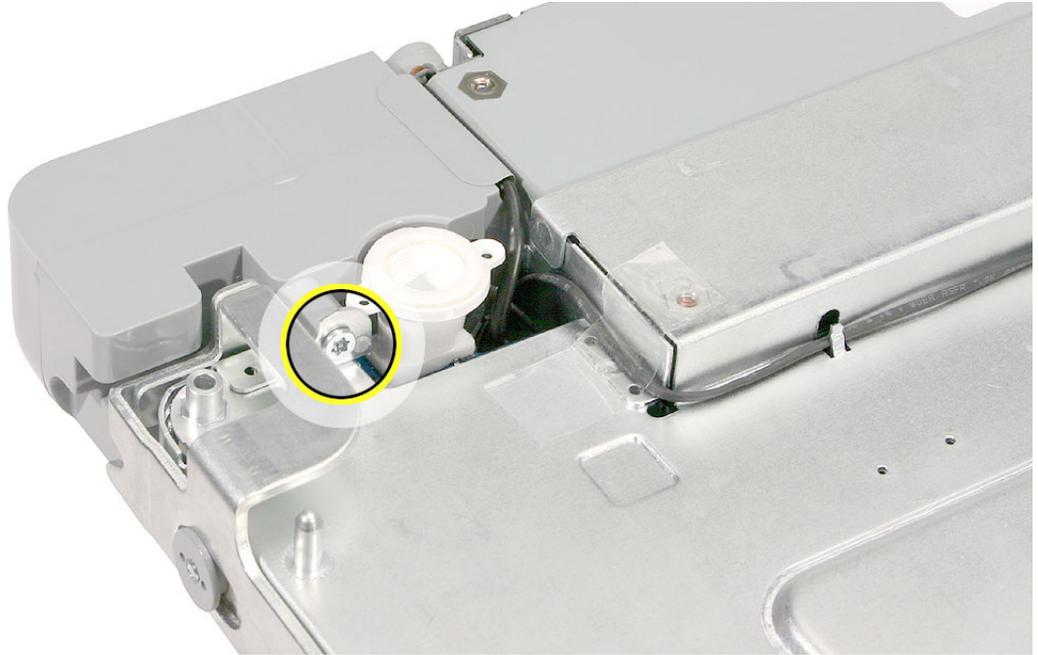
## Replacing the Microphone Cable

1. Secure the microphone cable to the speaker, and apply new tape. Route the microphone cable connector through the chassis opening.
2. Slide the speaker back onto the chassis standoff.

**Note:** A strip of new tape comes with both a replacement microphone cable and a replacement speaker set.



3. Replace the speaker screw.



4. Turn over the midplane. Connect the microphone and speaker to the logic board.



5. Replace the midplane.
6. Replace the back cover.



# Speaker Set

## Tools Required

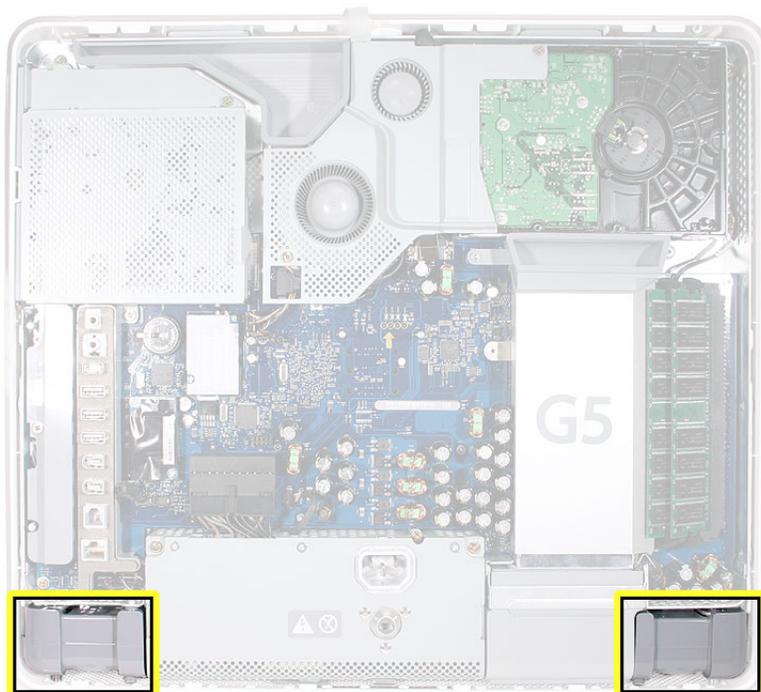
- Needlenose pliers
- Torx T10 screwdriver
- Flat-blade screwdriver
- Screw tray or something equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the following:

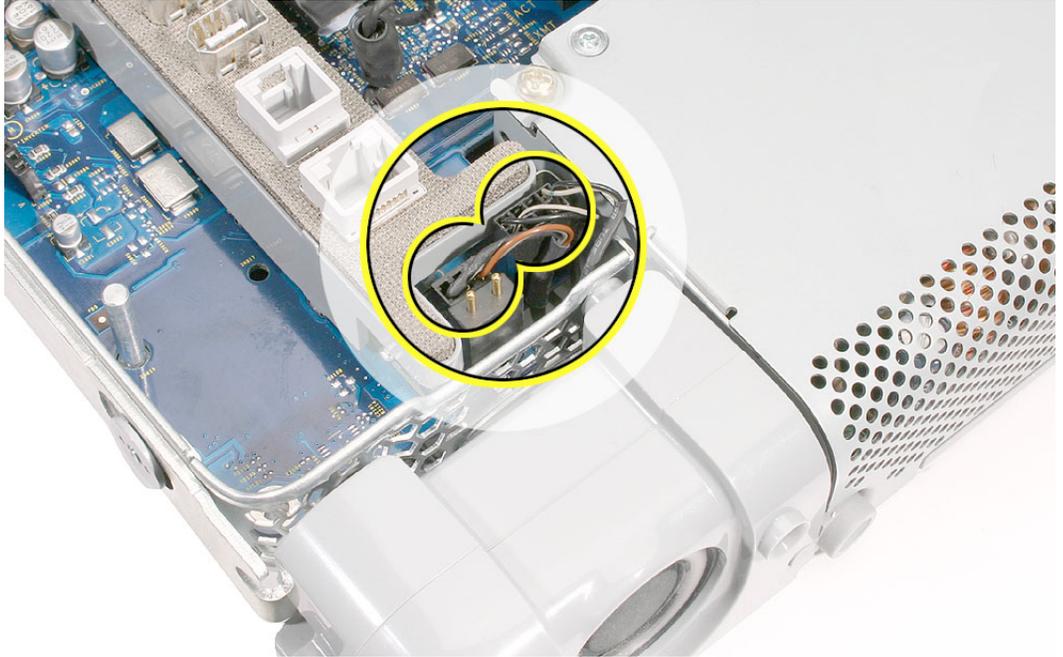
- Back cover
- Midplane

## Part Location

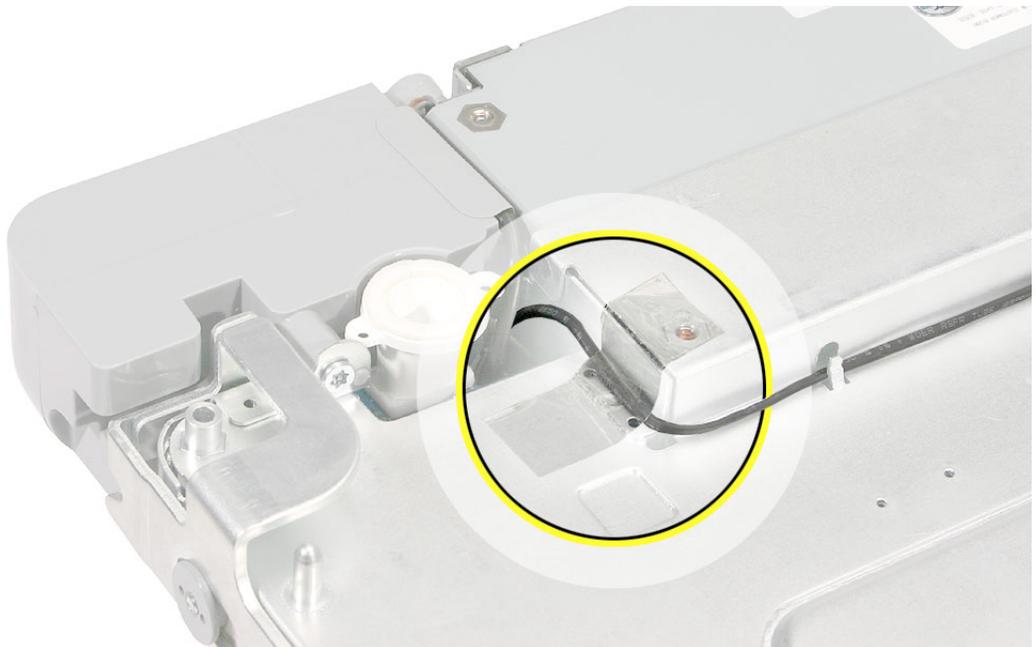


## Removing the Speaker Set

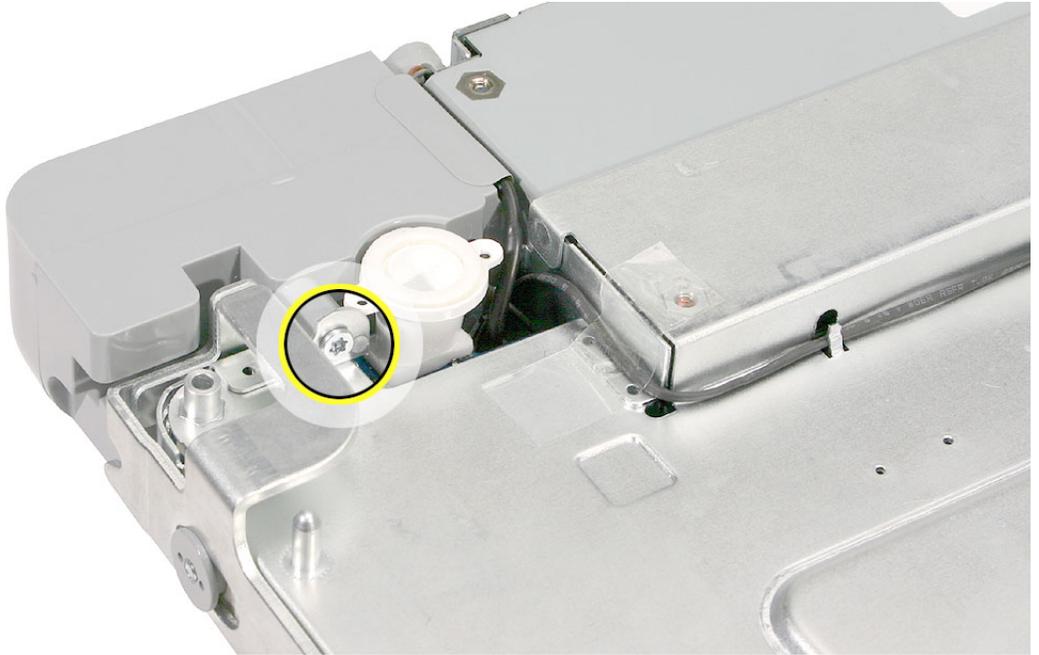
1. Locate the two speakers on the midplane chassis.
2. From the top of the logic board at the bottom of the port bank, use a needlenose pliers to disconnect the two cable connectors: microphone and speaker.



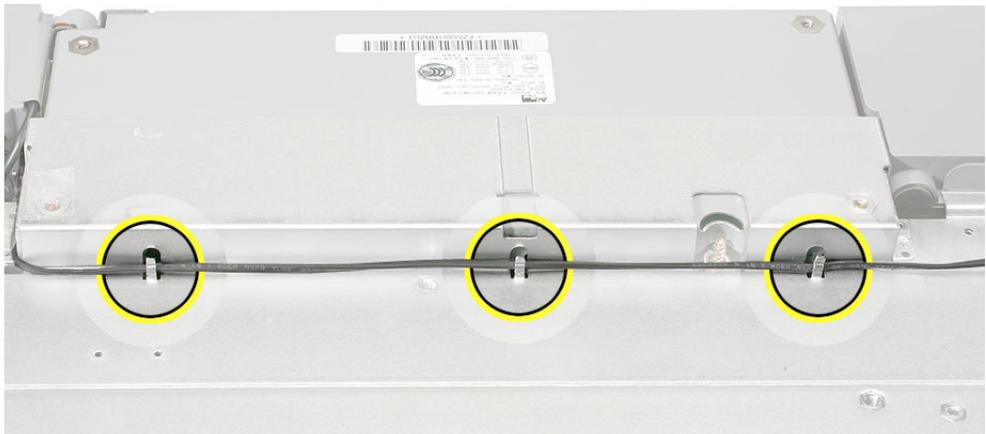
3. Turn over the midplane. Peel back the tape securing the speaker cable to the midplane chassis.



4. Remove the speaker screw (T-10).



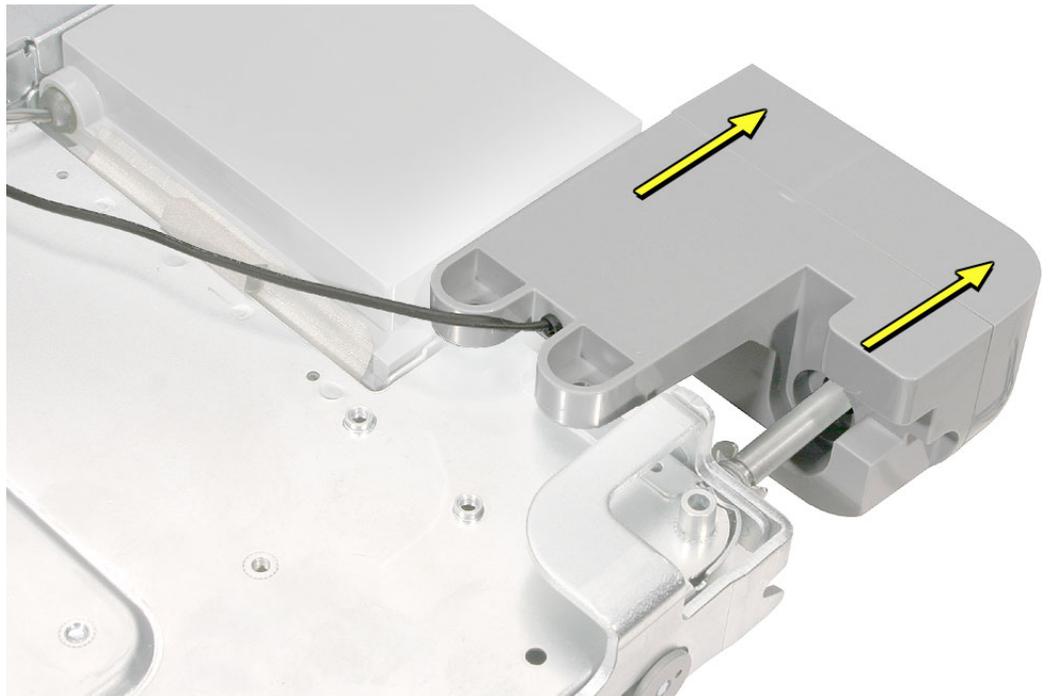
5. Without straining the speaker cable, use a flat-blade screwdriver to carefully open the cable guides on the underside of the midplane chassis.



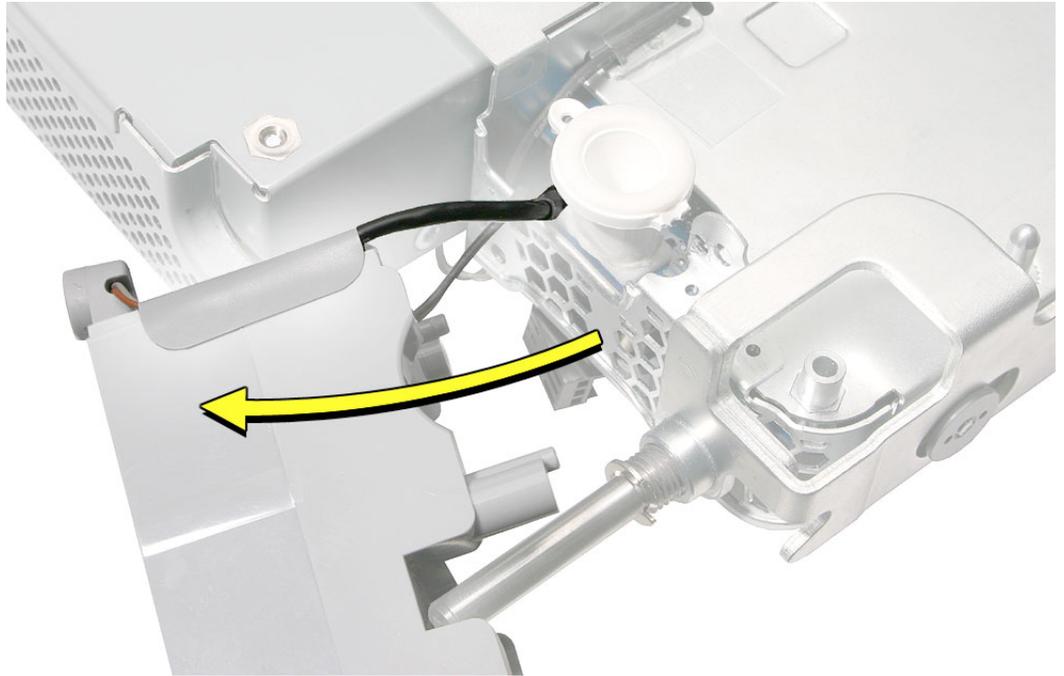
6. Remove the two screws at the other speaker.



7. Slide the speaker off of the chassis standoff.



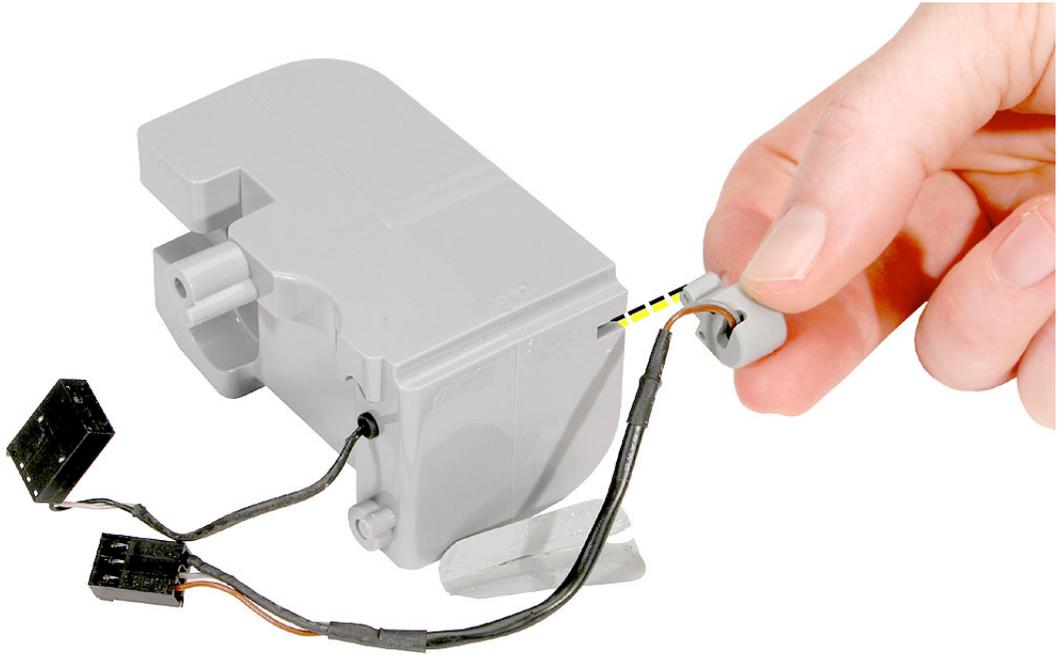
8. Repeat removal on the other speaker.



- 
9. **Replacement Note:** If you are replacing the speaker set, remove the microphone cable from the speaker and transfer it to the new speaker set.

To remove the microphone cable,

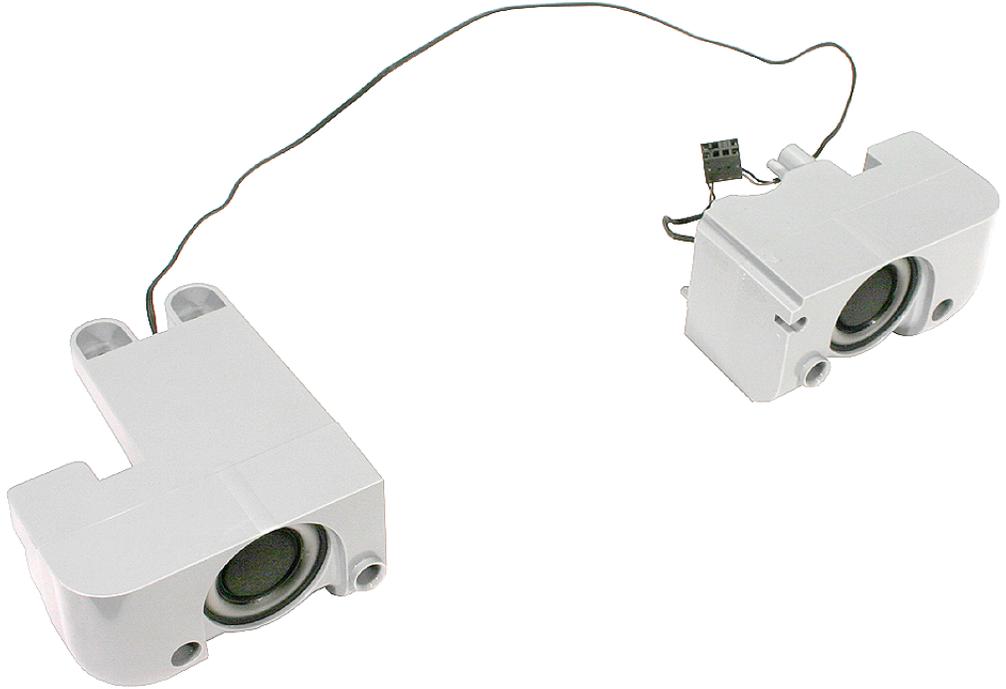
- peel up the speaker tape
- lift up the microphone cable
- slide out the rubber microphone gasket



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## Replacing the Speaker Set

1. **Note:** The speaker set includes the two speakers, speaker housing, and attached cable and connector.



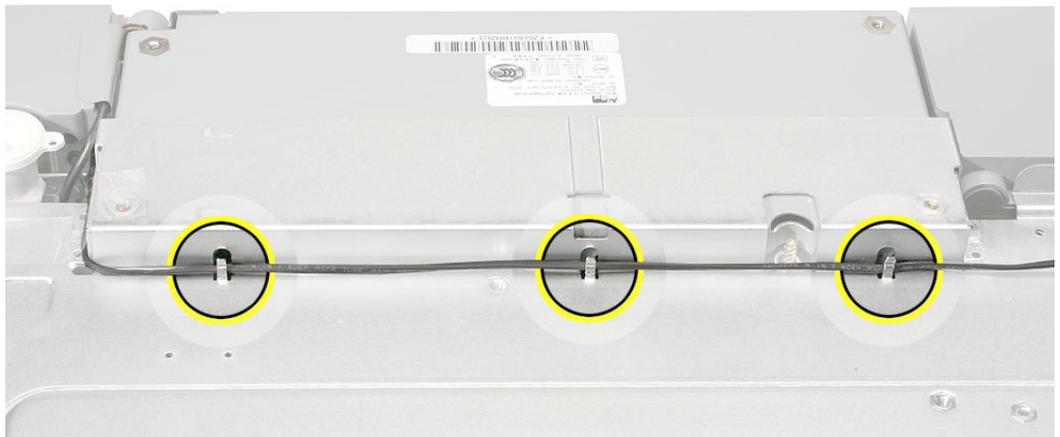
2. Secure the microphone cable to the speaker, and apply new tape.

**Note:** A strip of new tape comes with both a replacement speaker set and a replacement microphone cable.

3. Replace the speaker closest to the lower fan.

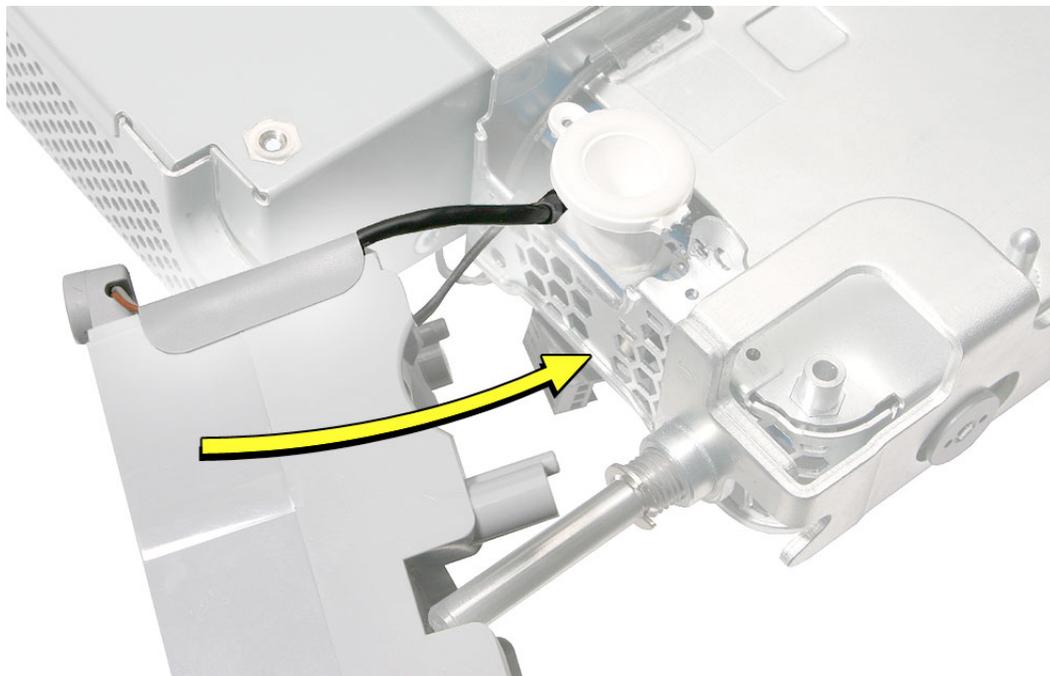


4. Route the speaker cable into the cable guides. Then route the fan cable on top of it.

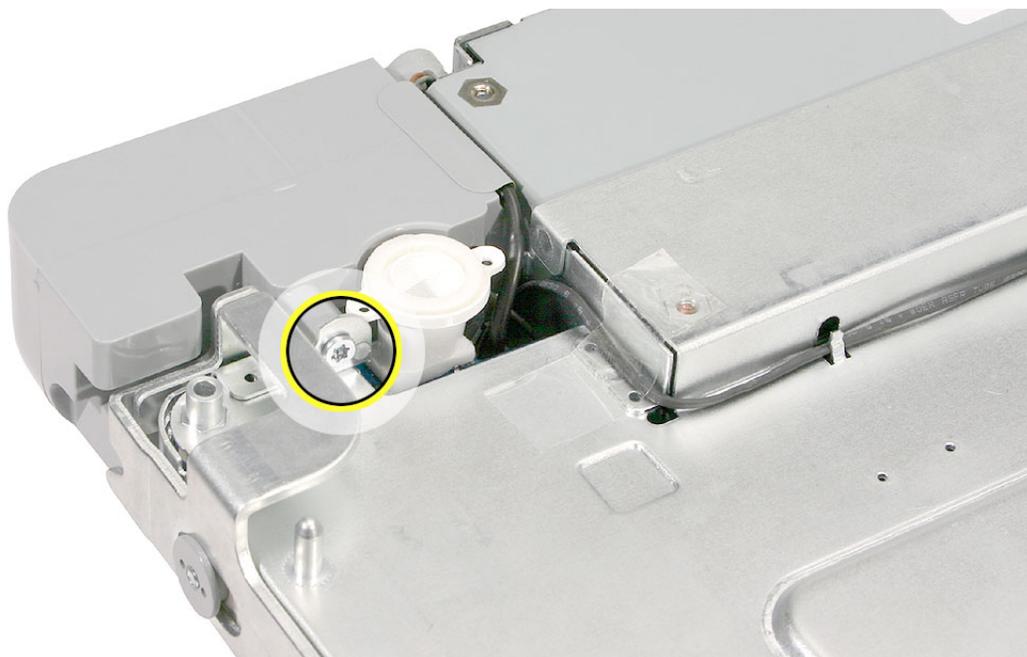


5. Gently press on the cable guides to ensure that the cables cannot become loose.

6. Install the remaining speaker to the chassis.



7. Replace the single screw and secure the speaker cable to the chassis with the clear tape.



8. Route the two cable connectors up through the chassis opening:
9. Connect the two connectors.



10. Replace the midplane.
11. Replace the back cover.



# Lower Fan

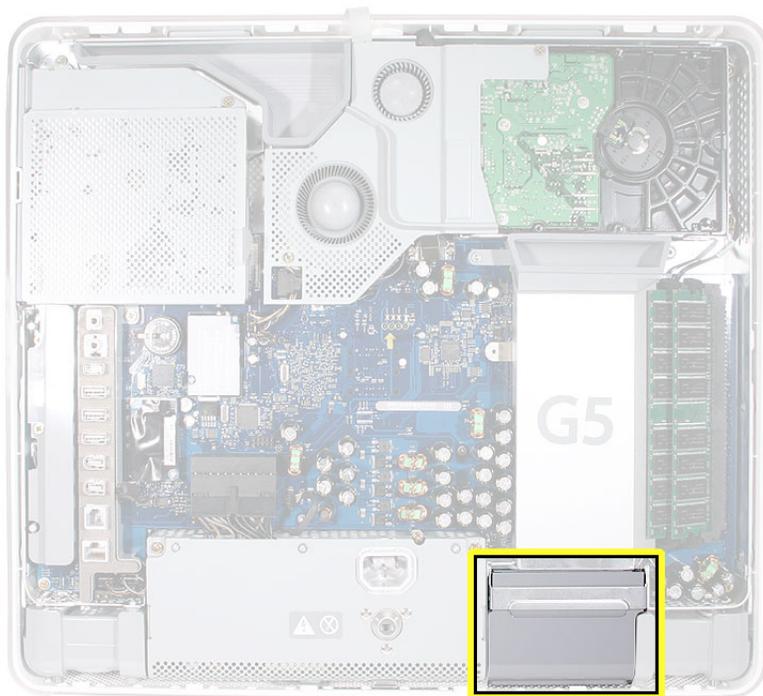
## Tools Required

- Flat-blade screwdriver

## Preliminary Steps

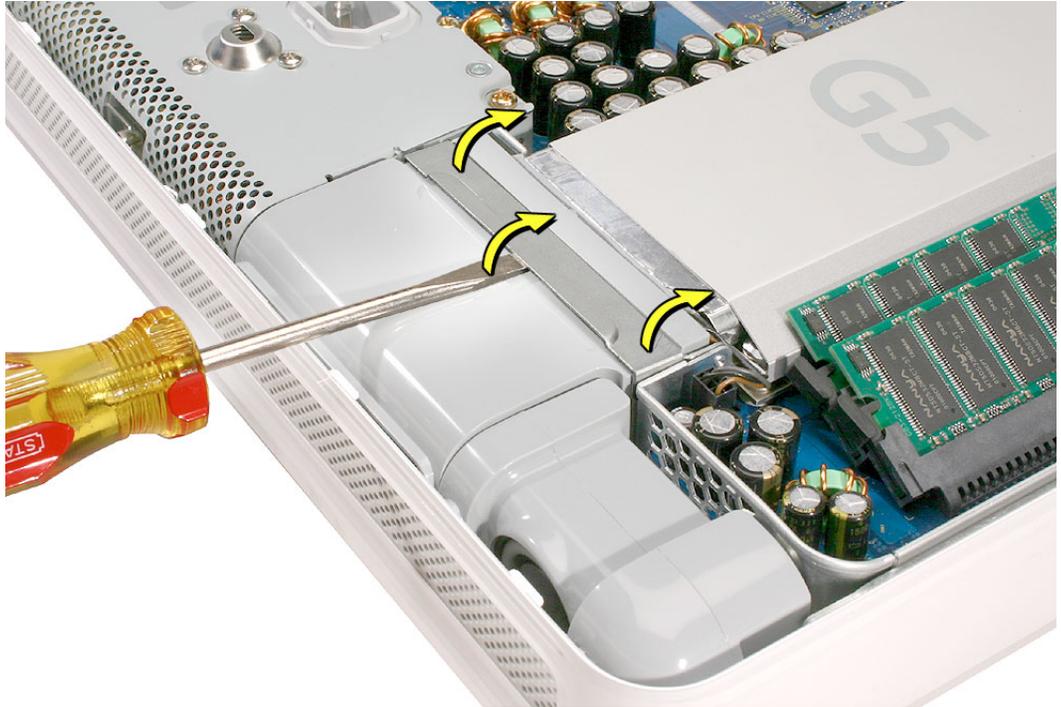
Before you begin, remove the back cover.

## Part Location

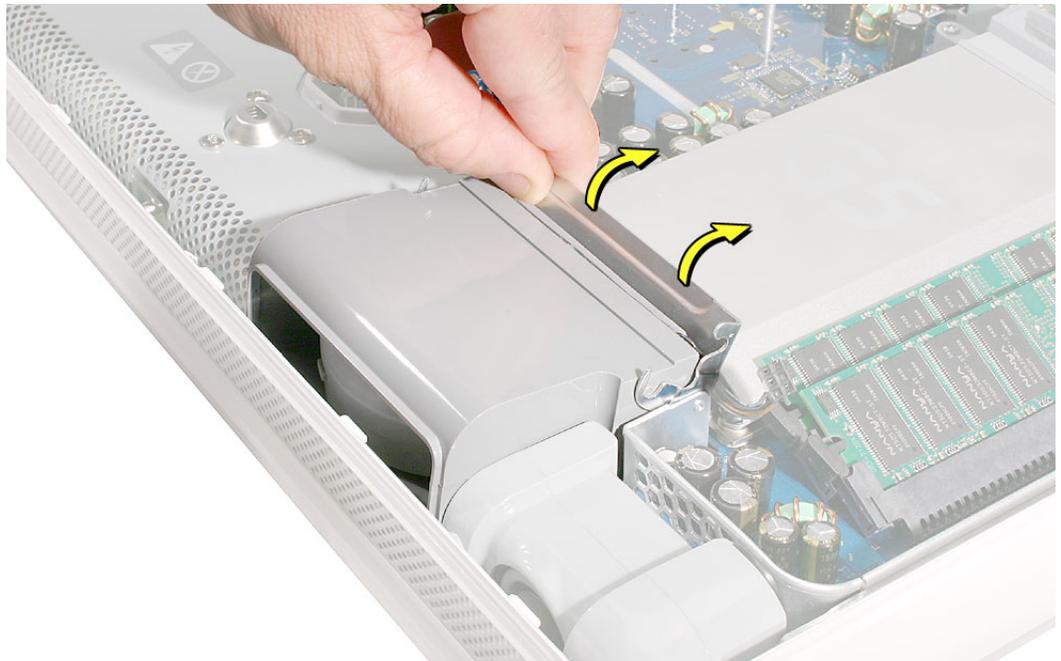


## Removing the Lower Fan

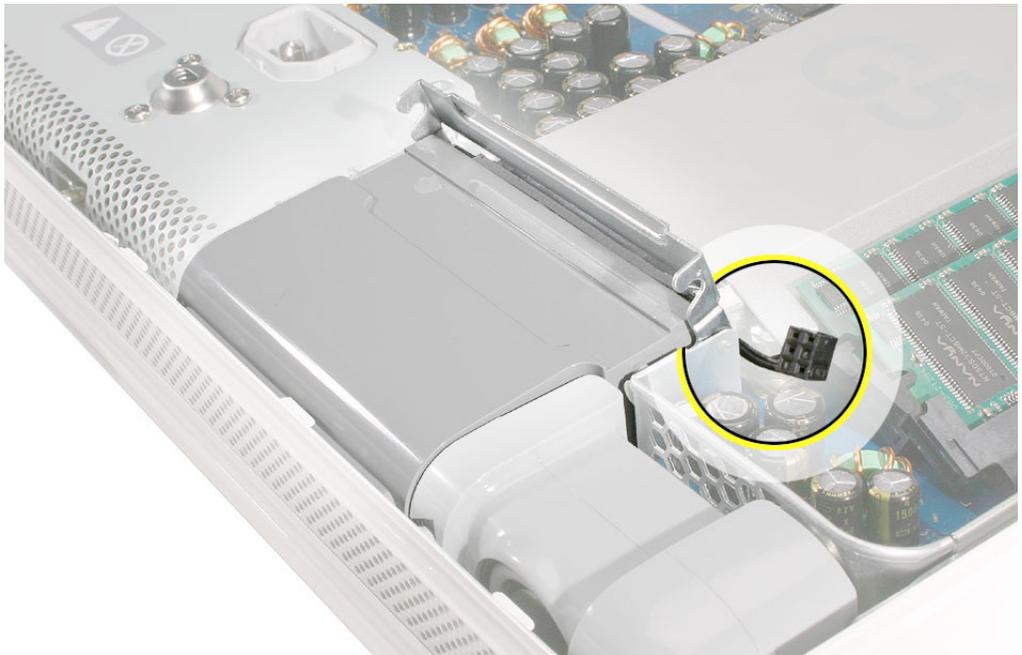
1. Locate the metal locking clip on the top of the fan housing. Use a flat-blade screwdriver to raise up the clip approximately 1/4 inch.



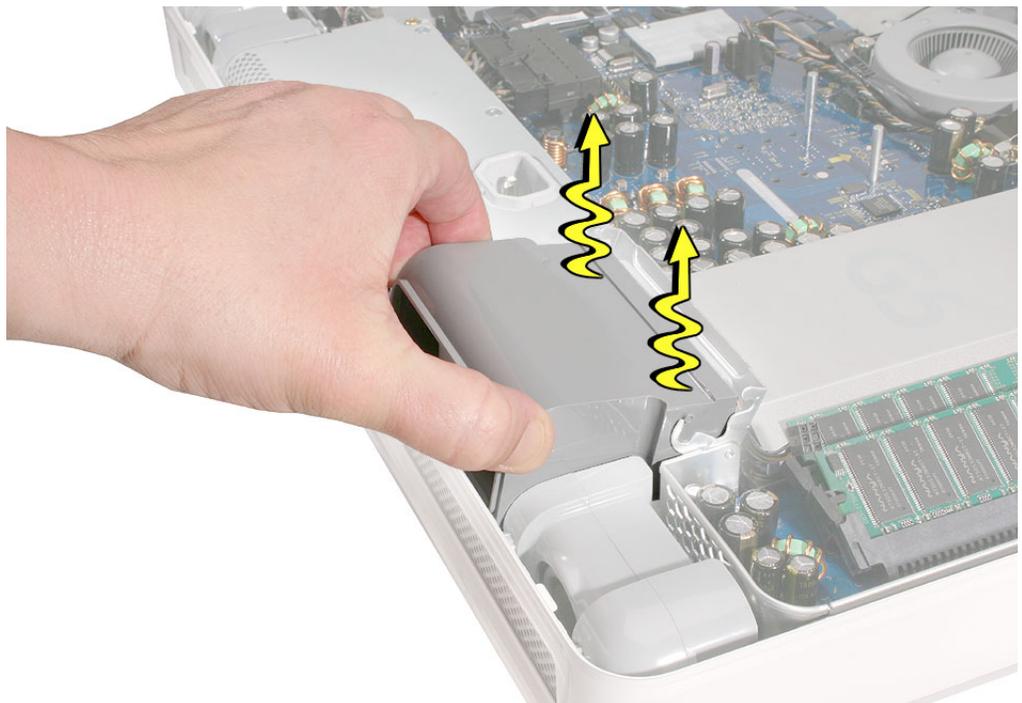
2. Push the metal locking clip all the way back until the fan begins to lift out of the computer.



3. Disconnect the fan connector on the logic board. Pull on the black connector not on the cable.



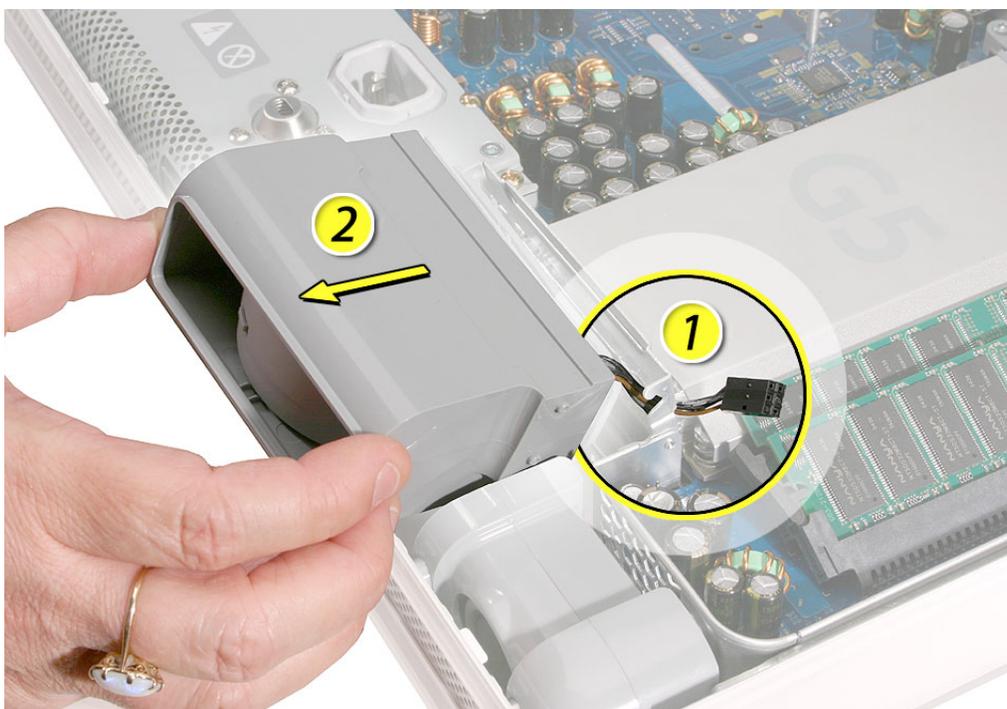
4. Grab the fan by the sides and wiggle the fan upward. As the fan comes up, the fan will bump into a tab on the front bezel. See the next step.



5. Push the fan into the computer and at the same time, tilt the fan so that it clears the tab on the bezel



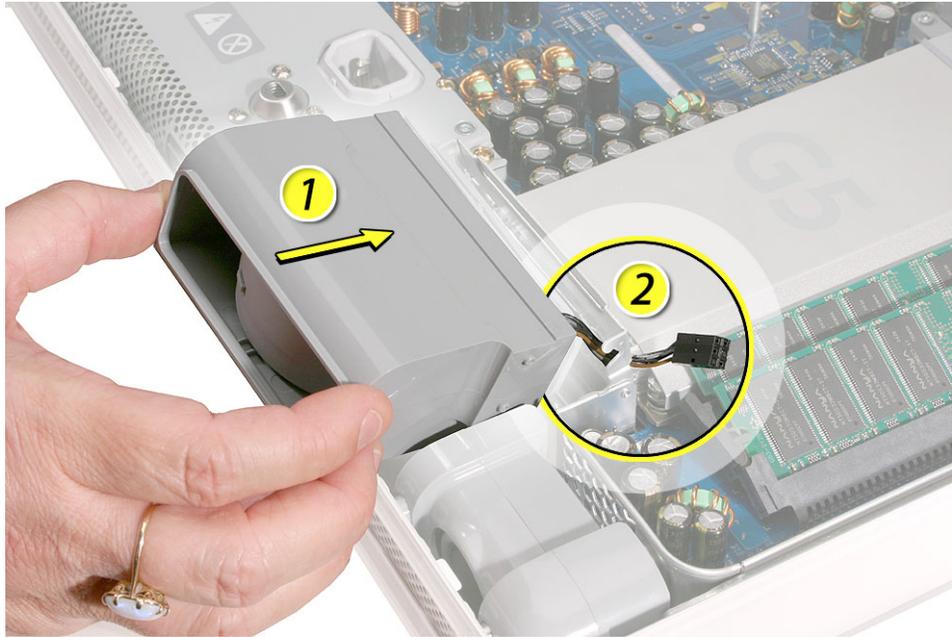
6. Pull the fan cable through the metal bracket(1) as you pull the fan forward (2).



## Replacing the Lower Fan

1. Push the lower fan (#1) into the chassis, aligning the fan with the metal bracket. Notice the location of the two gray bumps on the right side of the fan. These plastic bumps should be in this position for this step.

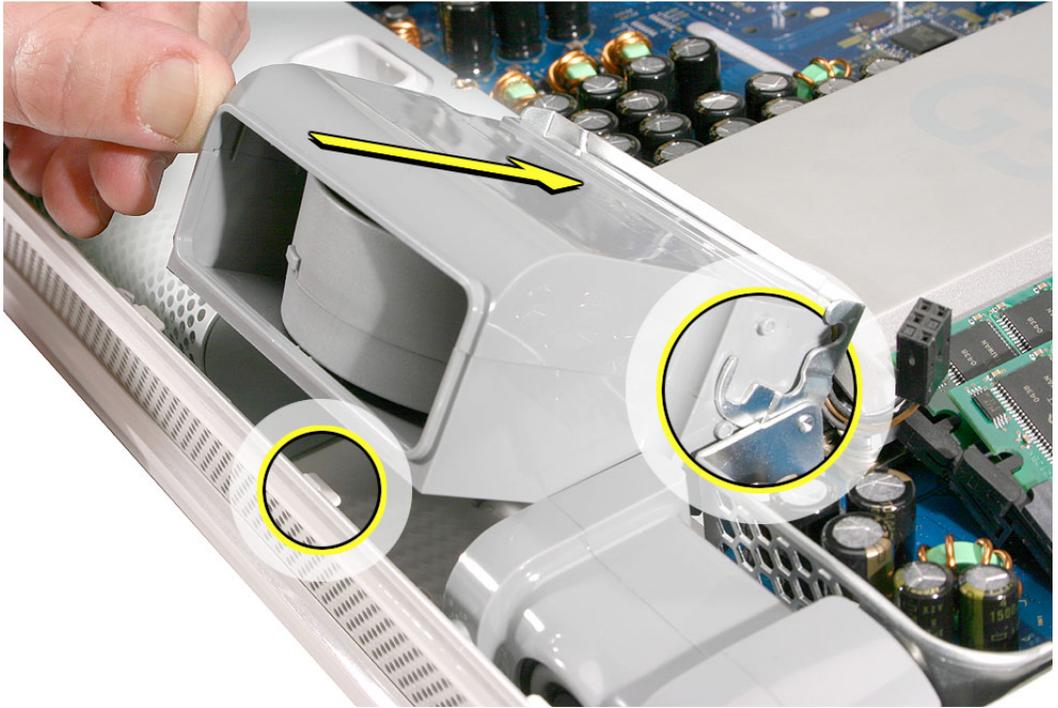
Pull the fan cable (#2) through the metal bracket.



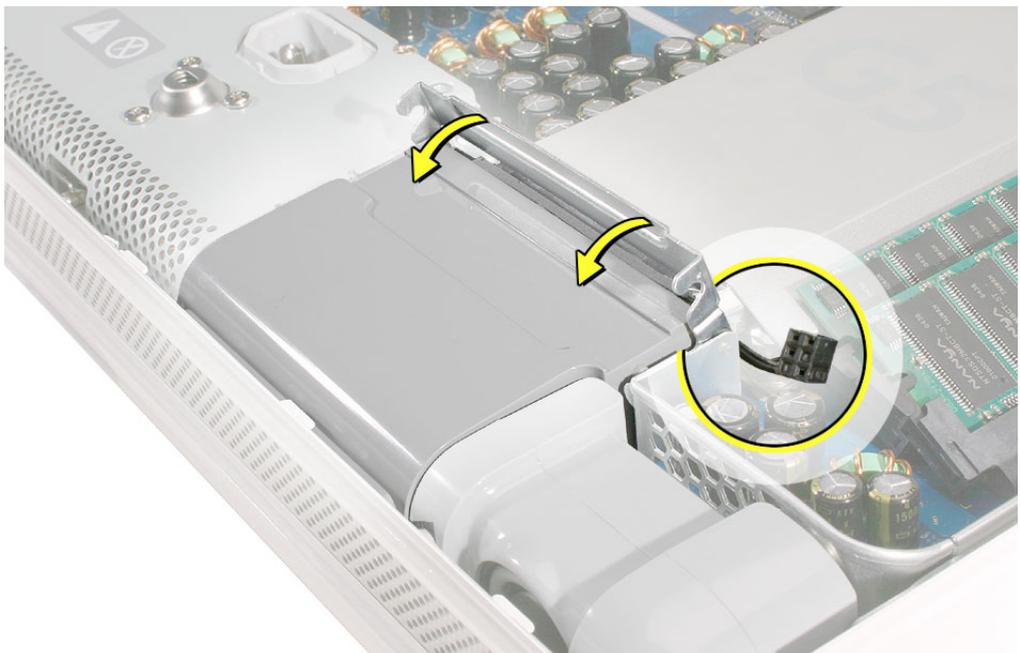
2. The edge of the fan (circled) has to clear the speaker. Push the fan into the computer until the edge of the fan clears the speaker.



3. As you push the fan, make sure it clears the white tab on the display bezel.  
**Important:** Notice the position of the gray bumps on the side of the fan. This is the correct position forsooth step.



4. Lower the fan into the display bezel. Pull the metal locking clip down onto the fan.  
Connect the fan cable to the logic board.



5. Replace the back cover.



# LCD Panel

## Tools Required

- Torx T10 screwdriver, preferably with a magnetized tip
- Clean, soft, lint-free towel or blanket
- Screw tray or something equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the following:

- Back cover
- Midplane

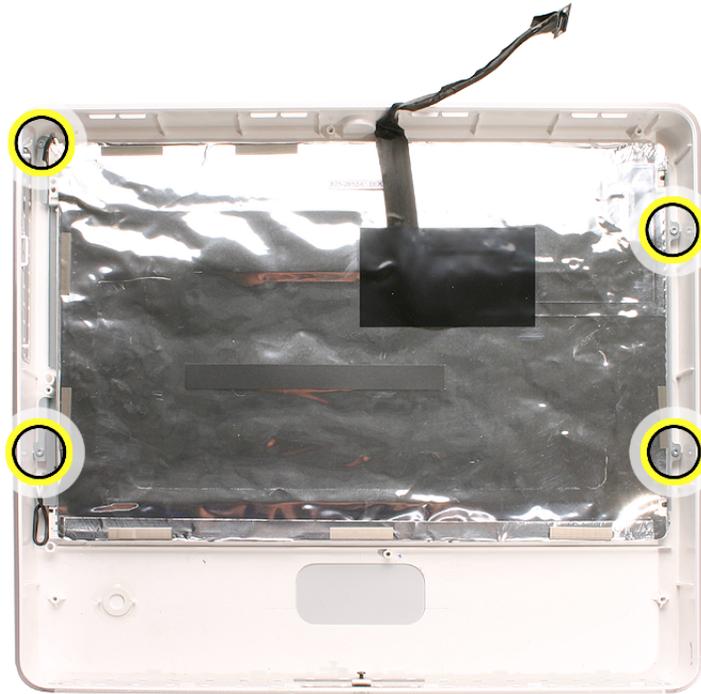
## Part Location



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## Removing the LCD Panel

1. Place the display bezel/LCD panel assembly face-down on a clean, soft, lint-free folded towel or blanket.
2. Remove the four self-tapping screws at the LCD panel brackets.



- 
3. Touching only the top and bottom edges of the LCD panel, raise it up out of the display bezel.

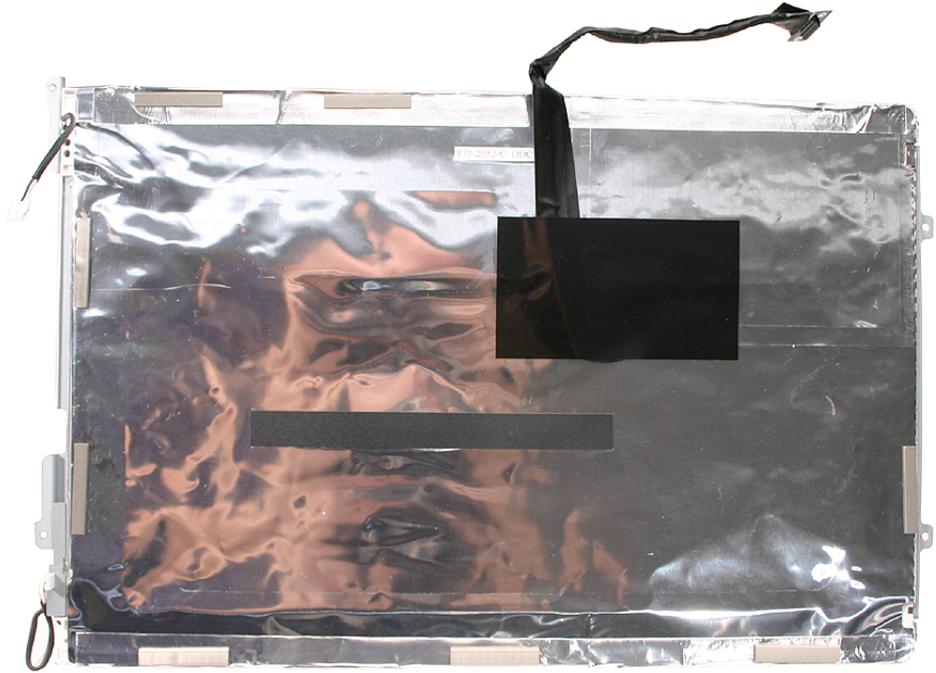


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## Replacing the LCD Panel

1. Check the routing of the LCD panel cables.

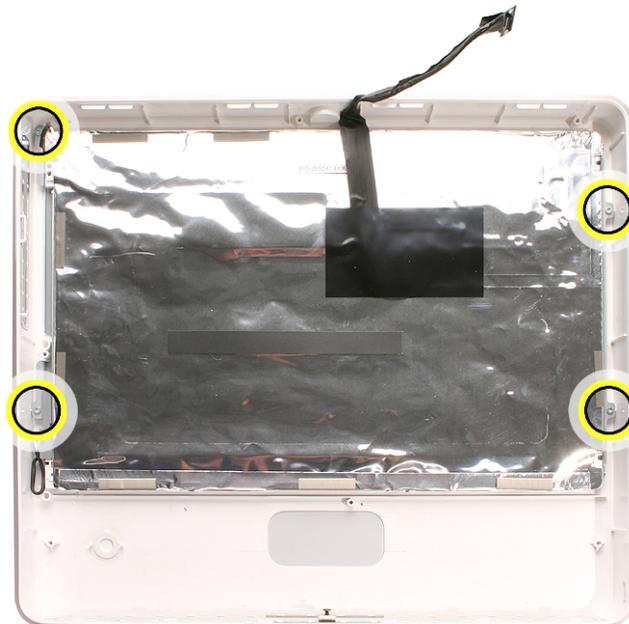
**Note:** The replacement LCD panel includes the brackets, cables, tape, and gaskets, as shown.



2. Make sure the cables cannot be pinched when setting the LCD panel in the display bezel.



3. Place the LCD panel into the display bezel so that all four screw holes on the brackets align with the screw holes on the bezel.
4. Replace the four screws.



- 
5. Turn over the display bezel/LCD panel assembly, and check that there are no uneven gaps between the bezel and the display.

If there are noticeable gaps, loosen the screws, reseal the panel, and retighten the screws.

6. Replace the midplane.
7. Replace the back cover.



# Display Bezel

## Tools Required

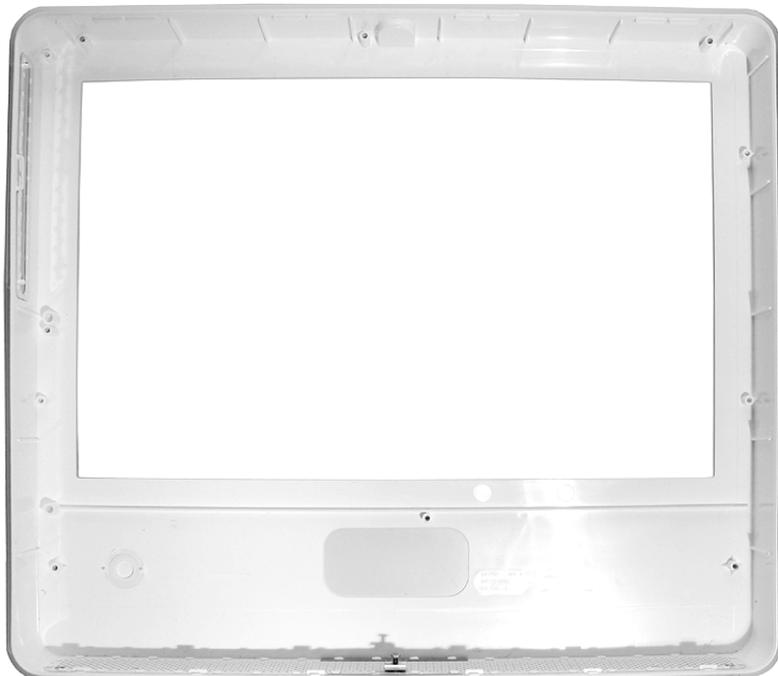
- Clean, soft, lint-free towel or blanket

## Preliminary Steps

Before you begin, remove the following:

- Back cover
- Midplane
- LCD panel

## Part Location

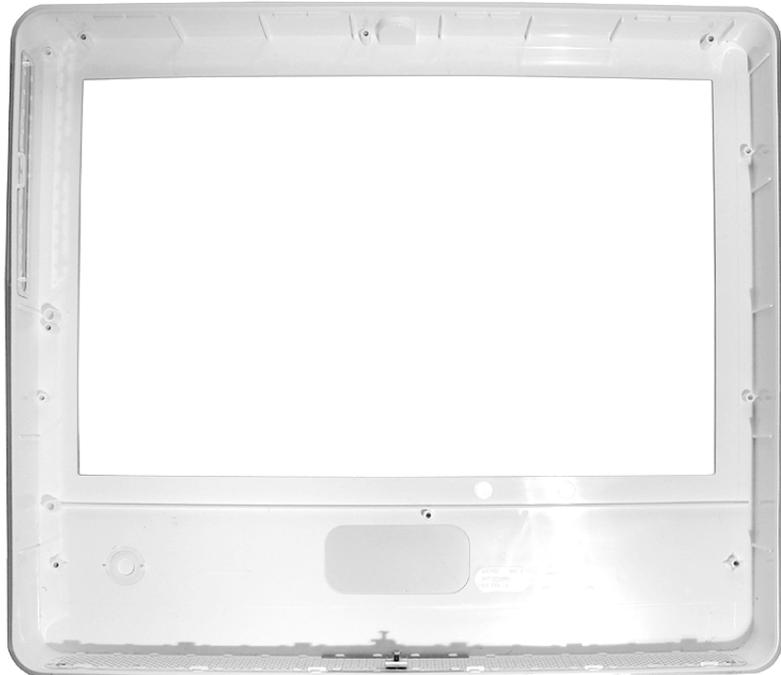


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## Removing the Display Bezel

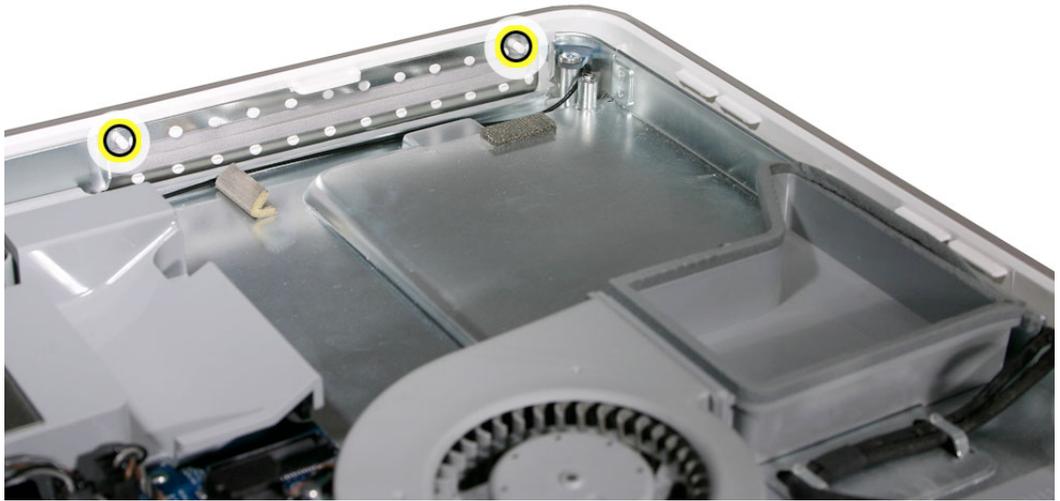
With all preliminary steps performed, the display bezel is the part that remains.

**Note:** A diecut piece of microfoam is included with all replacement optical drives and display bezels. It should be installed in between the disc drive and the display bezel to prevent optical media from ejecting out of the system and dropping to the desktop. Only one piece of microfoam should be used per system. Refer to the replacement procedure for the front bezel for more information.

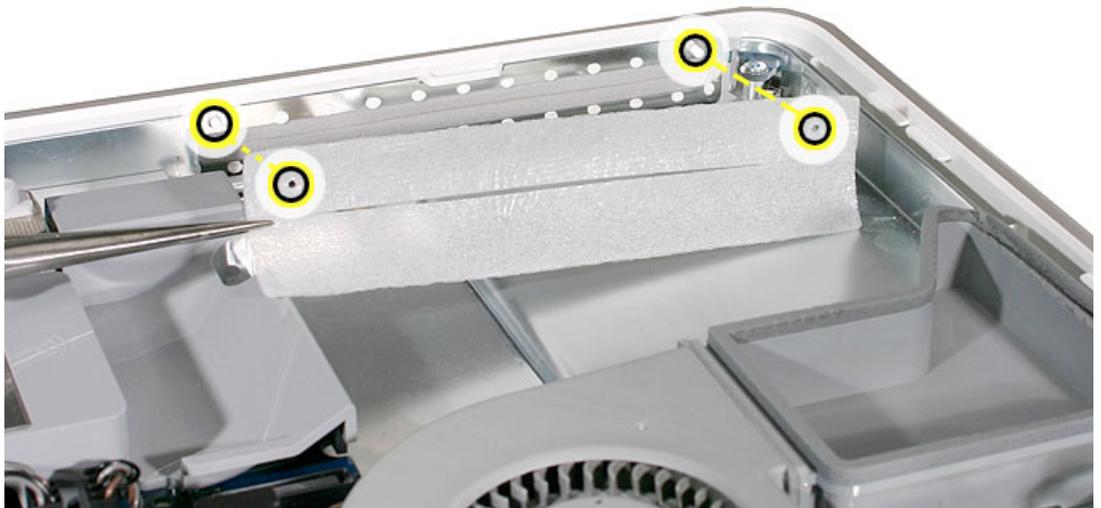


## Replacing the Display Bezel

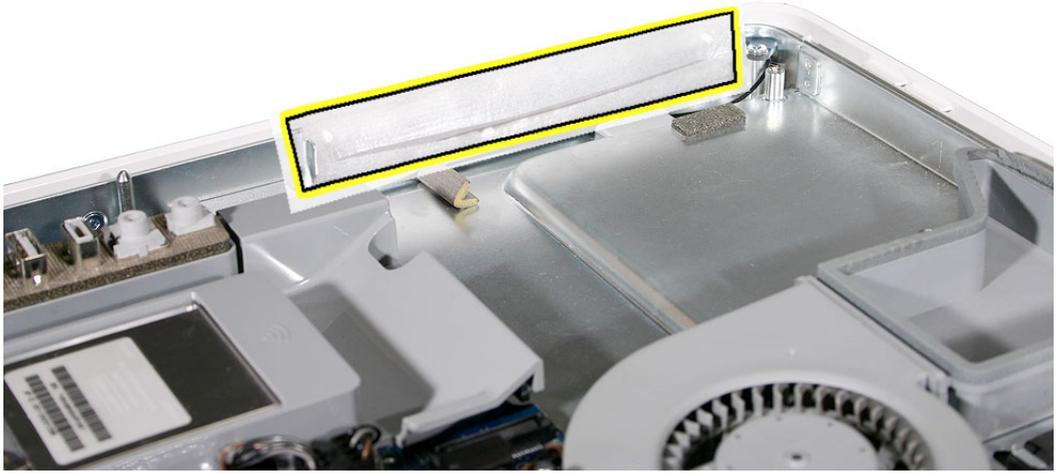
1. Before installing the LCD panel and reassembling the computer, make sure the display bezel is clean and free of dust and any foreign matter.
2. Replace the LCD panel.
3. Replace the midplane.
4. Locate the enclosed piece of white microfoam and the two white posts (circled) on the bezel.



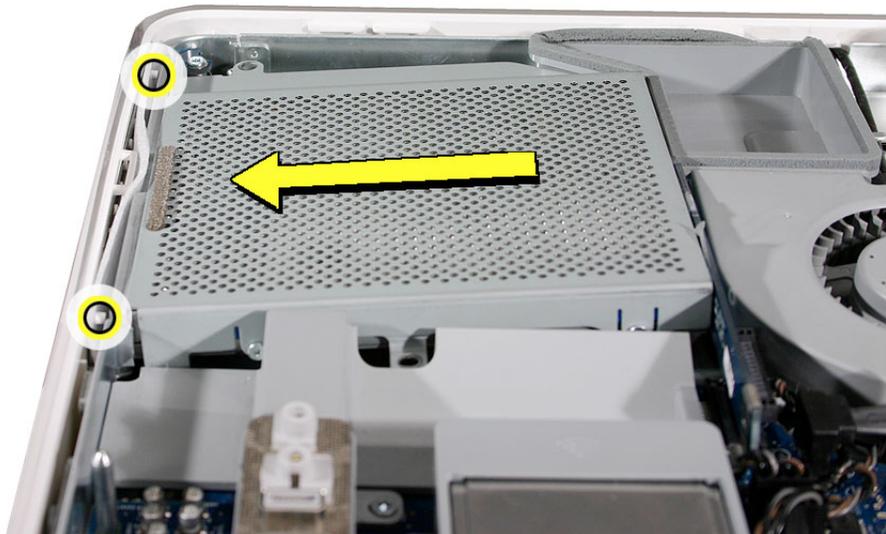
5. With the shiny side of the microfoam facing the bezel, slide the holes of the microfoam onto the two white posts on the bezel.



6. Tuck the microfoam into place before installing the optical drive.



7. Remove the replacement optical drive from its packaging.
8. Replace the optical drive in the direction of the arrow, lining up the white posts on the bezel with the holes on the optical drive bezel.



9. Make sure no microfoam is sticking out of the bezel. **Note:** Before reassembling the computer, partially insert an optical disc to make sure it inserts smoothly.



10. Replace the back cover.



# Chassis

## Tools Required

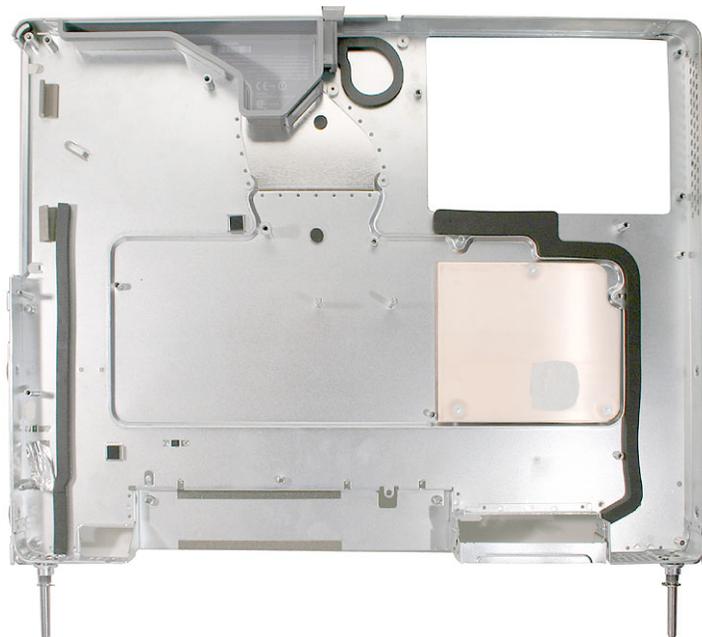
- Torx T10 screwdriver, preferably with a magnetized tip
- Screw tray or something equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the following:

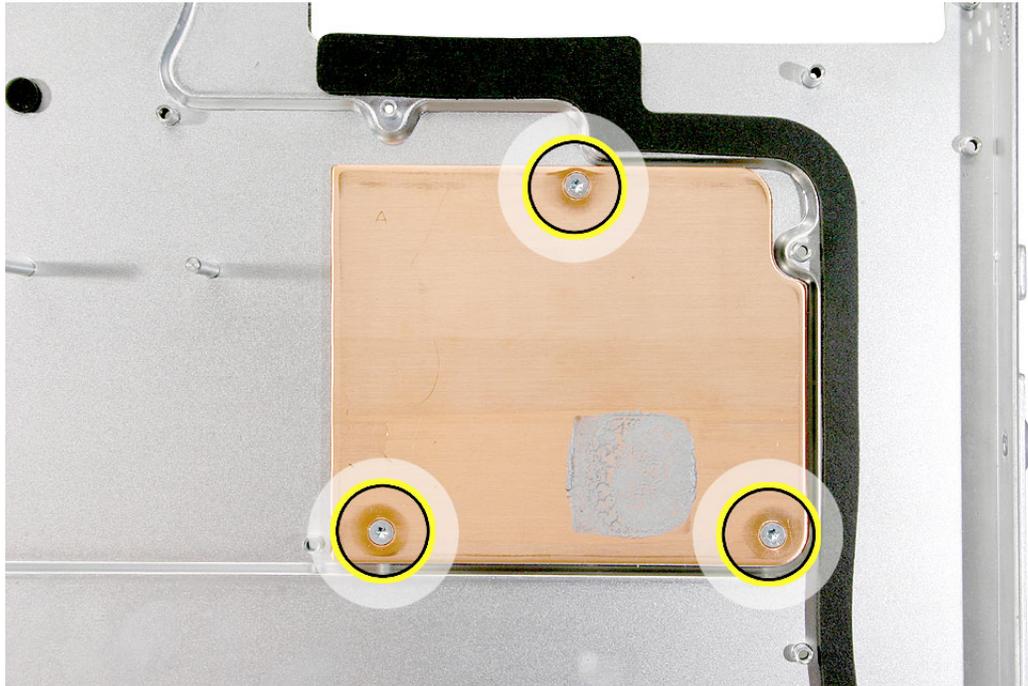
- Back cover
- Midplane assembly
- Upper fans
- Logic board
- AirPort and Bluetooth antennas
- Speaker set

## Part Location

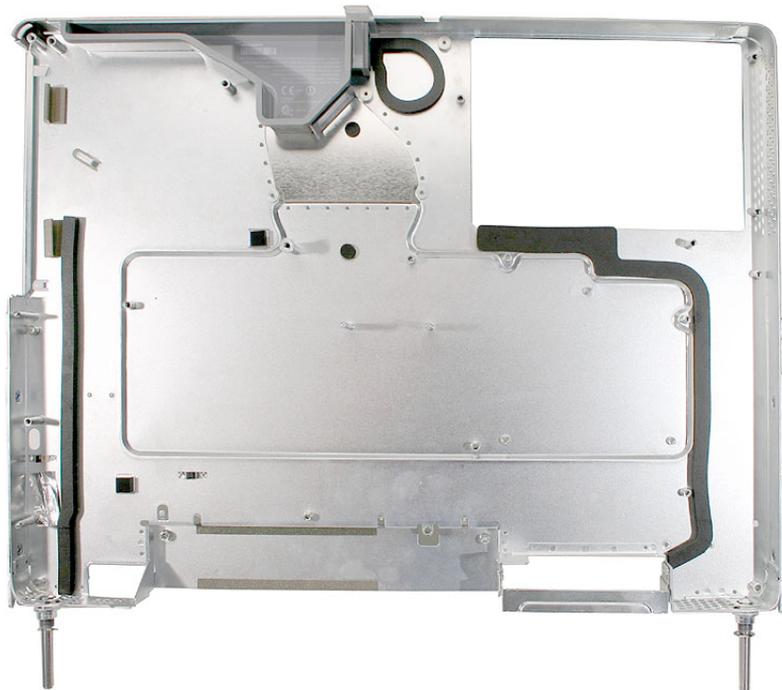


## Removing the Chassis

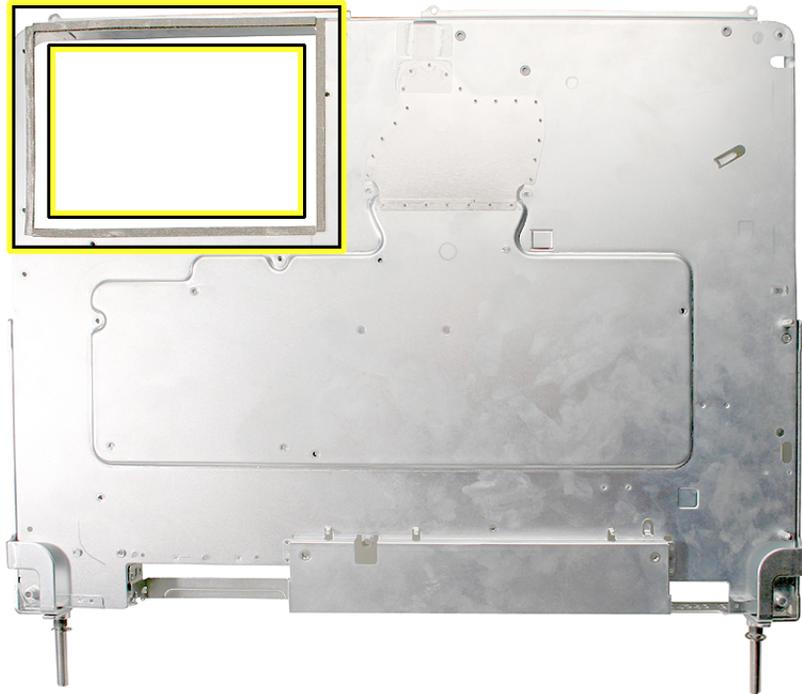
1. Remove the three T10 screws from the copper heatpad. Set the heatpad aside.



2. Note that the midplane chassis includes the fan duct, gaskets, and tape.



- 
3. On the other side of the chassis, note that the midplane chassis includes the mesh tape that borders the hard drive area.



---

## Replacing the Chassis

1. Transfer the copper heatpad to the replacement chassis. Replace the screws.

**Replacement Note:** Before installing the logic board, refer to the Logic Board procedure to clean the copper heatpad and apply new thermal grease.

2. Replace the speaker set.
3. Replace the antennas.
4. Replace the logic board.
5. Replace the upper fans.
6. Replace the midplane assembly in the back cover.



## Troubleshooting

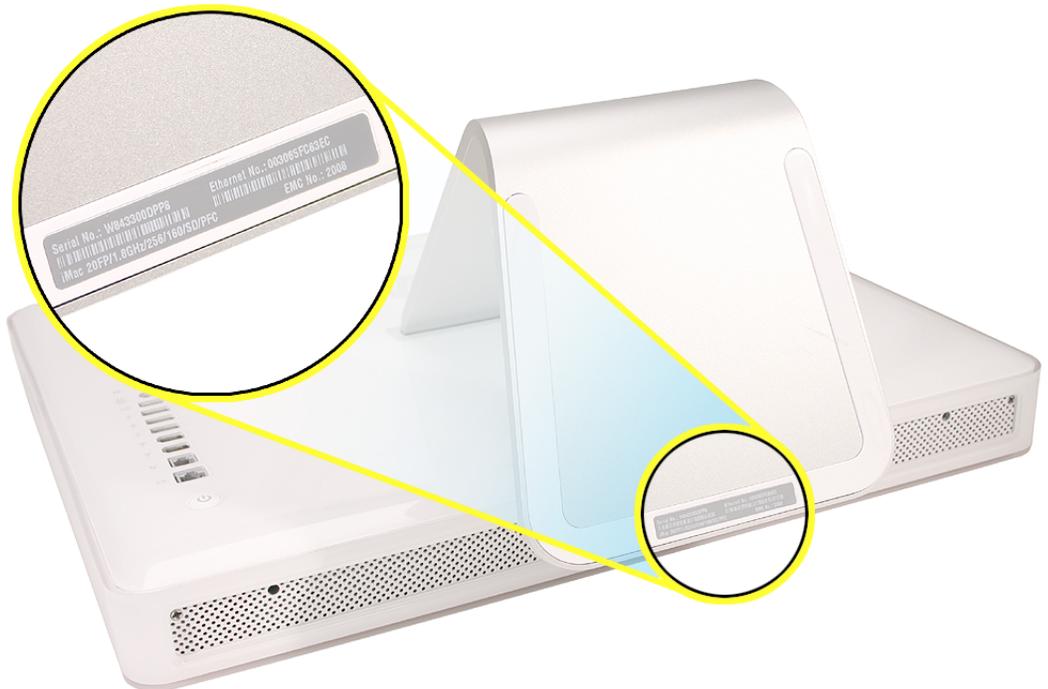
iMac G5, 17-inch (Ambient Light  
Sensor)



# General Information

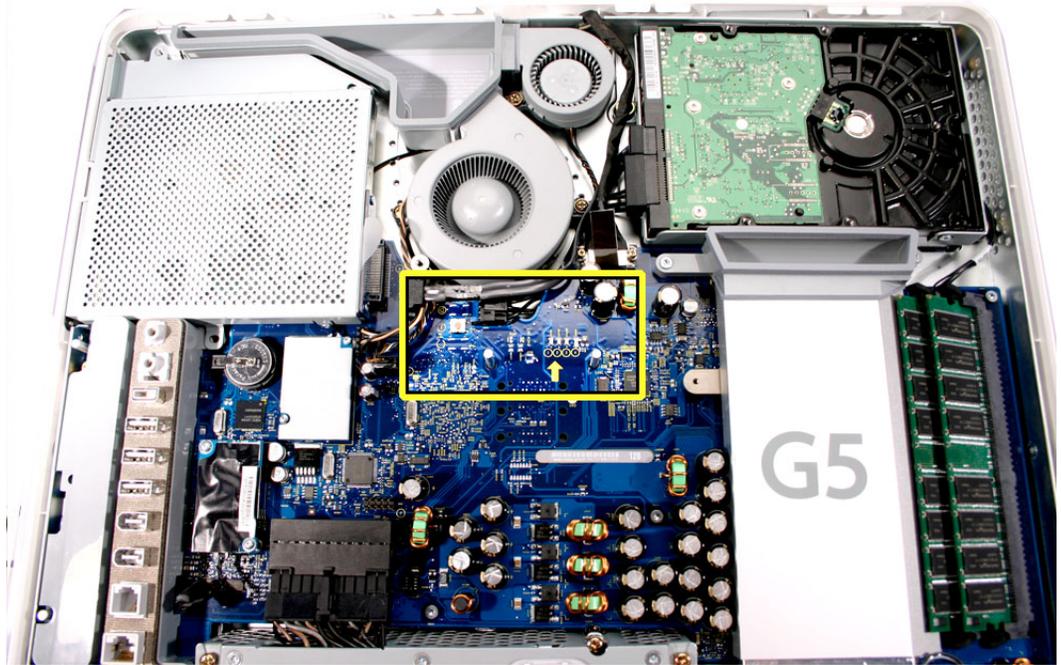
## Serial Number Location

The iMac G5 serial number is located on the bottom of the computer stand (foot). **Note:** If the back cover is replaced, copy the serial number from the original back cover to the blank label that comes with the replacement back cover. Attach the new label to the replacement back cover.



## Diagnostic LEDs

The iMac G5 has built-in diagnostic LEDs (shown below) on the main logic board that can help you to troubleshoot the computer.



To access these LEDs, remove the back cover of the computer:

1. Turn your computer off (choose Shut Down from the Apple menu). If you can't shut it down that way, you can turn the computer off by pressing the power button for five seconds.
2. After the computer is off, disconnect all cables and the power cord from your computer.

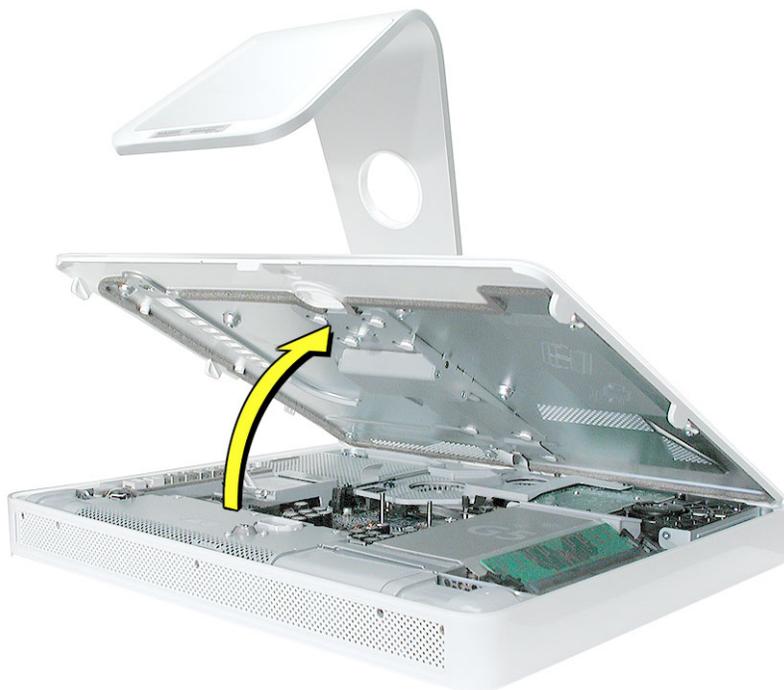
3. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of the computer and slowly lay it down so the screen is flat against the surface and the bottom is toward you.



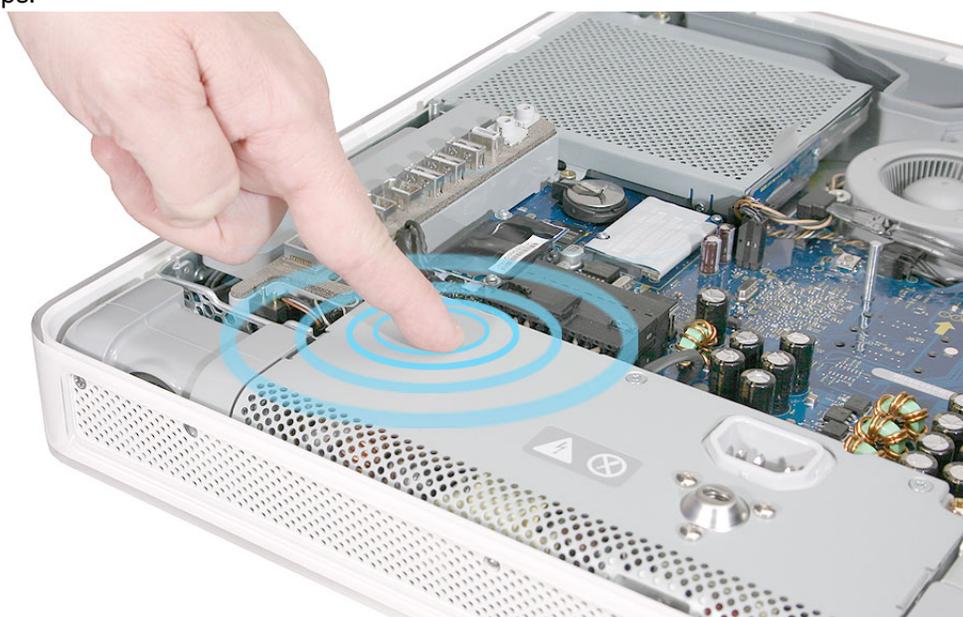
4. Raise the foot and use a Phillips #2 screwdriver to loosen the three screws at the bottom of the computer by turning them to the left. These are “captive screws,” which means they’re not supposed to come all the way out.



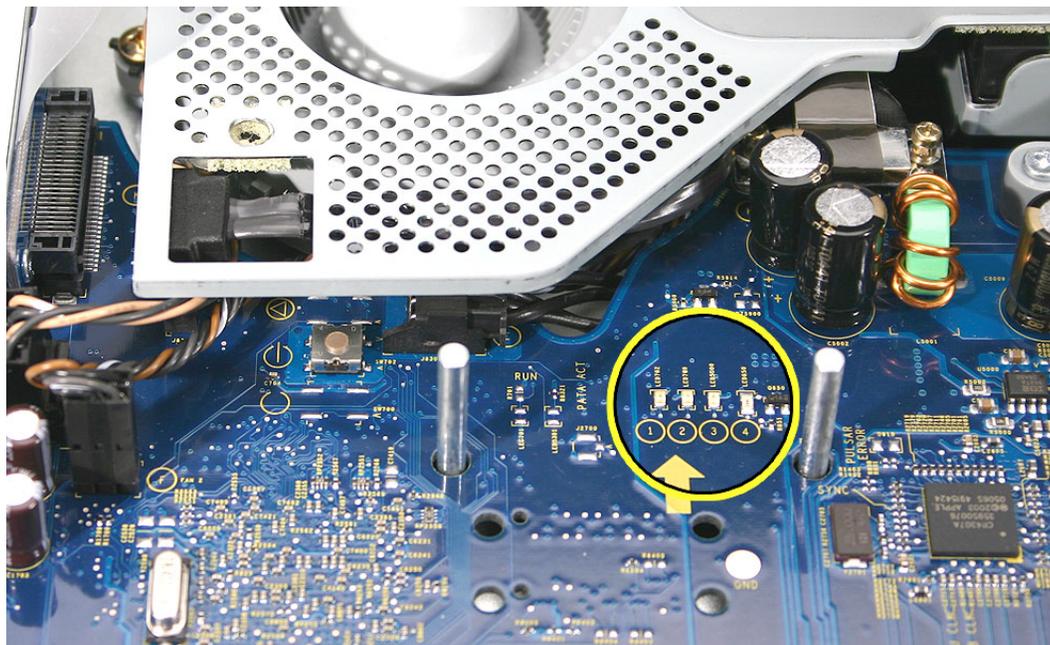
5. As you hold the metal foot, tilt the back cover up and lift it away from the computer. The back cover with the foot attached should come off easily. If it doesn't, make sure the screws are turned completely counter-clockwise, but not too far.



6. To protect the computer from electrostatic discharge, ground yourself by touching a metal surface inside the computer. **Warning:** Always discharge static electricity before you touch any parts or install any components inside the computer. Don't walk around the room in socks or bare feet, for example, until after you've finished these steps.



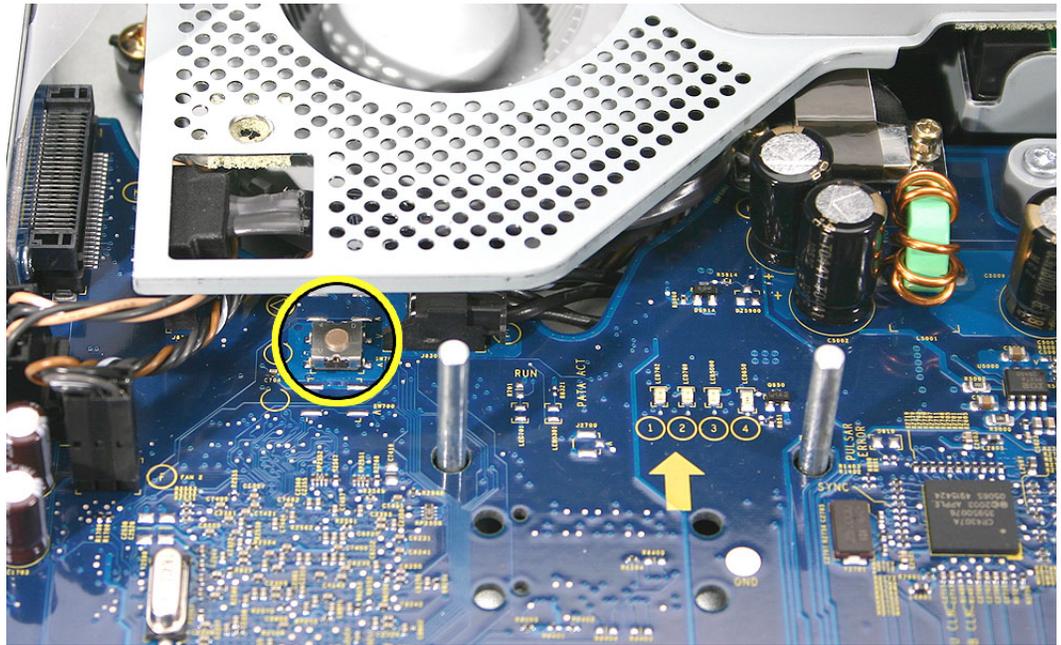
7. Locate the yellow arrow in the middle of the board.
8. Above this arrow, you'll see four LEDs:



- LED 1 indicates that the trickle voltage from the power supply has been detected by the main logic board. This LED will remain ON whenever the iMac G5 is connected to a working AC power source. The LED will remain on even when the computer has been shut down or put to sleep. The LED will turn off only if the AC power source is disconnected or the power supply is faulty.
- **LED 2** indicates that the main logic board has detected proper power from the power supply when the computer is turned on. This LED will be ON when the computer is turned on and the power supply is working correctly.
- **LED 3** indicates that the computer and the LCD display are communicating. This LED will be ON when the computer is turned on and video signal is being generated.
- **LED 4** lights only if the computer detects an over-temperature condition. This LED will be OFF when the computer is turned on and running at the correct temperature.

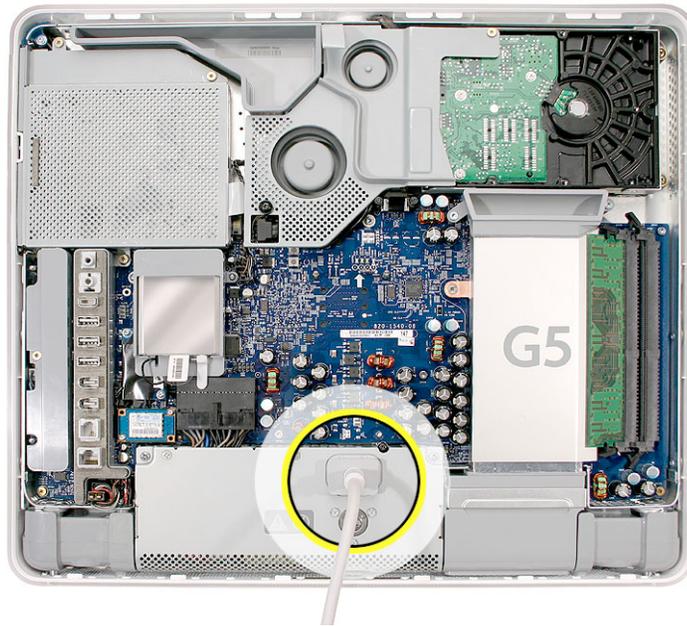
## Internal Power Button

To the left of the diagnostic LEDs is the internal power button. The internal power button gives you the ability to power on the computer with the back cover off the computer.

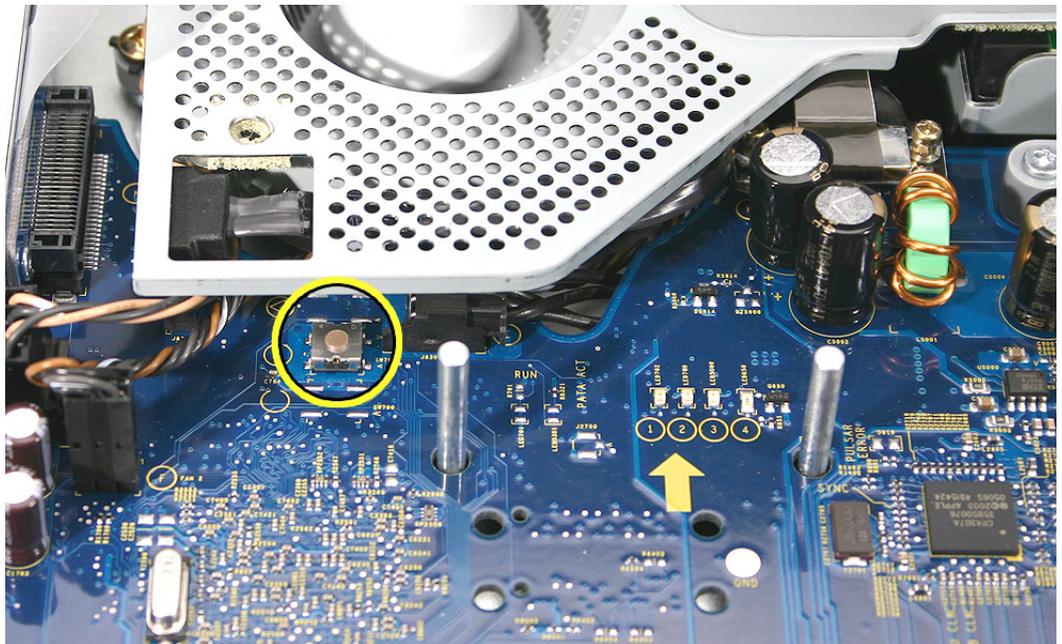


**To power the computer on with the back cover off:**

1. First remove the back cover.
2. Plug in the power cord.



3. Press the power button. The LEDs will come on indicating the computer status.



4. To shut the computer off with the back cover off, press the power button for at least five seconds. The green LEDs will go out.

---

## SMU (System Management Unit)

The iMac G5 uses an advanced system management unit (SMU) to manage the thermal and wattage conditions, while keeping the acoustic noise to a minimum. The SMU controls the fans and regulates the speeds to run each fan.

### **The SMU supports the following functions:**

- provides initial configuration of system clocks
- automatically initiates and sequences voltage and frequency slews when the OS requests a transition to a new run level
- handles all power button and environmental user events
- controls RPM fans
- provides processor Mode Ring and thermal data store
- monitors processor temperature and power consumption
- monitors VRD10-compliant processor power supply digital interface.

The iMac G5 system employs advanced thermal and wattage management to keep acoustic noise to a minimum. The enclosure is divided into discrete zones, each with independently controlled fans bringing in cool air from the front of the enclosure, directing it over system components and exhausting it out the rear. Temperature and power consumption are monitored by the operating system which communicates with the SMU, which in turn controls and monitors fan operation. If Mac OS X is not booted, thermal management must be provided by the alternate development operating system.

**Note:** If Mac OS X is not booted and the alternate development operating system does not manage the fans, the fans go into an unmanaged state and run at full speed.

The SMU controls the fans and regulates the speeds to run each fan. The SMU derives fan speed from sensors in each thermal zone. Some of these sensors monitor thermal only, while others monitor both thermal and power.

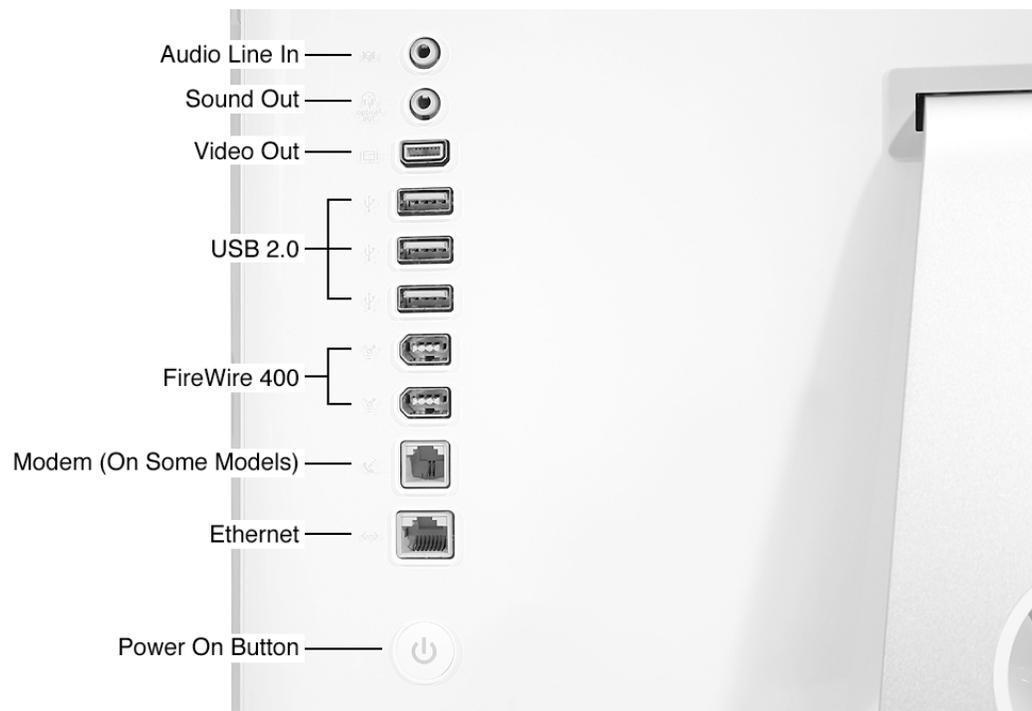
If the SMU does not receive an update from the operating system within two minutes, it begins to ramp up the speed of the fans to full speed.

## **Resetting the SMU (System Management Unit)**

1. Unplug all cables from the computer, including the power cord.
2. Wait 10 seconds.
3. Plug in the power cord while simultaneously pressing and holding the power button on the back of the computer.
4. Let go of the power button.
5. Press the power button once more to start up your iMac G5.

## Ports

The iMac G5 ports are shown below.



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## **DDR Memory**

iMac G5 computers work with memory modules (DIMMs) that meet all of these criteria: PC3200, 2.5V, unbuffered, 8-byte, nonparity, 184-pin, 400Mhz DDR SDRAM.

There are two RAM slots. The maximum amount of RAM you can install is 2 GB. You can use RAM module sizes of 256 MB, 512 MB and 1 GB, in either slot.

DIMMs with any of the following features are not supported in the iMac G5 computer: registers or buffers, PLLs, ECC, parity, or EDO RAM.



# Symptom Charts

## How to Use the Symptom Charts

The Symptom Charts included in this chapter will help you diagnose specific symptoms related to the product. Because cures are listed on the charts in the order of most likely solution, try the cures in the order presented. Verify whether or not the product continues to exhibit the symptom. If the symptom persists, try the next cure.

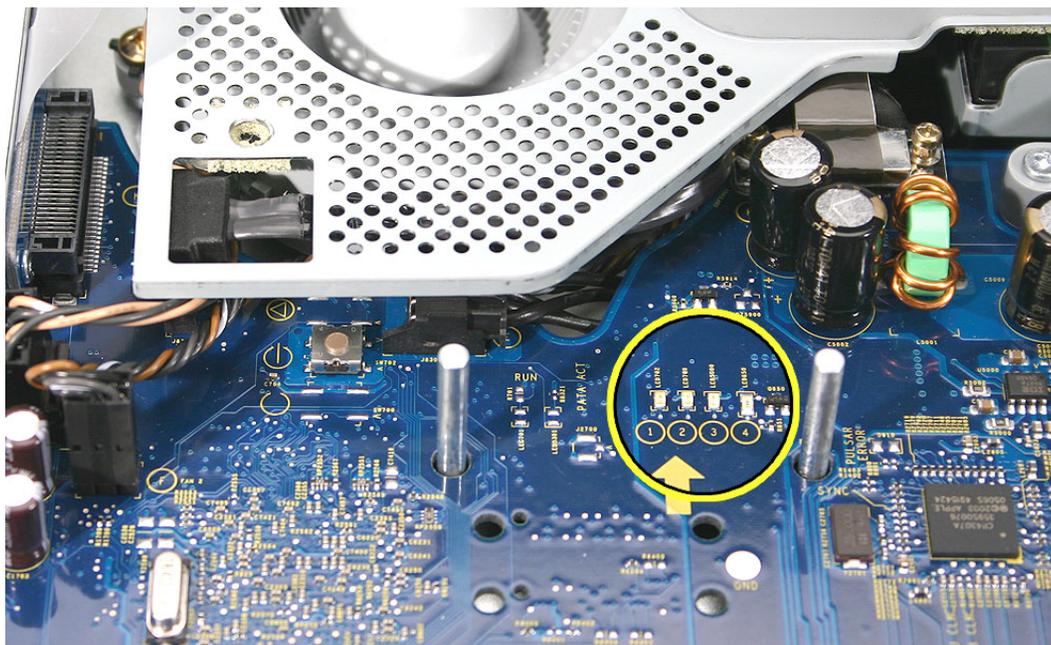
**Note:** If a cure instructs you to replace a module, reinstall the original module before you proceed to the next cure.

## Power Issues

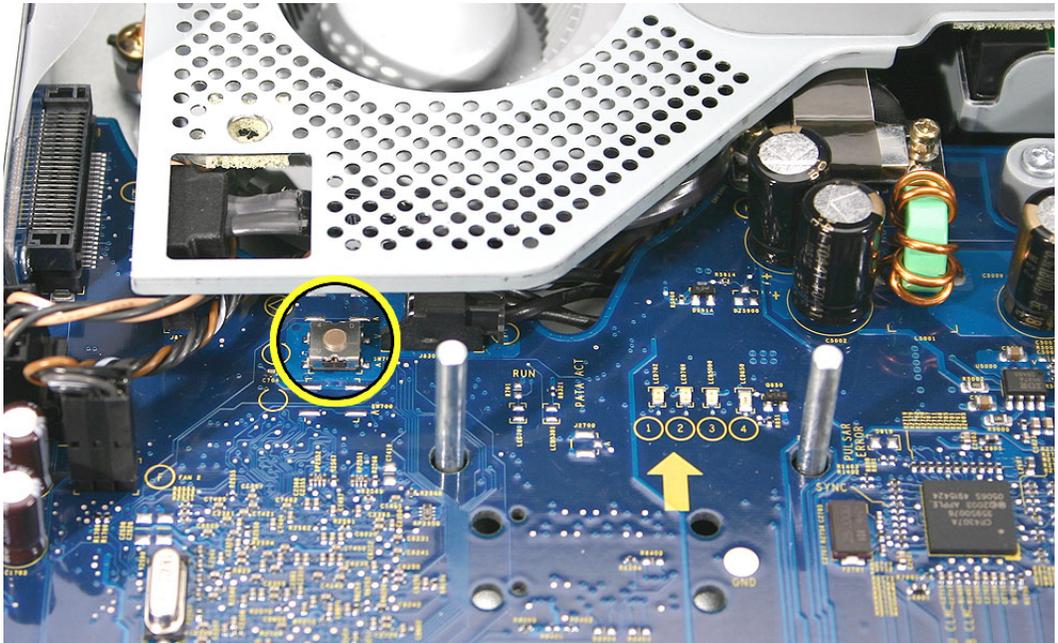
### No Power.

The iMac G5 will not turn on. The display has no picture or color and no sounds can be heard coming from the fan or hard drive.

1. Verify power outlet is good. Plug a different device into the socket to ensure there is power, or plug the iMac G5 into another outlet.
2. Check the power cord. Use a known good power cord.
3. Check the connection of the power cord on both ends. Verify that the plug is securely plugged into both the AC outlet and back of the computer.
4. Remove keyboard, mouse, and other peripherals such as speakers. Try starting up the computer with these devices removed.
5. Remove the back cover to access the diagnostic LEDs on the main logic board. See “Diagnostic LEDs” in this chapter for complete instructions on this procedure.
6. Locate LEDs 1 through 4 above the yellow arrow in the middle of the main logic board (near the fan cover).



7. Plug the power cord into the iMac G5 and into the AC outlet. Check to see if LED #1 is On or Off.
  - **LED #1 is On:** This indicates that the power supply is getting good power from the AC outlet. Go to step 8.
  - **LED #1 is Off:** This indicates that your power supply should be replaced. Order and install the power supply for your computer.
8. Turn the computer on by using the internal power button. With your finger, or with the nylon probe tool, press the small, metal button. Go on to the next step.



- 
9. Does the computer start up normally after pressing the internal power button?
- **Yes:** Press and hold the power button until the computer powers off.
    - Unplug the power cord from the iMac, and reinstall the back cover.
    - Return the computer to the upright position.
    - Plug the computer back in, and press the power button to turn on the computer.
    - Make sure the computer is starting up properly. If the computer will ONLY start up from the internal power but will not power on from the power button on the back cover, the power button on the back cover may be faulty. Go to step 13
  - **No:** Reset the SMU.
    - Unplug all cables from the computer, including the power cord.
    - Wait 10 seconds.
    - Plug in the power cord while simultaneously pressing and holding the power button on the back of the computer.
    - Let go of the power button.
    - Press the power button once more to start up your iMac G5.
10. After resetting the SMU does the computer start up normally now?
- **Yes:** Press and hold the power button until the machine powers off.
    - Unplug the power cord from the iMac, and replace the back cover.
    - Return the computer to the upright position.
    - Plug the in the computer, and press the power button to turn on the computer.
    - Make sure the computer is starting up properly. If the computer will ONLY start up from the internal power but will not power on from the power button on the back cover, this may indicate that the power button on the back cover is faulty. Got to step 13.
  - **No:** Go to the next step.
11. Unplug the power from the iMac G5 and remove the internal hard drive and set it aside. Plug in the iMac G5, and using the Internal power button as before, power on the iMac G5. Does the iMac G5 start up now?
- Yes - The hard drive needs to be replaced.
- No - Go on to the next step.
12. When pressing the internal power button to power on the computer, does LED #2 come on momentarily, or not at all?
- Momentarily:** The logic board has detected 12v, but the power supply cannot maintain it. Your power supply needs to be replaced.
- Not at all:** Your logic board needs to be replaced.

13. If the computer will ONLY start up from the internal power but will not power on from the power button on the back cover, the back cover may need to be replaced. Unplug the computer and remove the back cover. With the back cover removed, plug the power cord back in. Touch and hold an insulated screwdriver to the two contact points shown below:



Does your computer start up when holding the screwdriver to these two contact points?

**Yes:** This shows that the power button switch is working correctly. The back cover should be replaced.

**No:** This indicates that the power button switch is not working correctly. The logic board should be replaced.

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## Loud buzzing, ticking, or whining noise

The computer may make a loud buzzing, ticking, or whining noise when it's on. The sound may vary depending upon screen brightness or processor load.

1. Determine that this noise is related to the computer by removing and shutting down all other devices in the vicinity of the computer that could be causing a sound.
2. Determine if this is a power supply noise. With the iMac G5 on and running, adjust the screen brightness by pressing the F14 and F15 keys on the keyboard. Does the noise change in loudness when adjusting the brightness?

**Yes:** The volume changes when the brightness changes, the noise may be related to the power supply. Replace the power supply.

**No:** If the volume does not change when the brightness changes, the noise is not a power supply issue. Go on to step 3.

3. Quit all applications and test the computer again.
4. Check the volume settings under Sound in System Preferences.
5. Reboot the computer and check the computer again.
6. If the noise still doesn't go away, contact Apple Technical Support.

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## No Video

**The computer will turn on, but the display has no picture or color. The boot chime, the fan, and hard drive activity can be heard.**

1. Check if the computer is sleeping. Press the space bar to wake the computer from sleep mode.
2. Did the computer wake from sleep?

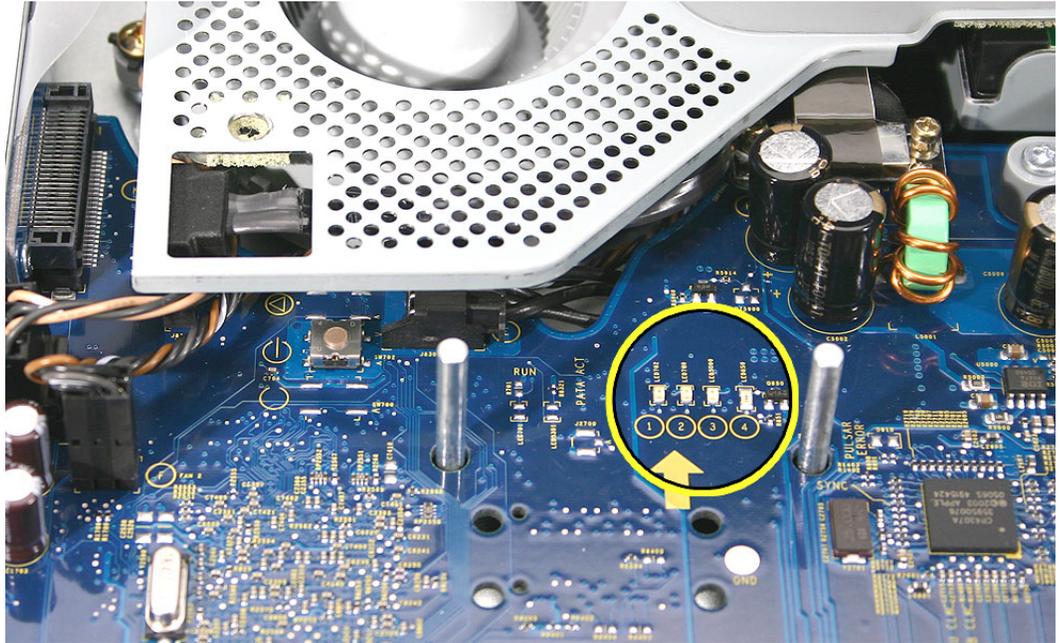
**Yes:** Put the computer to sleep from the Apple menu and wake the computer again to test the settings. Check Energy Saver setting to see when the computer has been designated to sleep.

**No:** Continue to the next step.
3. Reset your computer's PRAM (Parameter RAM).
  - If your iMac is on, turn it off by pressing the power button in until the computer powers off. You should hear the drives and fans go quiet.
  - Wait for a few seconds.
  - While the computer is off, with your left hand, hold down the Apple key, the option key next to it, and the letter R. When you have them all pressed push the power button with your right hand and then quickly move that hand to hold down the letter P. Keep the four keys pressed while the computer starts up.
  - Make sure you hold down the four keys (P-R-Command-Option) while the computer starts up. When you keep all the keys held down, you will hear the startup chime over and over again (about every ten seconds) until you let go. After you hear the second chime, you can let go of the keys.
  - If you didn't hear at least two startup chimes, go to step one on this page and try again. It's important that you two startup chimes when performing this procedure. This indicates that you have successfully reset the computer's PRAM (Parameter RAM).
4. Does the computer display video after successfully resetting the computer's PRAM?

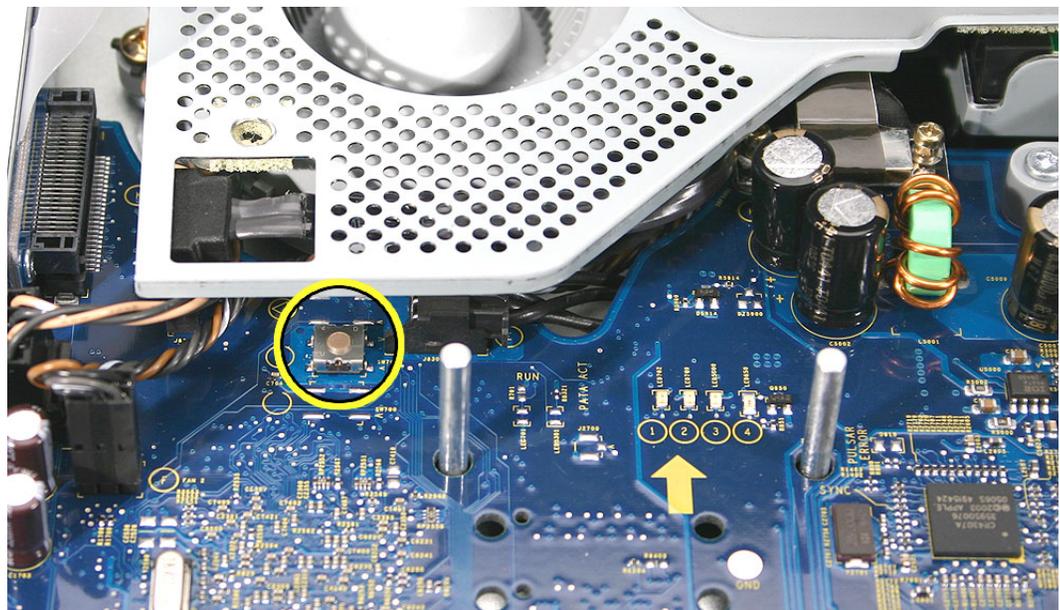
**Yes:** Problem resolved. Restart the computer from the Apple menu and make sure the computer is starting up properly.

**No:** Continue to the next step.

5. Remove the back cover to access the diagnostic LEDs on the main logic board.
6. With the back cover removed, locate the diagnostic LEDs 1 through 4 above the large yellow arrow on the main logic board.



7. Plug the power cord into the iMac G5 and into a known good AC outlet. LED #1 should come on if your computer has been starting up properly. If LED #1 is Off, see iMac G5: Troubleshooting: No Power for further troubleshooting information.
8. Turn the computer on by using the internal power button. Press the small, metal button under the fan cover as shown



9. When the computer starts up, LED #2 will light after you hear the boot chime indicating the logic board is processing power correctly. If LED #2 does not light, reset the SMU (System Management Unit). Refer to “Resetting the SMU” mentioned earlier in this chapter. If LED #2 remains off after resetting the SMU, your logic board needs to be replaced. Order and install the logic board for your computer.
10. LED # 3 will light last indicating that the logic board and LCD assembly have communicated and the LCD is ready to receive video. Does LED #3 come on?  
**Yes:** This indicates that your logic board is working correctly to produce video. Continue to step 14.  
**No:** Continue to step 11 to reset system power management.
11. Reset the SMU (System Management Unit). Refer to “Resetting the SMU” mentioned earlier in this chapter.  
After resetting the SMU, does LED #3 light now?  
**Yes:** Press and hold the power button until the computer powers off. Start the computer again and confirm that LED #3 is reliably lighting. Continue to step 14.  
**No:** Go to the next step.
12. Unplug the iMac G5 and remove the SDRAM. Replace with known good SDRAM. Plug the iMac G5 back in and start the unit by pressing the two internal power pins. Does LED #3 light now?



**Yes:** Replace the original SDRAM and test again. If LED #3 does not light with the original SDRAM, replace the SDRAM.

---

**No:** Continue to next step.

13. Unplug the iMac G5 and remove the optical drive. Plug the iMac G5 back in and start the unit up from the internal power button. Does LED #3 light now?
  - **Yes:** This indicates the optical drive has failed. Replace the optical drive.
  - **No:** Replace the logic board.
14. With LED #3 on, turn the machine off by holding the internal power button until the unit powers off. Unplug the computer and reinstall the back cover. Return the computer to the upright position. Plug in the computer again and power on the computer. Does the computer have video now?
  - **Yes:** Restart the computer and make sure that the computer is operating properly.
  - **No:** Continue to the next step
15. Turn the display at an angle to you and look closely at the display. Is the display completely black or can you see a dim light or glow to the display?
  - **Completely black:** Replace the inverter
  - **Dim or light glow:** Replace the LCD panel.

### **Display is tinted another color**

1. Reset the parameter RAM. Press Command-Option-P-R keys. When you keep all the keys held down, you will hear the startup chime over and over again (about every ten seconds) until you let go. After you hear the second chime, you can let go of the keys.
2. Does the computer display video after successfully resetting the computer's PRAM?

**Yes:** Problem resolved. Restart the computer from the Apple menu and make sure the computer is starting up properly.

**No:** Continue to the next step.
3. Check for external video. Connect an external monitor to the mini-VGA port. Do you have external video now?

**Yes:** Replace the LCD panel and then go on to step 4.

**No:** Replace the logic board.
4. After replacing the LCD panel? Do you have video now?

**Yes:** Problem solved.

**No:** Replace the logic board.

## Display

### When displaying a single color over the screen area, the LCD panel shows one or more pixels that are not properly lit

Active-matrix LCD technology uses rows and columns of addressable locations (pixels) that render text and images on screen. Each pixel location has three separate subpixels (red, green, and blue) that allow the image to be rendered in full color. Each subpixel has a corresponding transistor responsible for turning the subpixel on or off.

There are typically millions of these subpixels on an LCD display. For example, the LCD panel used in the Apple Cinema HD display is made up of 2.3 million pixels and 6.9 million red, green, and blue subpixels. Occasionally, a transistor does not work perfectly, which may result in the affected subpixel being turned on (bright) or turned off (dark). With the millions of subpixels on a display, it is quite possible to have a low number of faulty transistors on an LCD. Therefore, a certain number of subpixel anomalies is considered acceptable. Rejecting all but perfect LCD panels would significantly increase the retail price for products using LCD displays. These factors apply to all manufacturers using LCD technology—not just Apple products.

To determine whether or not the display has an acceptable number of pixel anomalies, follow the steps below:

1. Set the display image to one of the following colors: all-white display, all-red display, all-green display, or all-blue display.
2. Using a jeweler's loupe, pocket microscope, or other magnifying device, identify and count each subpixel anomaly:
  - Bright subpixel anomaly = subpixel that is always on
  - Dark subpixel anomaly = subpixel that is always off
3. **Important:** Check the number of subpixel anomalies with the following chart:

LCD Size (inches)	Acceptable Number of Subpixel Anomalies			Replace the Display		
	Bright	Dark	Combination	Bright	Dark	Combination
17 to 20	up to 4	up to 6	up to 8	5 or more	7 or more	9 or more

4. If the number of subpixel anomalies exceeds the acceptable number listed in the chart, replace the LCD panel.
5. If the number of subpixel anomalies is acceptable, explain to the customer that the pixel anomalies are within specifications, and no repair is necessary.

**Important:** Do not release the specifications to customers. Instead, inform them that a certain number of subpixel anomalies is considered acceptable, and these factors apply to all manufacturers using LCD technology—not just Apple products.

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## Hard Drive

**In a hard drive failure, the computer fails to boot to the desktop and may display a flashing question mark, or an alternating question mark and Mac OS (face o a folder)**

1. Restart the computer with the Apple Hardware Test (AHT) disc that came with the computer. Run the Quick/Extended test.
2. Does the Apple Hardware Test test pass?  
**Yes:** Run Disk repair from the Install CD that came with the computer.  
**No:** Replace the component indicated by Apple Hardware Test, go on to the next step.
3. Does the computer start up properly now?  
**Yes:** Problem resolved.  
**No:** Reinstall system software. Go on to the next step.
4. Does the computer start up properly now?  
**Yes:** Problem resolved.  
**No:** Replace the hard drive. Does the computer work now?
  - **Yes:** Problem resolved.
  - **No:** Replace the logic board.

### **System hangs during normal startup process**

1. Boot from the system CD that came with the computer and see if the hard drive mounts on the desktop.
2. Using Drive Setup, reinstall the system software drivers for the hard drive.
3. Using Drive Setup, reinitiation the hard drive.
4. Check all cable connections to and from the hard drive.
5. Replace the hard drive.
6. Replace the logic board.

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## Flashing question mark appears on the screen

1. Boot from the system CD that came with the computer and see if the hard drive mounts on the desktop.
2. Launch Drive Setup. Reinstall the system software drivers for the hard drive.
3. If no hard drive is found in Drive Setup, verify the hard drive cable connections.
4. Reinstall system software. Backup the data first.
5. Reinitialize the hard drive.
6. Replace the hard drive.
7. Replace the logic board.

## Optical Drive

### CDs or DVDs don't show up on my desktop.

1. The first thing we should check is whether your drive can read discs normally. Try inserting an audio CD and check whether it shows up on your desktop or launches iTunes. Then eject it and insert the iMac Software Install and Restore disc that came with your computer. Are either of these discs recognized by the computer?

**Yes:** It seems that some discs will show up on your Desktop, so the drive is OK - the problem is the individual discs that don't appear. Try cleaning these discs, and make sure they're in a format that can be read by your computer.

**No:** So no disc will show up on your desktop. Go ahead and leave the iMac Software Install and Restore disc in your drive, and we're going to try a process that involves restarting your computer. Follow the instructions, below.

- 1. Leave the iMac Install and Restore disc in the drive.
  - 2. Go to the Apple menu and choose Shut Down.
  - 3. Once the computer has shut down, hold down the OPTION button and press the power button to start the computer up again.
  - 4. You will see a blue background, a curly arrow and a right arrow, and between them is a button with the name of your hard drive. Wait about thirty seconds to see if another button comes up with the name iMac Software Install and Restore.
  - 5. After waiting about thirty seconds, choose the button with your hard drive's name, and click the right arrow button.
  - 6. The computer will start up normally. Open your browser and go back to the Apple support page at: [www.apple.com/support](http://www.apple.com/support)
2. When you were looking at the button with your hard drive's name on it, did a button with the iMac Software Install and Restore ever appear?

**Yes:** The fact that the disc appeared there means your drive does know that a disc is in it. Let's check some system settings to see if they're the reason the discs don't appear.

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**No:** The next thing to check to make sure the computer realizes the drive is there. From the Apple menu, choose About This Mac. From the window that pops up, click on More Info. An application called System Profiler should open.

In System Profiler, in the column on the left, look under Hardware for a line called S-ATA.

In the section on the right, you should see a header saying “S-ATA” and below it, two items. The first is your hard drive. The second is your optical drive. Do you see two items here?

- **Yes:** Even after checking for the drive in the startup manager, discs won't show up. This indicates that your optical drive needs to be replaced.
- **No:** Reseat the optical drive and check System Profiler again. Does the optical drive appear this time? If no, go on to the next step. If yes, it looks like the drive connection may not have been too great, but you've got it plugged in properly now.

3. Replace the optical drive.

4. Replace the logic board.

### **The computer won't burn discs.**

1. The first thing we should check is whether your drive can read discs normally. Try inserting an audio CD and check whether it shows up on your desktop or launches iTunes. Then eject it and insert the iMac Software Install and Restore disc that came with your computer. Are either of these discs recognized by the computer?

**Yes:** This is a good sign. So do you get a specific error message or error code when you try to burn a disc? Go on to step 2.

**No:** So no disc will show up on your desktop. Go ahead and leave the iMac Software Install and Restore disc in your drive, and we're going to try a process that involves restarting your computer. Follow the instructions, below.

- 1. Leave the iMac Install and Restore disc in the drive.
- 2. Go to the Apple menu and choose Shut Down.
- 3. Once the computer has shut down, hold down the OPTION button and press the power button to start the computer up again.
- 4. You will see a blue background, a curly arrow and a right arrow, and between them is a button with the name of your hard drive. Wait about thirty seconds to see if another button comes up with the name iMac Software Install and Restore.
- 5. After waiting about thirty seconds, choose the button with your hard drive's name, and click the right arrow button.
- 6. The computer will start up normally. Open your browser and go back to the Apple support page at: [www.apple.com/support](http://www.apple.com/support)

2. Which of these error messages do you see?

- **Unknown Error -2147352480.** See Knowledge Base article 25480 and 25750 for more information.
- **Buffer underrun error.** See Knowledge Base article 25480 and 25750 for more

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information.

- **Unknown Error.** If you see “Unknown Error”, without “-2147352480”, you will want to see Knowledge Base article 152224 for more information.
  - **None of these alert messages.** Is your disc drive the one inside the iMac, or is it attached to the iMac by a USB or FireWire cable?
    - Inside the Mac: Go on to step 3.
    - Attached by a cable: Go on to step 4.
3. So you can see other discs, it's just that they don't burn. Have you tried discs of other brands? Sometimes certain discs won't burn, either because of quality or because they're damaged or old. Try purchasing a different brand of discs and test to see whether these discs will burn. Do the new discs burn correctly?

**Yes:** Great! It looks like the issue can be isolated to the old discs you were using. For whatever reason, they don't seem to be working, so you'll want to use the new discs from now on.

**No:** So your new discs didn't work either. What sort of disc are you trying to burn - is it a CD or a DVD?

- CD: You said you're having problems burning CDs. Let's try an easy question first. In your Finder, open a window and select your hard drive. At the bottom of the window, does it say you have at least a gigabyte (1 GB) free? If no, go to step 5.
  - DVD: The first thing we should check is whether your drive can read DVDs normally. Try inserting the iMac Software Install and Restore disc that came with your computer. If you still have problems, go to step 6.
4. We don't have the capacity to troubleshoot an external drive - if you are having problems with a drive other than the internal one, you will need to talk to the manufacturer of that drive.
5. When the computer burns a CD, it needs some free space on the hard drive for it to do what it needs to do when it burns a disc. Try freeing up some space by emptying trash and deleting unneeded items. Once you have at least one gigabyte free and you've emptied the trash, try burning a disc again. Does it burn correctly now?

**Yes:** Problem solved.

**No:** When you try to burn a CD, are you burning a disc from the Finder, from iTunes, or from a different application? Refer to Knowledge Base articles 151904, 150293, 151701, and 153426 for disc burning issues. Does it burn a disc now?

- **Yes:** Problem solved.
- **No:** Go on to the next step.

6. Reinstall the system software. Print Knowledge Base article 151641 and follow the steps. Try burning a disc again. Did the disc burn correctly?

**Yes:** Problem solved.

**No:** Replace the optical drive. Does it burn correctly now?

- **Yes:** Problem solved.
- **No:** Replace the logic board.

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## Inserting Discs Issue

1. Is there a disc already in the drive? Refer to Knowledge Base article 106752, “Macintosh: How to Eject a Disc When Other Options Do Not Work”.
2. Check System Profiler. In System Profiler, in the column on the left, look under Hardware for a line called S-ATA.

In the section on the right, you should see a header saying “S-ATA” and below it, two items. The first is your hard drive. The second is your optical drive. Do you see two items here?

**Yes:** Problem solved. Run diagnostics and try inserting a disc again.

**No:** Remove the back cover and reseal the optical drive. Can you insert a disc now?

– **Yes:** Problem solved.

– **No:** Replace the optical drive. If this doesn’t solve the problem, go on to the next step.

3. Replace the logic board.

## Optical disc constantly ejects

1. Disconnect all peripheral devices, especially the mouse in cases where the disc is constantly ejecting.
2. Try cleaning the disc. If it is dirty or scratched, it may not mount.
3. Try a different disc.
4. Boot from Apple Hardware Test (hold down the “C” key at startup) or boot from the system install CD (use Startup Manager, hold down the Option key at startup).
5. Perform a clean install with the CD that came with the computer.
6. Reseat the optical drive.
7. Replace the optical drive.
8. Replace the logic board

## Optical media ejects out of the system and drops to the desktop

1. Try a different disc.

Check if the microfoam shim (922-7671) is installed in between the optical drive and the display bezel. Is there a shim installed?

– **Yes:** Reseat the optical drive.

– **No:** Install the shim if it’s not present. Follow the “installation” procedure in the Take Apart chapter under Microfoam Shim. Test the unit again.

2. Replace the optical drive.
3. Replace the logic board.

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## Fan Sound

### Loud fan noise coming from inside the computer

The grill on the bottom of the iMac G5 lets a trio of fans draw cool air into the system. Advanced thermal software spins the fans fast or slow as needed, passing the heated air through a slit on the back cover. As the system usage increases, the fans will adjust their speed using advanced thermal software to meet the cooling needs of the system. Accumulating dust can obstruct the flow of air through the system causing the fans to run faster than normal. In severe cases the system may overheat and unexpectedly shut down.

Under normal conditions, rotating fans will make a slight hum that varies in relationship with their rotational speed and the amount of air that they are moving. In addition, the normal functioning of the hard drive and optical drive will generate additional whirring and scratching sounds that may be audible. All of these sounds are normal and do not indicate a failure with your computer.

To begin troubleshooting a possible fan issue, we need to qualify the sound that you're experiencing.

1. Does the sound occur only under specific light/heavy usage conditions?

**Yes:** CPU intensive applications such as iTunes, Garage Band, DVD Player, etc., or two or more applications open at once will cause the fans to run at an increased rate making them more noticeable. If the sound only occurs when one or more of these applications is running, this is normal.

**No:** If the sound isn't affected by CPU intensive application it may be due to other factors. Go on to the next step.

2. Is the sound always present, or does the sound vary?

**The sound is always present:** The normal functioning of the hard drive and optical drive will generate additional whirring and scratching noises that may be audible. Let's see if this sound is related to one of the components. Go to step 4.

**The sound varies:** Under normal conditions rotating blowers will make a slight hum that varies in relationship with their rotational speed and the amount of air that they are moving. Let's see if this is indeed the case. Go to Next Step.

3. Are the fans making a normal humming sound that increases/decreases in relation to processor usage? As the fans increase their speed to cool the system the sound level will increase.

Launch the Activity Monitor application included with Mac OS X in the Utilities folder to determine whether the noise corresponds with heavy usage of the CPU. Does fan activity increase / decrease with the CPU Usage graph in Activity Monitor?

**Yes:** As the system CPU usage increases, the fans will adjust their speed using advanced thermal software to meet the cooling needs of the system. As the fans

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increase their speed to cool the system the sound level will increase. This is normal operation and none of your fans require replacement. Refer to the “Heatsink Cleaning Procedure” that follows to determine whether dust accumulating in the heatsink cooling fins may be causing the fans to run faster than normal.

**No:** If the fan activity does not coincide with CPU usage, the sound you're hearing may not be fan activity. Go to the Next Step.

4. The normal functioning of the hard drive and optical drive will generate additional whirring and scratching noises that may be audible. We can isolate these noises by booting the computer to the iMac G5 Install Mac OS X Install Disc 1.

- Place the disc in the drive, and restart your machine, holding down the “C” key as the machine starts up.

- Once at the Installer window, choose Open Disk Utility from the Installer Menu.

- Once Disk Utility is open, select your Macintosh HD and on the toolbar choose Unmount. Note: if you have multiple partitions, you should unmount each of these partitions.

This will spin down the hard drive. The optical drive will also be busy at this time; wait a moment for the optical drive to spin down also and then listen to the machine.

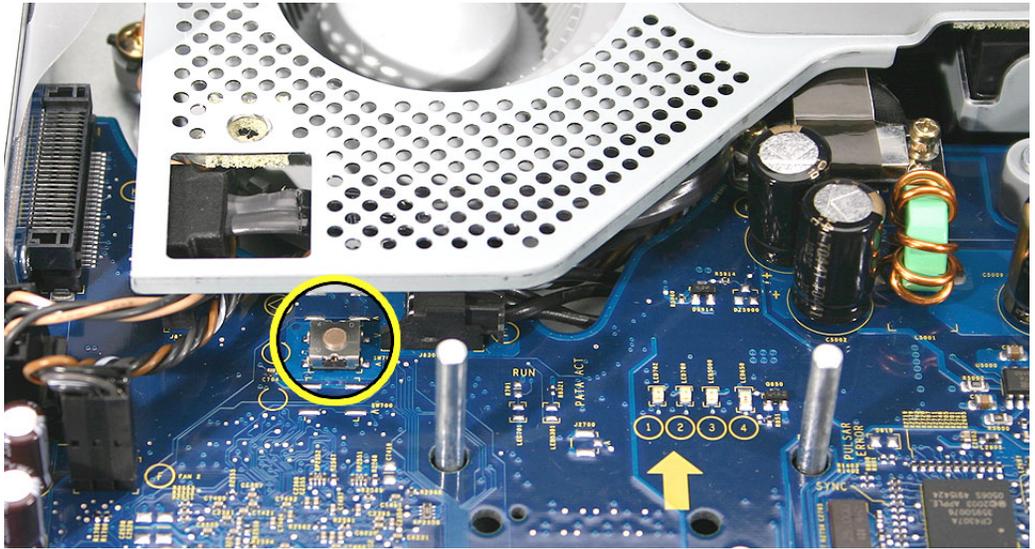
Is the sound that you've been experiencing still present?

**Yes:** With the hard drive and optical drive inactive, all you should be hearing are the fans in the machine. While booted to the CD, these fans should be running at a lower level since the CPU is under very little task with both drives inactive. Fan sound that includes objectionable ticking, whistling, or squealing may require further investigation and/or replacement of the particular fan. Go on to the Next Step.

**No:** The normal functioning of the hard drive and optical drive will generate additional whirring and scratching sounds that may be audible. All of these sounds are normal and do not indicate a failure with your machine. If you wish to check the health of your hard drive, see article 152349 - Replacing a disk before it fails.

5. Power off your computer, remove the power cord and any other cables that are connected to your computer and remove the back cover.

- Plug the computer in and start it up by pressing the internal power button.



- As the machine starts up, listen carefully to each of the fans, and see if you can locate one of the three fans of which the objectionable ticking, whistling, or squealing sound is coming from.

Can you pinpoint the fan making the sound?

**Yes:** If the sound is coming from one of the fans near the hard drive, you can order and install the Upper Fan kit for the computer.

If the sound is coming from the fan near the power supply of your computer, you should order the lower fan.

**No:** If you can hear an objectionable ticking, whistling, or squealing sound, but you cannot identify the source of the sound, contact Apple Technical Support.

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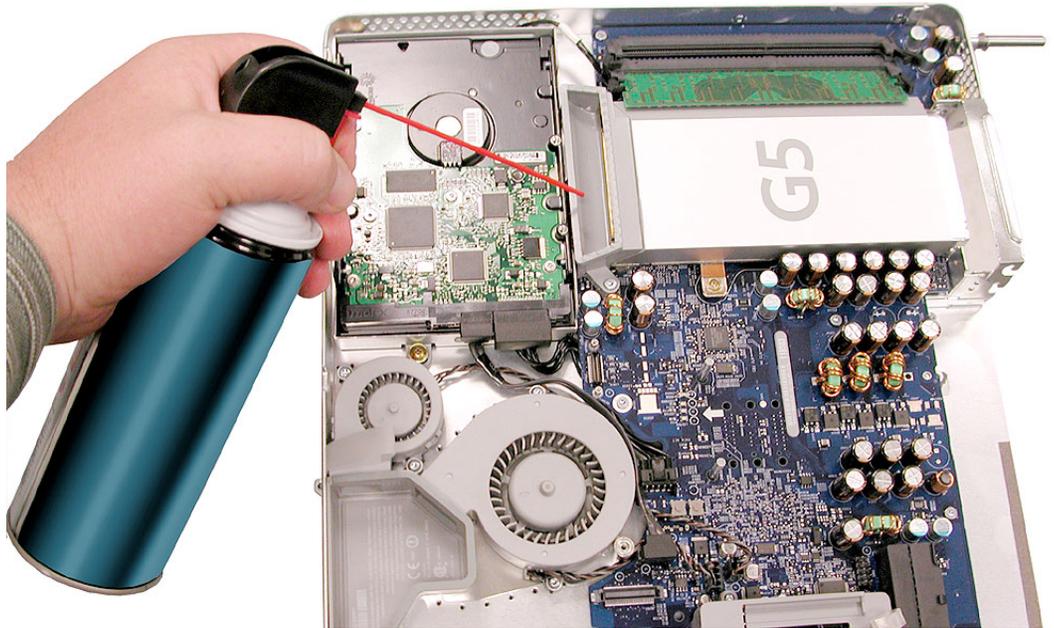
## Heatsink Cleaning Procedure

Dust drawn in through the intake grill on the bottom of the iMac can gradually accumulate, eventually degrading the cooling performance of the heatsink by obstructing the air flow.

1. Before you begin, remove the back cover and the midplane assembly.
2. Remove the lower fan from its mounting bracket to expose the heatsink cooling fins.  
**Note:** The lower fan does not need to be disconnected from the logic board.
3. With the lower fan removed, carefully inspect the heatsink intake for visible dust contamination as shown below. If the heatsink appears free of dust then reinstall the lower fan, assemble the system, and retest the computer. If there is visible dust, proceed to the next step.



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4. If the dust has accumulated on the cooling fins than use compressed air from a can or an air compressor to blow the dust from the heatsink as shown below.



5. Inspect the lower fan and use the compressed air to clean it out if needed.
6. Inspect the lower grill on the iMac front bezel and clean if needed.
7. Reassemble the computer and retest.

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## Fans are running at a constant high speed

If the fans on the system are running at a constant high speed, or ramp very quickly to high speed and do not vary this speed once reached, the fans are most likely receiving incorrect thermal input. In these cases you should use the following steps to resolve:

1. Reset the SMU (refer to “Resetting the SMU” mentioned earlier in this chapter) and then test to see if the fans still exhibit the issue.
2. Boot from the iMac G5 Install DVD or another iMac G5 of the same type in FireWire Target disc mode and see if the issue persists. If the fans run normally here, reinstall the system software. Be sure to give the system enough time to recreate the issue when booted to these other volumes.
3. Verify that the hard drive sensor cable is plugged in correctly. If necessary, replace the hard drive sensor cable.
4. Replace the hard drive (the hard drive includes the sensor on the hard drive carrier).
5. Replace the main logic board.

## AirPort/Bluetooth

### Not able to connect wirelessly with AirPort or Bluetooth

1. From the Apple menu, choose About this Mac.
2. Click on More Info. System Profiler should open.
3. In System Profiler, in the column on the left, look under Hardware for a line called “AirPort Card”. Select that line.

4. Does the section to the right say “No Information Found”?

**Yes:** It looks like your computer doesn't realize it has an AirPort/Bluetooth card installed. Go on to step. 5

**No:** It looks like your iMac recognizes that it has an AirPort/Bluetooth card installed. Go on to step 6.

5. Remove the back cover and reseal the AirPort/Bluetooth card. Check System Profiler again to see if the computer sees the AirPort/Bluetooth card. Does it recognize the card now?

**Yes:** Problem solved.

**No:** Replace the AirPort/Bluetooth card.

6. Now that we know your iMac recognizes your AirPort/Bluetooth card, check the antennas. If the antennas are not plugged in all the way, you may have very short AirPort/Bluetooth range.
7. Remove the back cover. Reconnect the antennas cable to the AirPort/Bluetooth card. Press the antennas firmly, to make sure it's fully connected to the card. You should be

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ready to go wireless now.

8. If your antennas are plugged in properly and your AirPort/Bluetooth card is recognized there are a number of other things that could cause issues with wireless networking. Refer to Knowledge Base document 106858 for more networking information.
9. Replace the AirPort/Bluetooth card.
10. Replace the antenna(s).
11. Replace the logic board.

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## My AirPort signal seems to be very weak

1. Check your antenna. If the antenna is not plugged in all the way to the AirPort/Bluetooth card, you may have very short AirPort range.
2. Remove the back cover. Reconnect the antenna cables to the card. Press the antenna connector firmly, to make sure it's fully connected to the card. Replace the cover and reconnect the power cord.
3. Try connecting to your wireless access point now. Did your reception improve?

**Yes:** It looks like the antenna had not been plugged in all the way. You should be ready to go wireless now.

**No:** It continues like your antenna is plugged in properly and your AirPort/Bluetooth card is recognized. However, there are a number of other things that could cause issues with wireless networking. Refer to Knowledge Base document 106858 for more networking information.

4. Replace the AirPort/Bluetooth card.
5. Replace the antenna(s).
6. Replace the logic board.

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## Speakers

### I don't hear sound from the speakers.

1. Press the F5 button on your keyboard. It has a sound icon on it. Do you hear sound now?

**Yes:** It looks like your volume was muted. When this happens again, just press the F4 and F5 keys to regulate your volume.

**No:** Are there any external microphones, speakers or headphones plugged into the iMac? If yes, go on to step 2. If no, go on to step 3.

2. Disconnect your external microphones, speakers, or headphones. Do you hear sound now?

**Yes:** It looks like the built-in speakers are working properly. Now try plugging in a different set of speakers or headphones. Go on to step 4.

**No:** Unplug any USB devices you have plugged into your iMac except the mouse and keyboard. Do you hear sound now? Go on to step 3.

3. Unplug any USB devices you have plugged into your iMac except the mouse and keyboard. Do you hear sound now?

**Yes:** It sounds like you may have a USB Audio device plugged into your iMac such as a USB microphone adapter or USB speakers. Please work with the manufacturer to troubleshoot this issue.

**No:** Reset your computer's PRAM (Parameter RAM), which stores settings for sound and go to step 5.

4. With new speakers or headphones plugged in, do you have audio?

**Yes:** It appears that the issue may be with the external microphone, speakers or headphones that were plugged into your iMac originally. Work with the manufacturer to troubleshoot the speakers or headphones

**No:** It looks like there may be something wrong with the audio output port on your iMac. Replace the logic board.

5. After resetting the PRAM, do you hear sound now?

**Yes:** Test the audio again. Open System Preferences and check the Sound icon. Make sure the preferences are set correctly. Problem resolved.

**No:** Replace the speakers.

6. After replacing the speakers, do you have sound now?

**Yes:** Problem resolved.

**No:** Replace the logic board.

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## **I hear sound out of only one speaker.**

1. Are there any external microphones, speakers or headphones plugged into the iMac?

**Yes:** Disconnect any external microphones, speakers, or headphones. Do you hear audio from both of the built in speakers on your iMac?

- **Yes:** Good. It looks like the built-in speakers are working properly. This may be an issue with the microphone, speakers or headphones that were plugged into your iMac. Please work with the manufacturer to troubleshoot this issue.
- **No:** Go to step 2.

**No:** Check your speaker balance. If your balance setting was set to the left or right speaker, you would only hear sound from one speaker. Go to step 2.

2. Open System Preferences. (System Preferences can be found under the Apple menu.)
3. Click once on the sound icon.
4. Click once on the Output tab.
5. Make sure your balance setting is in the middle. After adjusting the audio balance, do you have audio from both speakers now?  
**Yes:** It looks like the issue was the balance was not set properly.  
**No:** Replace the speakers.
6. If the speakers did not solve the problem, replace the logic board.

## **Mouse**

### **My mouse doesn't work at all.**

1. Try using the mouse on another surface. Non-reflective, opaque surfaces without repetitive patterns work best. The surface should be clean, but not shiny.
2. Unplug any USB devices plugged into your computer, other than the Apple Mouse and Apple Keyboard.
3. Try another known good USB mouse.
4. Replace the mouse.
5. Replace the logic board.

### **My mouse works intermittently (the cursor freezes randomly).**

1. Unplug any USB devices plugged into your computer, other than the Apple Mouse and Apple Keyboard.
2. Reconnect the USB devices one by one and test your mouse after each to figure out which device is causing the issue. Once you have isolated the “problem child” that isn't playing well with others, you will want to contact the manufacturer of that device to see

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if they have any suggestions or assistance.

3. Try a known good USB mouse.
4. Replace the mouse.
5. Replace the logic board.

### **The mouse is slow to respond.**

1. Try putting the mouse on a different surface - an opaque surface with no patterns is best.
2. Adjust the settings on the mouse.
  - Choose Apple menu > System Preferences and click Keyboard & Mouse.
  - Click Mouse.
  - Drag the Tracking Speed slider to select how fast the pointer moves. Drag the Double-Click Speed slider to set how fast you have to double-click.
3. If the mouse still doesn't work, insert the iMac Software Install and Restore disc that came with your computer. Shut the computer down and then start it up while holding down the letter "c" on the keyboard. Does the mouse work when the computer is started up from this disc?
4. Try a known good USB mouse.
5. Replace the mouse.
6. Replace the logic board.

## **Keyboard**

### **None of the keys on my keyboard work.**

1. Unplug all devices from your computer, including your mouse and keyboard as well as printer, scanner, external hard drives, and hubs. (Warning: Some devices may require you to perform steps before it is safe to unplug them, e.g, external storage devices.) Be sure to unplug your hub, if you have one.
2. Plug your keyboard into the back of your computer firmly and securely. Plug your mouse into the back of your computer firmly and securely. Take special care to make sure the connector is completely in the socket. Go on to step 3.
3. Does your keyboard work now?
  - Yes:** Problem solved.
  - No:** Unplug your keyboard and plug it into another USB slot on the back of your iMac. Does it work now?
    - **Yes:** Replace the logic board.
    - **No:** Unplug your keyboard and plug your mouse into the port the keyboard just occupied. Go on to step 4.
4. Does your mouse work now?

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**Yes:** Replace the keyboard.

**No:** Replace the logic board.

### **Certain keys don't work.**

1. Unplug all devices from your computer, including your mouse and keyboard as well as printer, scanner, external hard drives, and hubs. (Warning: Some devices may require you to perform steps before it is safe to unplug them, e.g, external storage devices.) Be sure to unplug your hub, if you have one.
2. Plug your keyboard into the back of your computer firmly and securely. Plug your mouse into the back of your computer firmly and securely. Take special care to make sure the connector is completely in the socket. (Note that USB plugs can only work one way up, and if you try them upside-down they won't slide together properly.) Go on to the next step.

3. Does your keyboard work now?

**Yes:** Problem solved.

**No:** Unplug your keyboard and plug it into another USB slot on the back of your iMac  
Does it work now?

– **Yes:** Replace the logic board.

– **No:** Unplug your keyboard and plug your mouse into the port the keyboard just occupied. Go on to step 4.

4. Does your mouse work now?

**Yes:** Replace the keyboard.

**No:** Replace the logic board.

### **My keys are sticky or slow to respond.**

1. Try a known good keyboard.
2. Open System Preferences. Click on the keyboard and mouse icon. Adjust the “key repeat speed and delay until repeat” rate.
3. Replace the keyboard.

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### **When I type, strange characters appear on the screen.**

1. Depending on your iMac's settings, a simple keystroke can change your keyboard from English to Japanese. This can result in some pretty funny characters showing up when you type. To switch to the US keyboard,
2. Open System Preferences.
3. Click on the International icon.
4. Click on the Input Menu near the top of the screen.
5. Scroll down the list and uncheck any non-US keyboard layouts.
6. Close the System Preferences. Try typing a few characters. Did it solve the problem?

**Yes:** Problem solved.

**No:** Replace the keyboard.

### **The USB port on my keyboard doesn't work.**

1. Unplug all devices from your keyboard.
2. Plug your Apple mouse into the left USB port on your keyboard. Does your mouse work when it's plugged into this port?

**Yes:** Now plug the mouse into the right port. Does it work?

– **Yes:** Try a known good keyboard.

– **No:** Try a known good mouse to rule out the mouse. Then go to step 3.

**No:** Try a different mouse or keyboard.

3. Now unplug the keyboard from the USB port on the back of the iMac, and plug the mouse into the port the keyboard had been in. Does the mouse work now?

**Yes:** Replace the keyboard?

**No:** It appears that your USB port isn't functioning properly. Go on to step 4.

4. Replace the logic board.

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## Error Beep(s)

### Computer beeps at startup.

1. Check that the memory DIMMs are iMac G5 compliant. iMac G5 computers work with memory modules (DIMMs) that meet all of these criteria: PC3200, 2.5V, unbuffered, 8-byte, nonparity, 184-pin, 400Mhz DDR SDRAM.

There are two RAM slots. The maximum amount of RAM you can install is 2 GB. You can use RAM module sizes of 256 MB, 512 MB and 1 GB, in either slot.

DIMMs with any of the following features are not supported in the iMac G5 computer: registers or buffers, PLLs, ECC, parity, or EDO RAM.

2. Reseat the memory into the slot.
3. Replace the memory.
4. Replace the logic board.

## USB

### A USB device doesn't work

1. Please unplug all of your USB devices from your iMac except your Apple Keyboard and Apple mouse.
2. Now plug your device directly into the back of your iMac. Does it work as expected now?

**Yes:** Your device works when plugged directly into the computer. This indicates a conflict with one of the other USB devices. You can test by gradually adding your devices back and seeing where the issue occurs, then contacting the manufacturer of the device(s) for assistance.

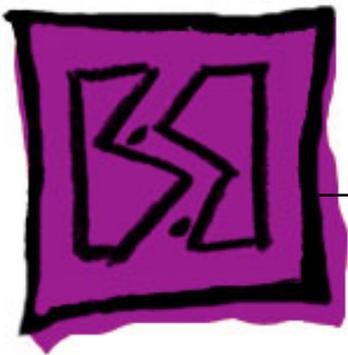
**No:** Unplug your device from the iMac and plug the keyboard into the port your device just occupied. Is your keyboard still working?

- **Yes:** Your Apple Keyboard works when plugged into the USB port your device was plugged into. This points to an issue with your device. Please review the documentation that came with your device. Install any necessary drivers and contact the manufacturer of your device for assistance.
- **No:** Replace the logic board

### I see a message saying not enough power to function.

It appears that this device needs to be plugged into the computer's USB port, rather than the keyboard USB port. Any USB device connected to the keyboard needs to be either a self-powered device (a USB device with its own AC power supply), or a low-power device (a device that does not need a large amount of voltage to operate). Your device may draw more power than the keyboard can provide.

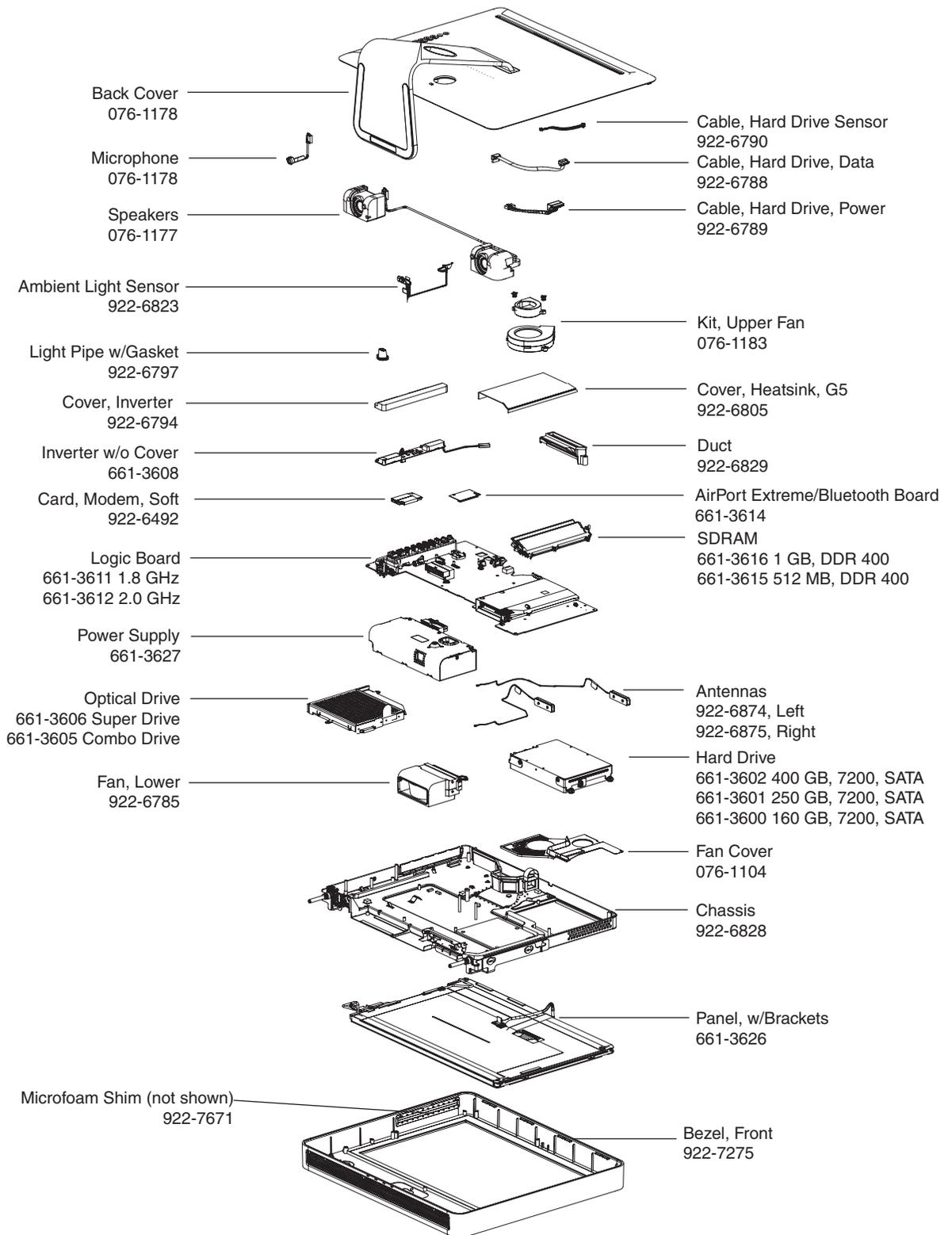




## Views

iMac G5, 17-inch (Ambient  
Light Sensor)

# iMac G5 17-inch (Ambient Light Sensor)



# Screw Matrix and Part Numbers

## iMac G5, 17-inch (Ambient Light Sensor)

**Note:** These are not to scale.

<p><b>922-6659</b></p>  <ul style="list-style-type: none"><li>• Video cable to midplane (2)</li></ul>	<p><b>922-6661</b></p>  <ul style="list-style-type: none"><li>• Fan cover to hard drive (1)</li></ul>	<p><b>922-6662</b></p>  <ul style="list-style-type: none"><li>• Midplane to front bezel (4)</li></ul>
<p><b>922-6665</b></p>  <ul style="list-style-type: none"><li>• Inverter to midplane (1)</li><li>• Optical drive to midplane (3)</li></ul>	<p><b>922- 6666</b></p>  <ul style="list-style-type: none"><li>• Logic board to midplane to front bezel (3)</li></ul>	<p><b>922-6668</b></p>  <ul style="list-style-type: none"><li>• Hard drive bracket to midplane (3)</li></ul>
<p><b>922-6802</b></p>  <ul style="list-style-type: none"><li>• Fan cover to mdiplane (1)</li></ul>	<p><b>922-6850</b></p> <ul style="list-style-type: none"><li>• LCD Panel</li><li>• Speakers, Left (2)</li></ul>	<p><b>922-6856</b></p>  <ul style="list-style-type: none"><li>• Logic board, T10</li></ul>

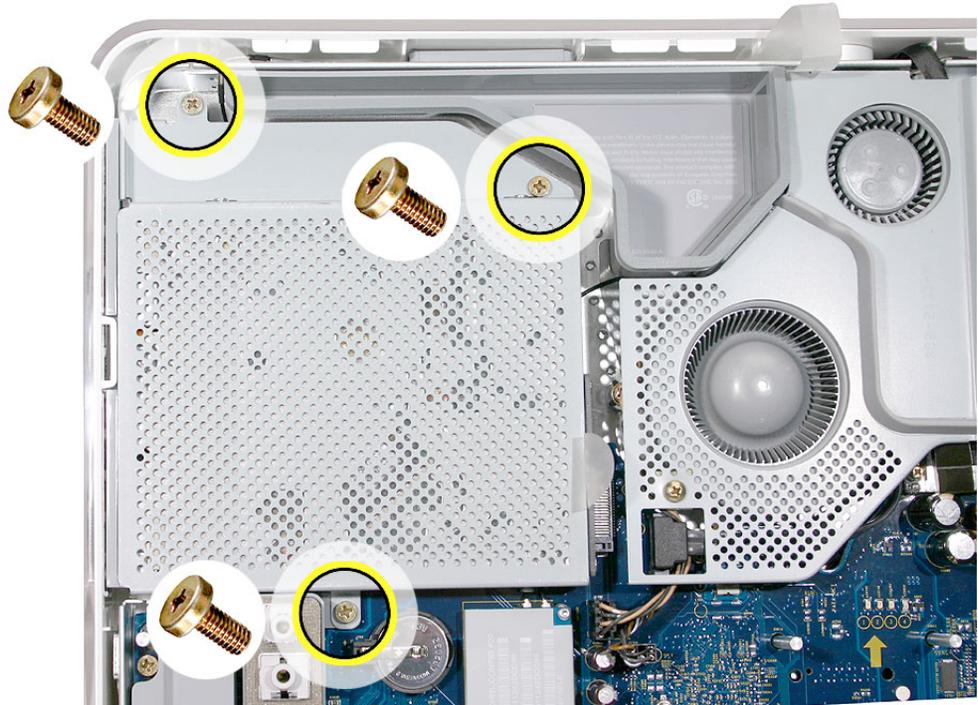
**Note:** These are not to scale.

<p><b>922-6846</b></p>  <ul style="list-style-type: none"><li>• Heatsink to chassis (3) T10</li></ul>	<p><b>922-xxxx</b></p>  <ul style="list-style-type: none"><li>• AirPort Extreme/ Bluetooth card (2) T6</li><li>• Modem (2)</li></ul>	<p><b>922- 6851</b></p>  <ul style="list-style-type: none"><li>• Speaker, Left (2)</li></ul>
<p><b>922-6842</b></p>  <ul style="list-style-type: none"><li>• AirPort Antenna (1) T10</li></ul>	<p><b>922-6845</b></p>  <ul style="list-style-type: none"><li>• Fan Duct( near heatsink)</li></ul>	<p><b>922-6860</b></p>  <ul style="list-style-type: none"><li>• Upper Fan Screws Phillips #2</li></ul>

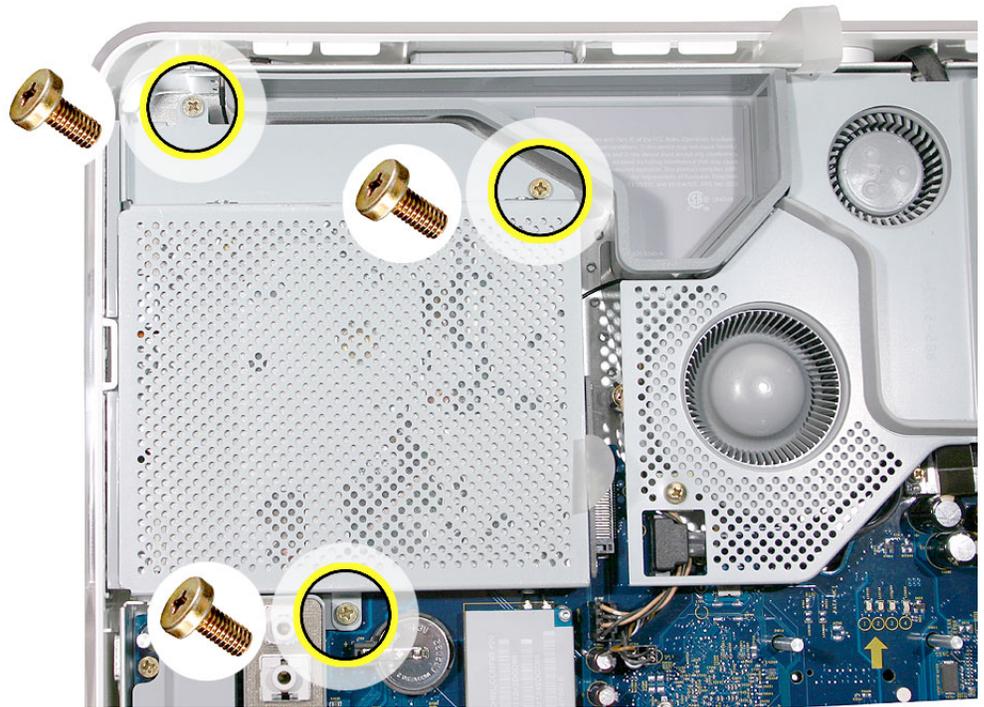
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# Screw Locators

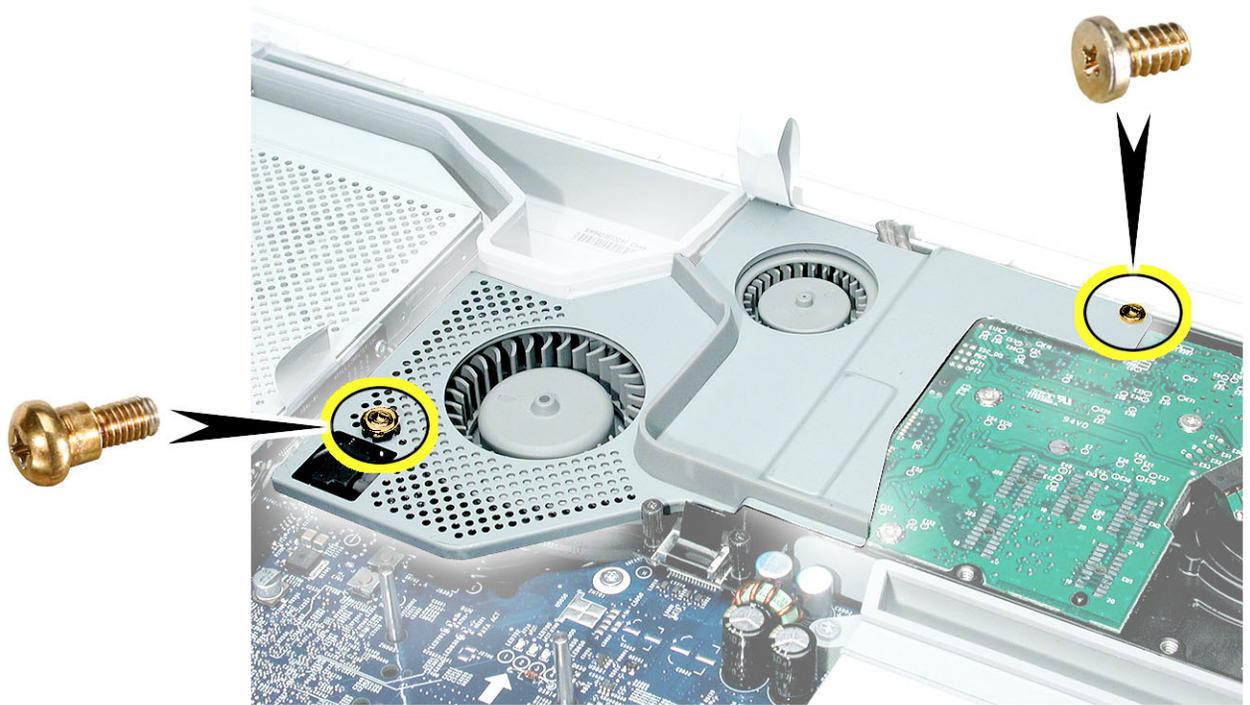
**To Access the Optical Drive**



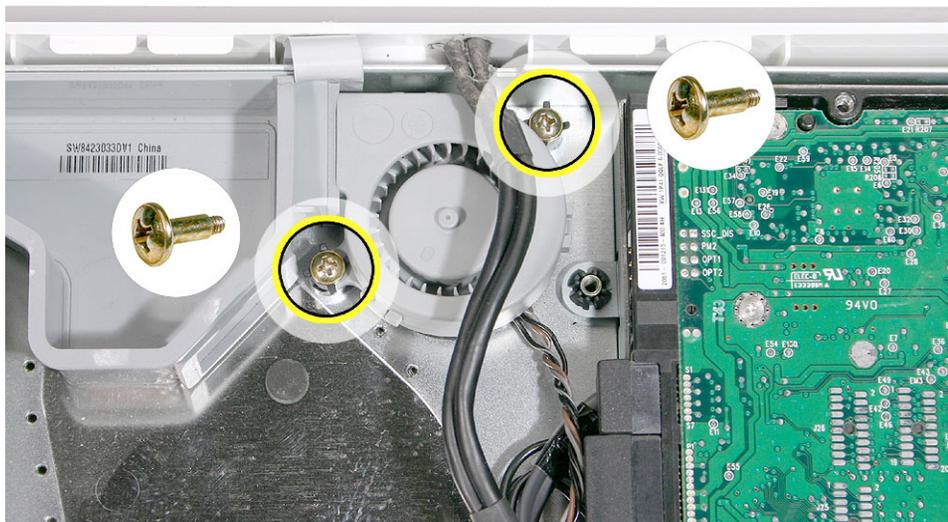
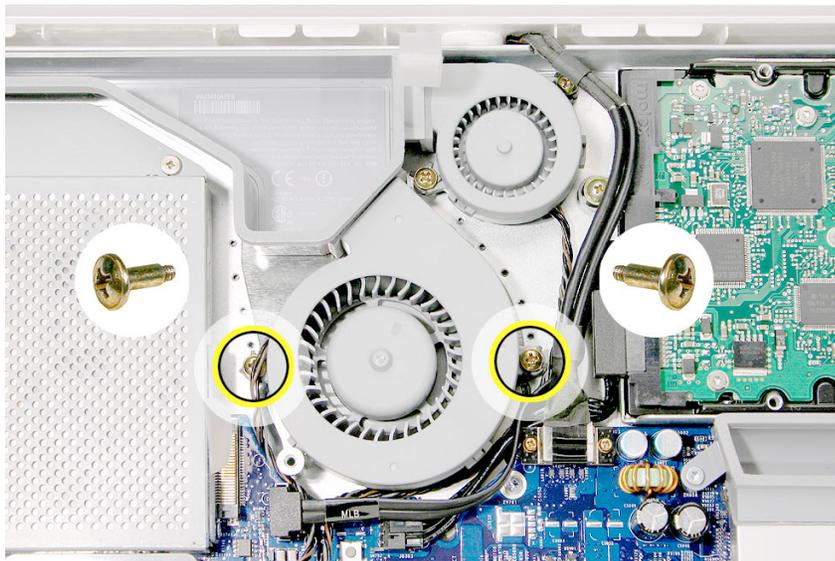
## To Access the Inverter



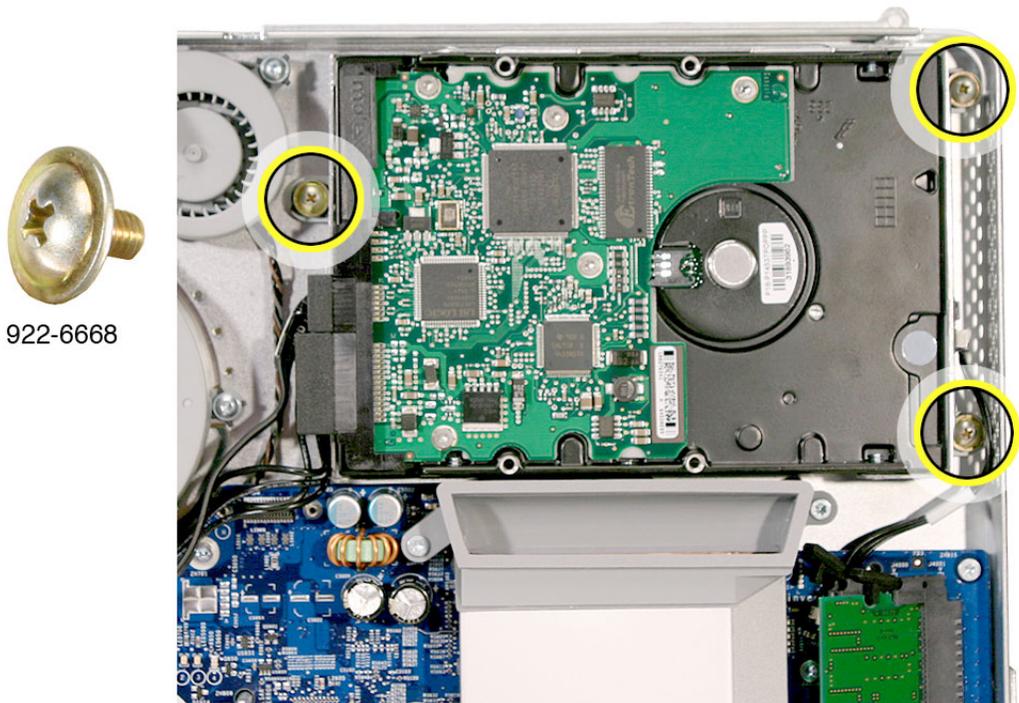
## To Access the Fan Cover



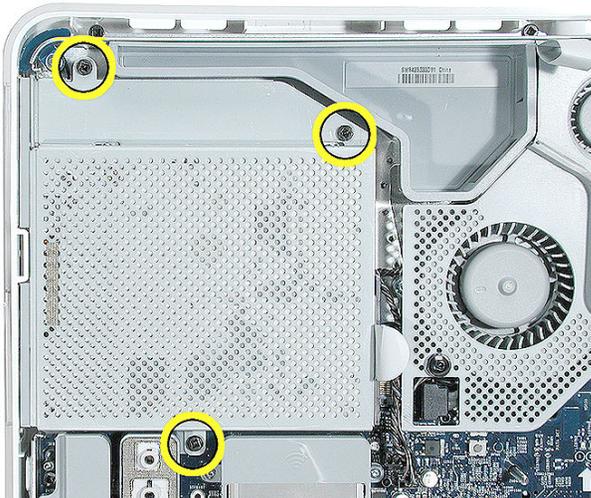
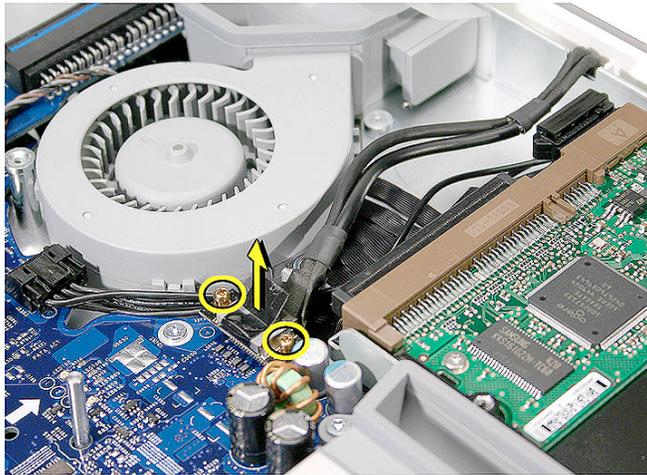
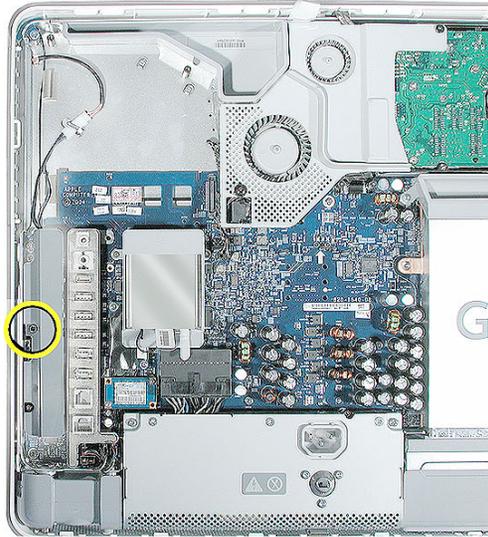
## To Access the Upper Fans



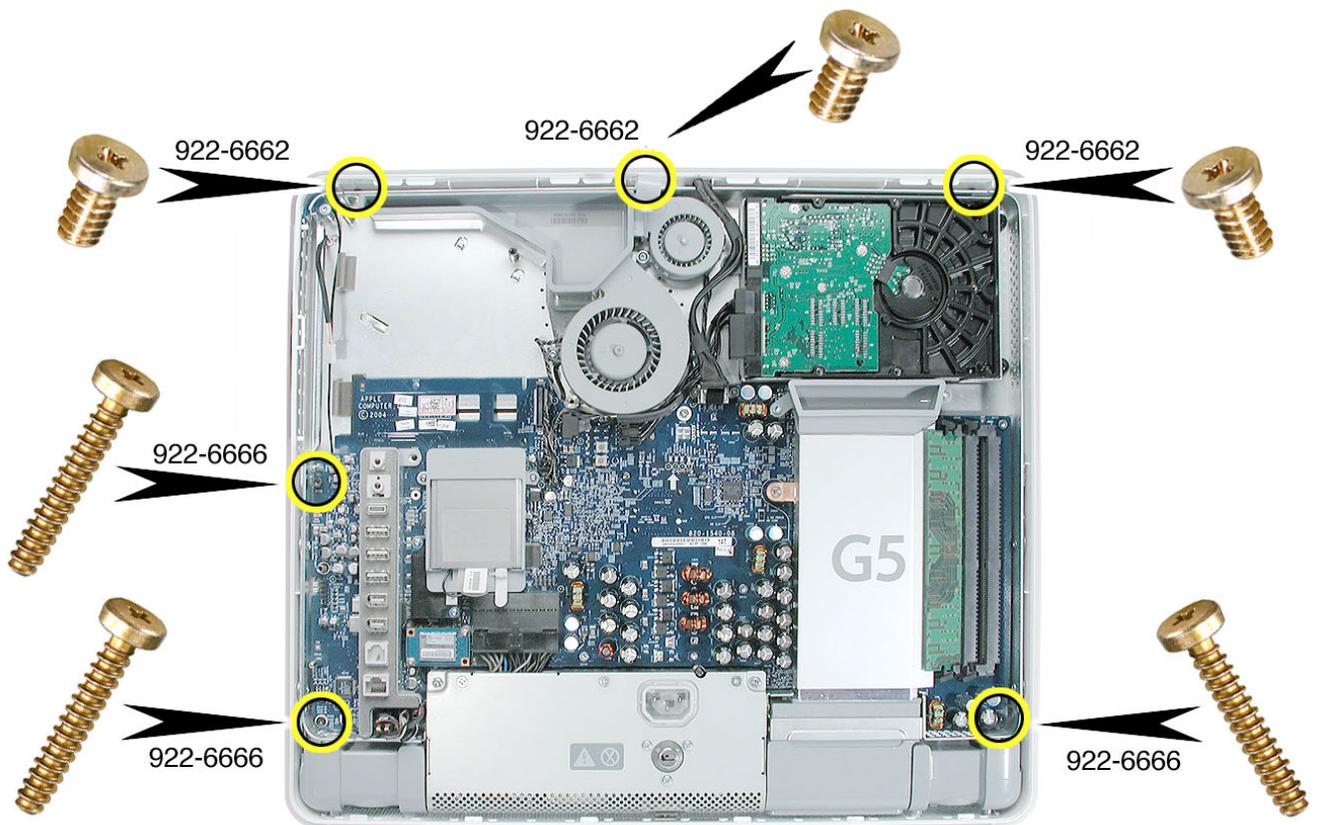
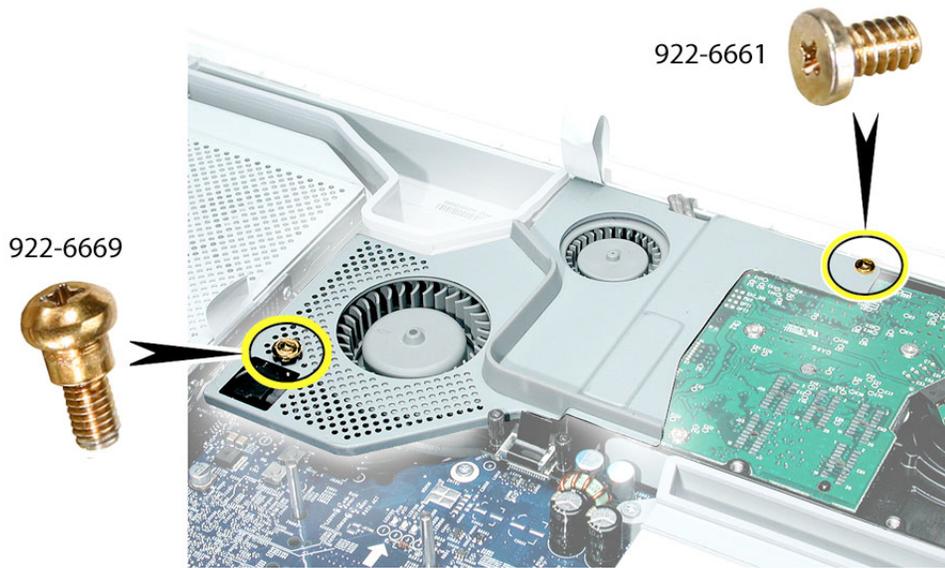
## To Access the Hard Drive



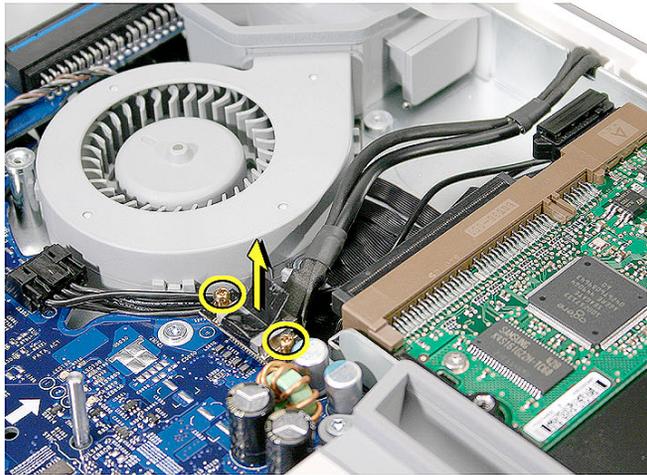
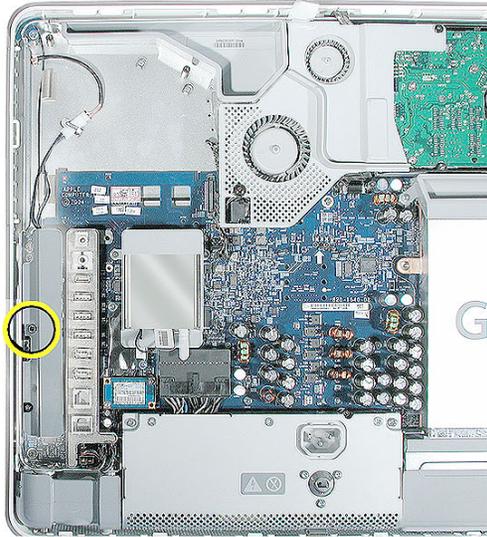
## To Access the Display/Bezel-Part 1



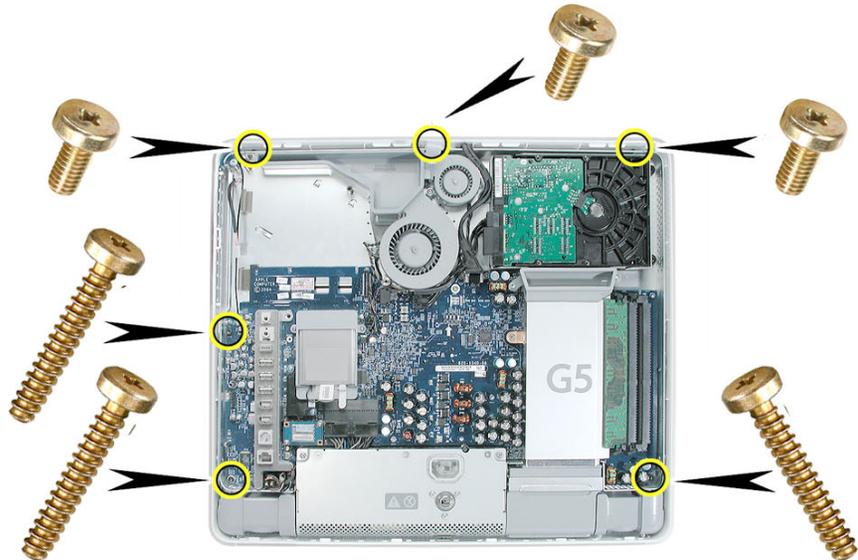
## To Access the Display/Bezel-Part 2



## To Access the Midplane Assembly-Part 1

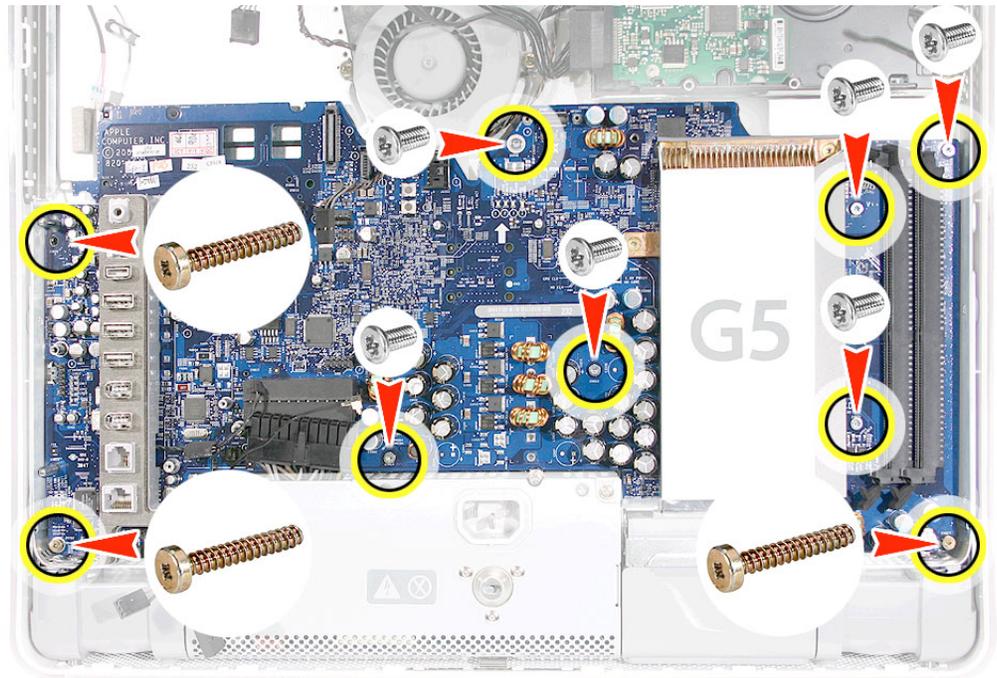


## To Access the Midplane Assembly-Part 2



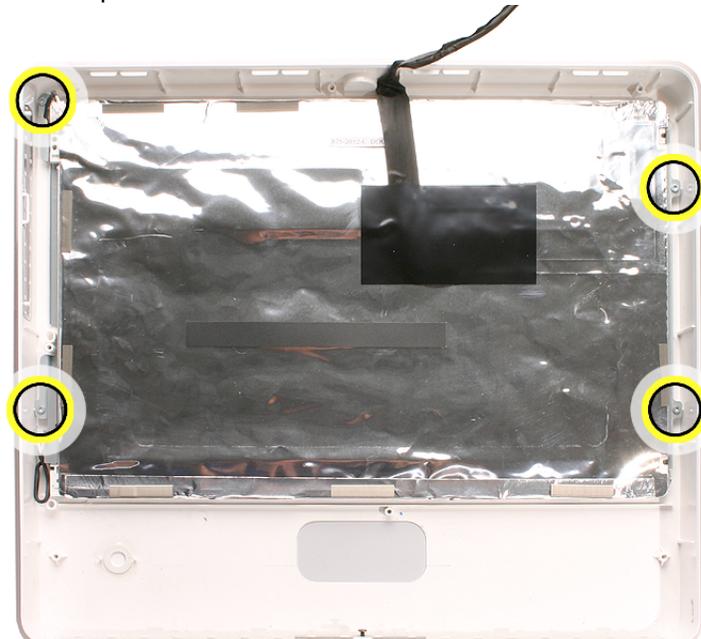
## To Access the Logic Board

Remove all the cables, connectors, modem, memory, and AirPort Extreme/Bluetooth card

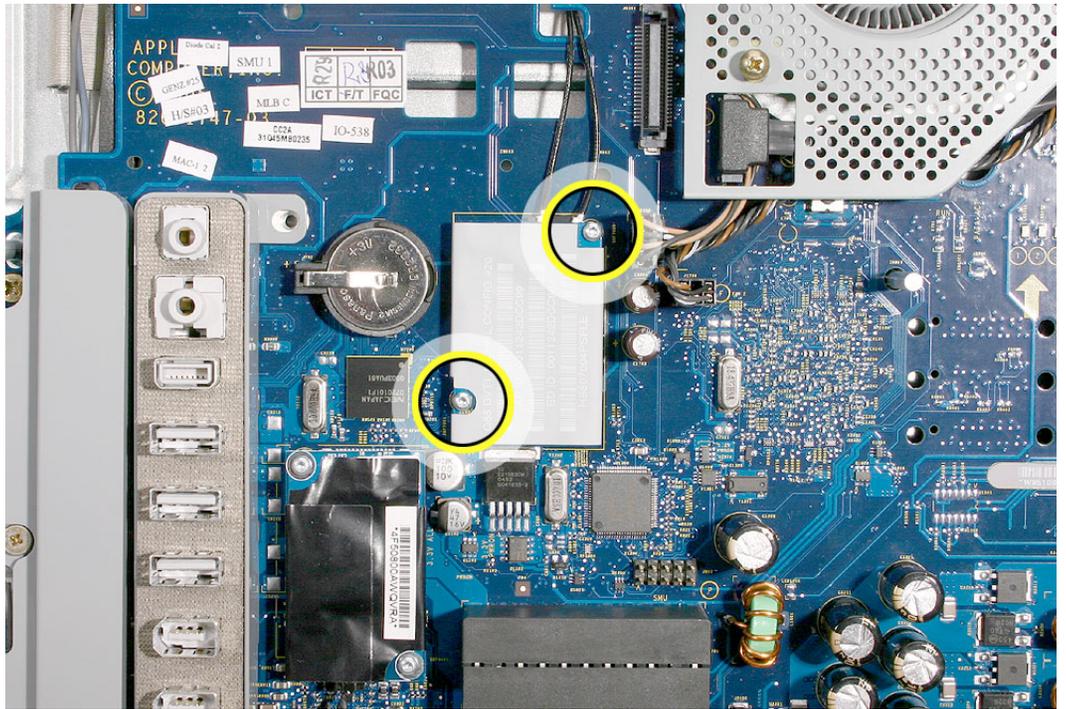


## To Access the LCD Panel

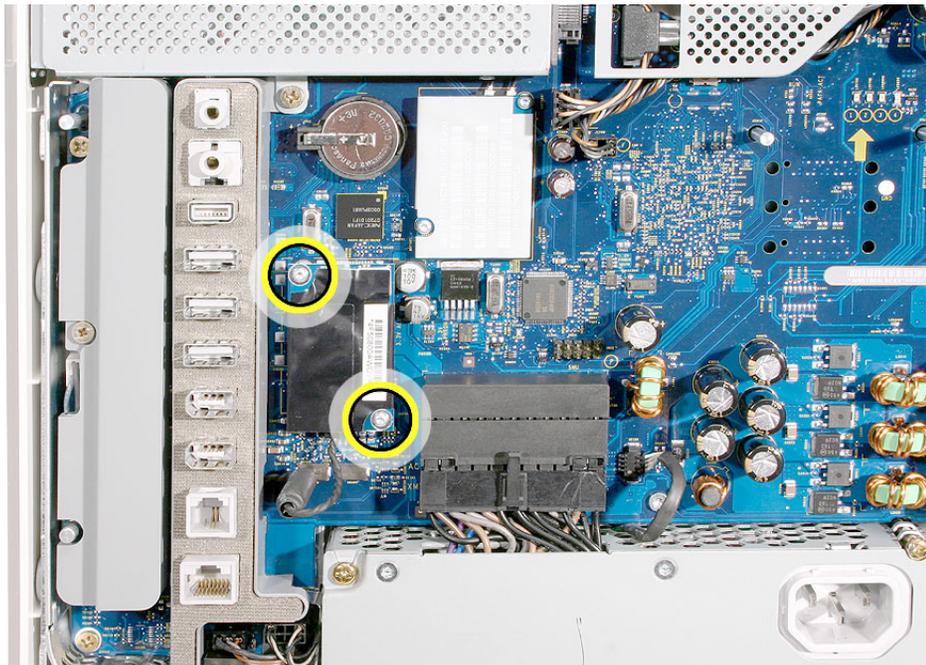
First remove the midplane.



## To Access the AirPort Extreme/Bluetooth Card



## To Access the Modem



## To Access the Speakers

