

## iMac G5, 20-inch

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(September 2004)





Take Apart  
iMac G5, 20-inch



# General Information

## Take Apart Procedures

### Tools

The following tools are required to service the computer:

- Use the screwdriver provided, or a magnetic Phillips #1 screwdriver
- Flatblade screwdriver
- Jeweler's flatblade screwdriver
- Nylon probe tool (black stick 922-5065)
- Needlenose pliers
- Soft cloth (for protect removed parts from scratches)

### Parts Requiring Midplane Replacement

The following are **not** separate, orderable parts. To replace them, you must replace the midplane assembly.

- Fan(s)
- Main logic board
- Midplane chassis
- Logic board cables
- Speakers
- I/O panel

### Parts Requiring Display/Bezel Replacement

The following are **not** separate, orderable parts. To replace them, you must replace the display/bezel assembly.

- Flat panel display
- TMDS video cable
- Inverter-to-display cable
- Display bezel housing (white plastic)

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## Service Modules

1. Midplane assembly (with or without Bluetooth)
2. Display and bezel assembly
3. Hard drive, with carrier (Serial ATA)
4. Power supply
5. Optical drive
6. Backup battery
7. AirPort Extreme card
8. Memory DIMMs, DDR 400
9. Inverter
10. Back cover and foot

## Important Things to Know

1. A spares kit is included with the replacement part. All spares kit include the Phillips #1 and extra screws. There are additional items that are included with the hard drive, the midplane, and the display/bezel assembly. Their spares kit are listed below.

### Hard drive kit

- a Phillips #1 screwdriver
- an extra thermal sensor cable
- extra screws

### Midplane kit

- a Phillips #1 screwdriver
- an extra LED gasket/light tube (located on the underside of the midplane)
- extra screws

### Display/Bezel kit

- a Phillips #1 screwdriver
- an extra LED gasket/light tube (located on the underside of the midplane)
- extra screws

2. All customer removable screws are brass colored. **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. Do not pull on individual wires when disconnecting a part; pull on the connector.



# Removing the Back Cover

## Tools

Use the screwdriver provided, or a Phillips #1 screwdriver

## Part Location



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## 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



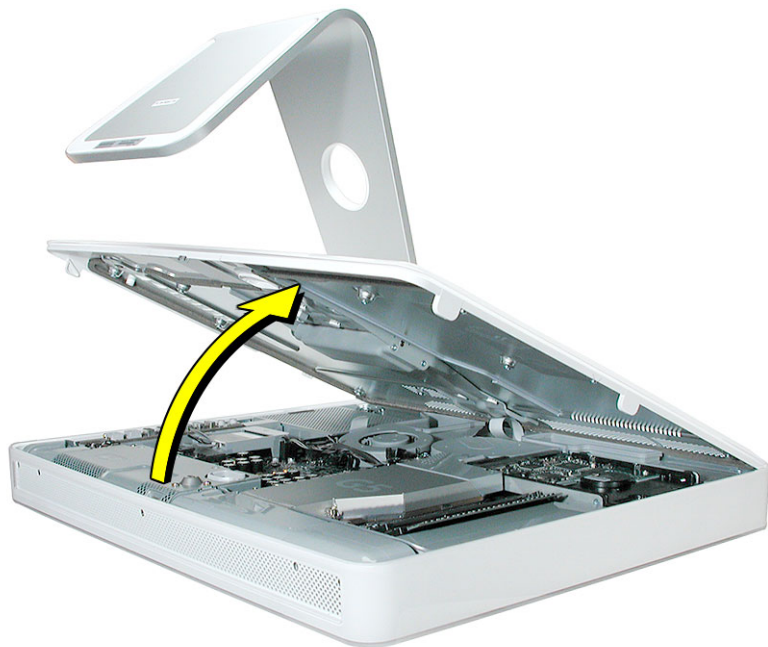
3. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of the computer and slowly lay the computer face down as shown.



4. Locate the three case screws circled below. You may have to lift the metal foot to locate the middle case screw. **Note:** These screws are captive; they are part of the display/bezel assembly and cannot be removed.
5. Using the tool provided, or a Phillips #1 screwdriver, loosen the three captive screws. **Note:** Turn the screws counterclockwise until they stop turning.



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





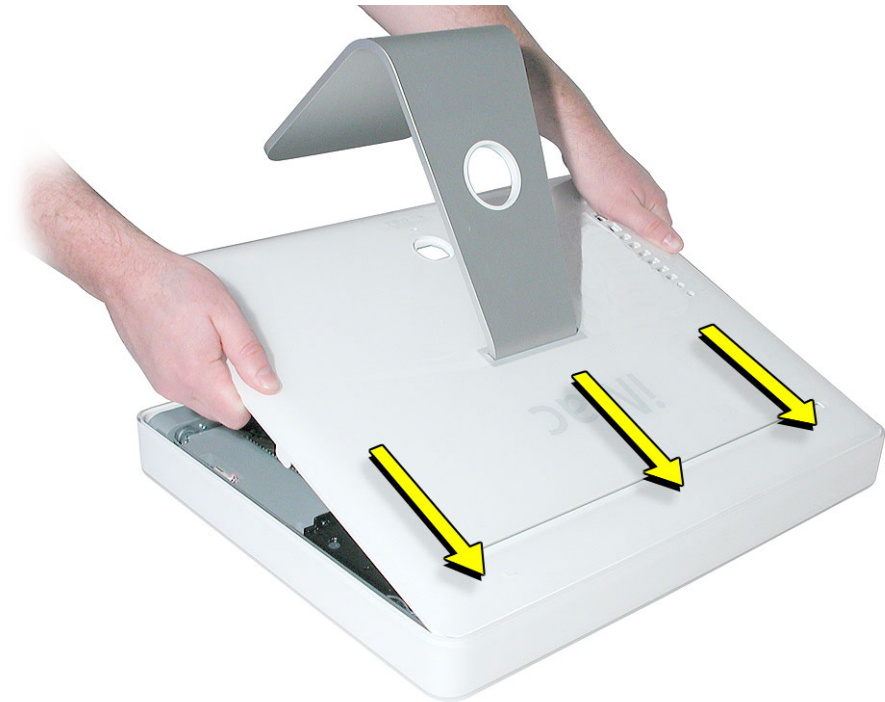
# Replacing the Back Cover

## Tools

Use the screwdriver provided, or a Phillips #1 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.



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



4. Tighten the case screws by turning them clockwise.



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5. Position the computer in the upright position. Reconnect the power cord and remaining cables. Power on the compute





# Serial ATA Hard Drive

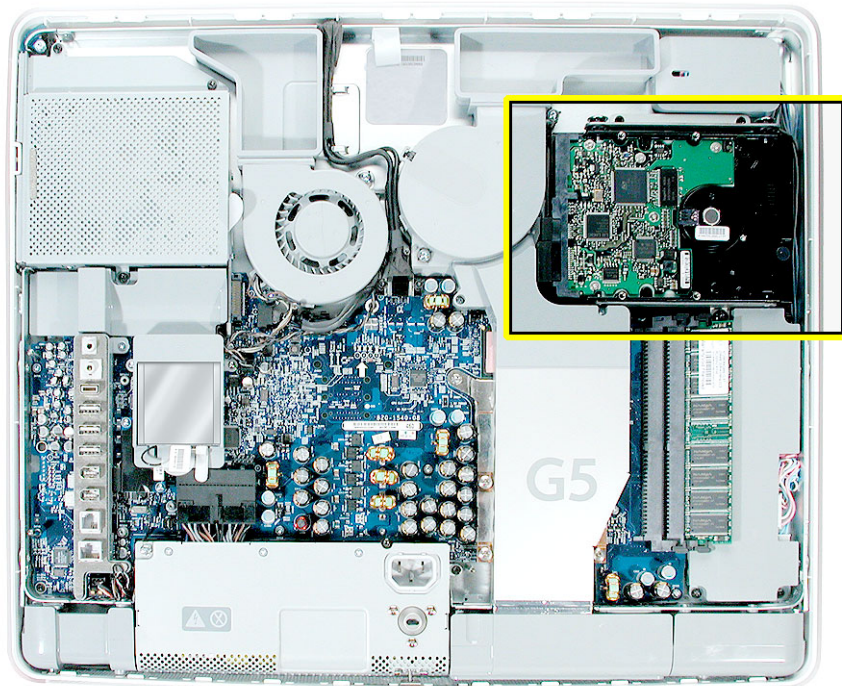
## Tools

- Use the screwdriver provided, or a Phillips #1 screwdriver, preferably with a magnetized tip
- Needlenose pliers
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



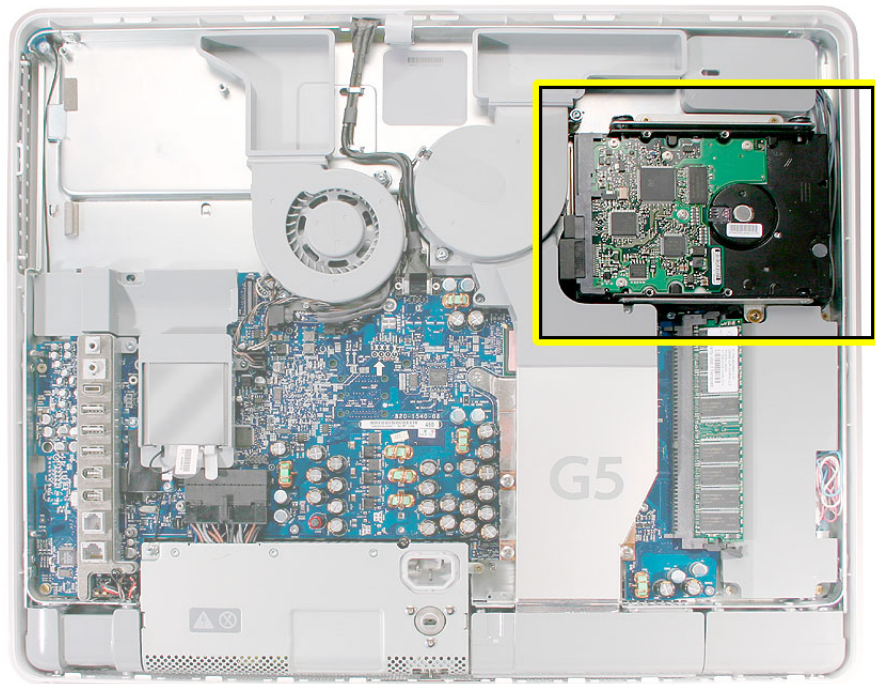
## Removing the Serial ATA Hard Drive

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.

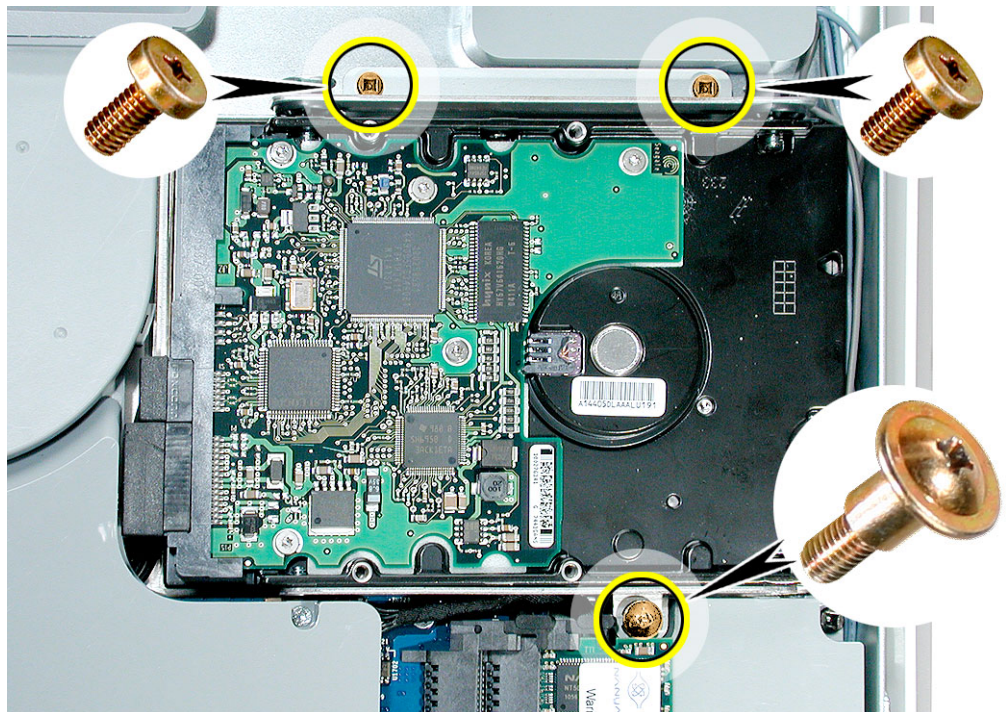
**Warning:** Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.



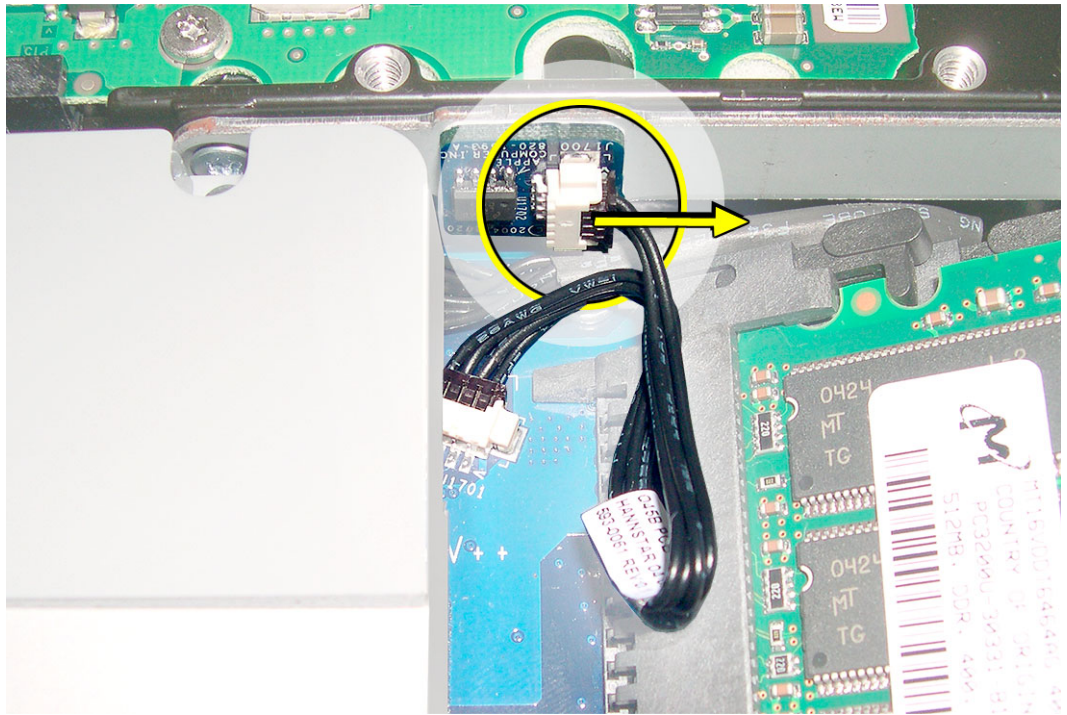
3. Locate the hard drive near the top right corner.



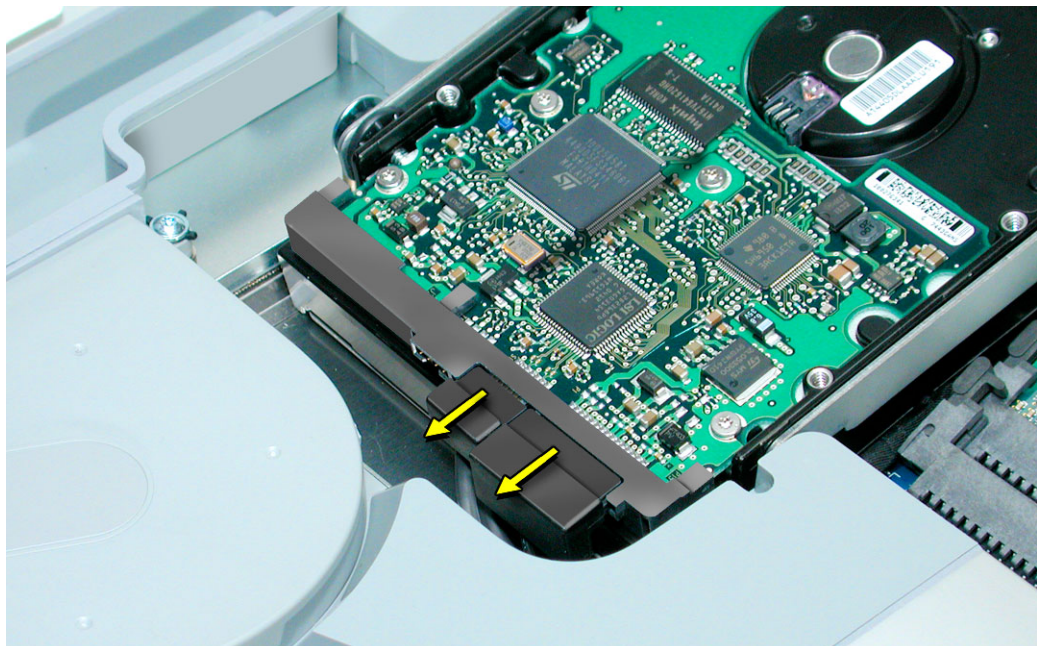
4. Remove the three hard drive screws. Set the screws aside.



- Lift the hard drive straight up, about one inch, to access the connector shown below. Disconnect the black connector from the side of the hard drive. **Note:** Do not disconnect the other end of the cable from the board.

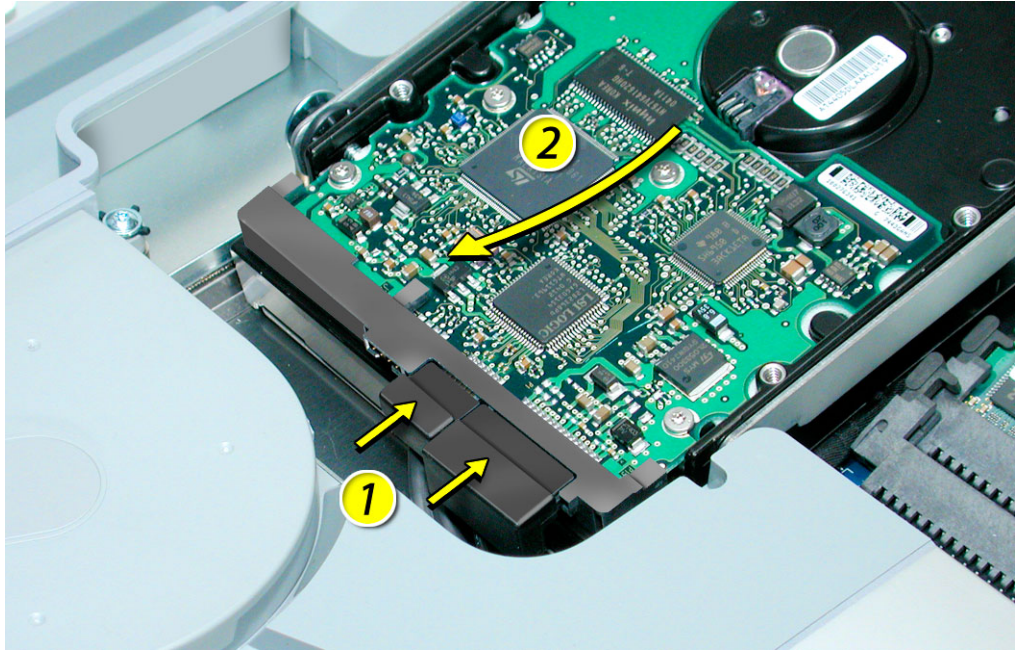


- Disconnect the drive data cable and power cable from the hard drive. Lift the hard drive up and out of the midplane assembly. **Important:** Return this hard drive to Apple in the packaging provided.

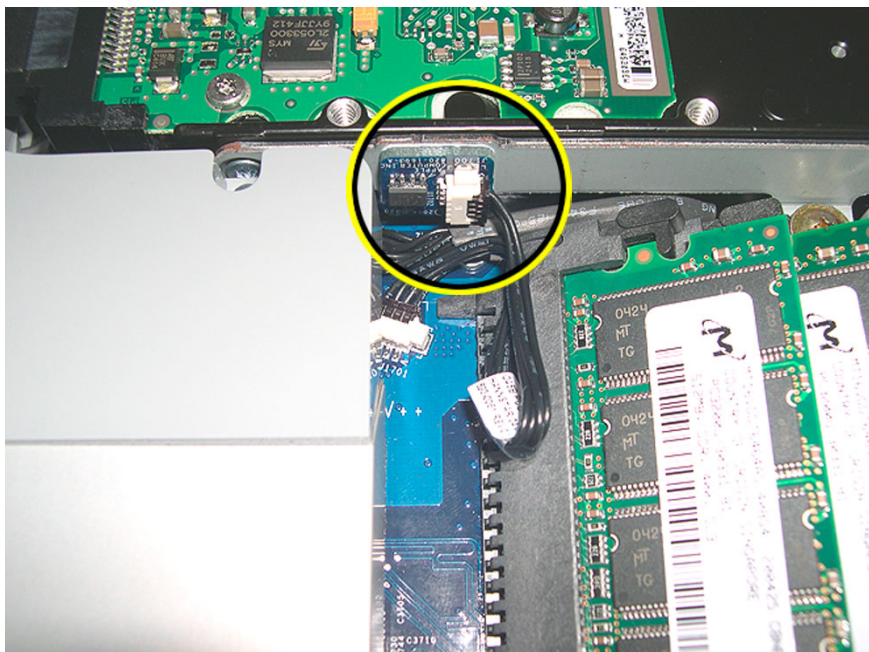


## Replacing the Serial ATA Hard Drive

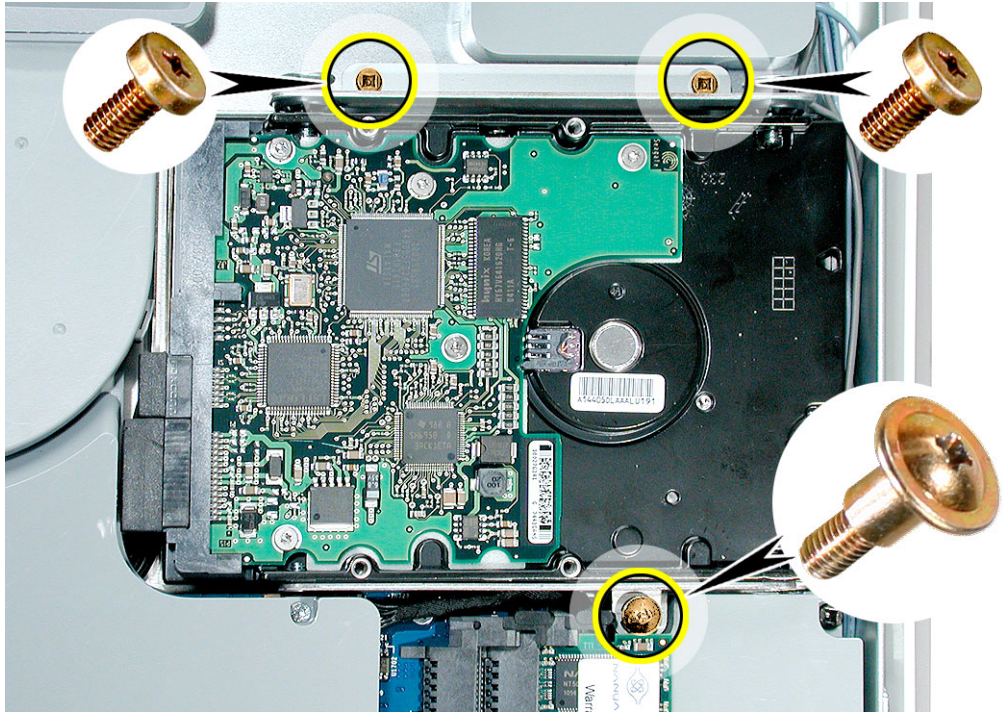
1. Remove the replacement hard drive from its packaging.
2. Connect the drive data cable and power cable to the hard drive. Lower the hard drive into place on the midplane.



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



4. Replace the three hard drive screws.





# Optical Drive

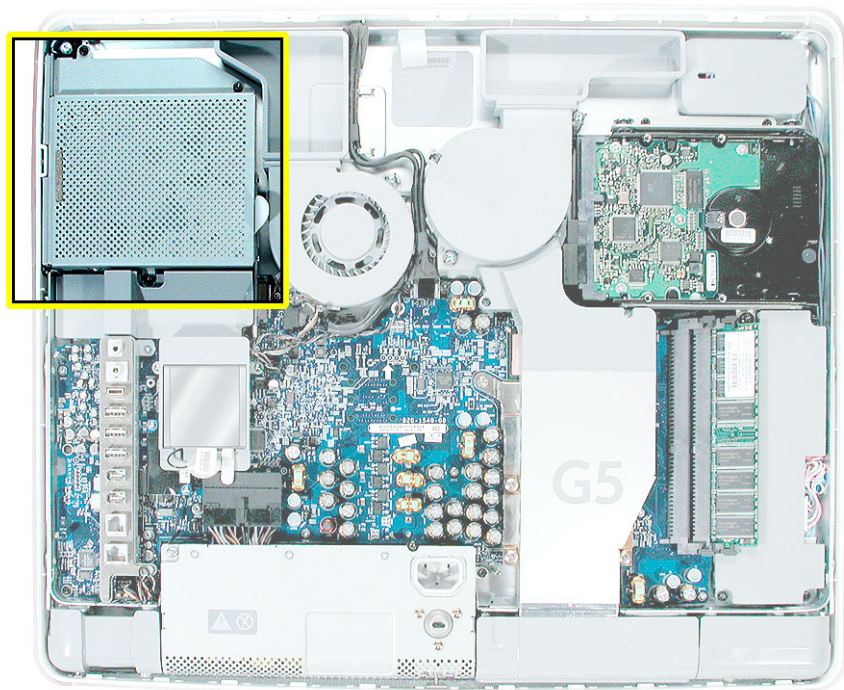
## Tools

- Use the screwdriver provided, or a Phillips #1 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



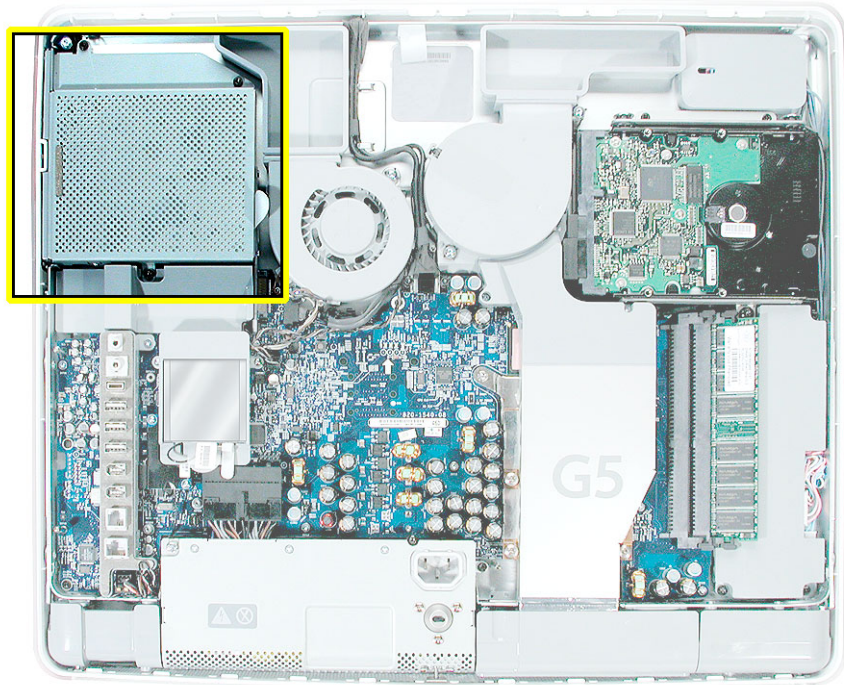
## Removing the Optical Drive

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

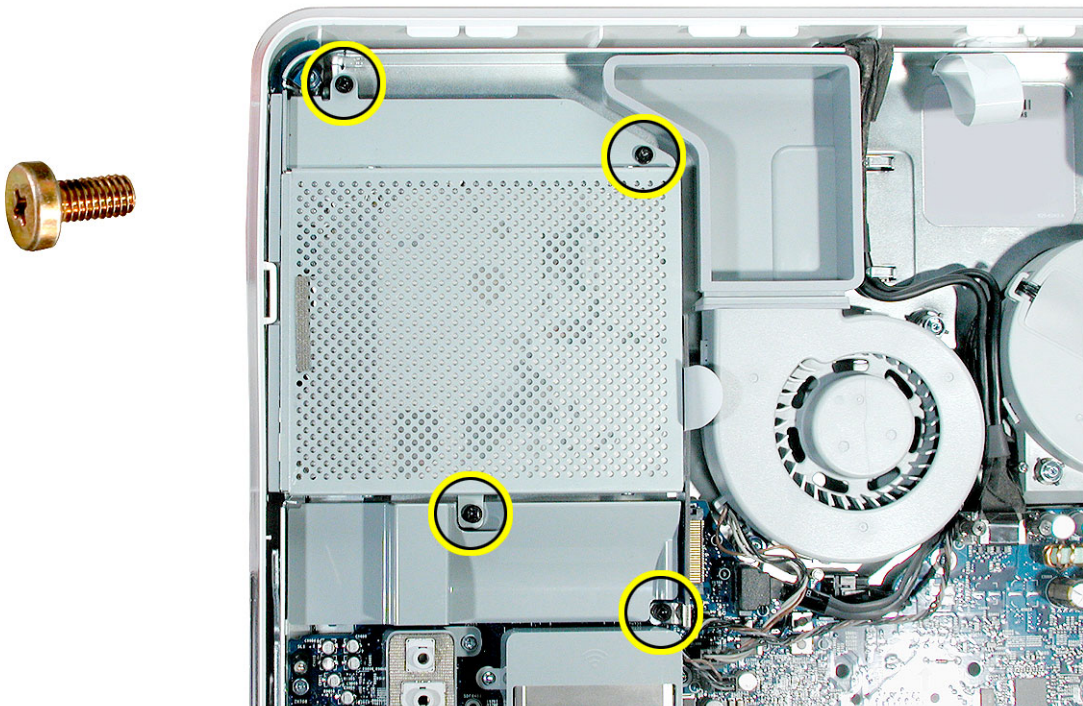
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



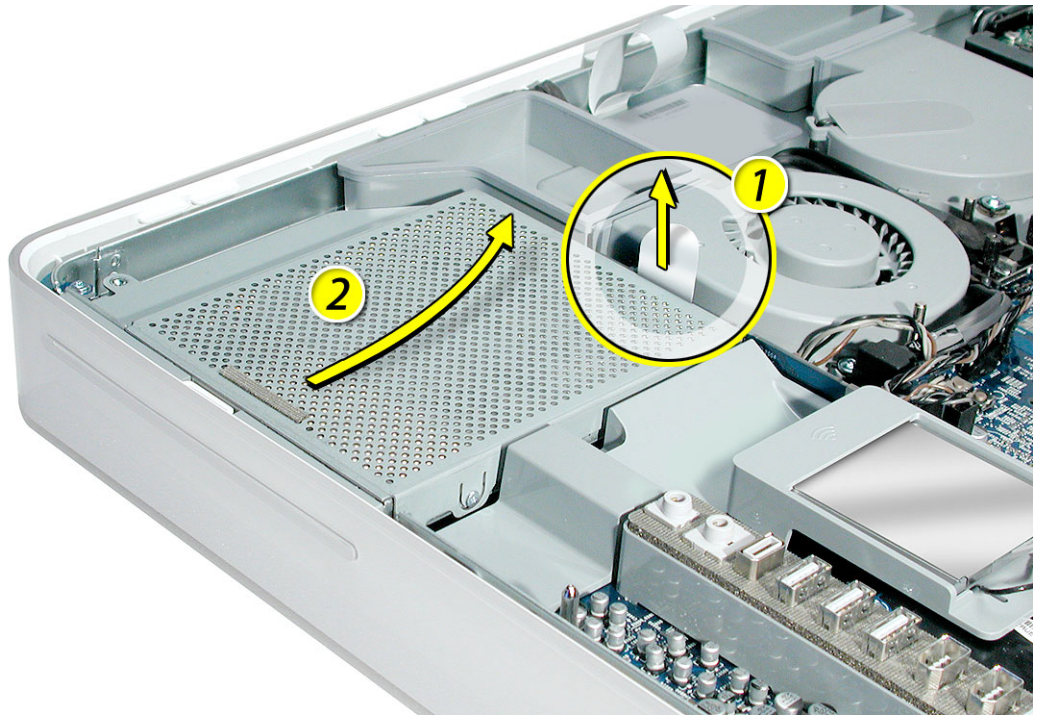
2. Locate the optical drive in the top left corner.



3. Using the tool provided, or a Phillips #1 screwdriver, remove the four optical drive screws circled below. Set the screws aside.



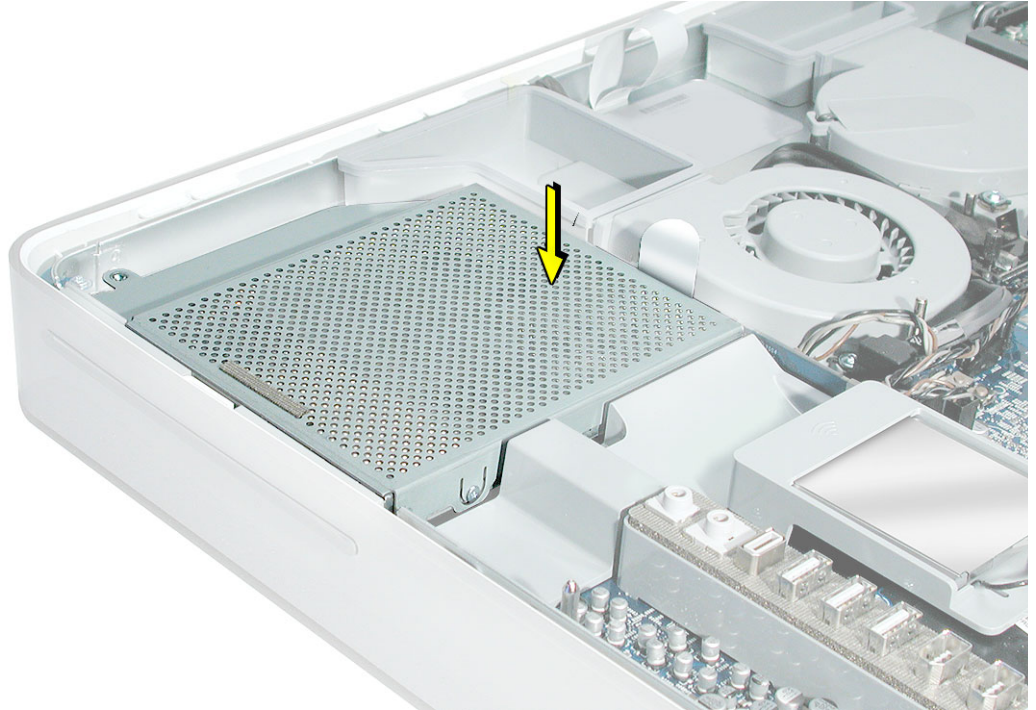
4. Pull the optical drive tab straight up and then to the right. Set the optical drive aside.



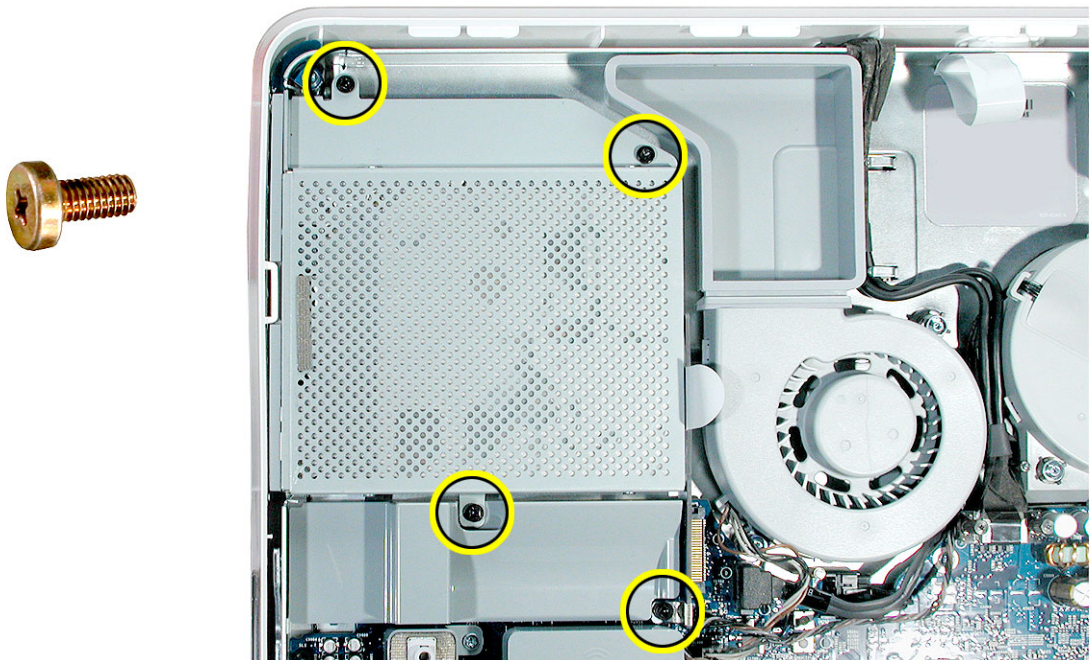
5. **Important:** Return this optical drive to Apple in the packaging provided.

## Replacing the Optical Drive

1. Remove the replacement optical drive from its packaging.
2. Slide the optical drive into place and press down near the tab to reconnect the drive. If the drive won't click into place, check that the fan cables (near the connector) are not obstructing the connector.



3. Replace the four optical drive screws.





# Inverter

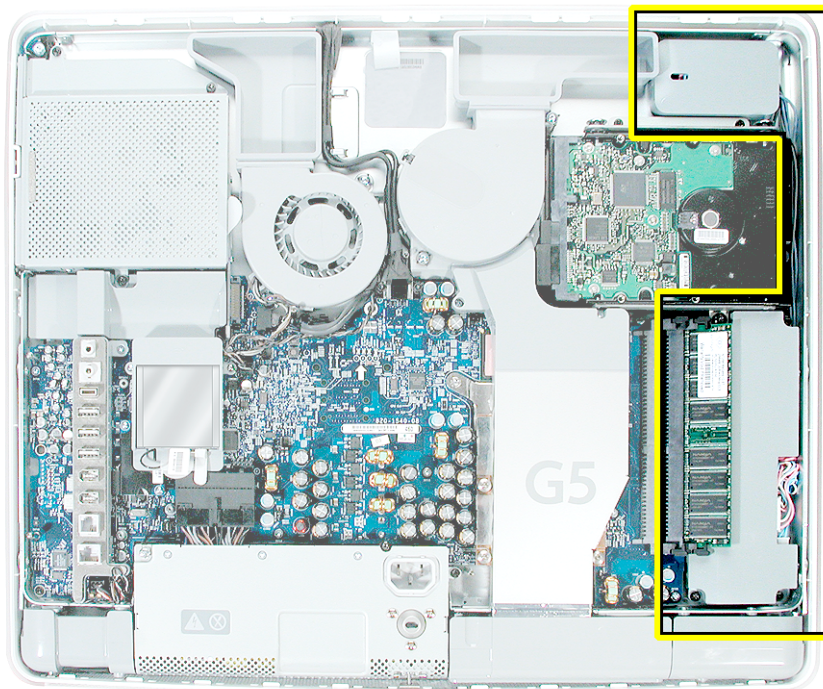
## Tools Required

- Use the screwdriver provided, or a Phillips #1 screwdriver, preferably with a magnetized tip
- Needlenose pliers
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



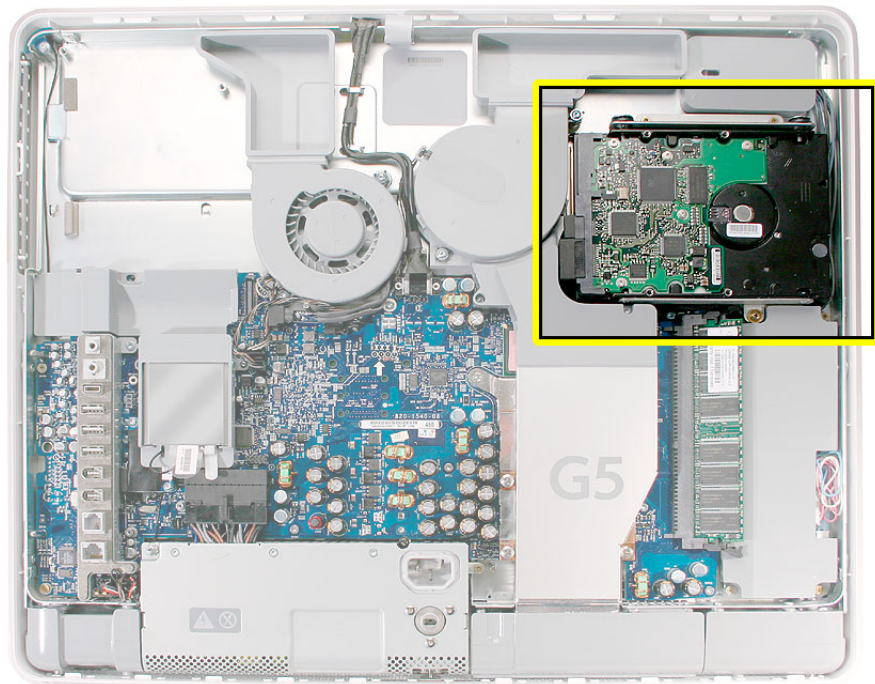
## Removing the Inverter

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

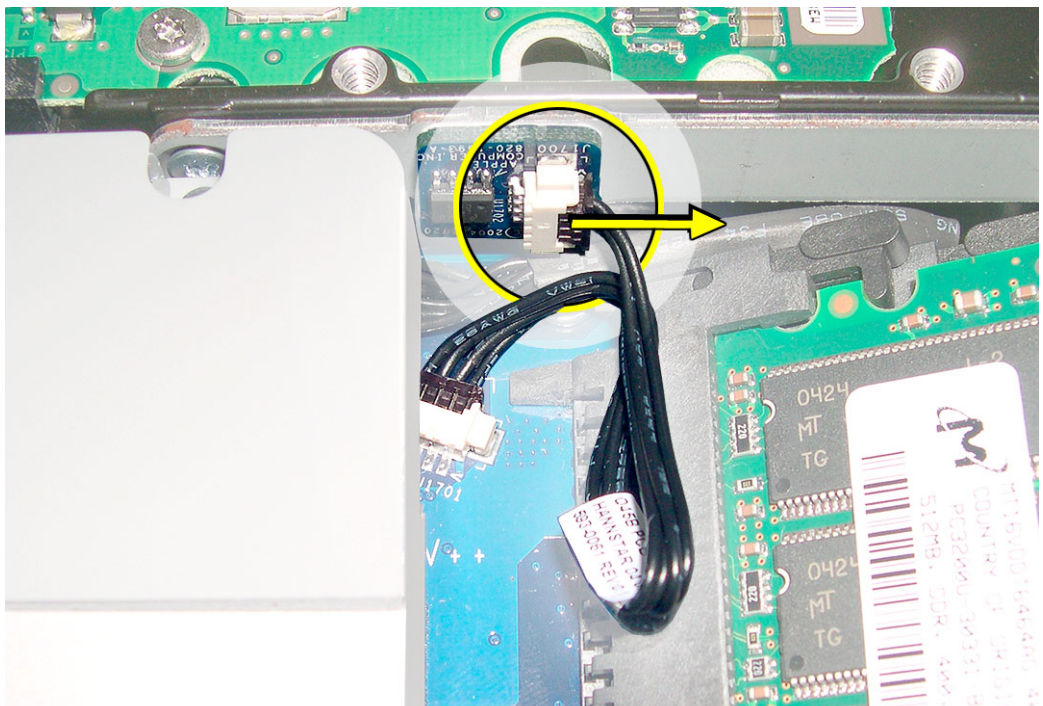
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



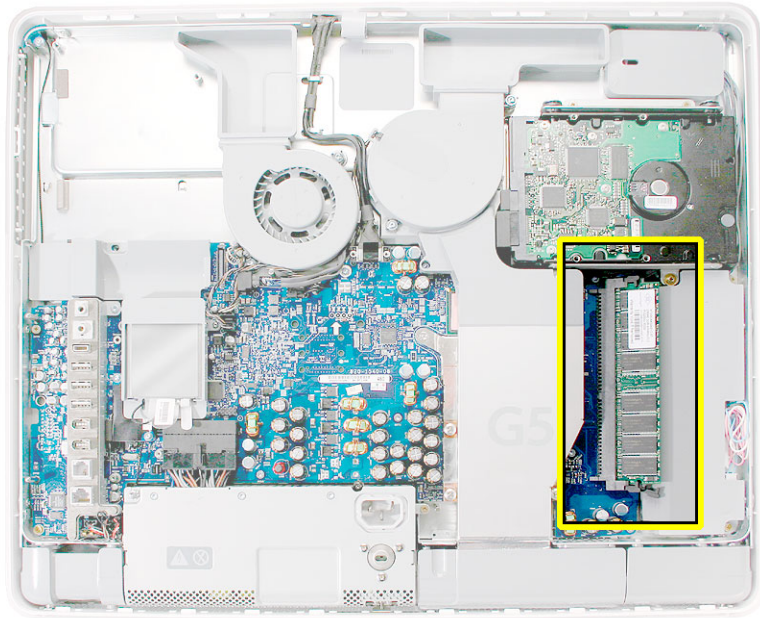
3. Locate the hard drive near the top right corner.



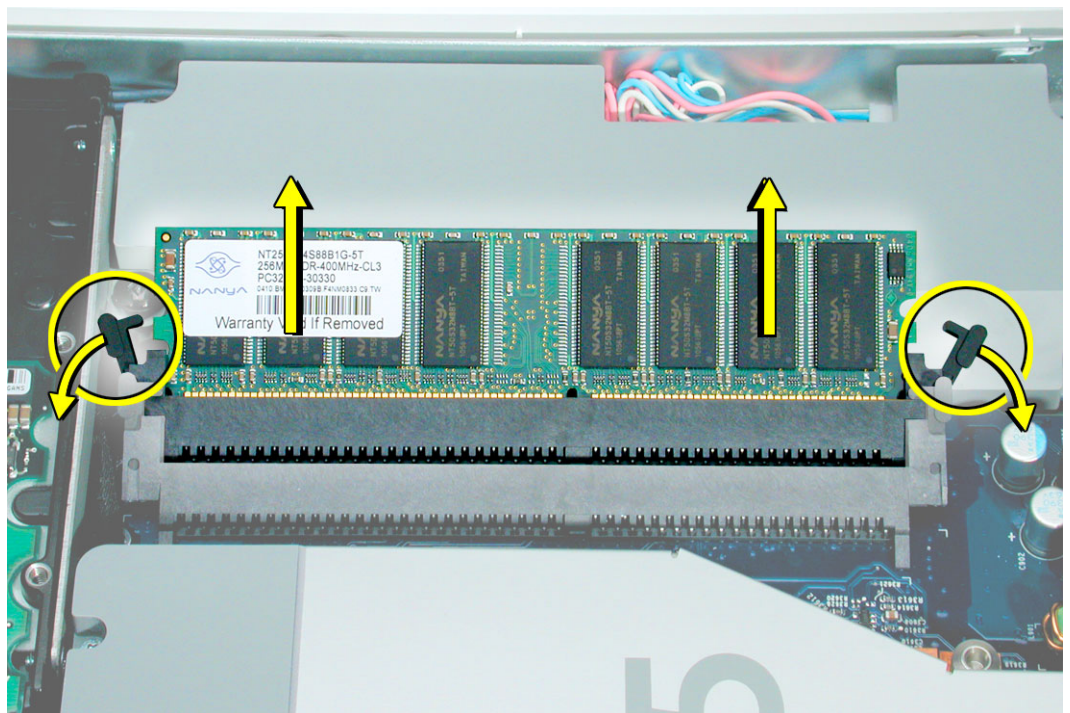
4. Disconnect the black cable from the white connector on the side of the hard drive near the memory. **Note:** Do not disconnect the other end of the cable. Leave the hard drive in place.



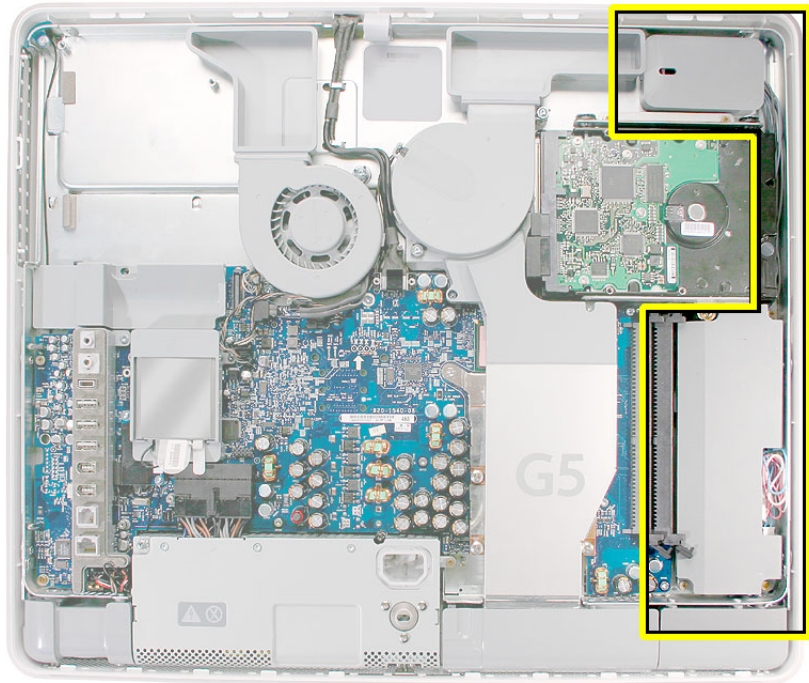
5. Locate the memory module(s) in the bottom right corner. You must remove the memory to gain access to the inverter.



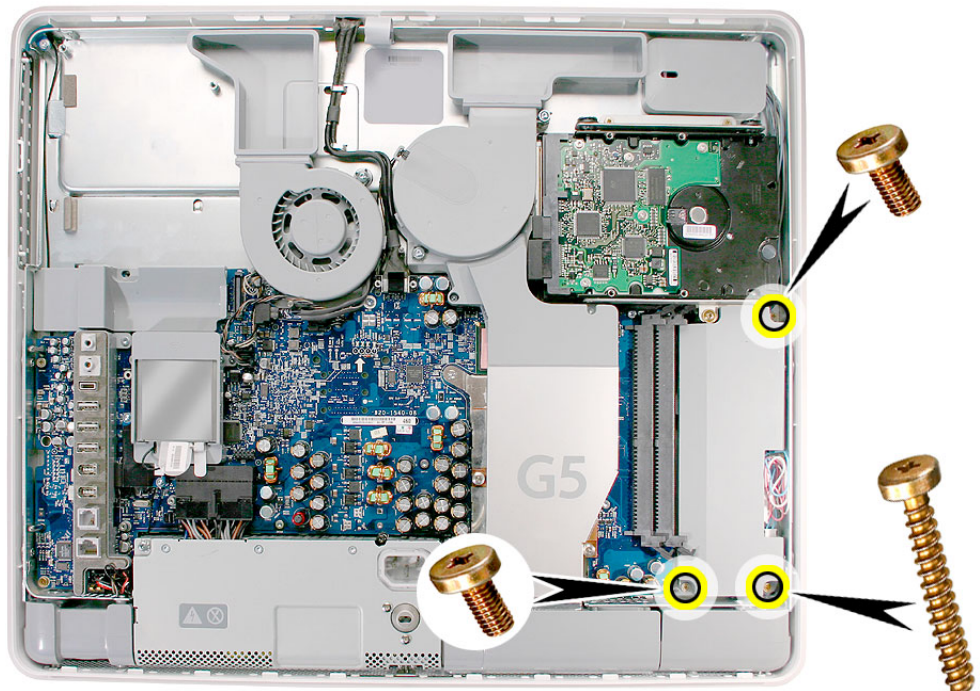
6. Rotate the computer counterclockwise so the memory is in the position shown below.
7. To release the memory from its slot, push down on the two side latches (circled below). Then pull the memory module out of the slot. Repeat this step if you have a second memory module.



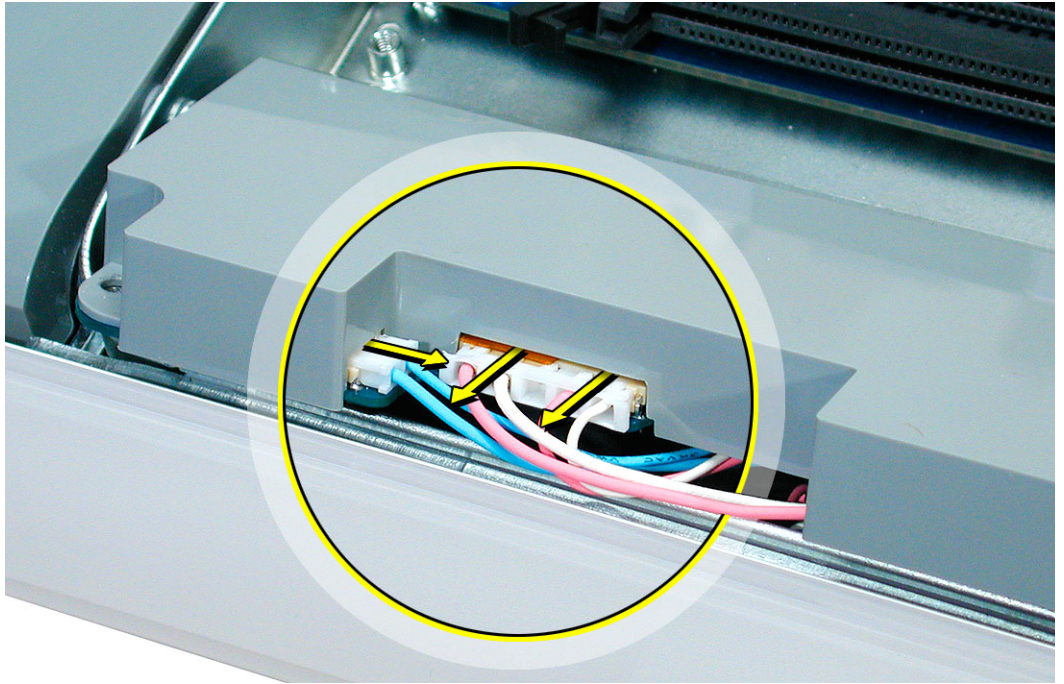
8. Locate the gray plastic module on the right side of the computer. This is the inverter.



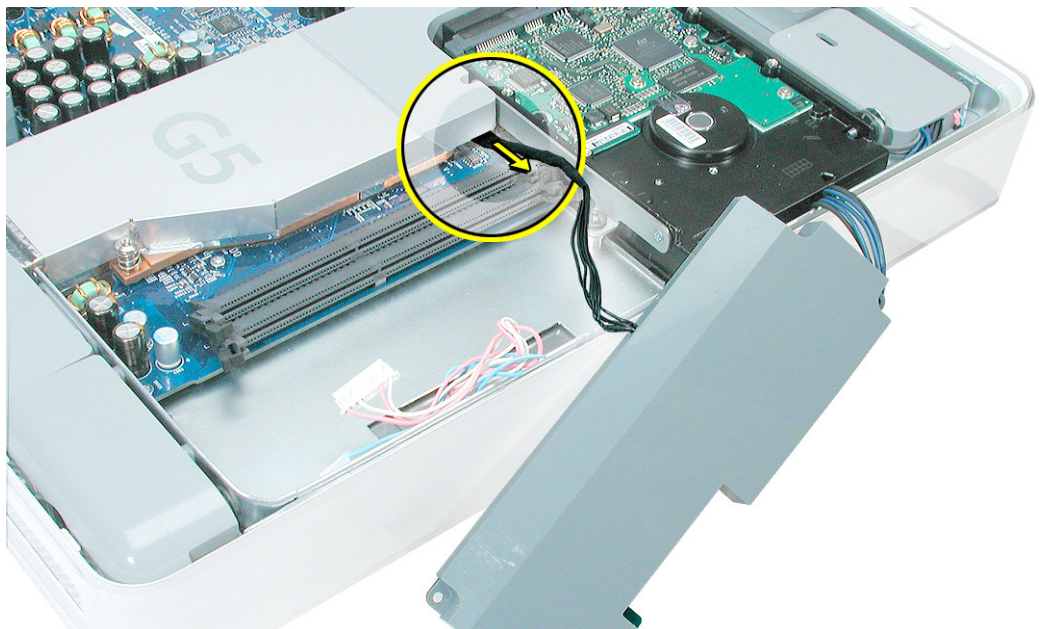
9. Remove the three inverter screws (circled below).



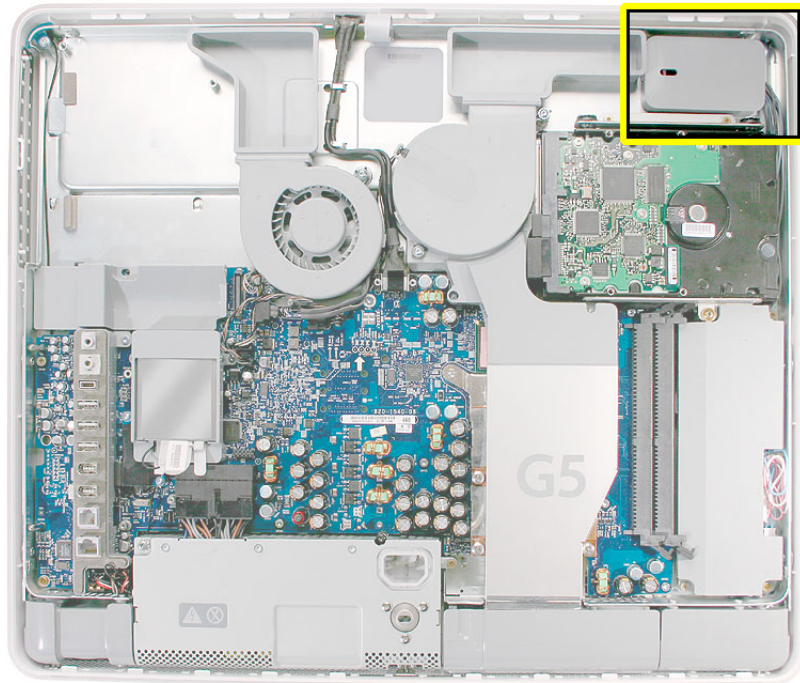
10. Rotate the computer clockwise so you see the inverter cables as shown below. Tilt the inverter to access the two white cable connectors with the pink and blue cables.
11. Disconnect the cables by pulling on the connector, not on the cables. Disconnect the smaller connector first.



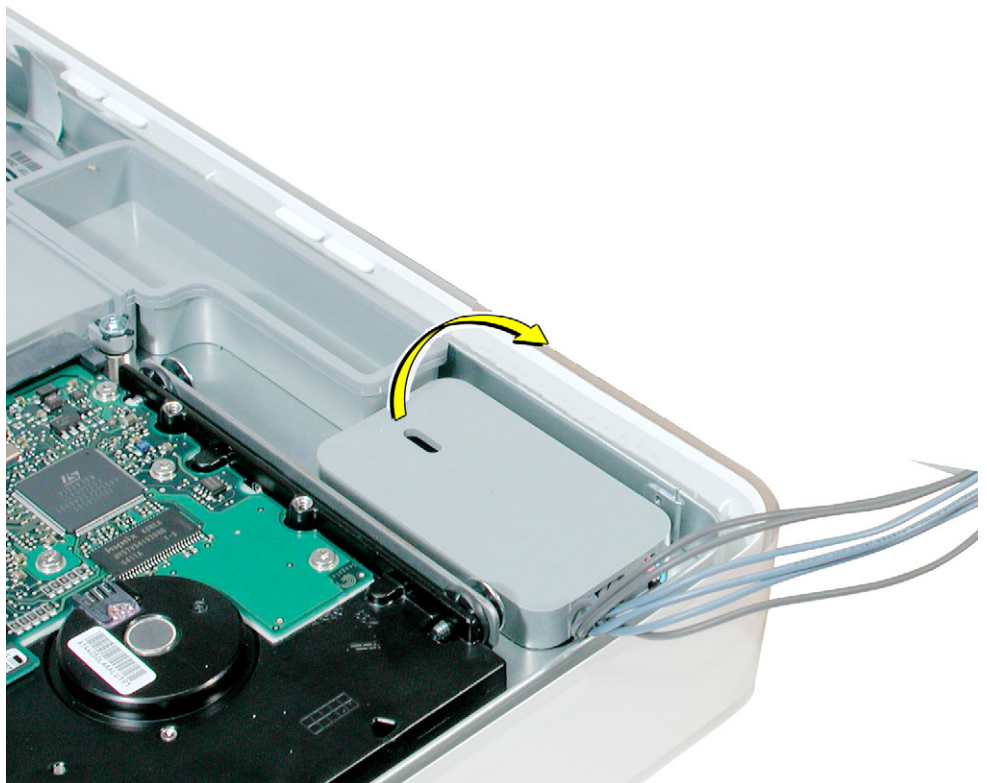
12. Lift the inverter out of the computer. Disconnect the black connector (circled below) located **under** the gray fan duct. Gently pull the black cable to disconnect the connector.



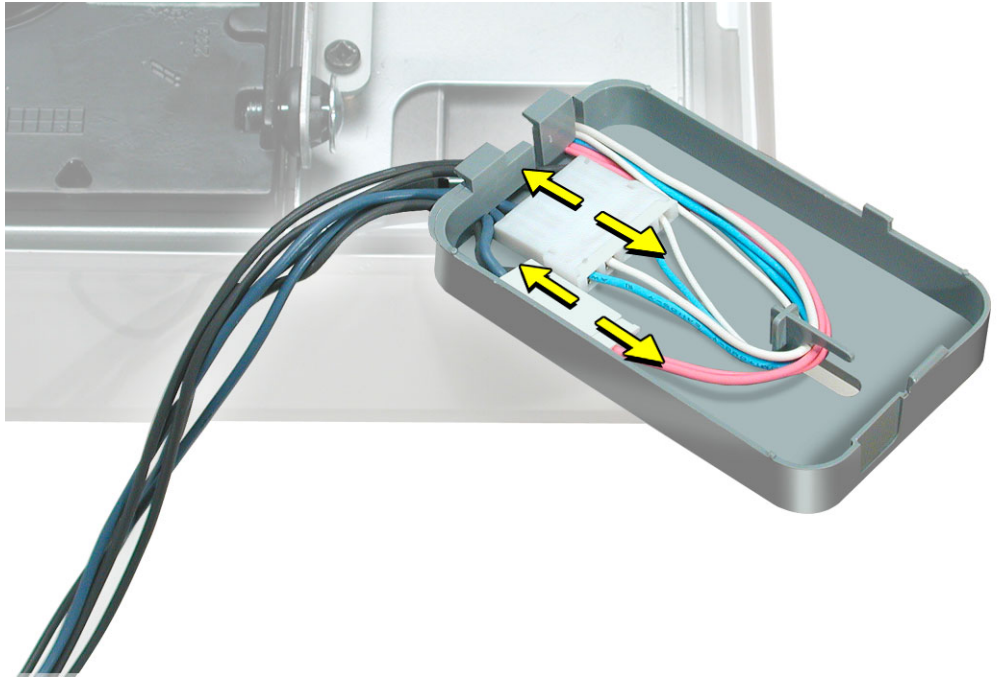
13. Locate the small, gray inverter cable cover in the top right corner.



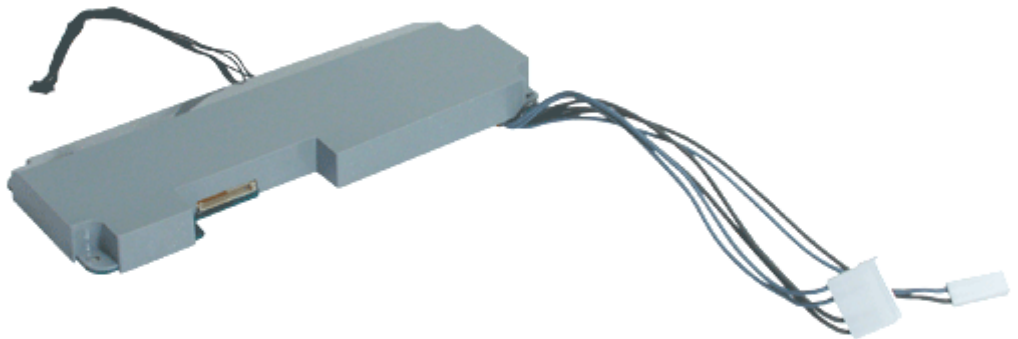
14. To unhook the cover, pull it in the direction of the arrow shown below.



15. Disconnect the two white connectors underneath the cover. Pull on the connectors, not on the cables. Free the cables from the clips inside the cover. Set the inverter and cable cover aside.

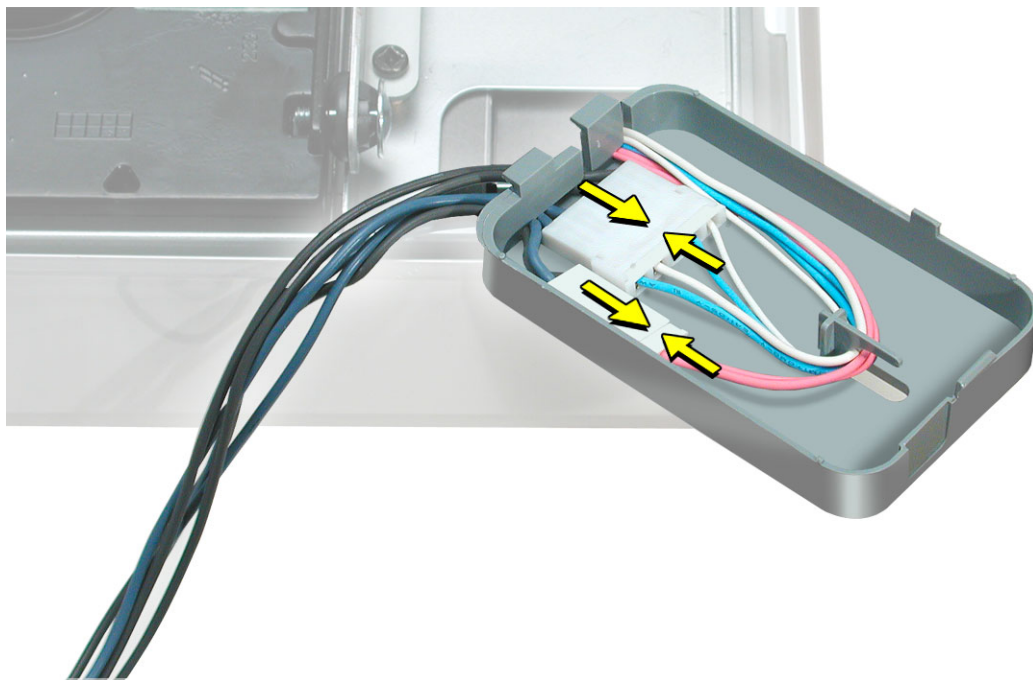


16. The inverter is shown below. **Important:** Return the inverter to Apple in the packaging provided.

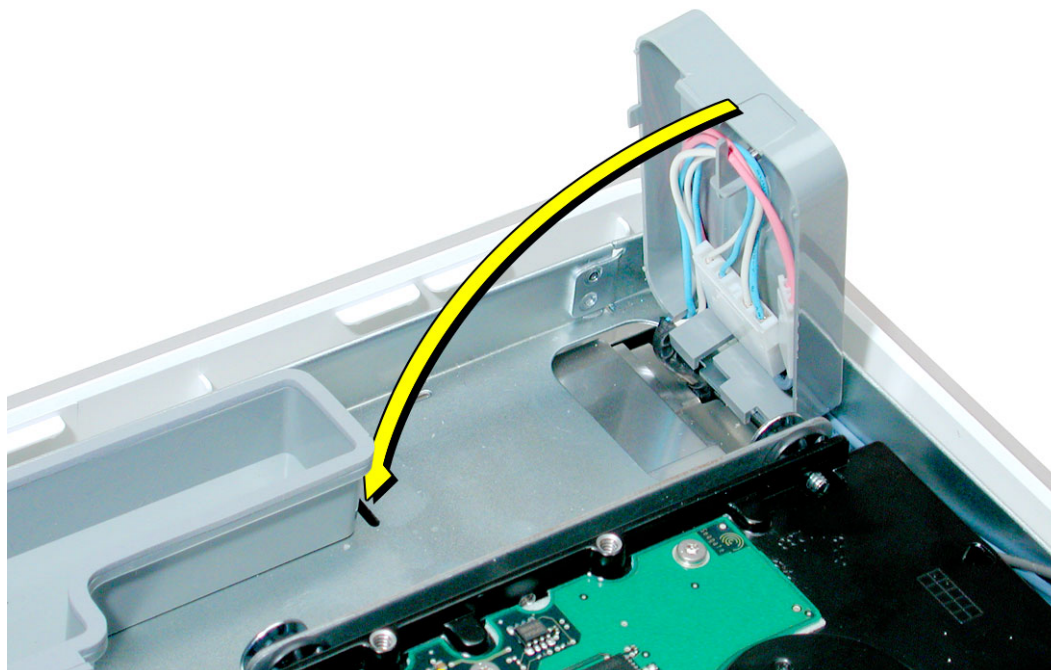


## Replacing the Inverter

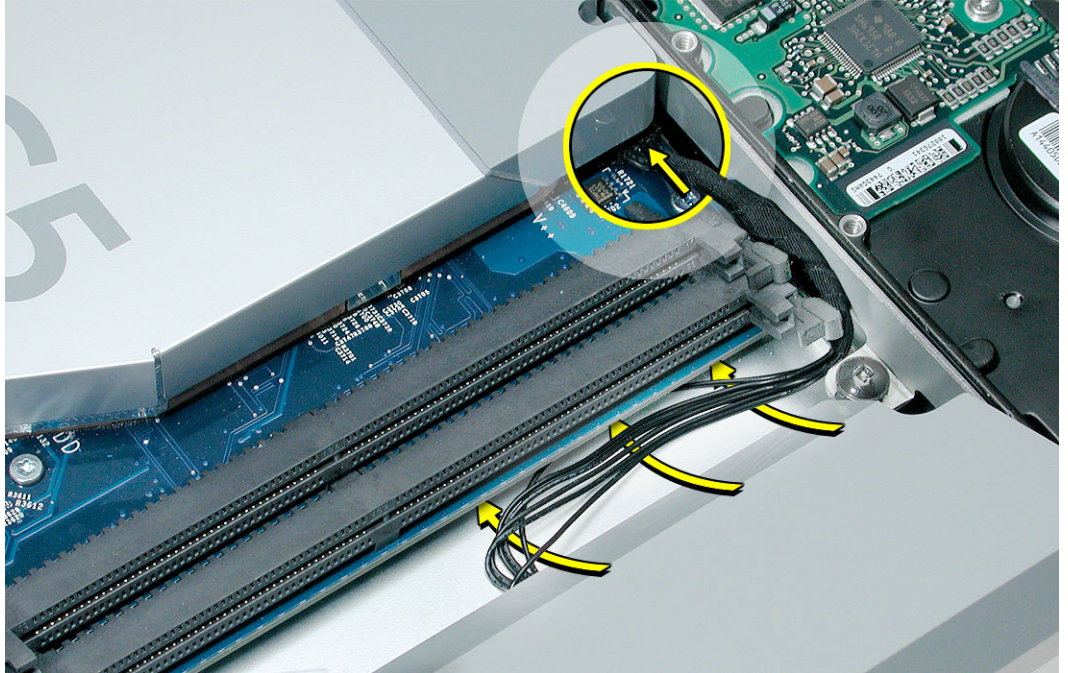
1. Remove the replacement inverter from its packaging.
2. Locate the inverter cable cover. Connect the inverter cables as shown, making sure the connectors lie flat inside the cable cover. **Note:** Route the cables through the cable clips so that the darker cables are barely visible and have little slack.



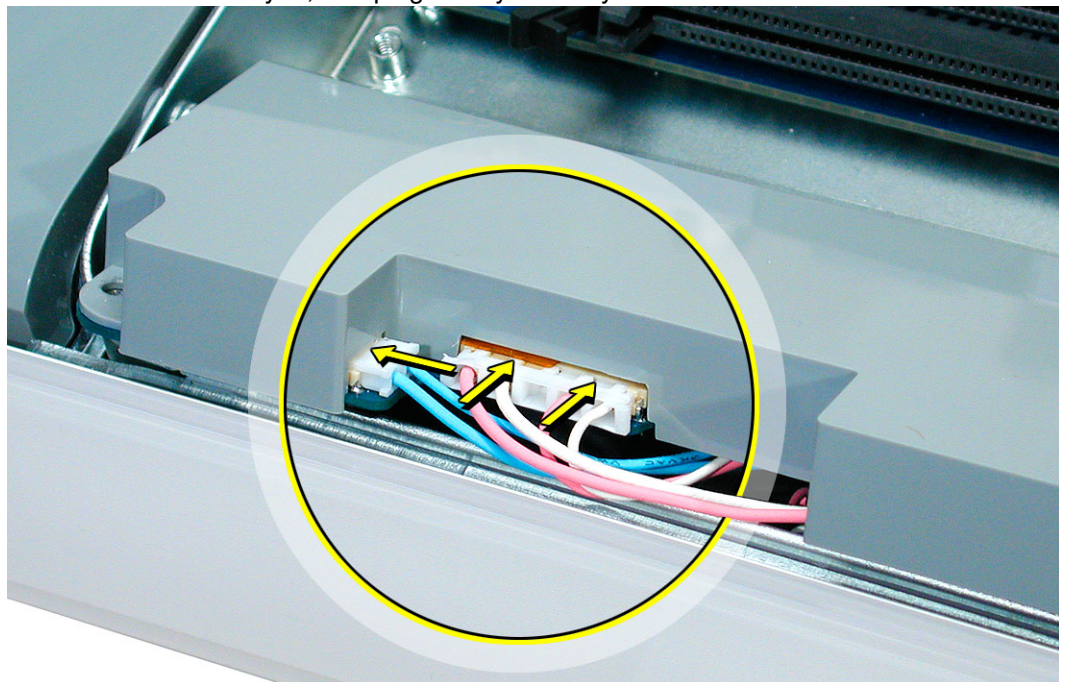
3. Lower the cable cover, pressing down steadily until the tabs lock the cover into place.



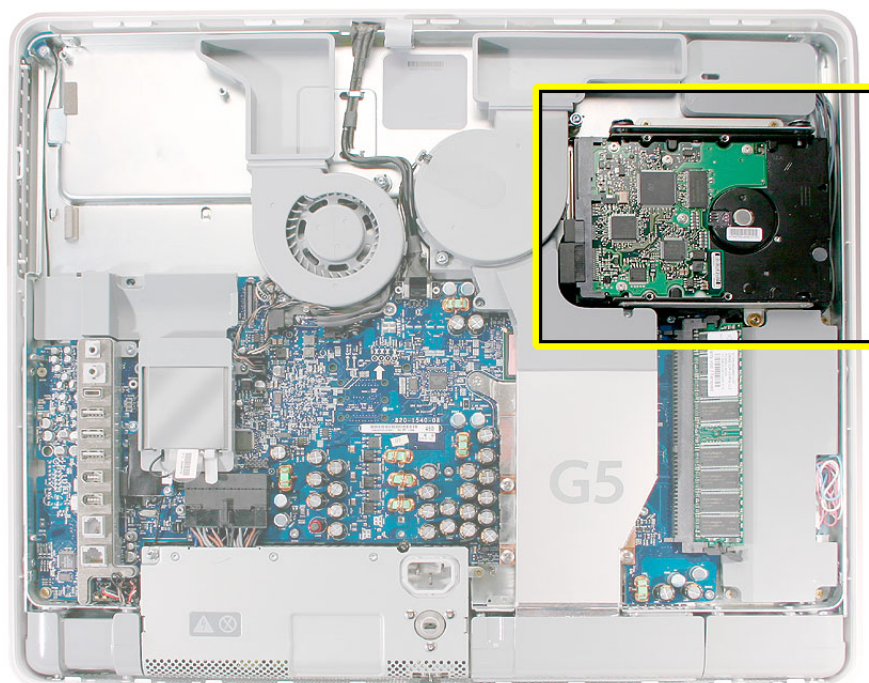
4. Press in the latches on the memory slots in and route the black inverter cable along the side of the hard drive. Using a needlenose pliers, connect the black inverter connector (circled) to the connector under the gray fan duct. **Note:** The connector is keyed so it can plug in only one way; the teeth on the connector face up. Tuck the remaining black cables under the board (shown by the arrows).



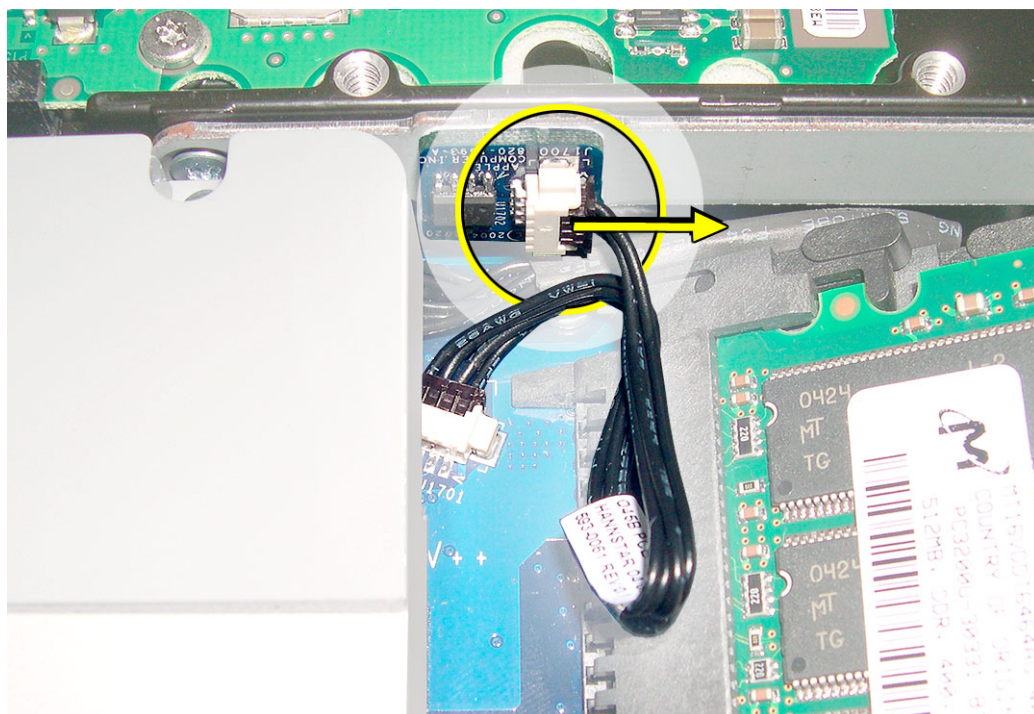
5. Connect the inverter cables, connecting the larger connector first. **Note:** The connectors are keyed, and plug in only one way.



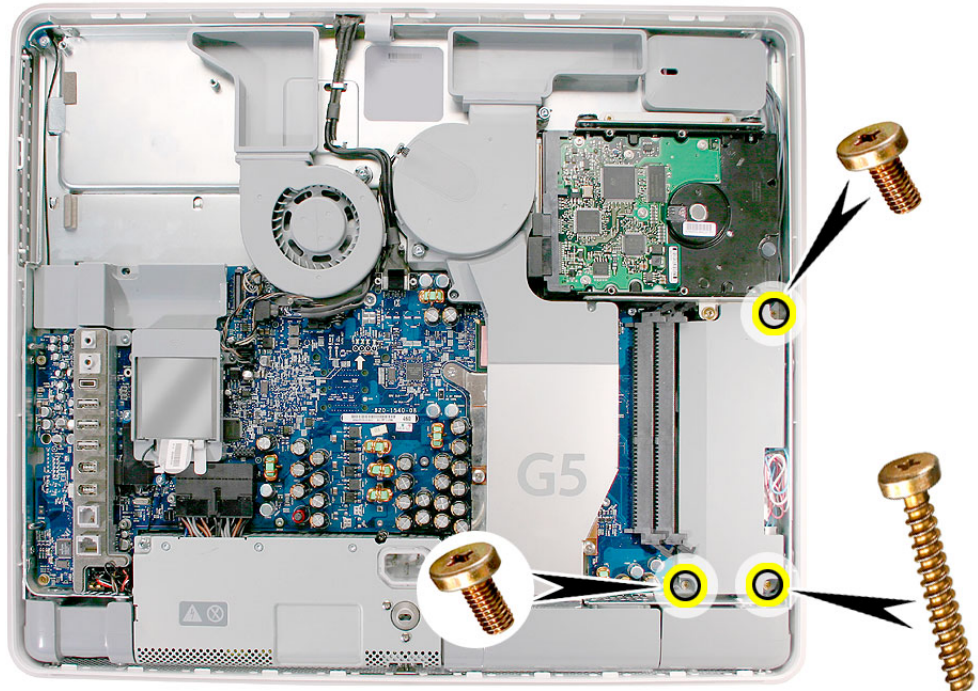
6. Locate the hard drive near the top right corner.



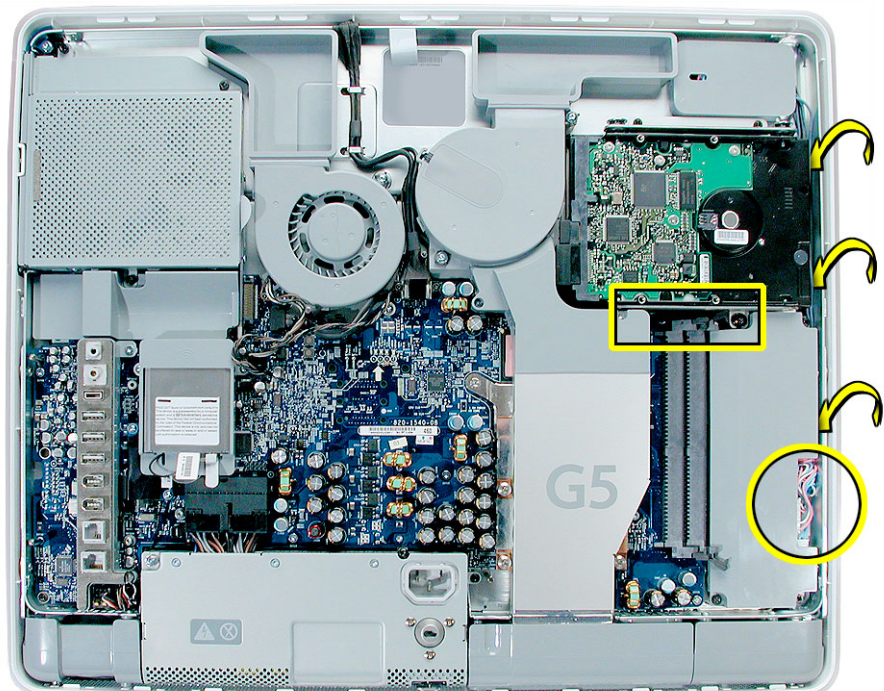
7. Connect the black cable to the white connector on the side of the hard drive.



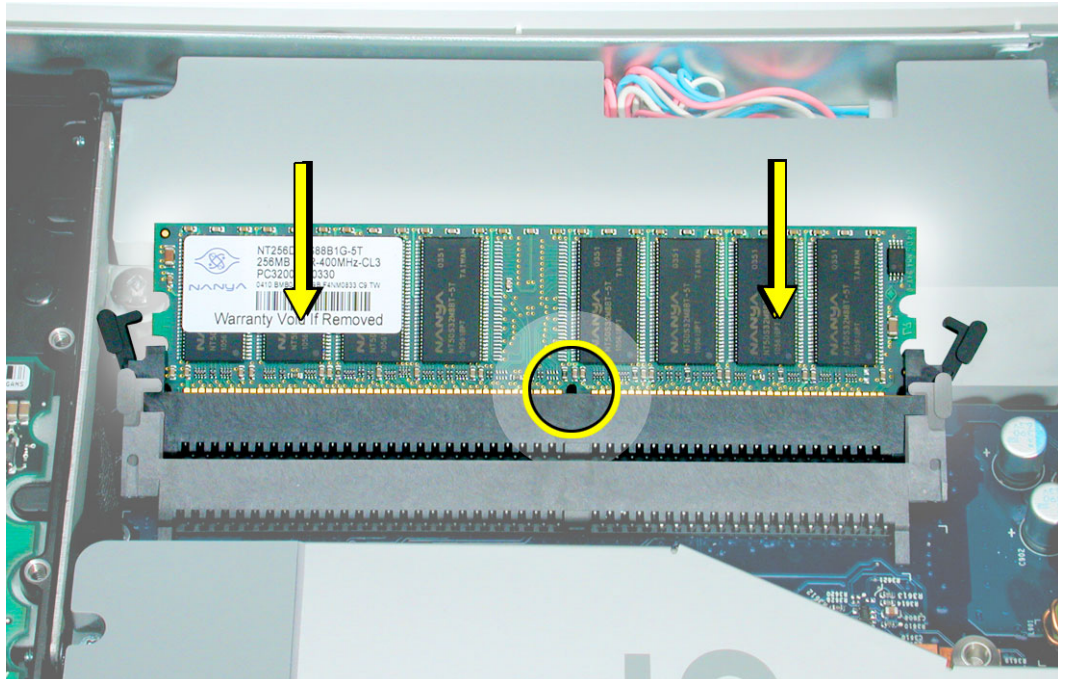
8. Install the gray plastic inverter at a slight angle as if it were sliding under the memory slots. Replace the three inverter screws.



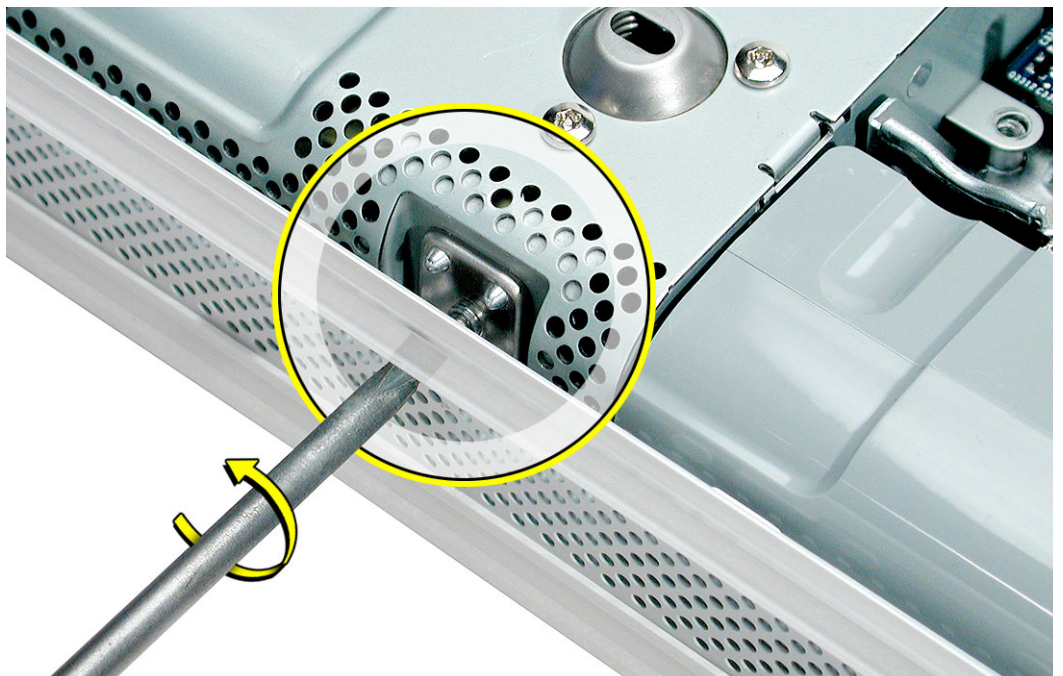
9. Tuck the inverter cables along the edge of the hard drive and next to the memory tabs.



10. Replace the memory module(s) by lining up the notch on the module with the notch on the slot. Press firmly on the memory module until it clicks into place. Use your thumb and index finger to push the module into the slot.



11. If you are replacing the back cover, turn the middle case screw counter clockwise about five revolutions. This step prepares the back cover to be installed and secured.





# Memory (DIMMs)

## About iMac G5 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

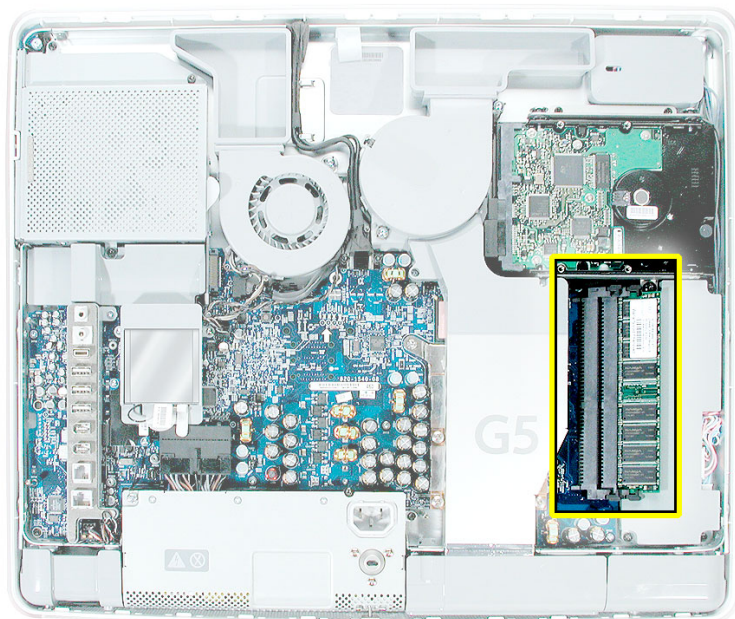
## Tools

Use the screwdriver provided, or a Phillips #1 screwdriver

## Preliminary Steps

Before you begin, remove the back cover.

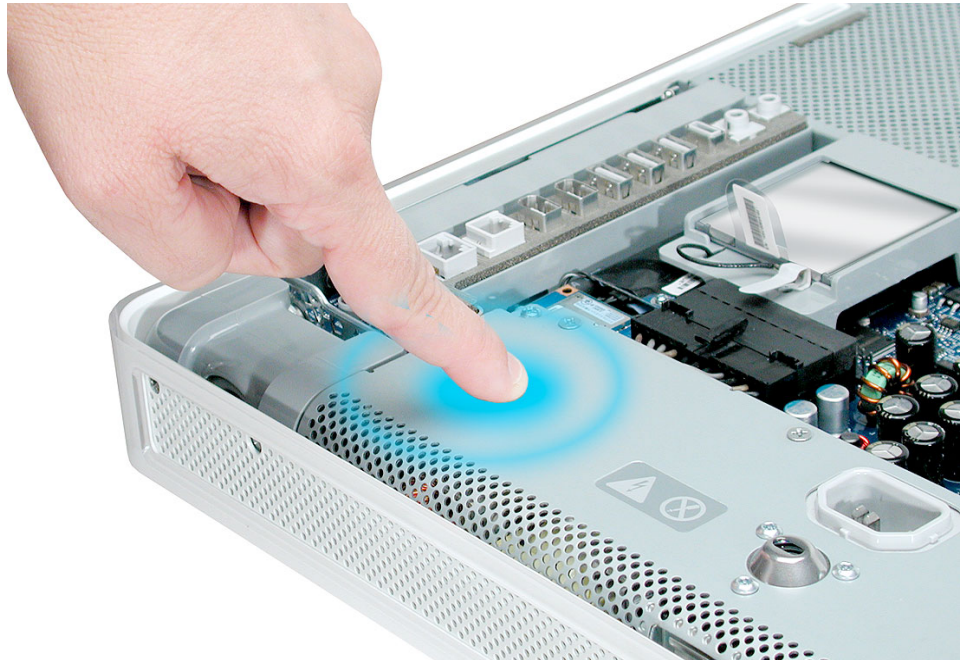
## Part Location



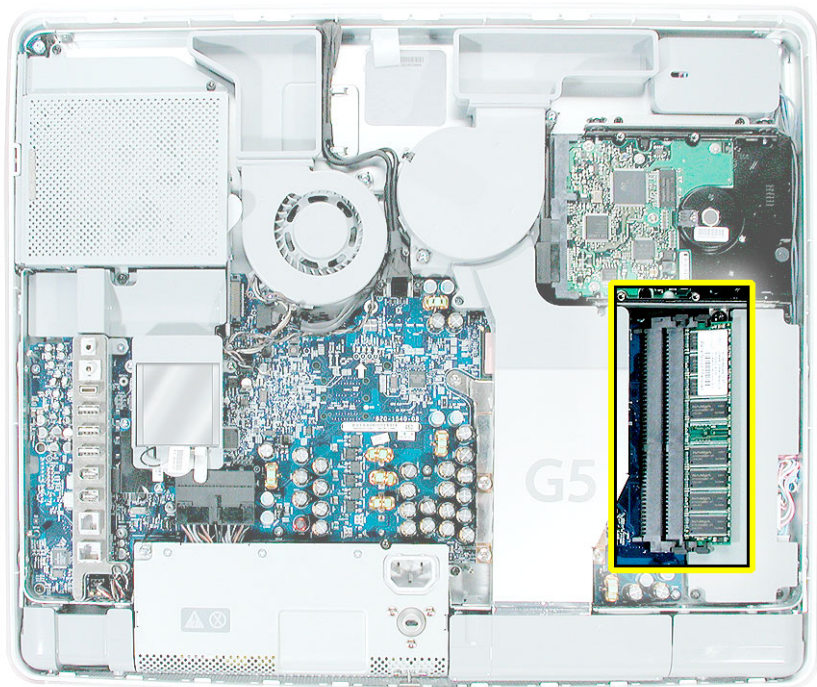
## Removing the Memory

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

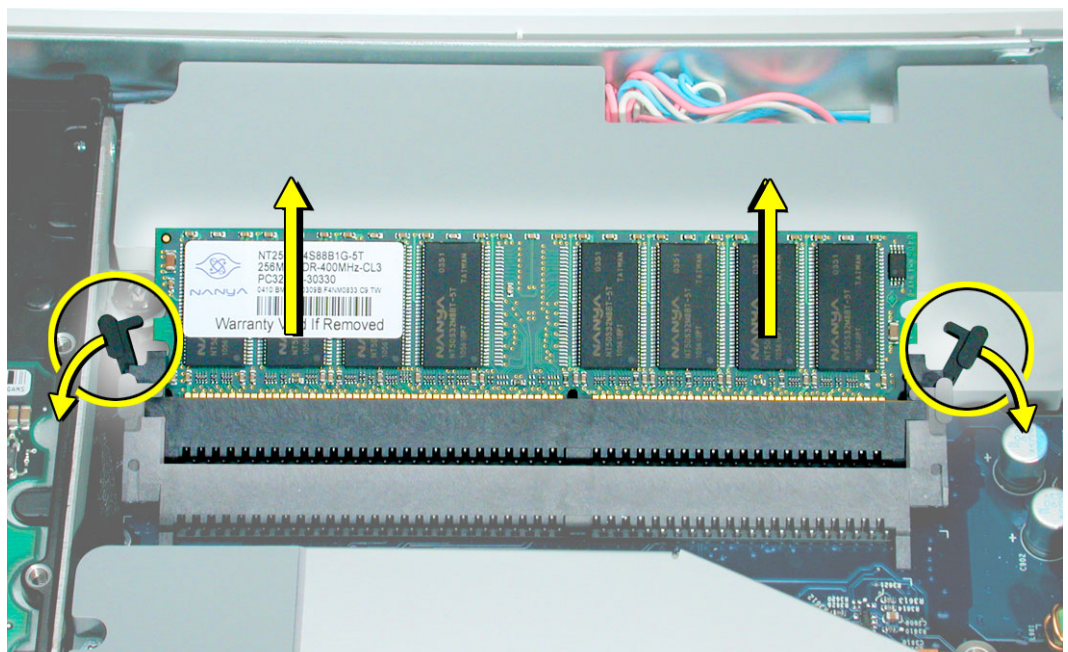
**Warning:** Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.



2. Locate the memory module(s) in the bottom right corner.

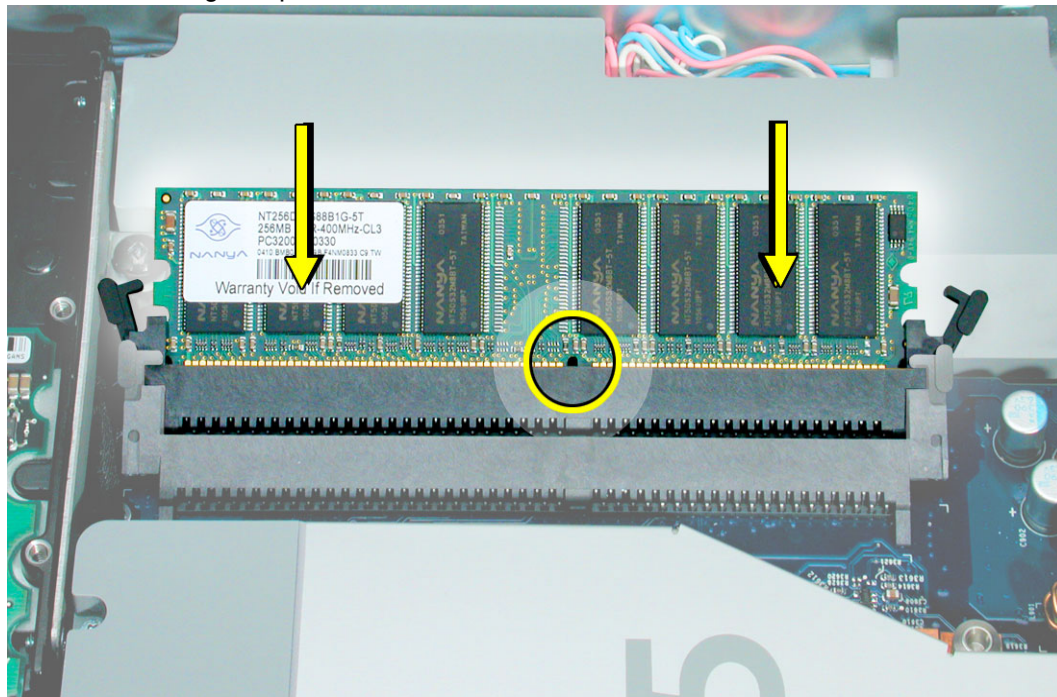


3. Rotate the computer counterclockwise so the memory is in the position shown below.
4. To release the memory from its slot, push down on the two side latches. Then pull the memory module out of the slot. Repeat this step if you have a second memory module. **Important:** Return the memory to Apple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

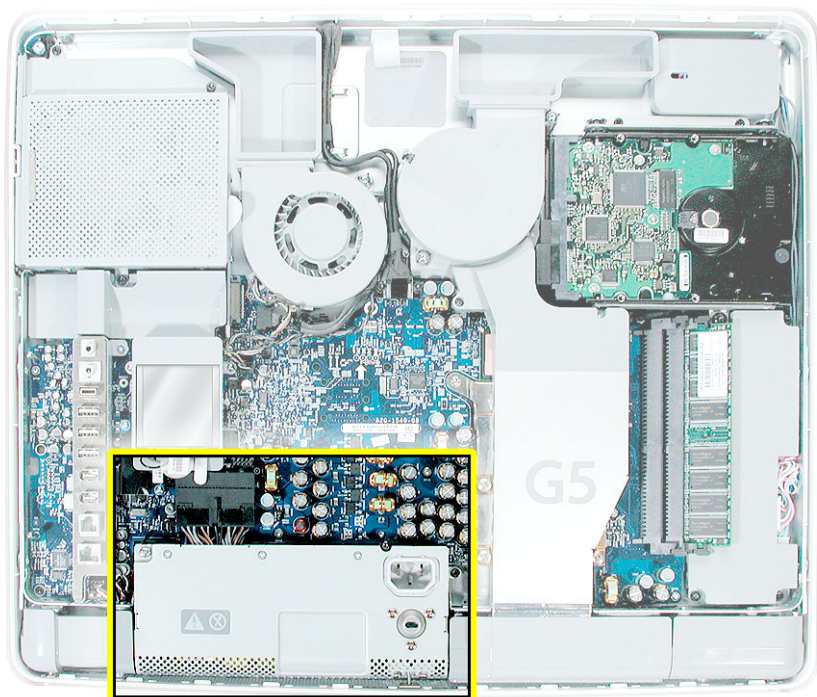
## Tools Required

- Use the screwdriver provided, or a Phillips #1 screwdriver, preferably with a magnetized tip
- Flat blade screwdriver
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



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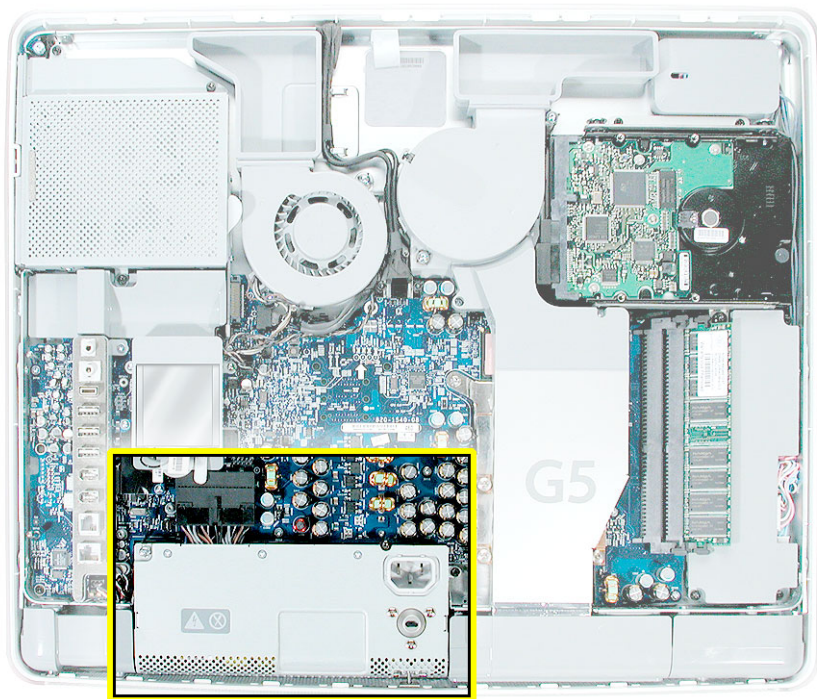
## Removing the Power Supply

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

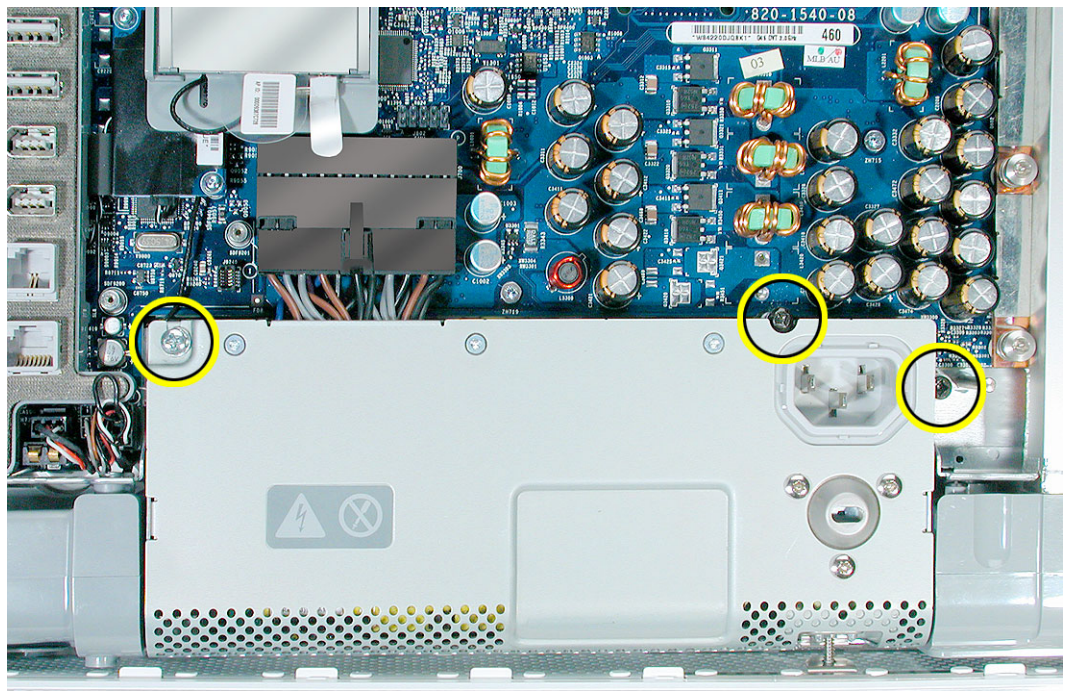
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



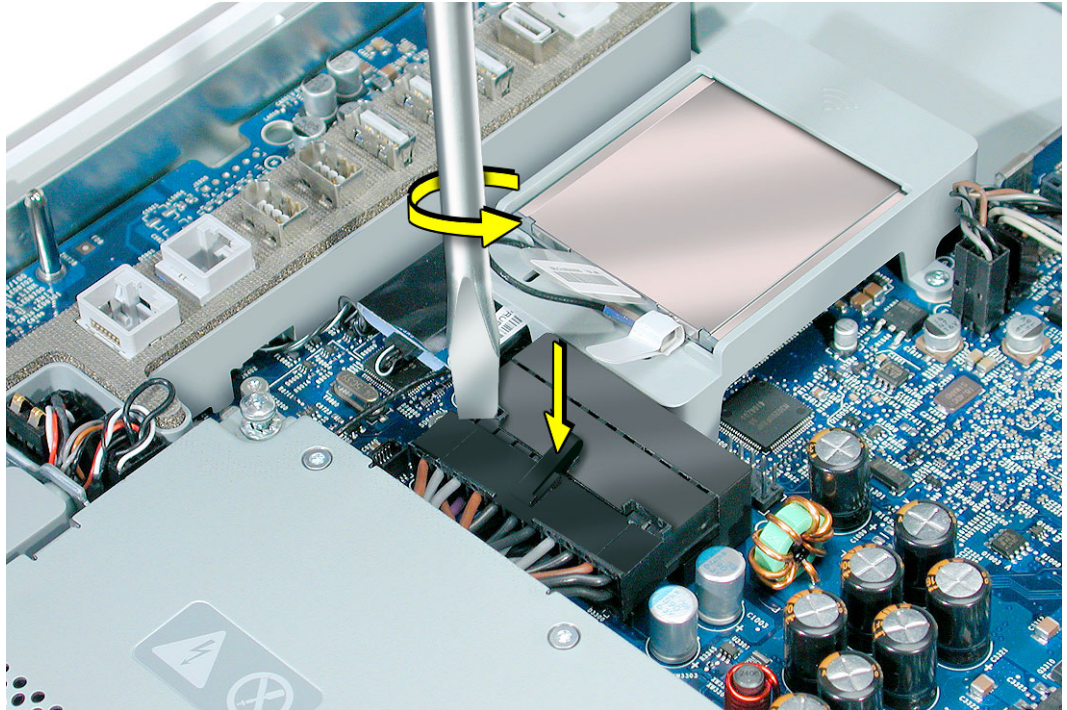
2. Locate the power supply shown in the picture below.



3. Remove the screw on the far right and loosen the other two screws by turning them completely counterclockwise. **Note:** The middle screw and the screw on the left are captive; they will not come out of the power supply.



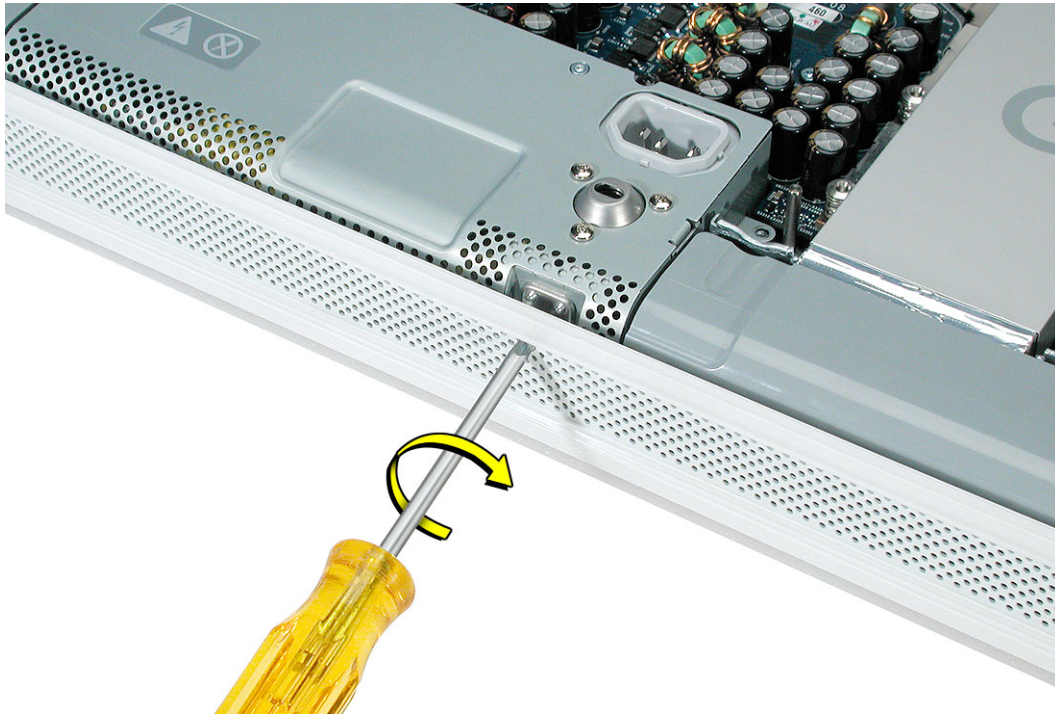
4. Disconnect the power supply cable by pressing the connector release tab and using a wide, flat blade screwdriver to pry apart the connector.



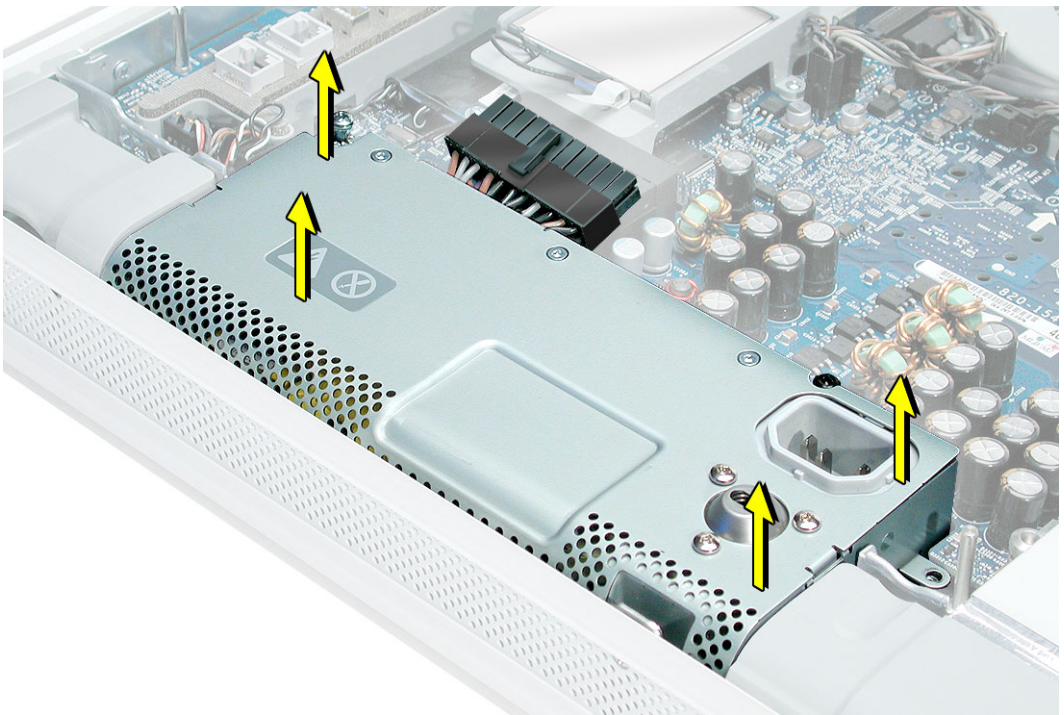
5. Pull on the connector, not on the cables.



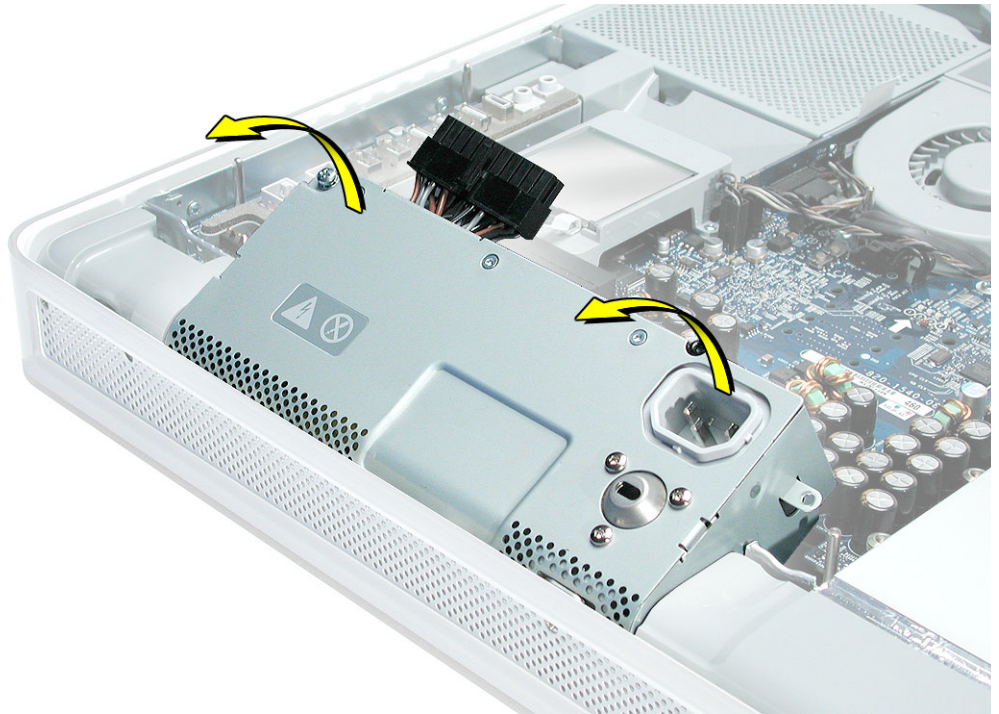
6. To unlatch the power supply, tighten the middle case screw by turning it clockwise five to eight revolutions.



7. Lift up the power supply at the sides approximately five mm or until it touches the middle case screw.



8. Tilt up the power supply until it clears the edge of the main circuit board. Lift it out of the computer and set it aside.

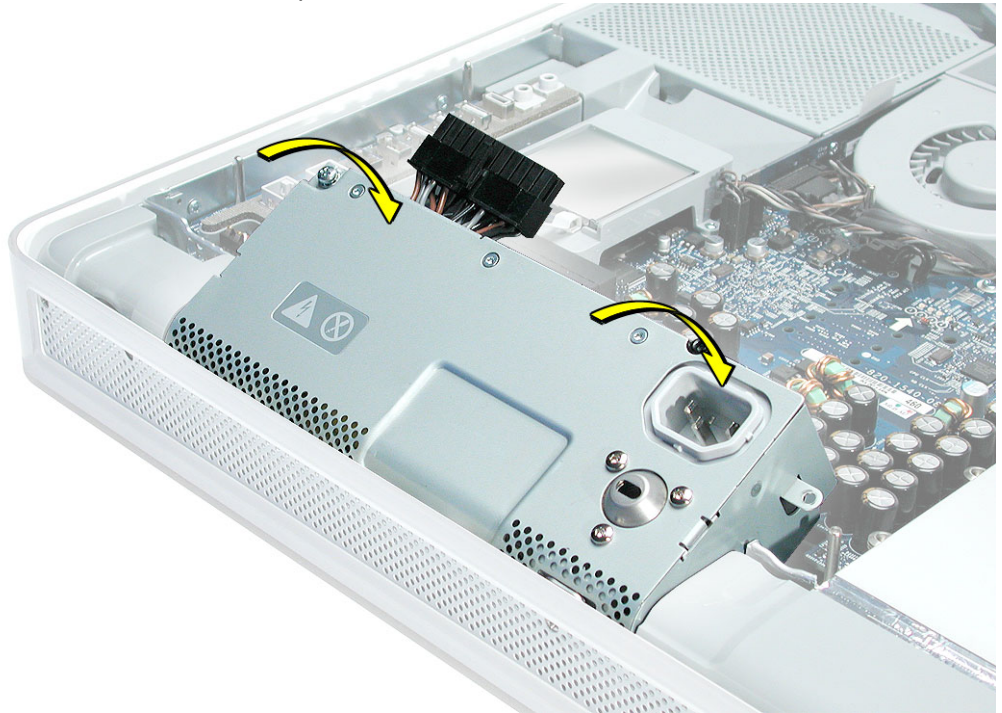


9. Return this power supply to Apple in the packaging provided.



## Replacing the Power Supply

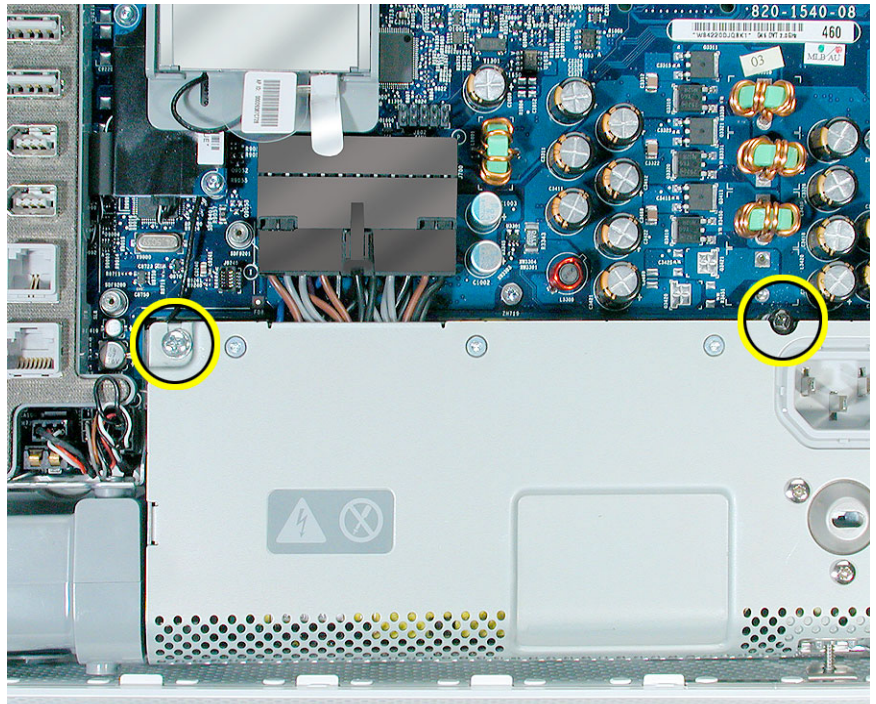
1. Remove the replacement power supply from its packaging.
2. Replace the power supply. Tilt up the power supply until it clears the edge of the main circuit board. Lower it into place.



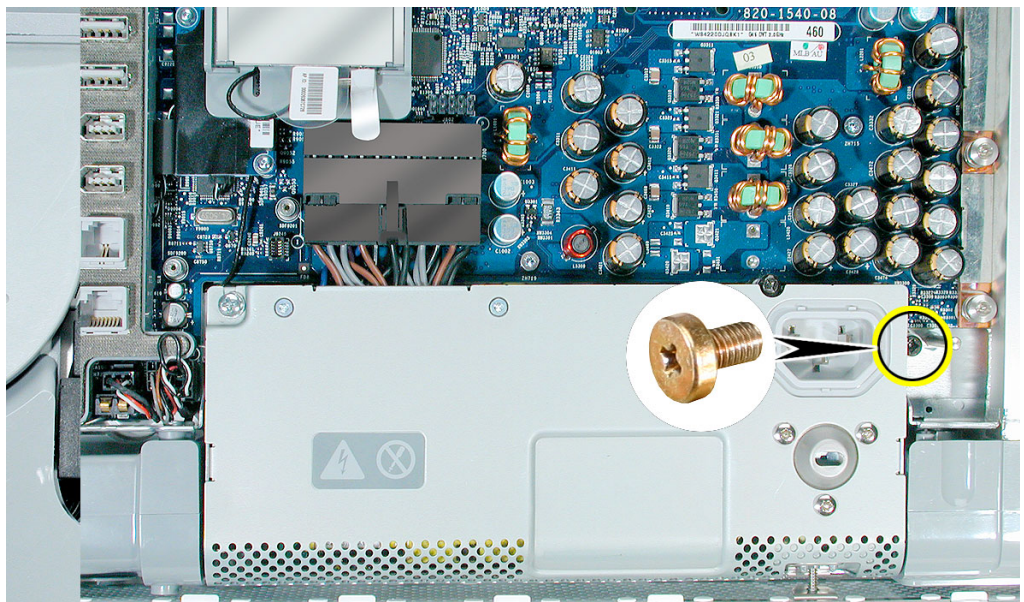
3. When the power supply is installed properly it should be flush with the gray plastic parts on the right and left sides of the power supply.



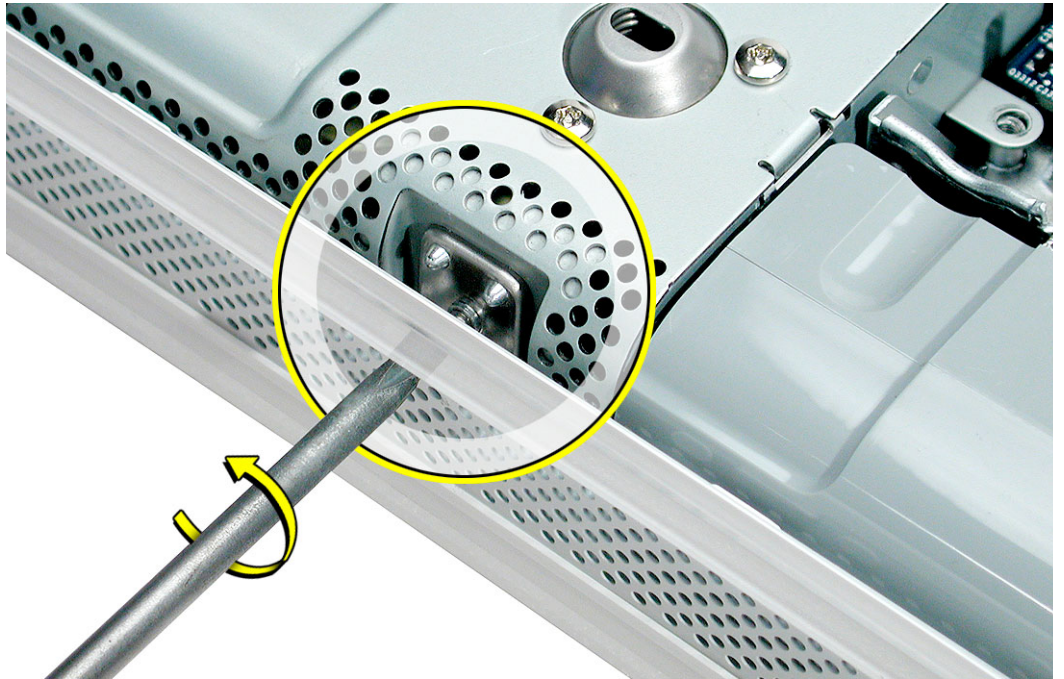
4. Connect the black power supply connector and tighten the two captive screws (circled), turning them clockwise.



5. Replace the power supply screw located on the far right.



6. Turn the middle case screw counterclockwise about five revolutions. This step prepares the back cover to be installed and secured.





# AirPort Extreme Card

Only the AirPort Extreme Card may be installed in the iMac G5. Older AirPort Cards do not work in this computer.

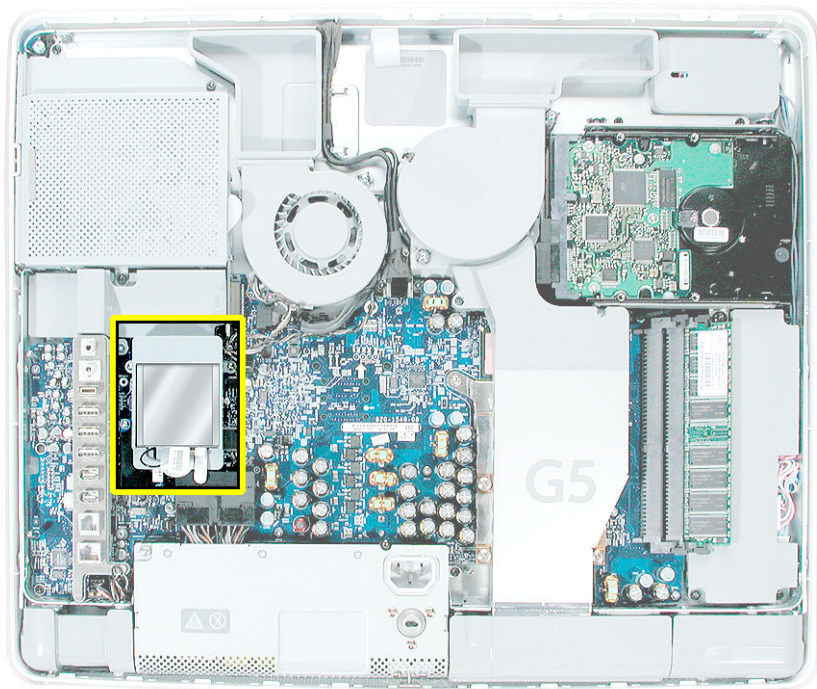
## Tools

No tools are required for this procedure.

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



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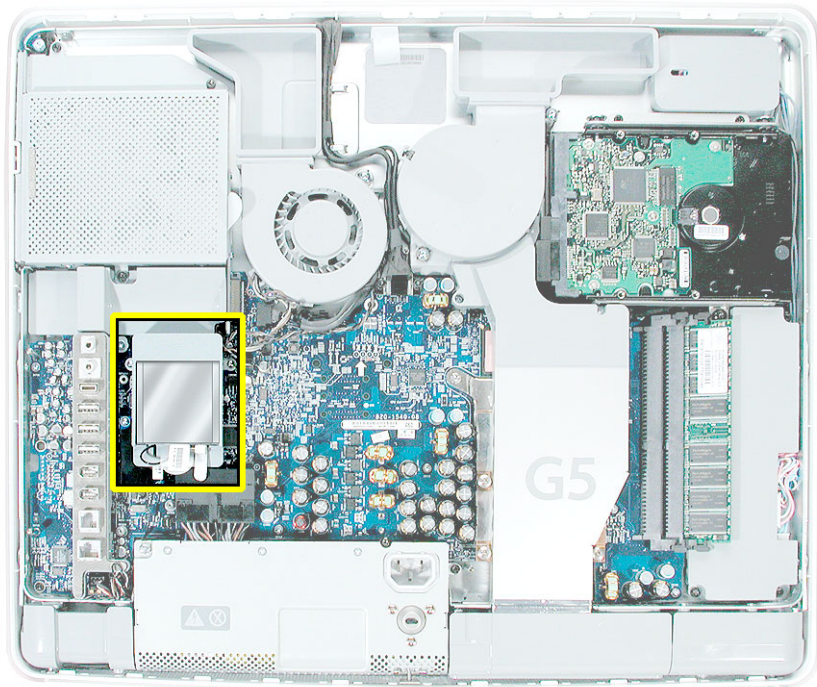
## Removing the AirPort Extreme Card

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

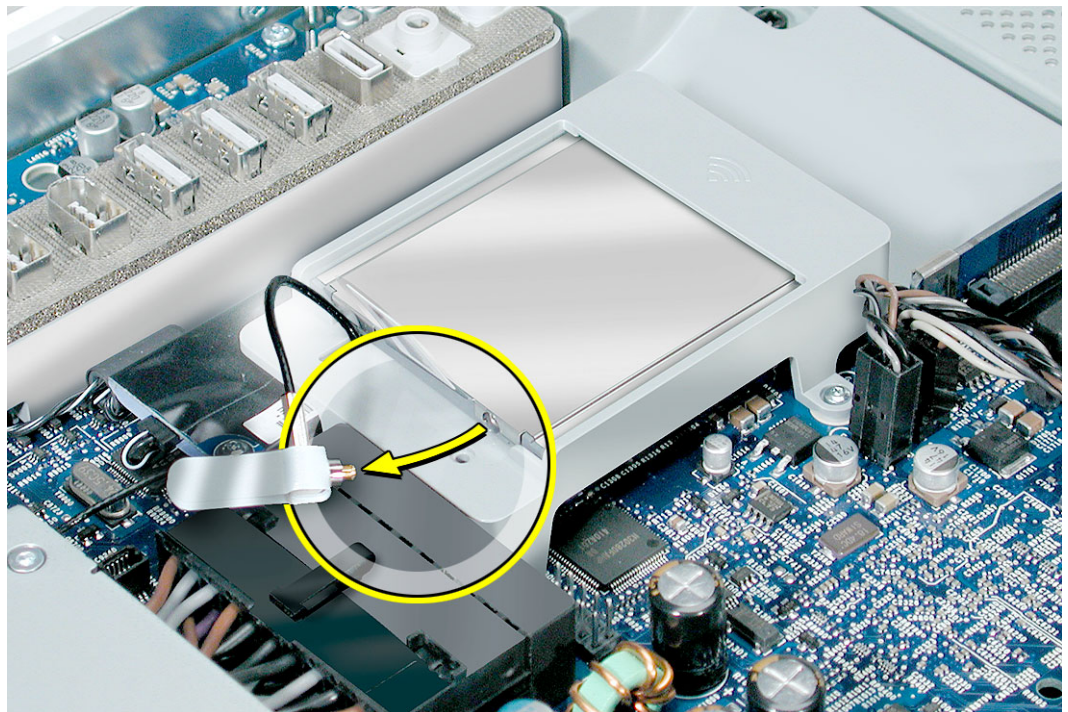
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



2. Locate the AirPort Extreme card.

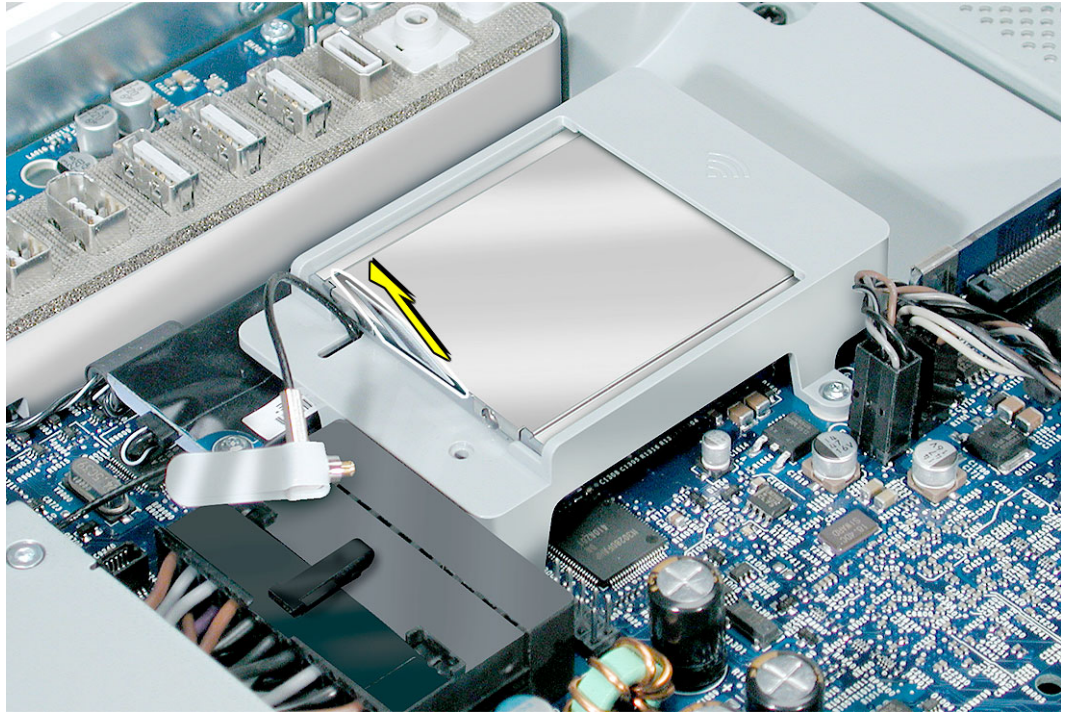


3. Disconnect the antenna cable from the end of the installed AirPort Extreme card.



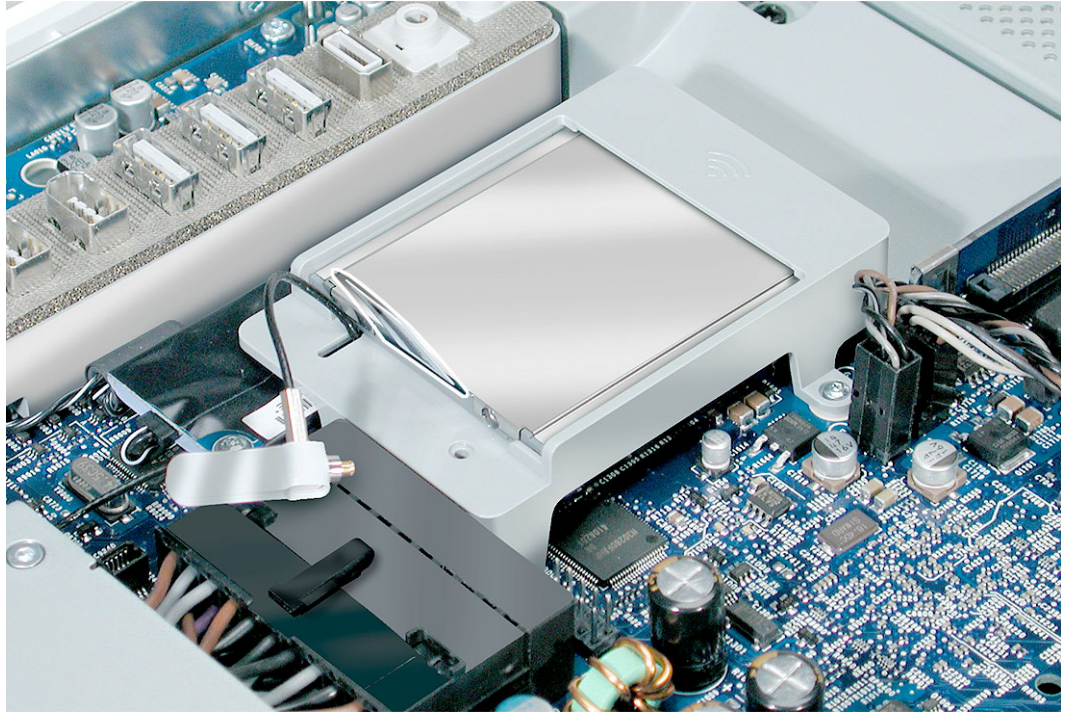
4. Pull the tab on the card to remove the card from the AirPort card guide.

**Important:** Return this AirPort Extreme card to Apple in the packaging provided.

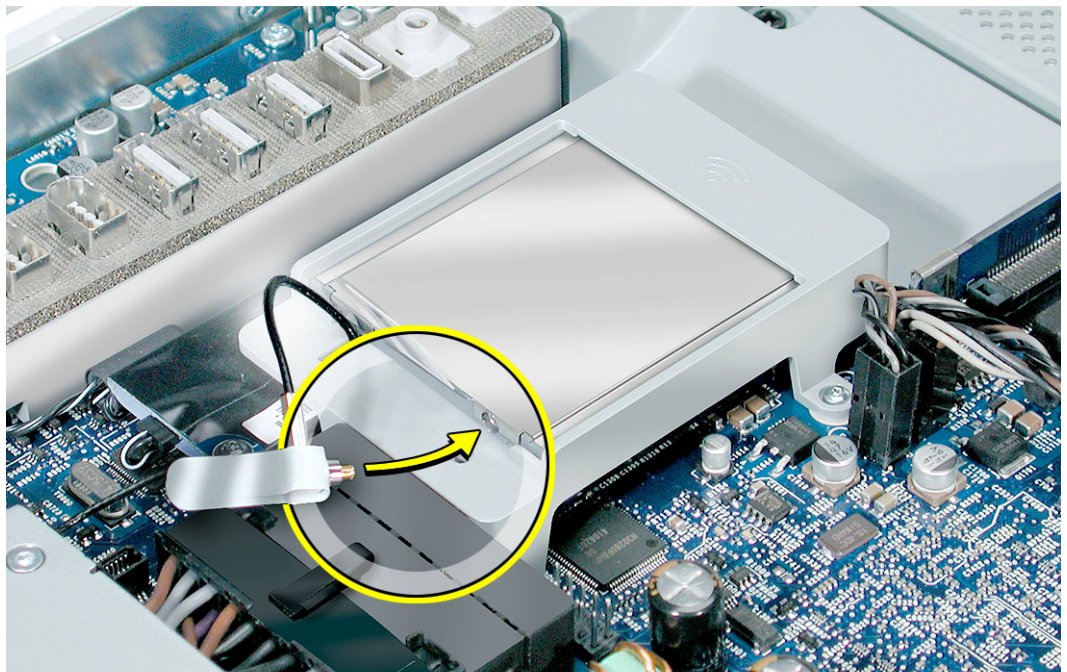


## Replacing the AirPort Extreme Card

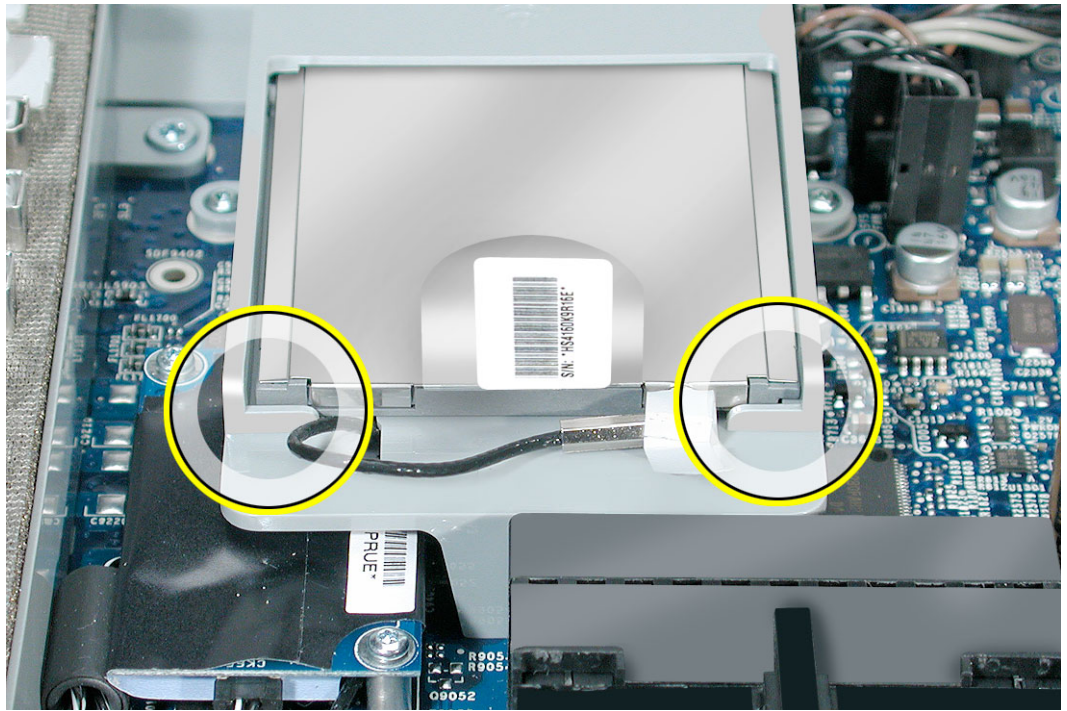
1. Remove the replacement AirPort Extreme card from its packaging.
2. Slide the AirPort Extreme card into the AirPort card guide channel until it clicks into place.



3. Connect the antenna cable to the end of the installed AirPort Extreme card.



4. Make sure the AirPort Extreme card is flush with the plastic AirPort card guide.





# Battery

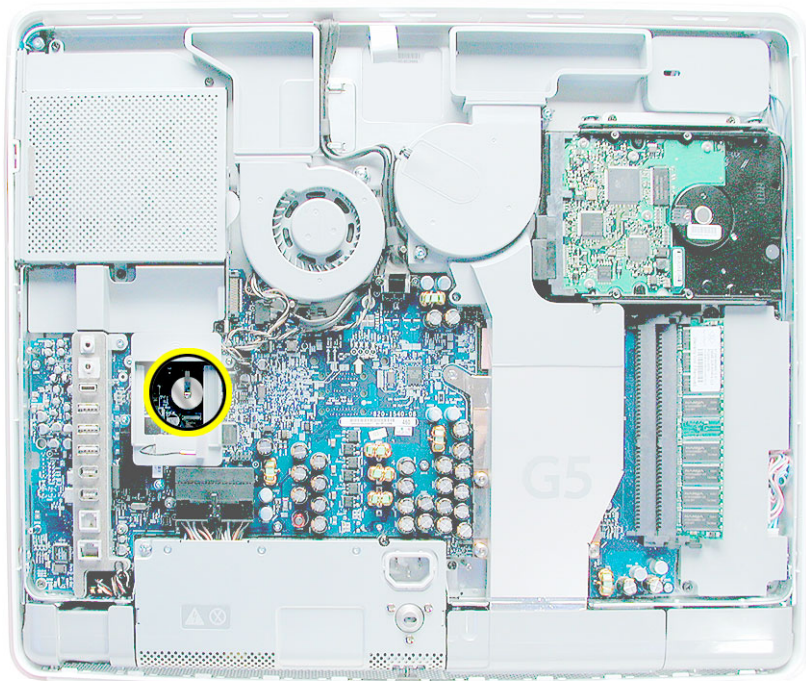
## Tools

No tools are required for this procedure. You may, however, find a flat-blade screwdriver or the nylon probe tool useful in removing the battery from its holder.

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



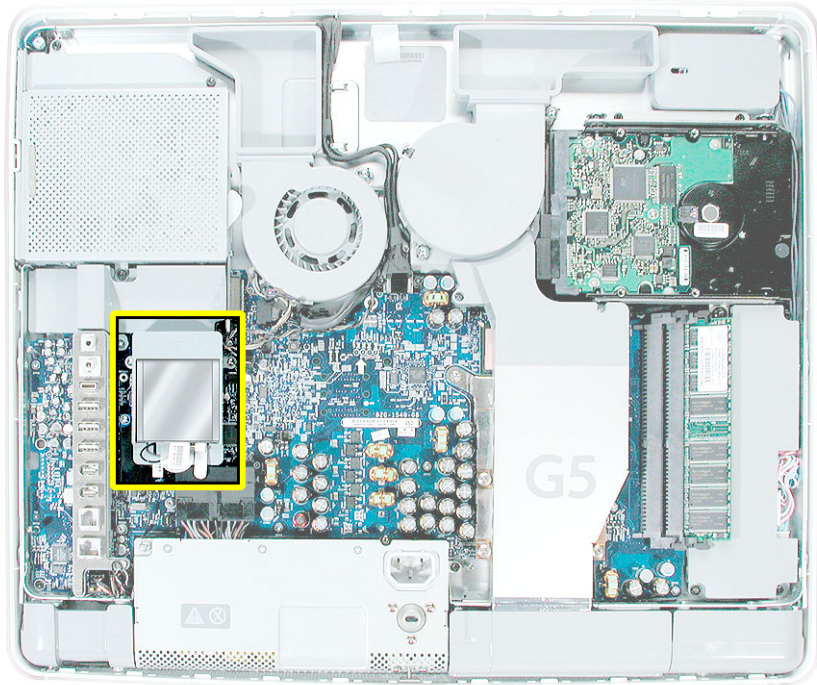
## Removing the Battery

1. To access the battery 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.

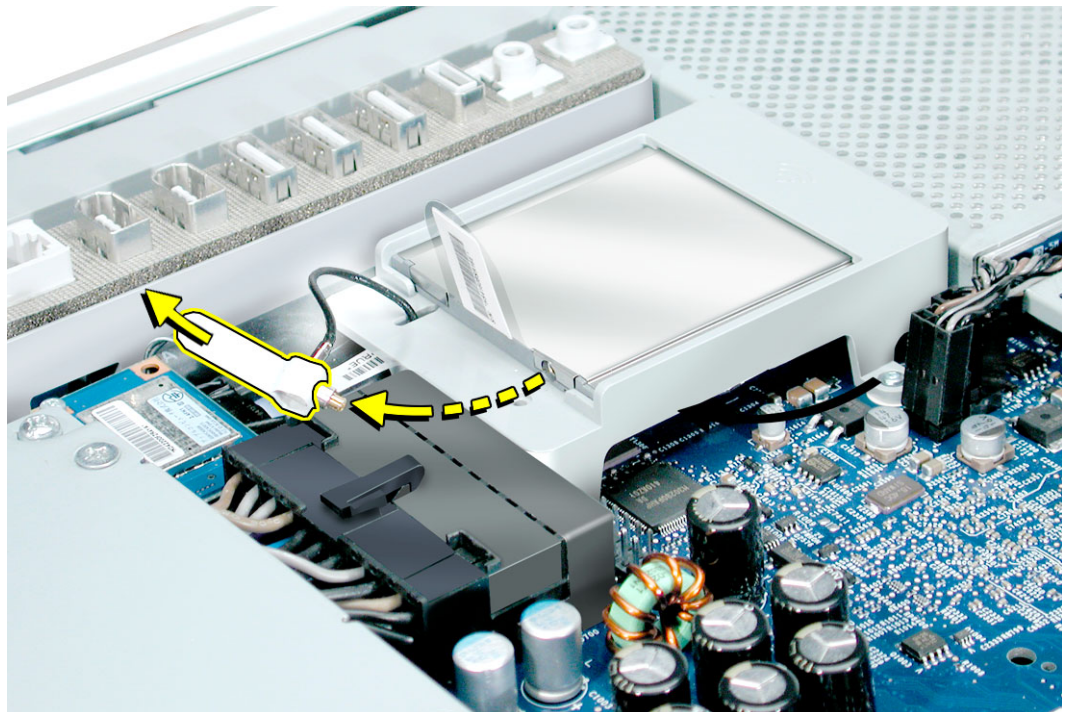
**Warning:** Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.



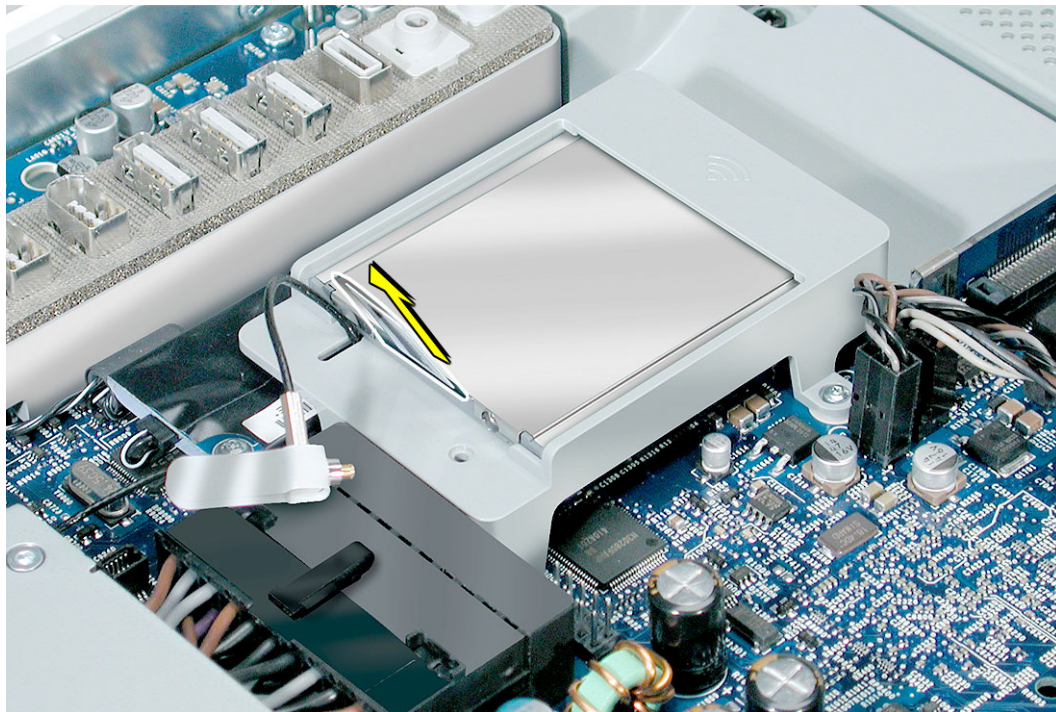
3. Locate the AirPort Extreme card. The battery is located below the AirPort Extreme card. **Note:** If an AirPort Extreme card is not installed, go on to step 7.



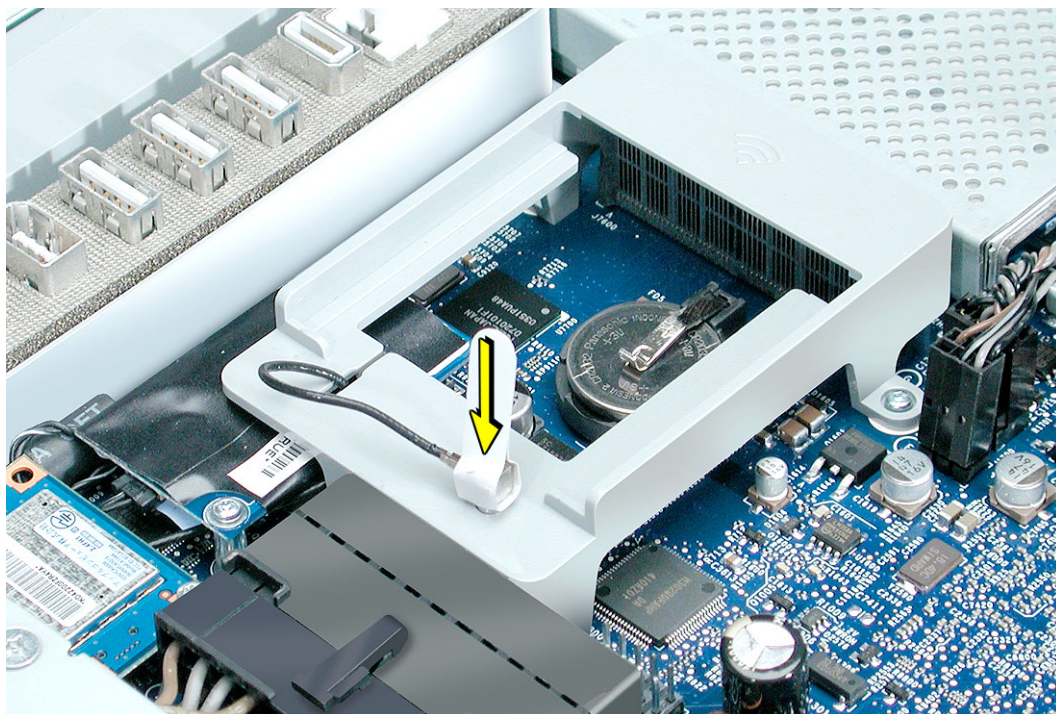
4. Disconnect the antenna cable from the end of the installed AirPort Extreme card.



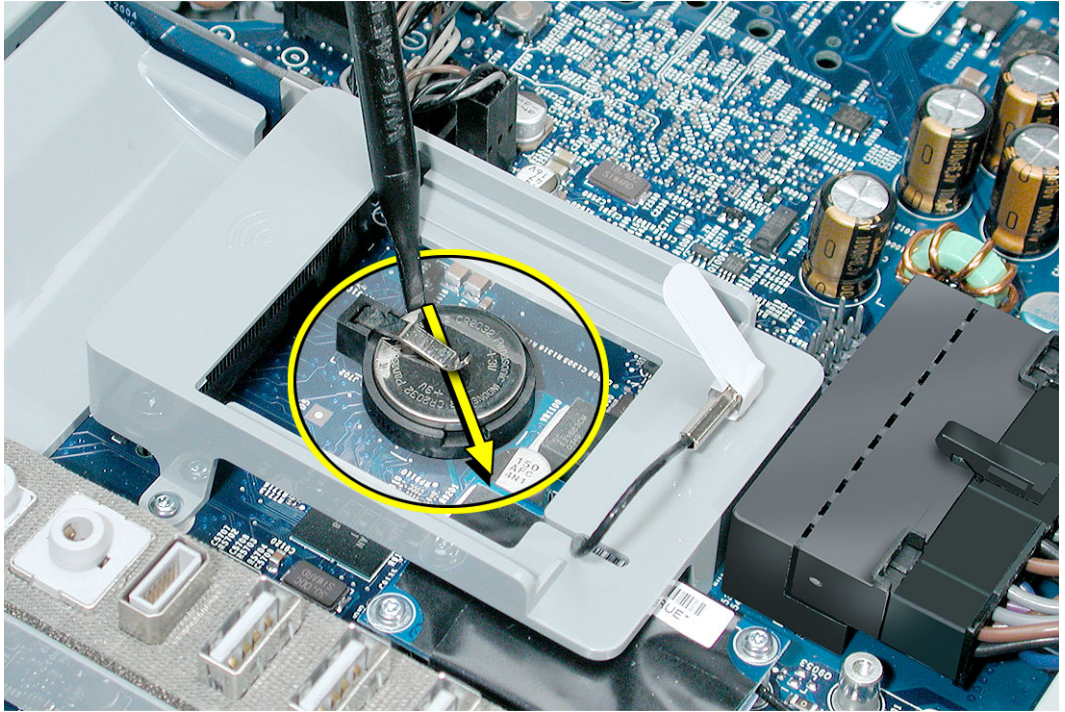
5. Pull the tab on the card to remove the card from the AirPort card guide.



6. Reconnect the antenna cable to the hole on the AirPort card guide.

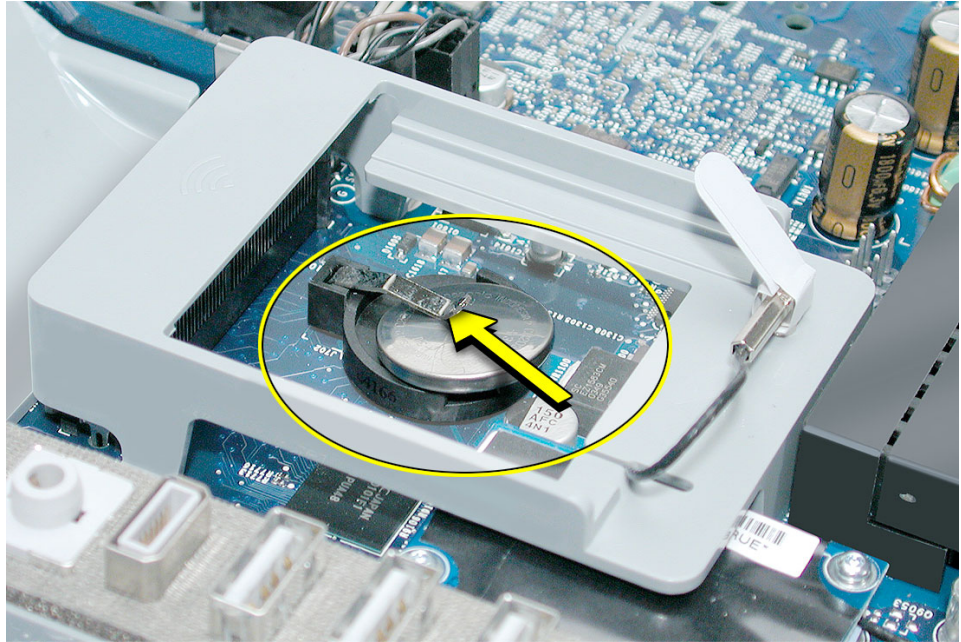


7. With the nylon probe tool, push the battery in the direction of the arrow to free the battery from the metal clip.

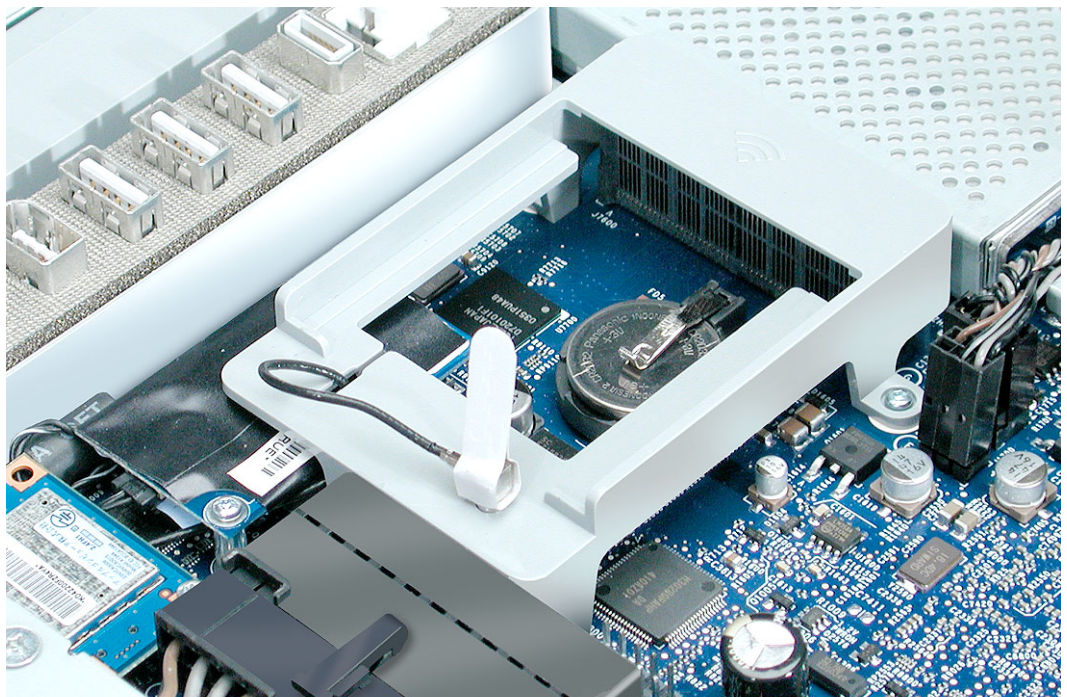


## Replacing the Battery

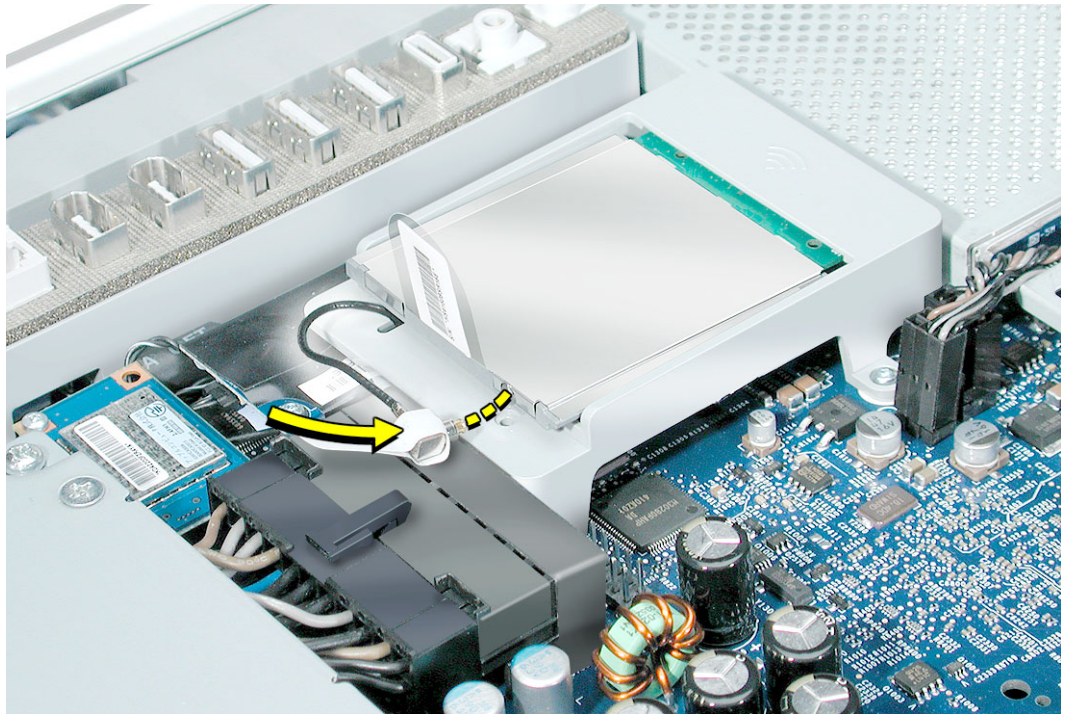
1. Remove the replacement battery from its packaging.
2. Holding the battery positive side up, push the battery (in the direction of the arrow) under the battery clip. The battery should slip into place under the clip.



3. Remove the AirPort antenna cable (by pulling the tab) from the opening on the AirPort Extreme guide rail.



- Slide the AirPort Extreme card into the slot until it clicks into place. Connect the AirPort antenna cable to the AirPort Extreme card.





# Midplane Assembly

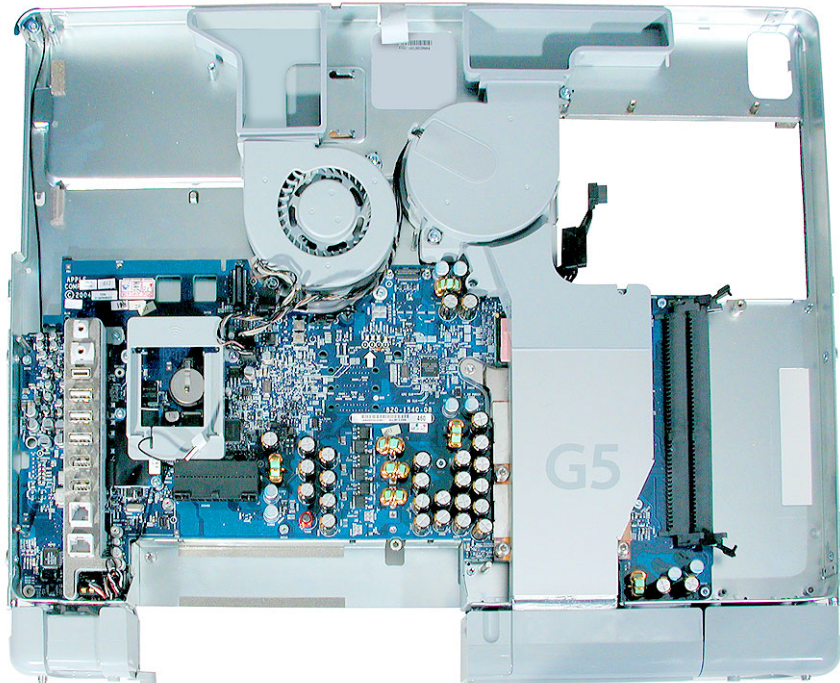
## Tools Required

- Use the screwdriver provided, or a Phillips #1 screwdriver, preferably with a magnetized tip
- Needlenose pliers
- Screw tray or equivalent to hold the screws

## Preliminary Steps

Before you begin, remove the back cover.

## Part Location



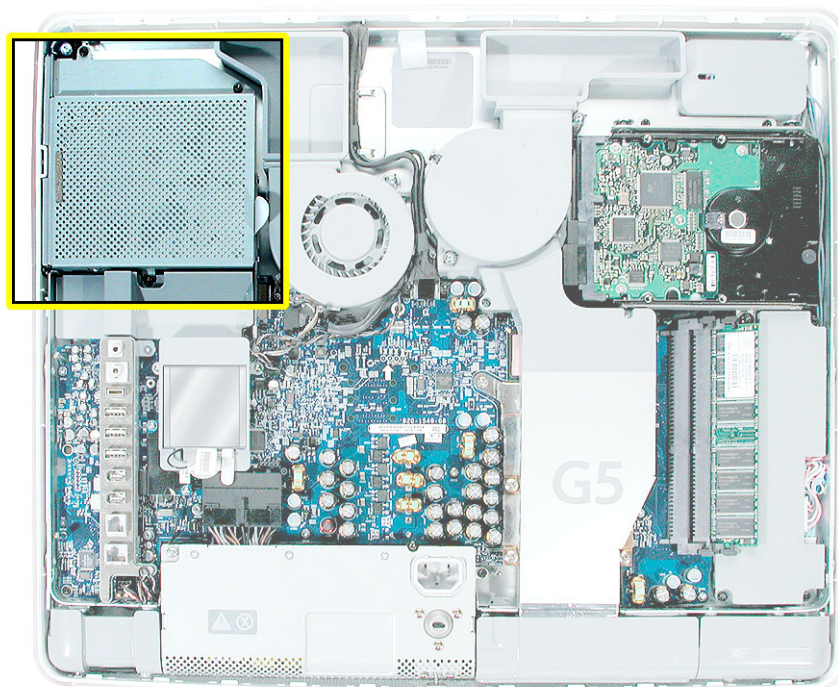
## Removing the Midplane Assembly

1. To access the midplane assembly 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.

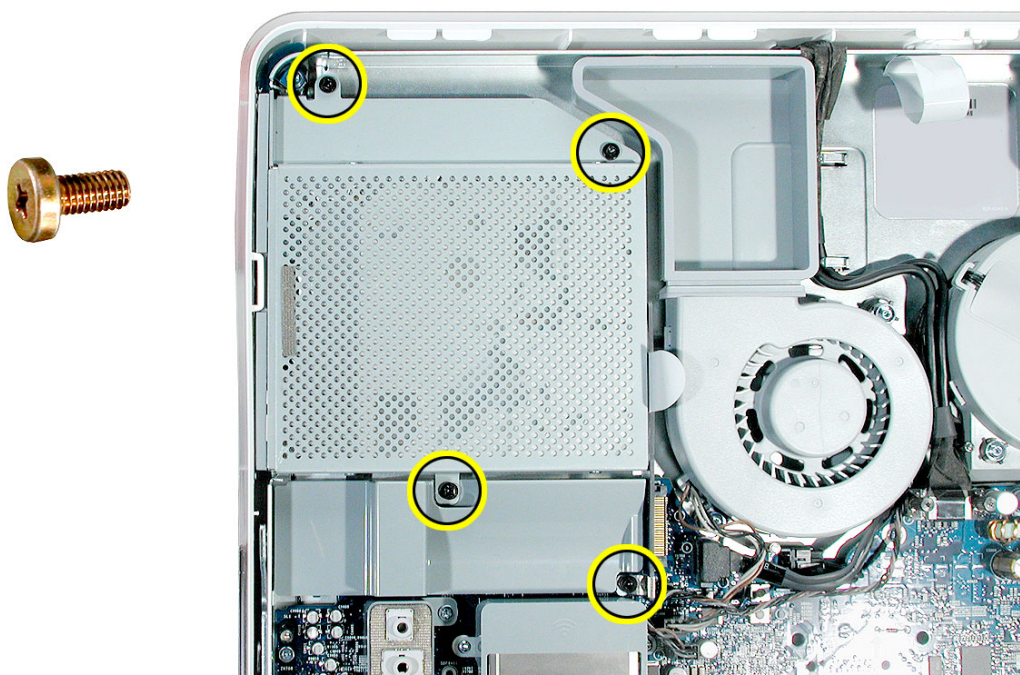
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



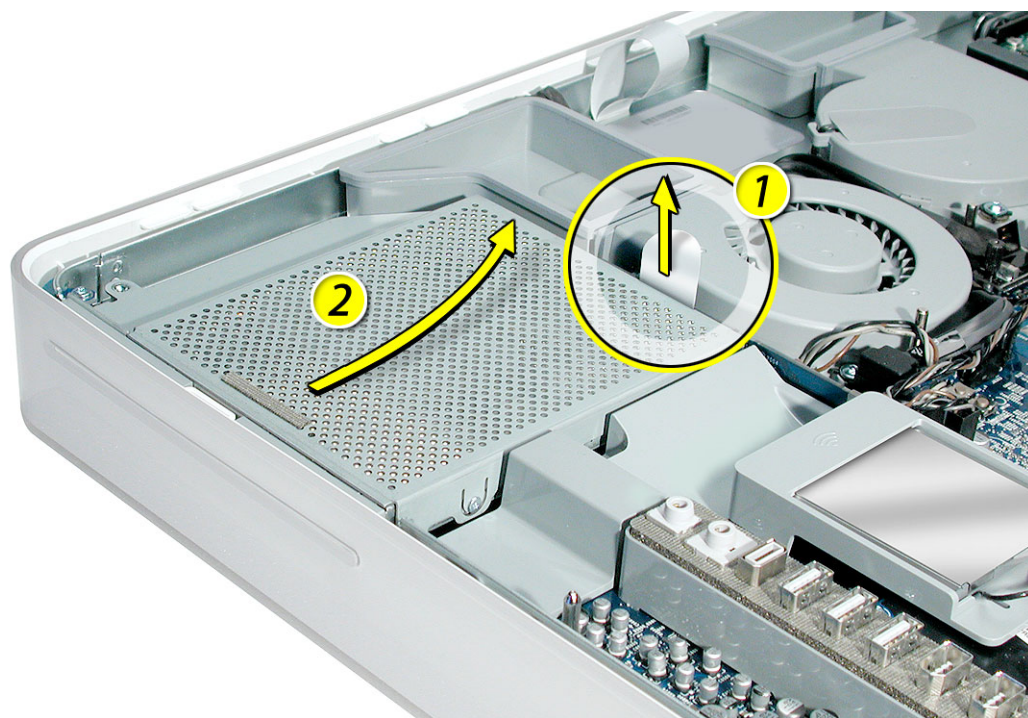
3. Locate the optical drive in the top left corner.



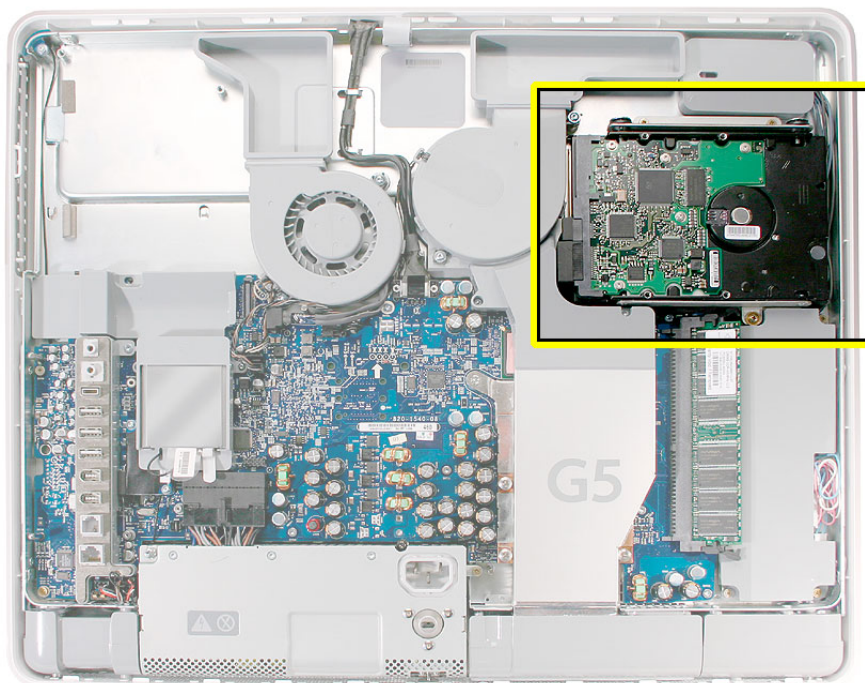
4. Using the tool provided, or a Phillips #1 screwdriver, remove the four optical drive screws circled below. Set the screws aside.



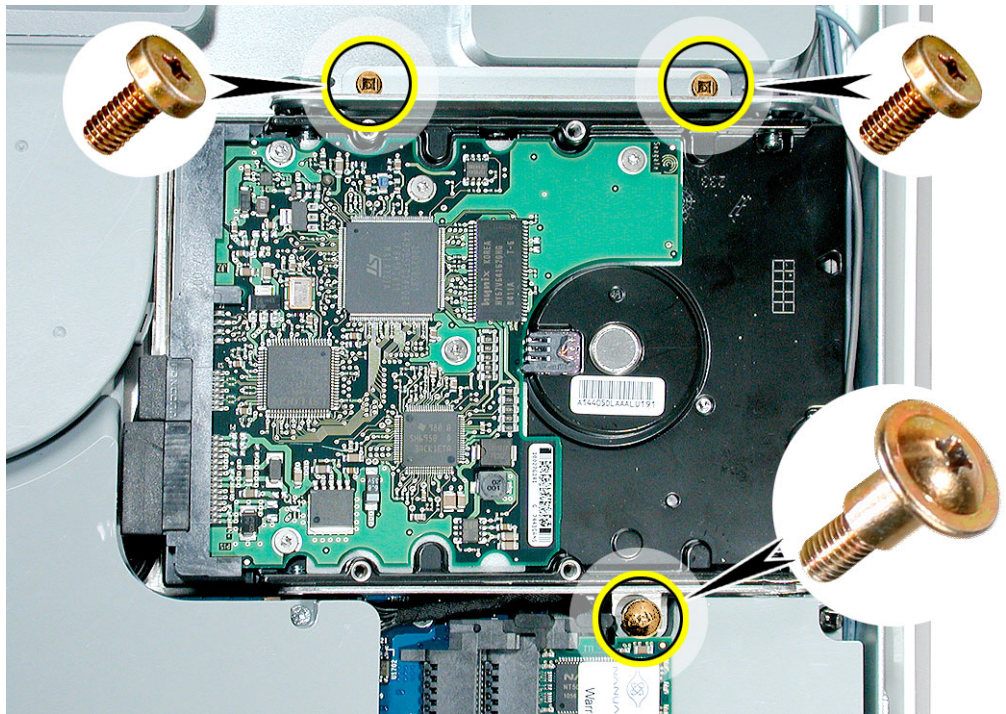
5. Pull the optical drive tab straight up and then to the right. Set the optical drive aside.



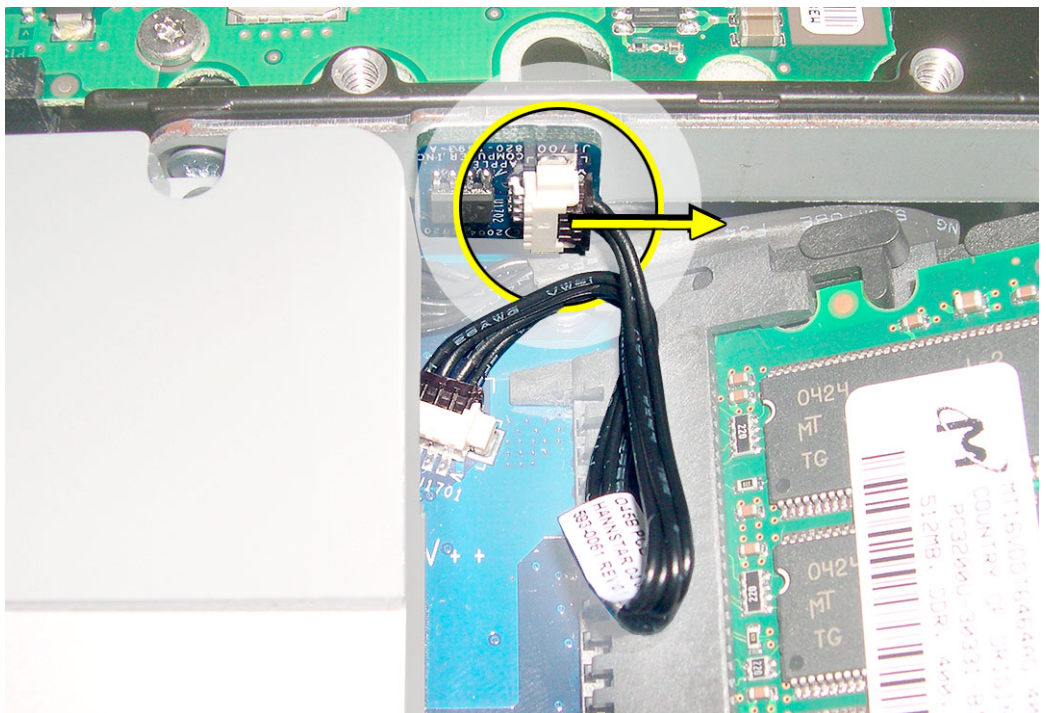
6. Locate the hard drive near the top right corner.



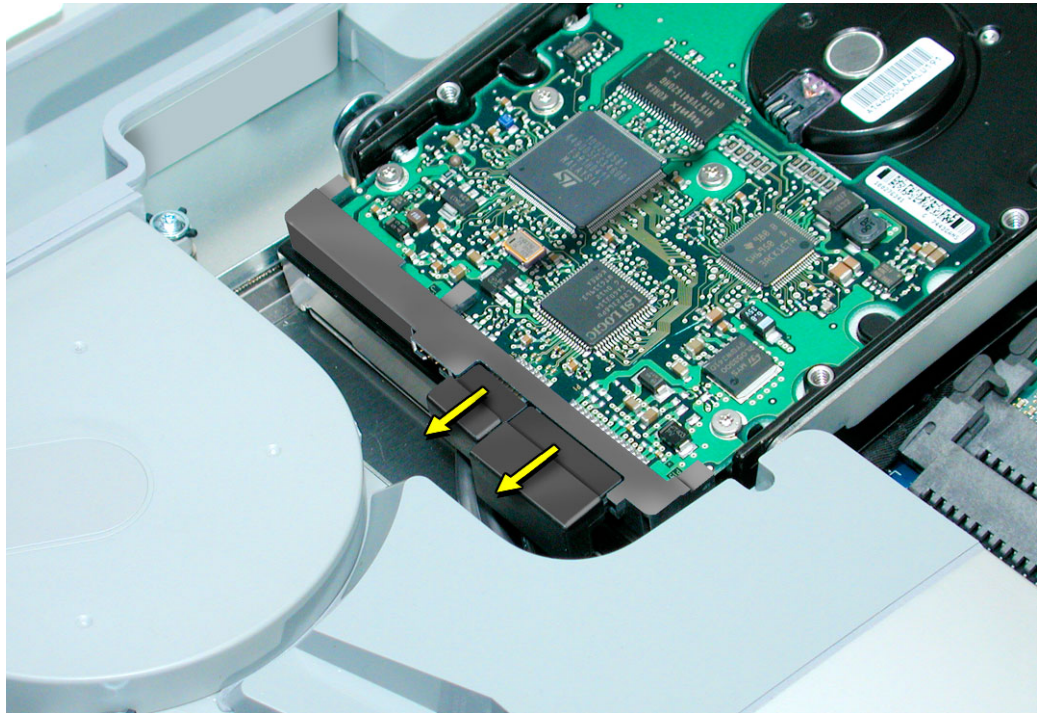
7. Remove the three hard drive screws.



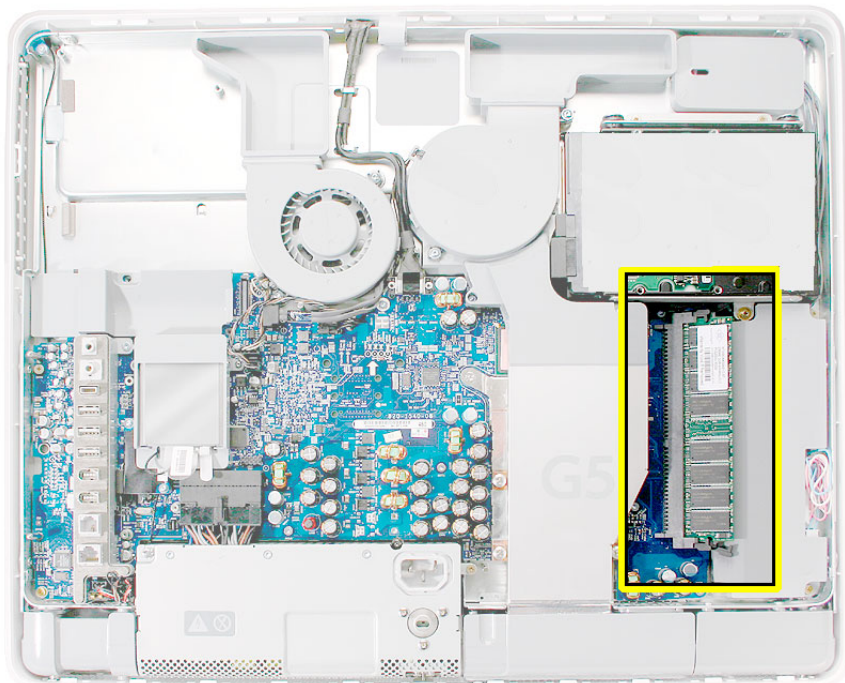
8. Lift the hard drive straight up, about one inch, to access a connector. Disconnect the black cable from the white connector on the side of the hard drive. **Note:** Do not disconnect the other end of the cable.



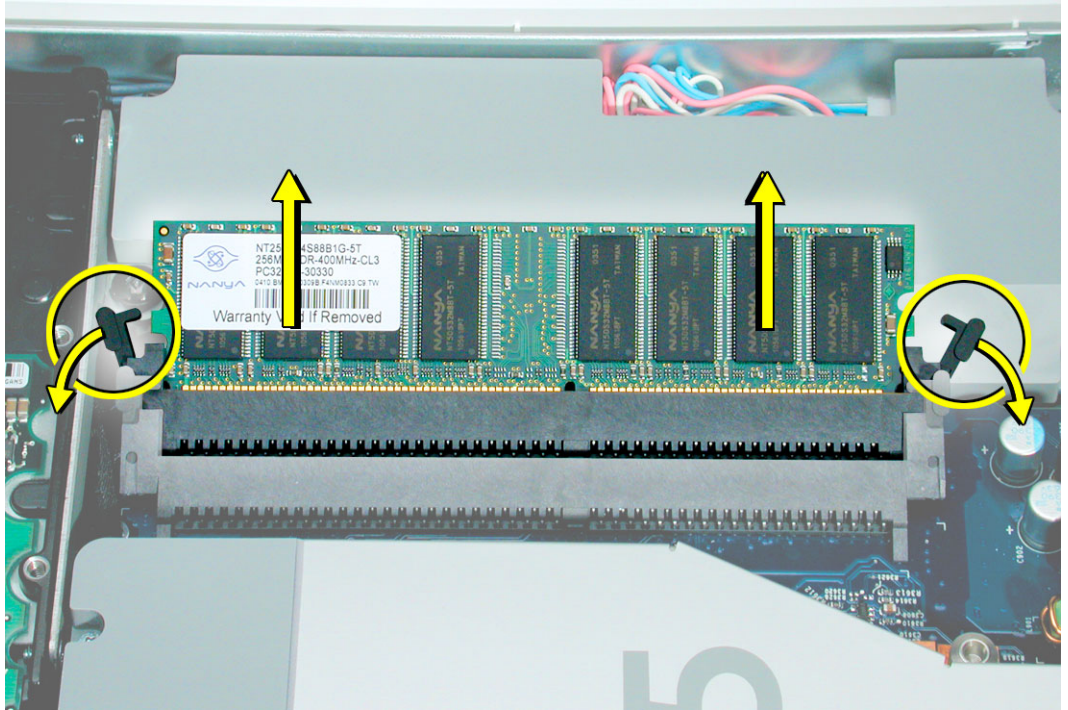
9. Disconnect the hard drive power and data cables. Lift the hard drive up and out of the midplane assembly. Set the hard drive aside.



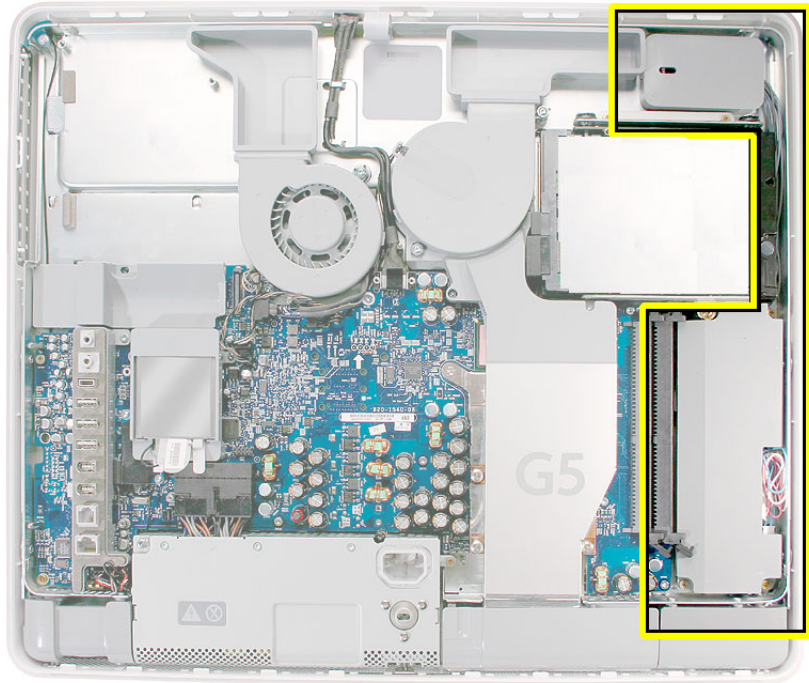
10. Locate the memory module(s) in the bottom right corner. You must remove the memory to gain access to the next module.



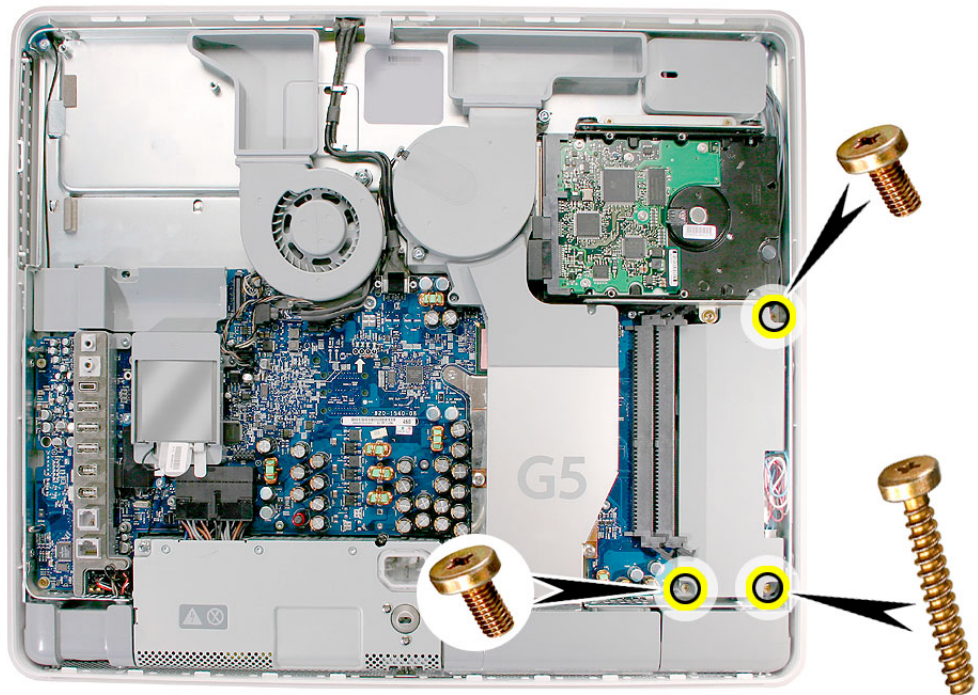
11. Rotate the computer counterclockwise so the memory is in the position shown below.
12. To release the memory from its slot, push down on the two side latches (circled below). Then pull the memory module out of the slot. Repeat this step if you have a second memory module.



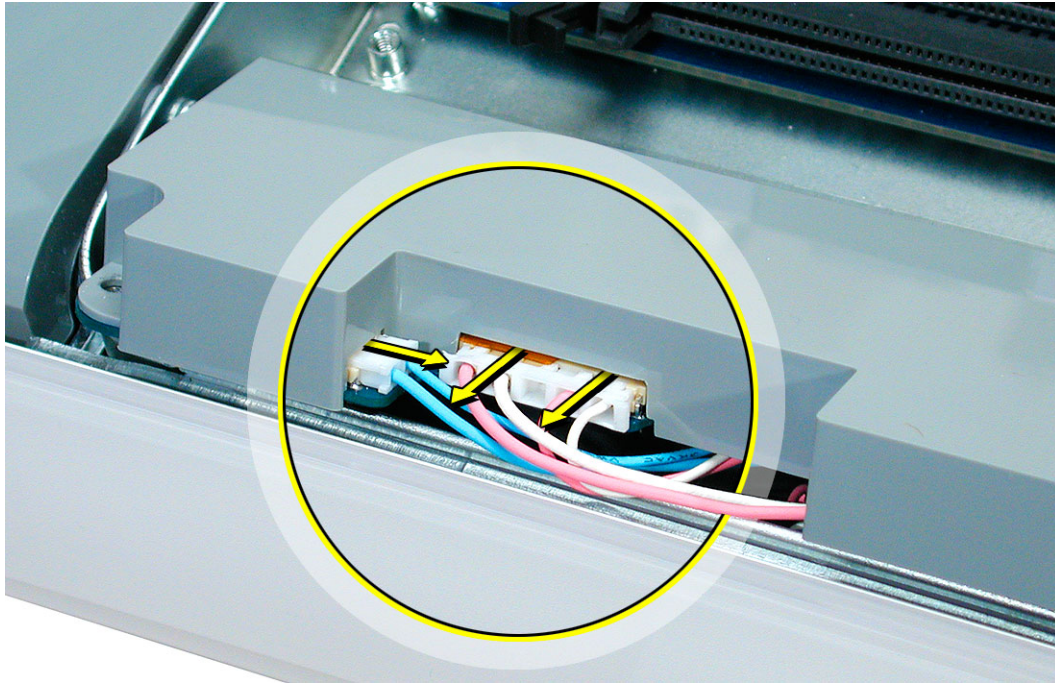
13. Locate the gray plastic module on the right side of the computer. This is the inverter. You must remove the inverter to remove the midplane.



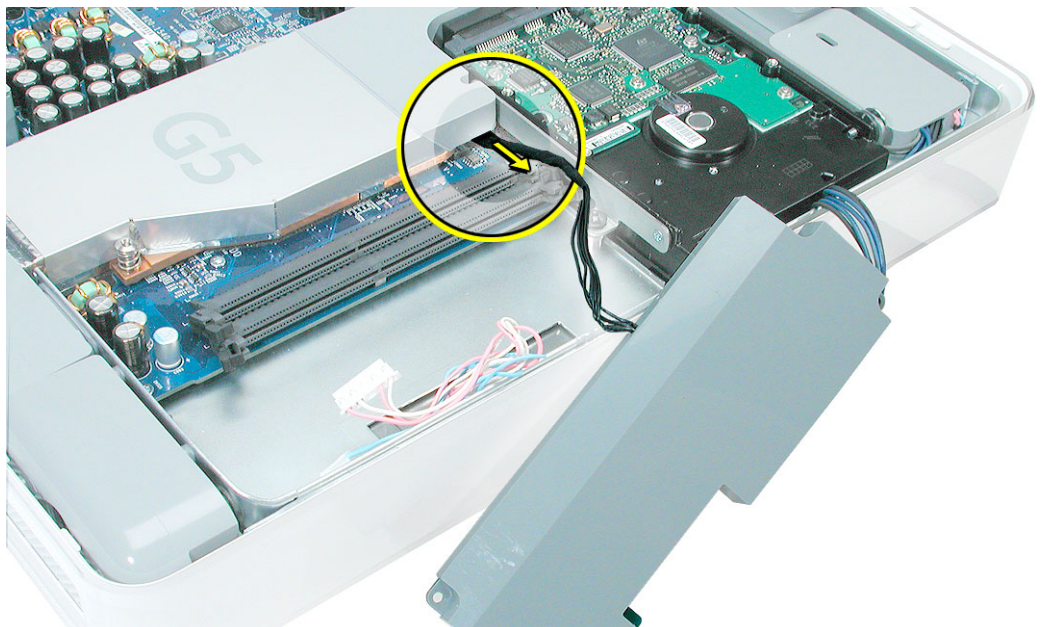
14. Remove the three inverter screws (circled below).



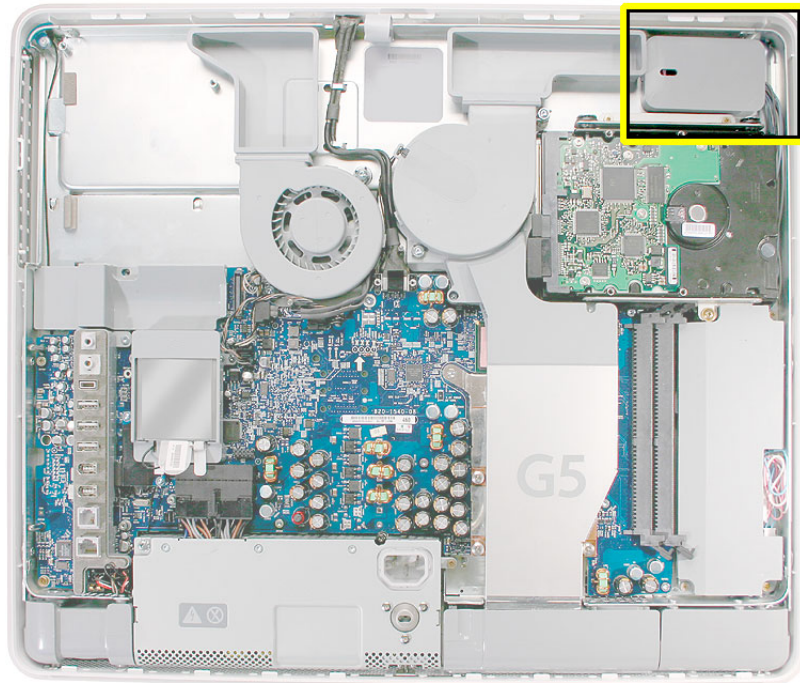
15. Rotate the computer clockwise so you see the inverter cables as shown below. Tilt the inverter to access the two white cable connectors.
16. Disconnect the cables by pulling on the connector, not on the cables. Disconnect the smaller connector first.



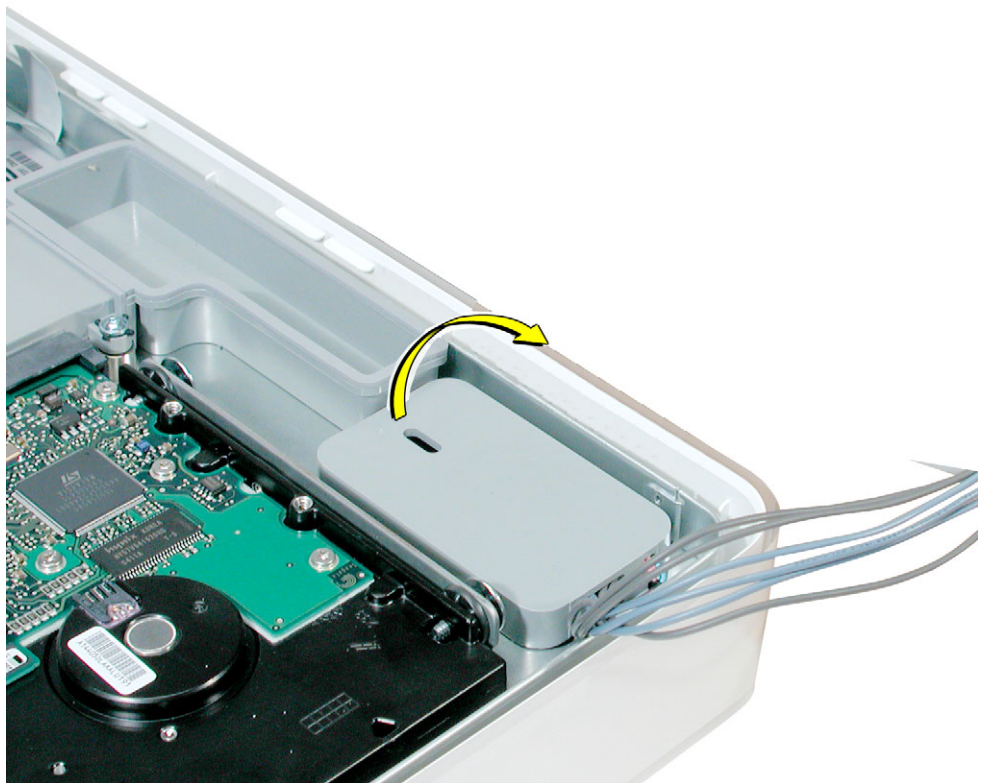
17. Lift the inverter out of the computer. Disconnect the black connector (circled below) located **under** the gray fan duct. Gently pull the black cable to disconnect the connector. Shift the hard drive to the right if you need more room to access the cable.



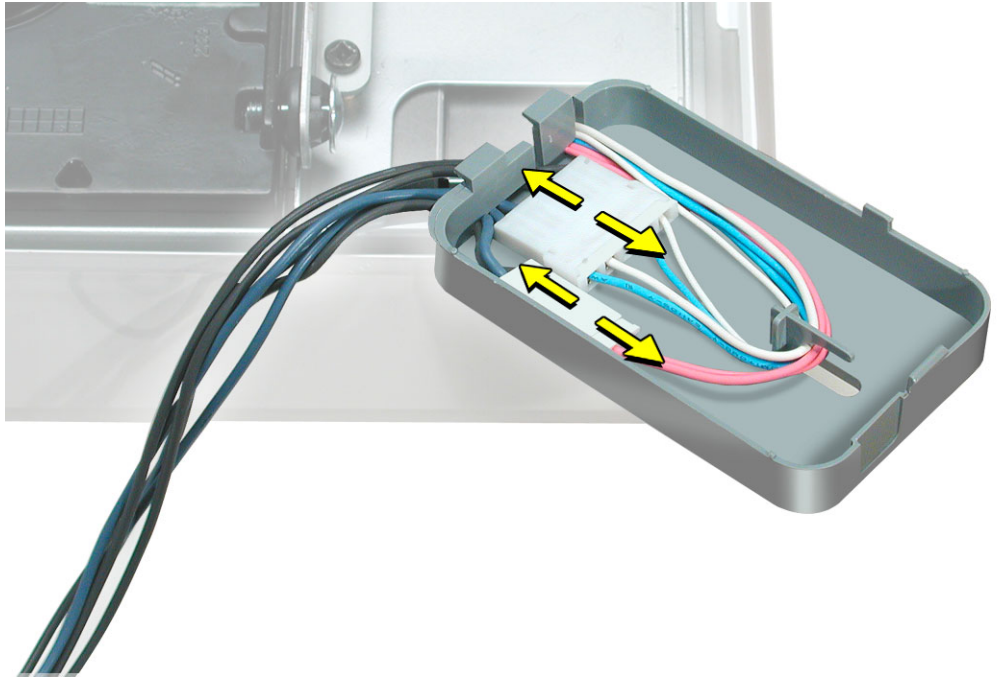
18. Locate the small, gray inverter cable cover in the top right corner.



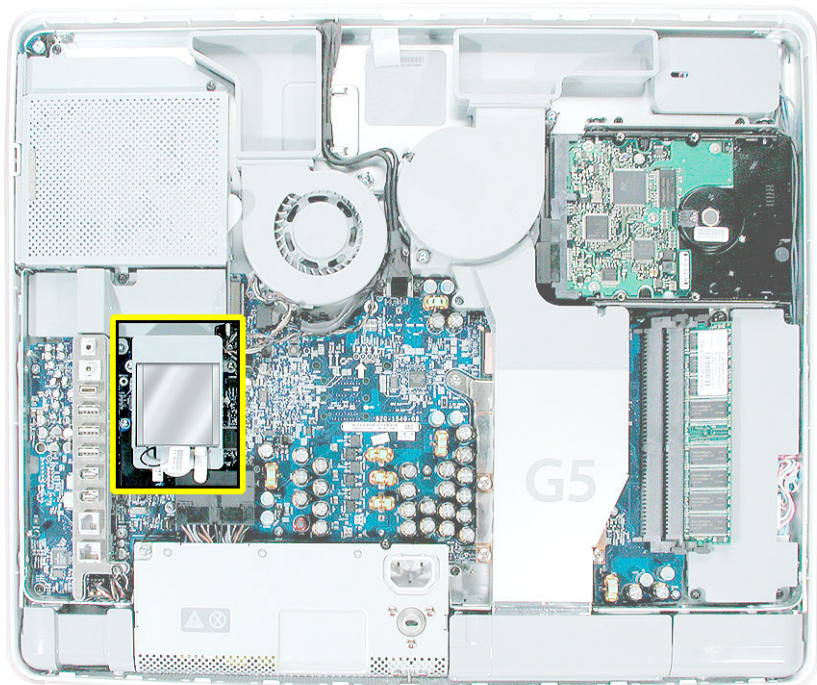
19. To unhook the cover, pull it in the direction of the arrow shown below.



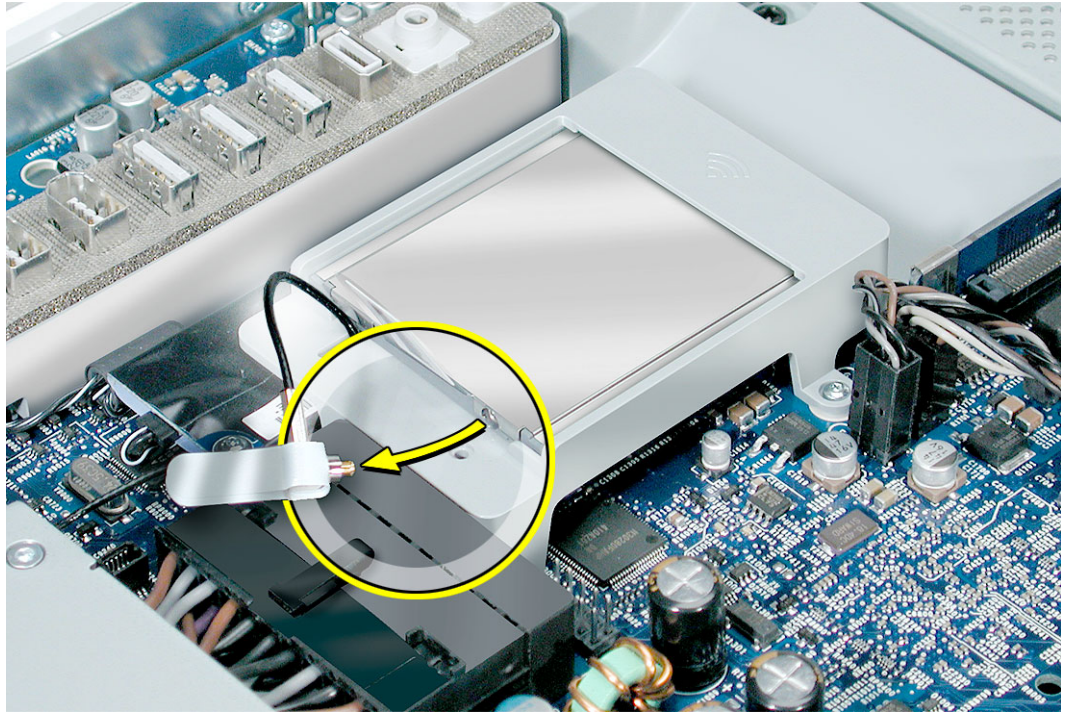
20. Disconnect the two white connectors underneath the cover. Pull on the connectors, not on the cables. Free the cables from the clips inside the cover. Set the inverter and cable cover aside.



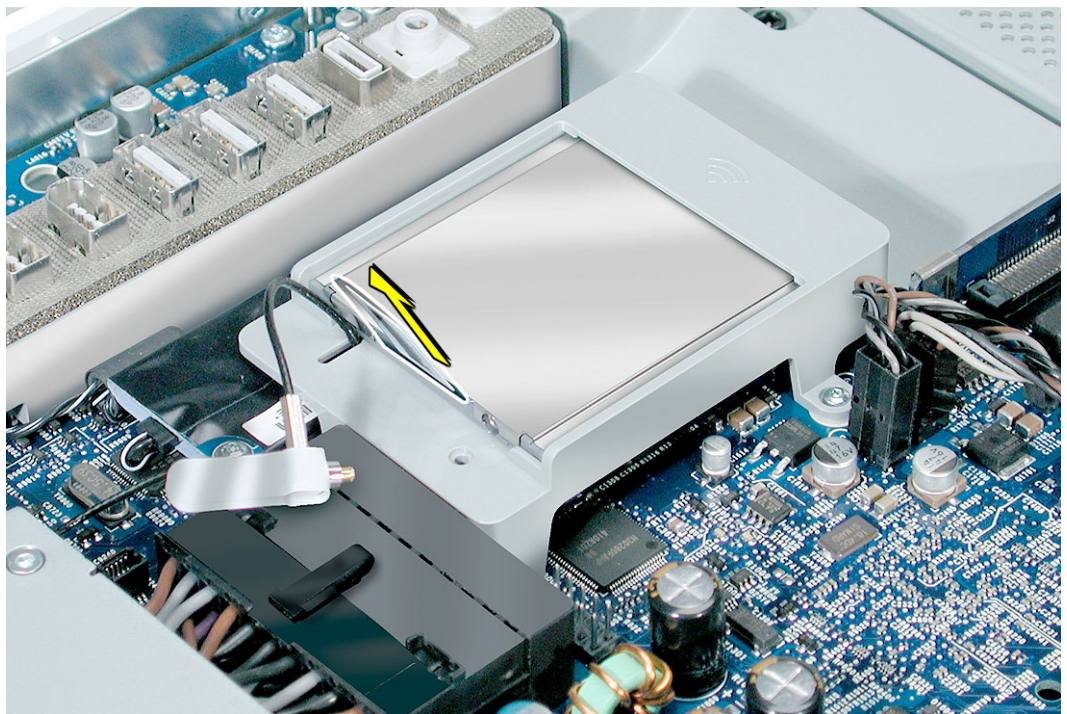
21. Locate the AirPort Extreme card. **Note:** If it's not installed, go on to step 25.



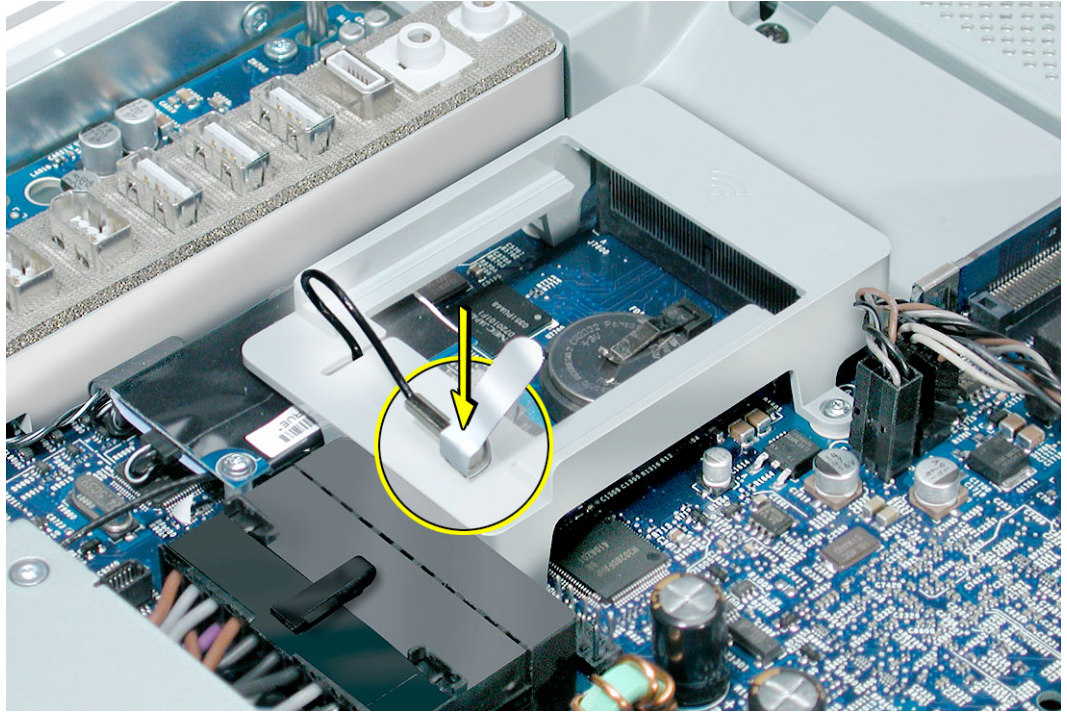
22. Disconnect the antenna cable from the end of the installed AirPort Extreme card.



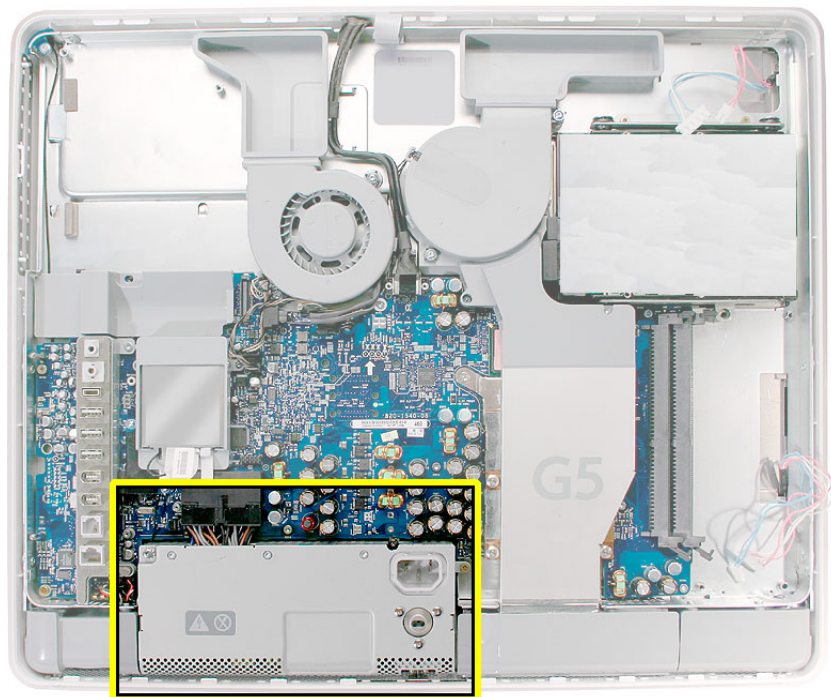
23. Pull the tab on the card to remove the card from the AirPort card guide.



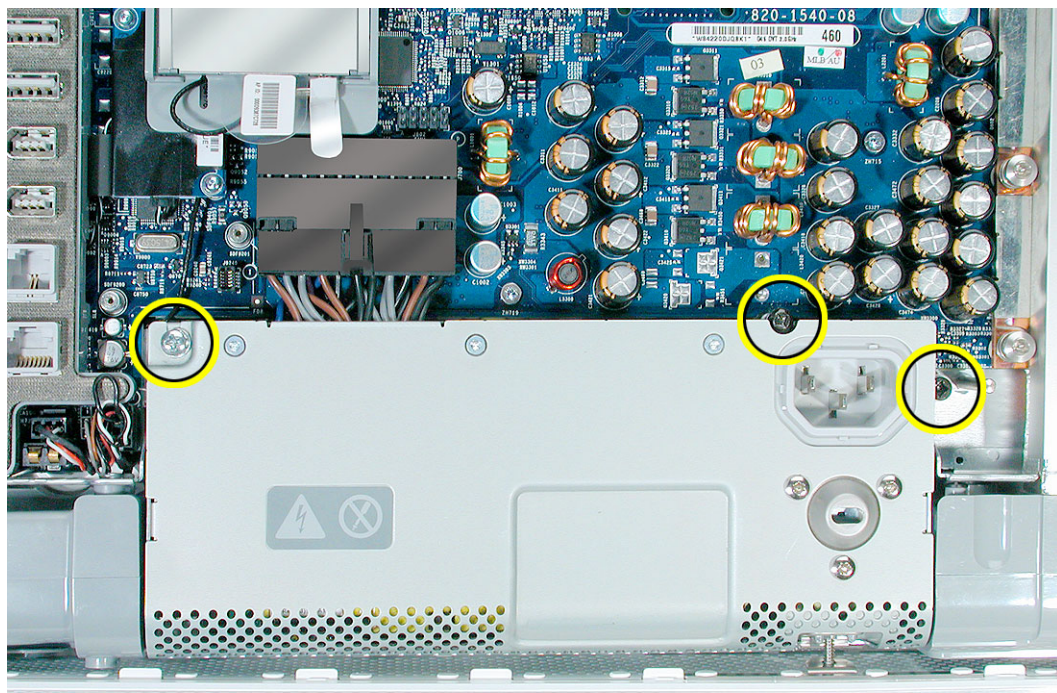
24. Reconnect the antenna cable to the hole on the AirPort card guide.



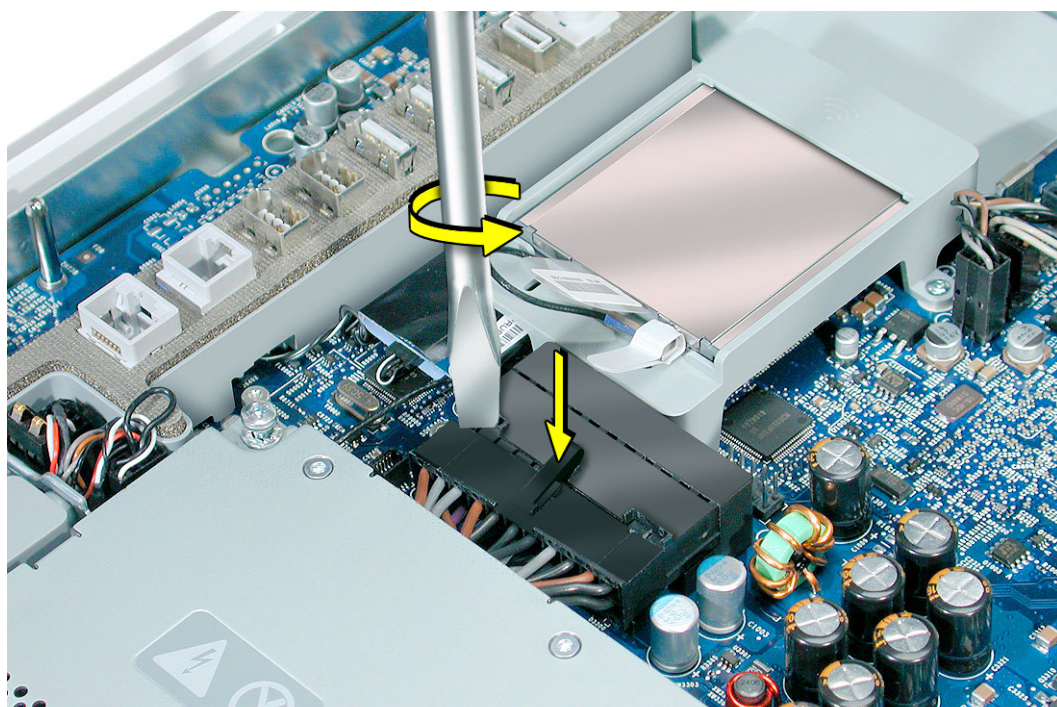
25. Locate the power supply at the bottom of the picture.



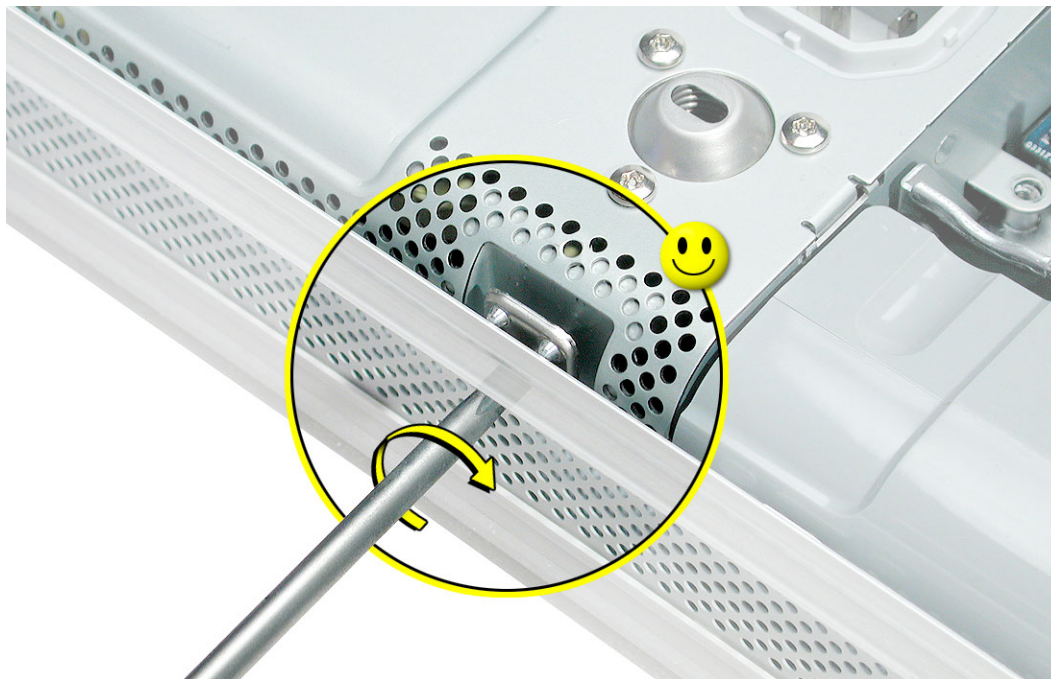
26. Remove the screw on the right and loosen the other two screws by turning them completely counterclockwise. **Note:** The middle screw and the screw on the left are captive; they will not come out.



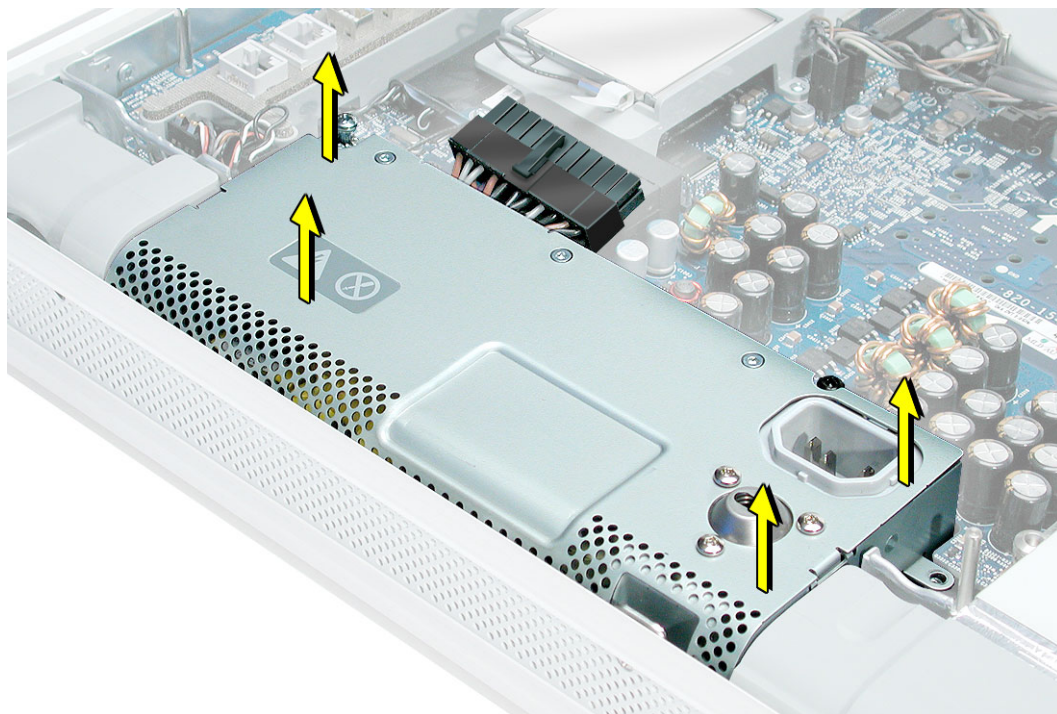
27. Disconnect the power supply cable by pressing the connector release tab and using a wide, flat blade screwdriver to pry apart the connector.



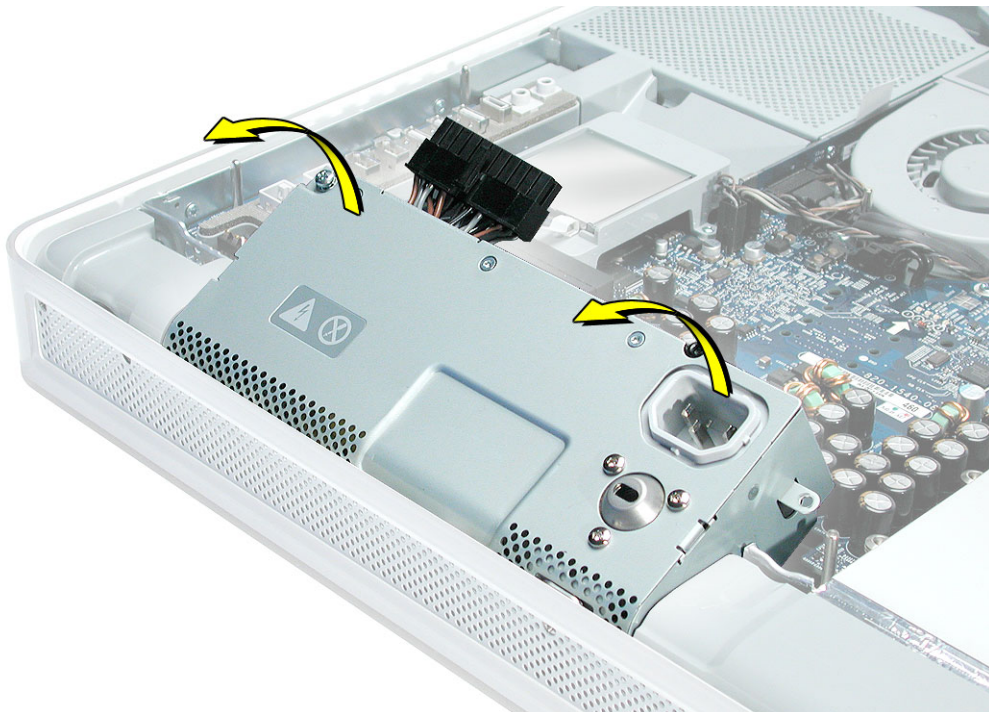
28. To unlatch the power supply, tighten the middle case screw by turning it clockwise five to eight revolutions.



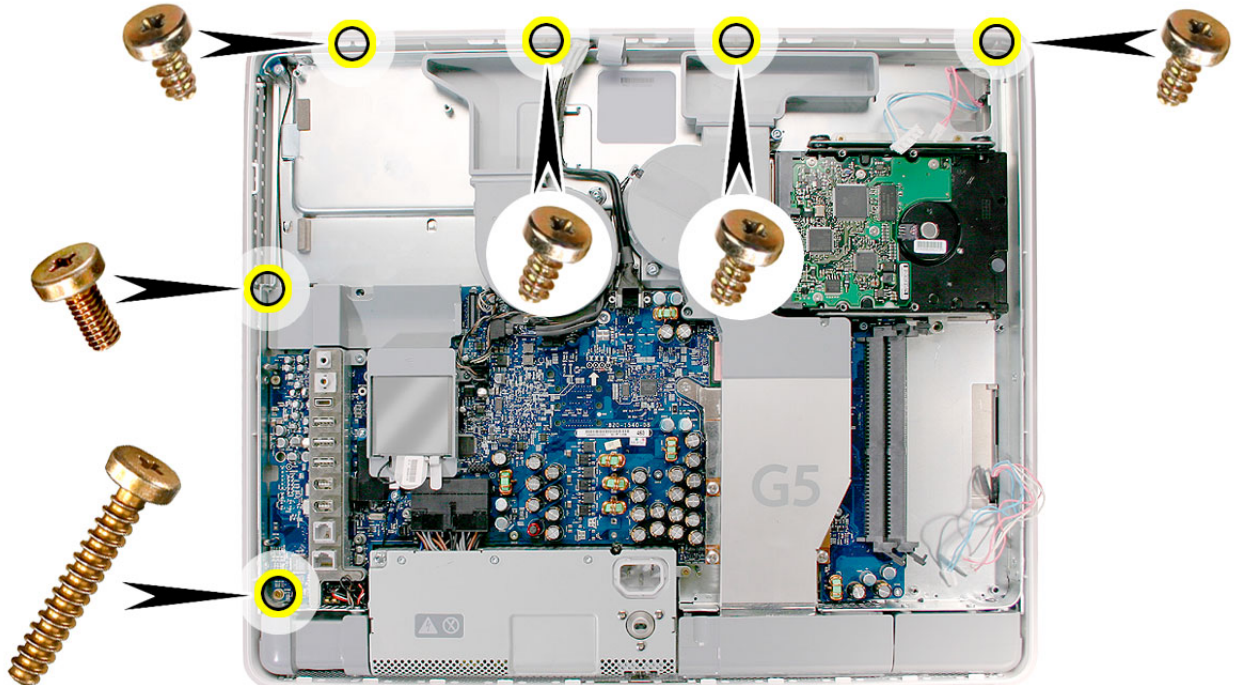
29. Lift up the power supply at the sides approximately five mm or until it touches the middle case screw.



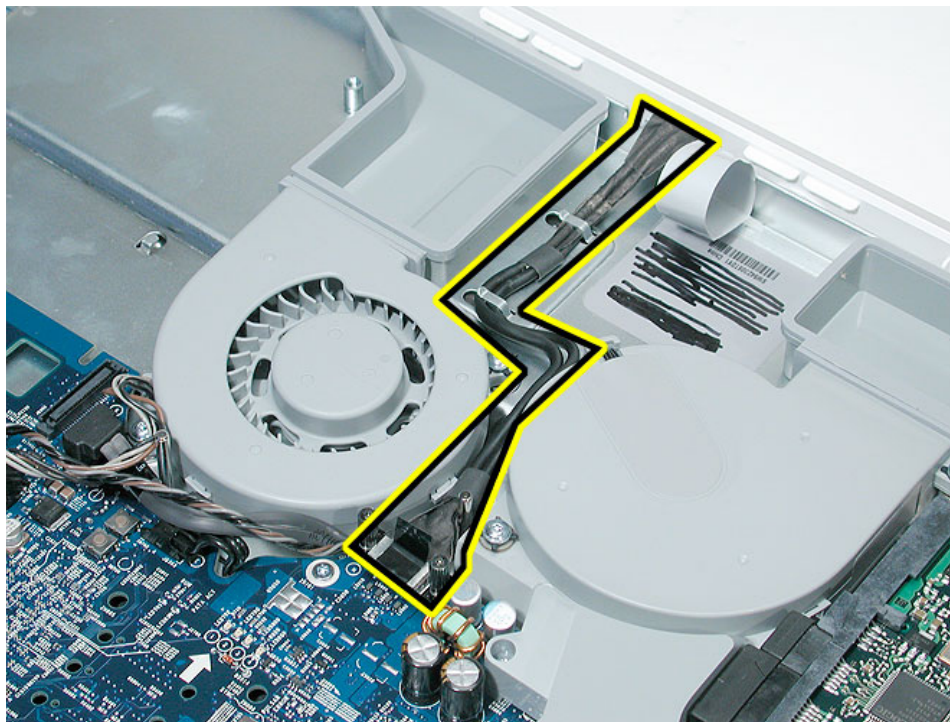
30. Tilt up the power supply until it clears the edge of the main circuit board. Lift it out of the computer and set it aside.



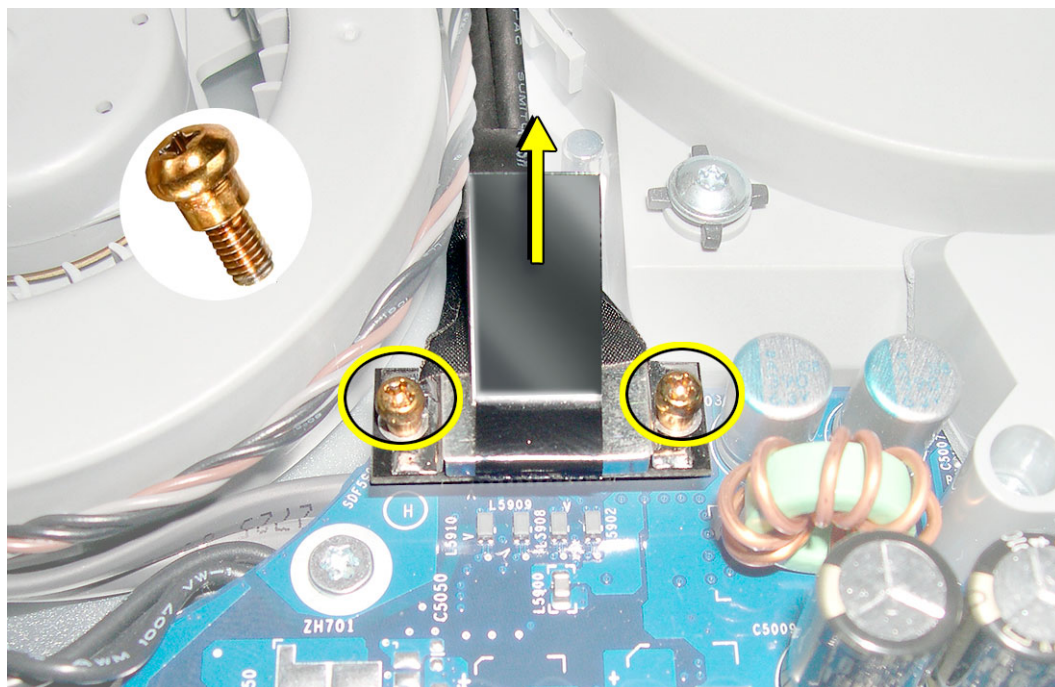
31. Remove the six screws (four identical, short, brass-colored screws in the channel along the top, and two screws on the left side of the board).



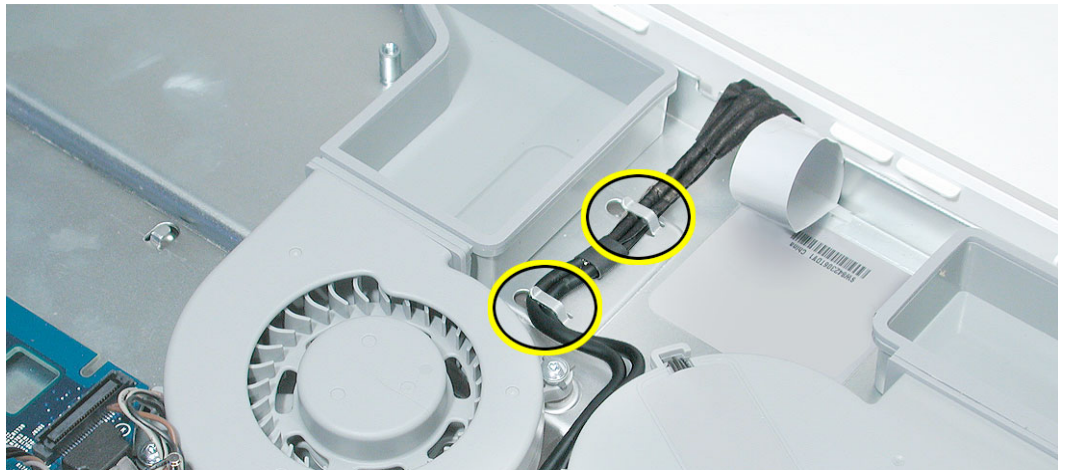
32. Locate the black video cable running alongside the fan.



33. To disconnect the cable from the board, remove the two screws at the end of the cable and pull up the black tab.



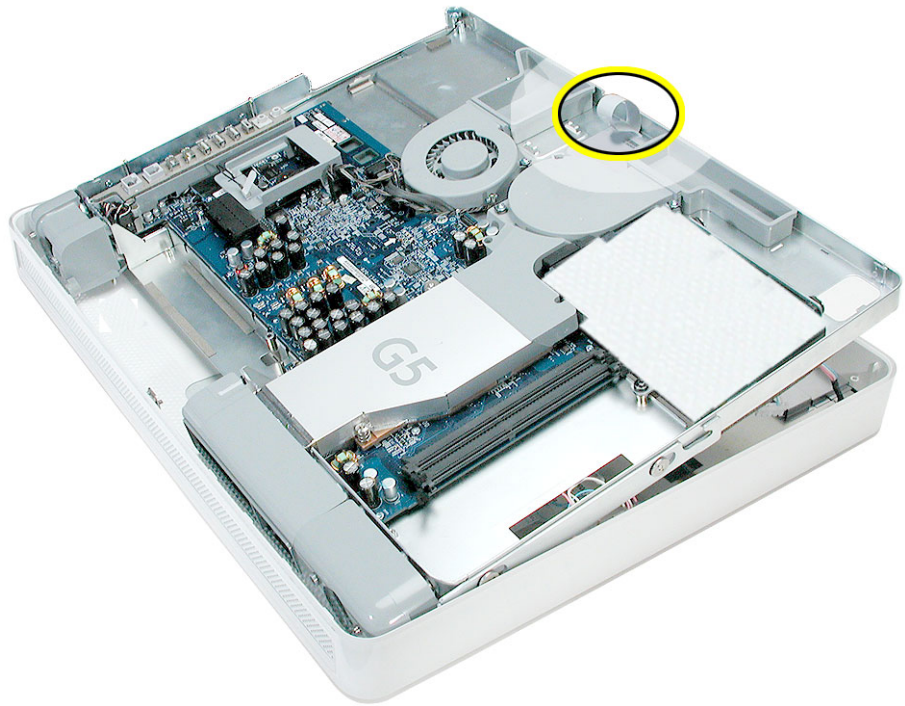
34. Release the cable from the metal cable clips (circled below)



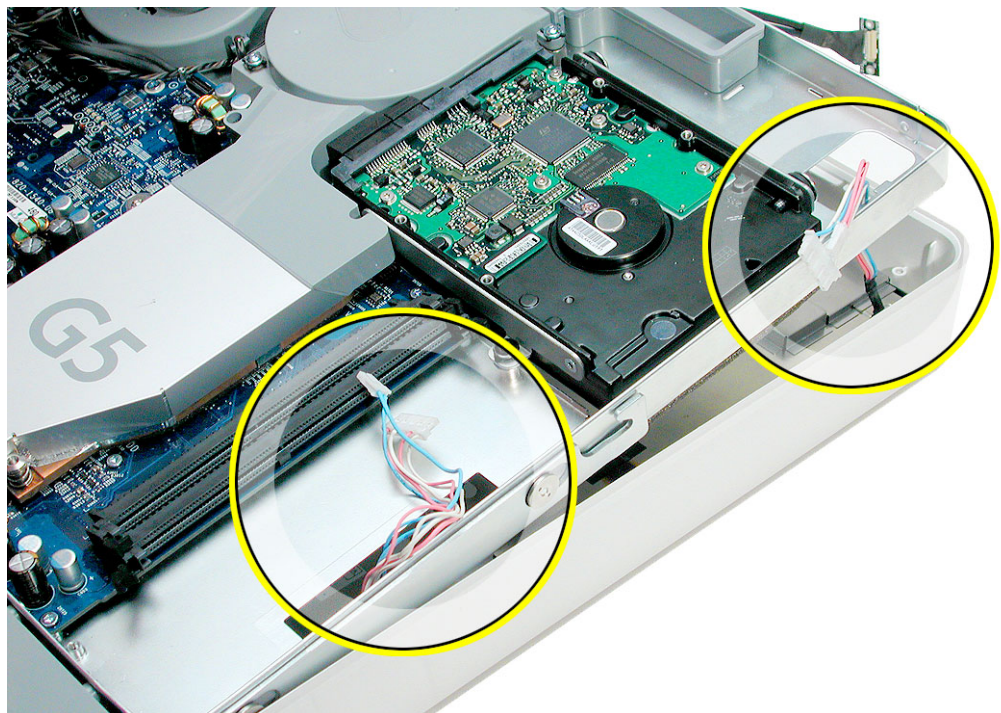
35. Flip the cable back, so it is out of the way for the next step.



36. Locate the pull tab. Pull the tab up to release the midplane assembly from the display/bezel assembly.



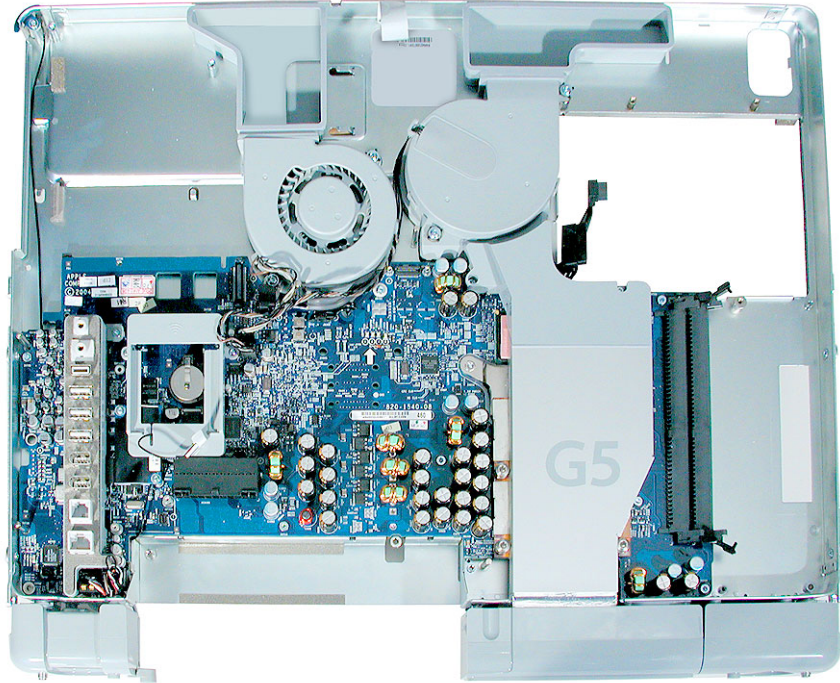
37. Push the inverter cables down through the openings on the midplane assembly. Lift the midplane assembly up and set it aside. **Important:** Return this midplane to Apple in the packaging provided



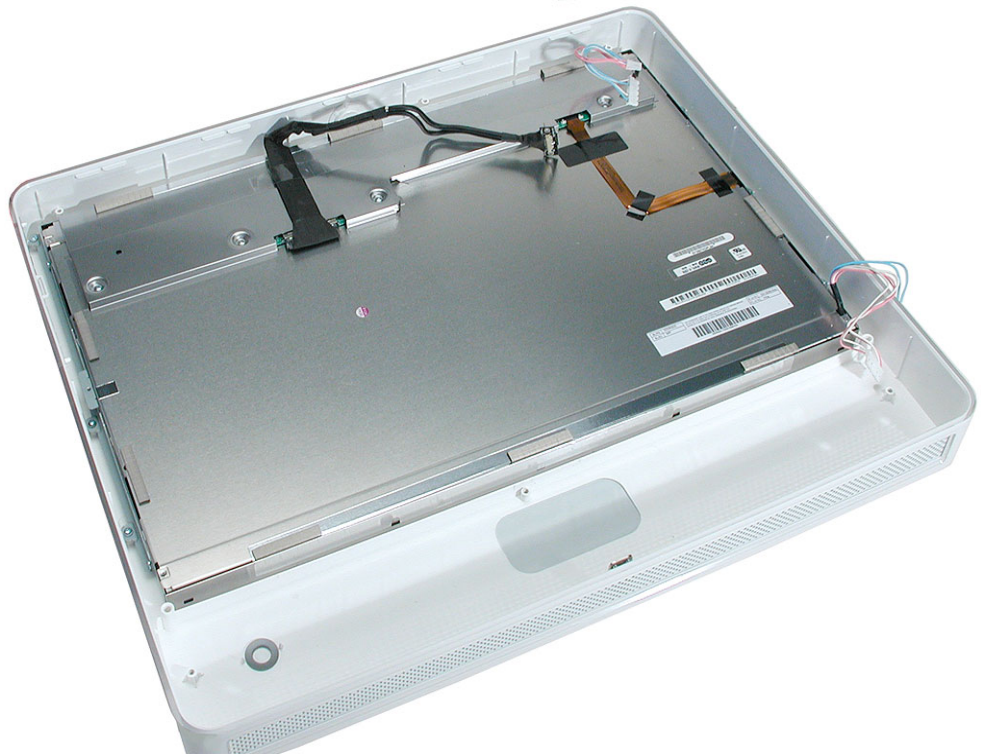
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## Replacing the Midplane

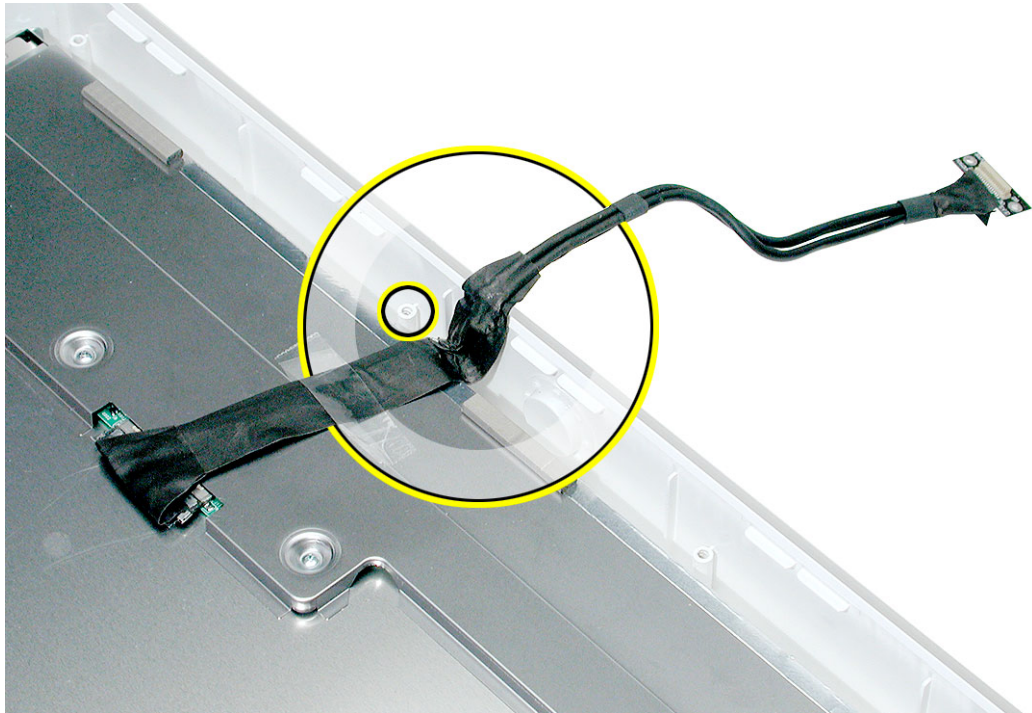
1. Remove the replacement midplane from its packaging.



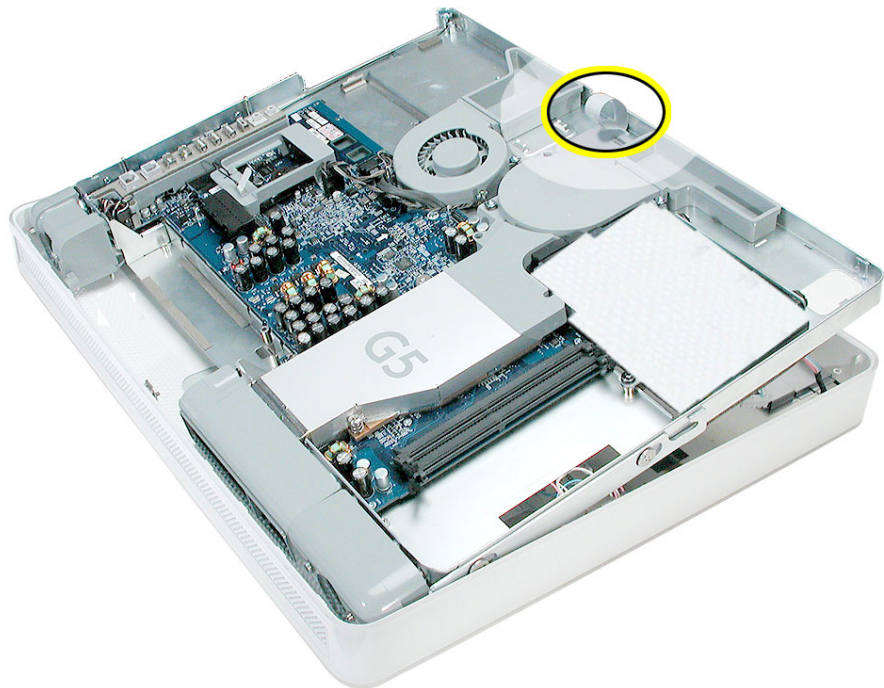
2. Position the display/bezel assembly with the display face down on a clean soft cloth.



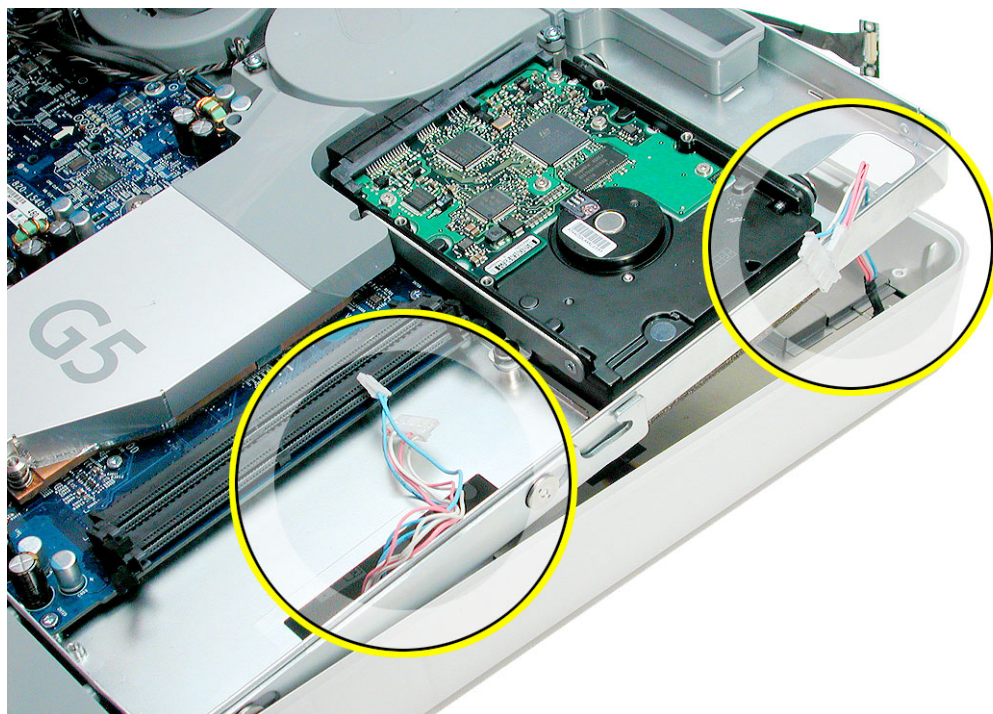
3. Make sure that the black video cable is tucked into the groove on the bezel as shown. Use the screw hole (smaller circle) as a guide for the cable placement.



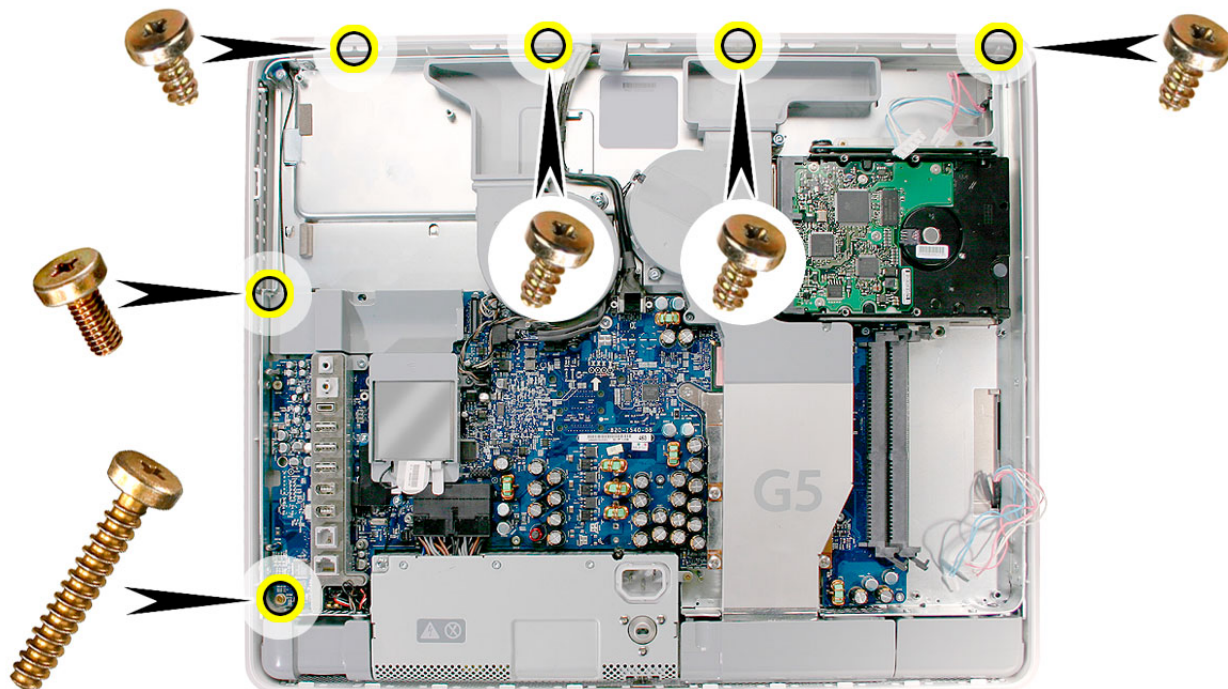
4. Position the midplane over the replacement display/bezel assembly housing.
5. Lower the midplane into the display/bezel assembly housing. Use the tab (circled) to lift and adjust the midplane into the housing.



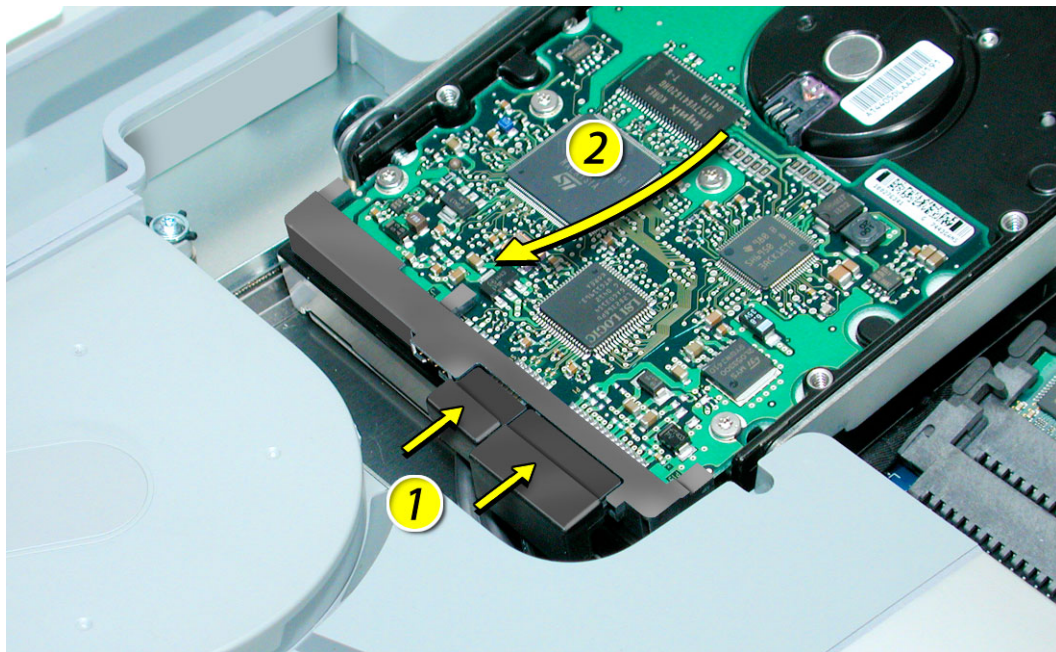
6. As you lower the midplane, pull the inverter cables through the openings on the right side of the midplane.



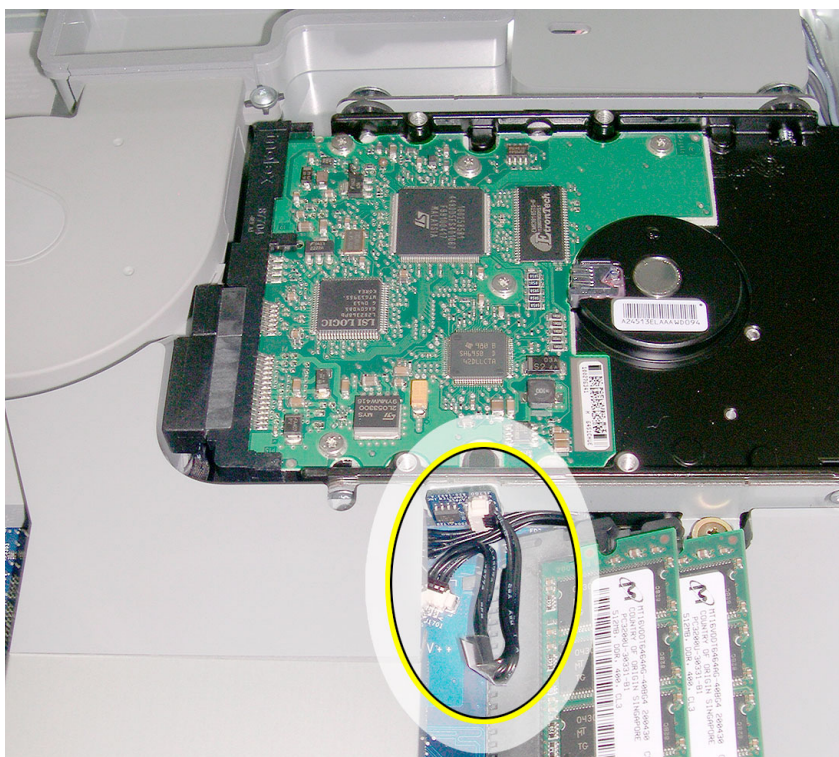
7. Replace the six case screws,



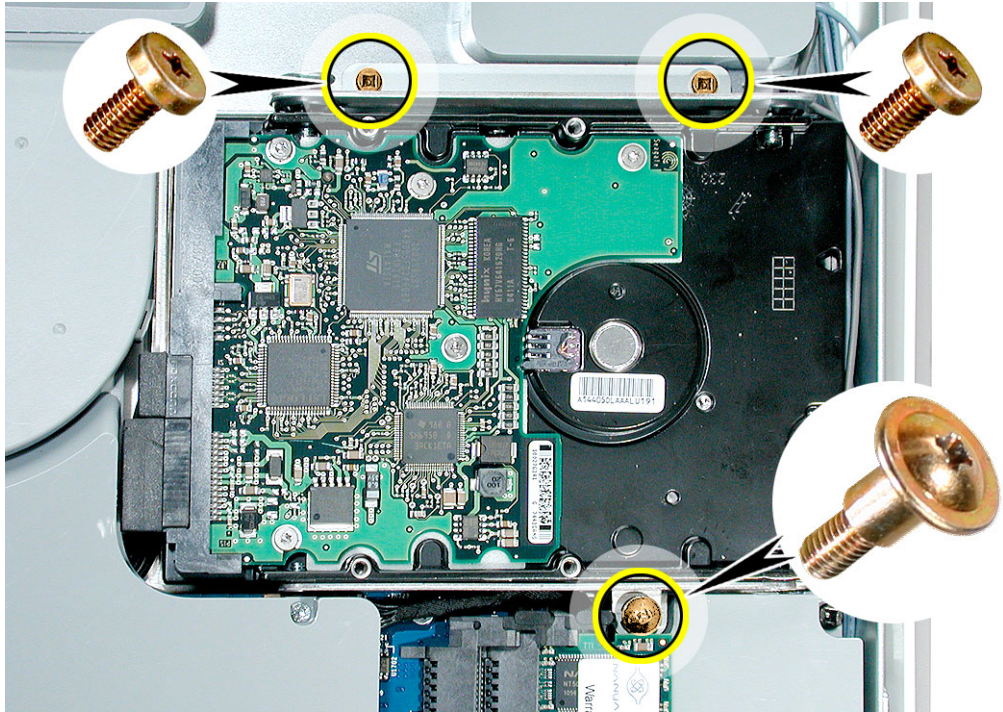
8. Connect the two hard drive cables and lower the hard drive into the midplane.



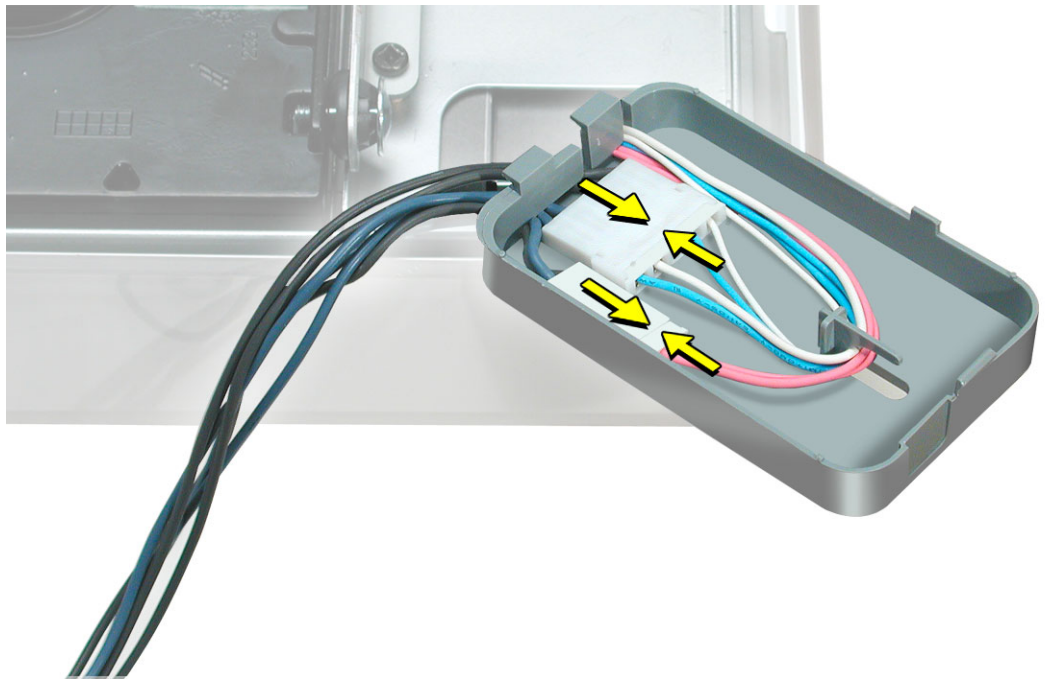
9. Reconnect the black cable to the white connector on the side of the hard drive. If required, use a needlenose pliers to push the cable into the white connector.



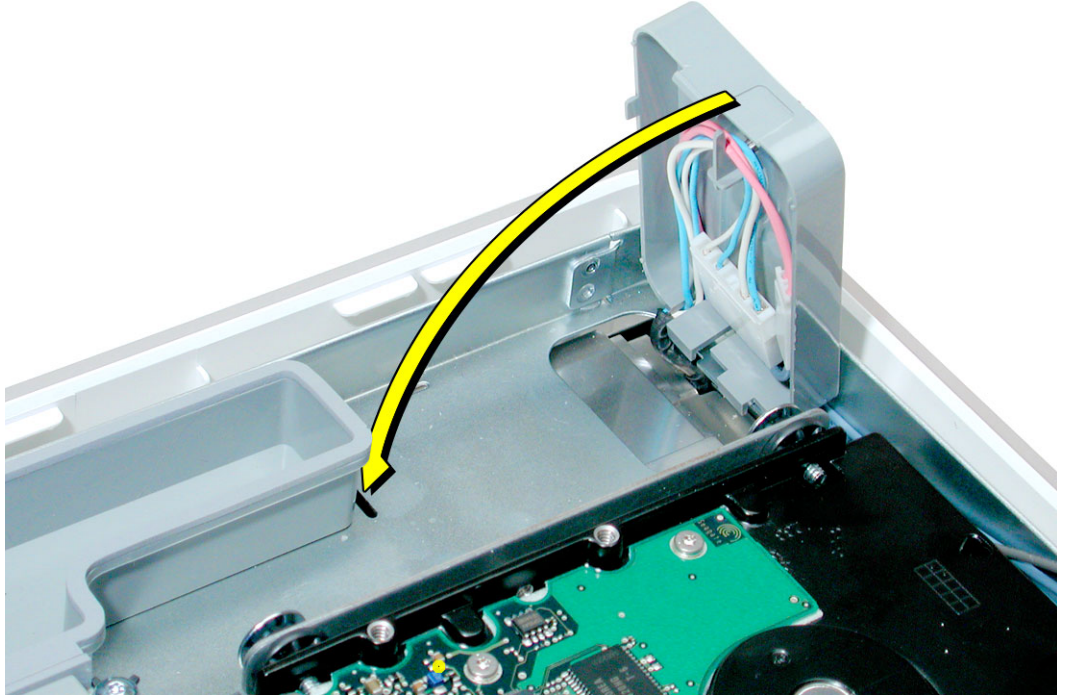
10. Replace the hard drive screws. The smaller screws attach on the top side.



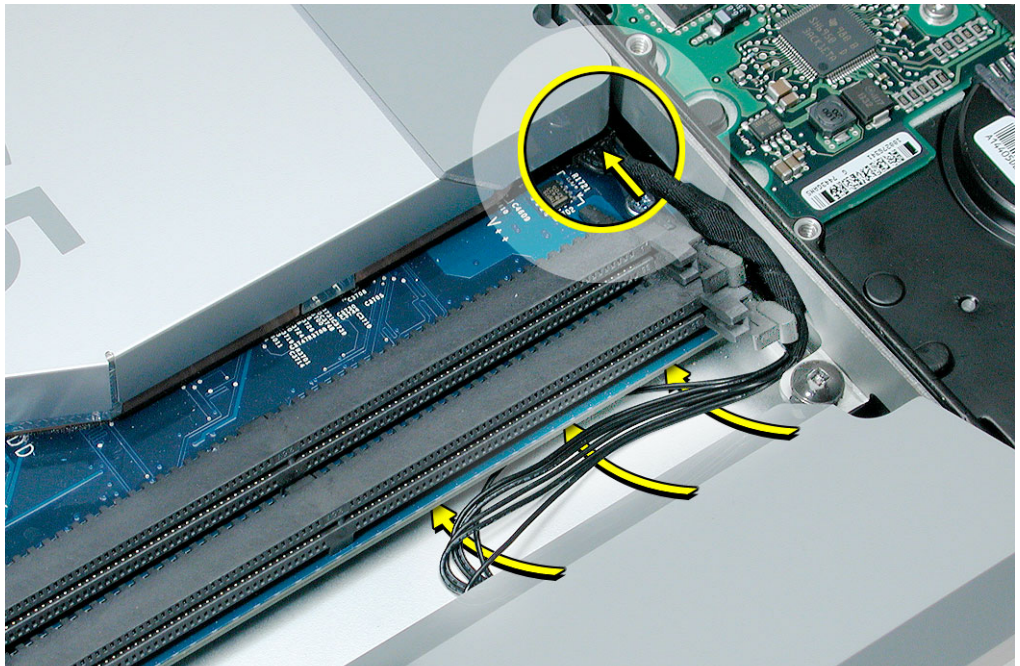
11. Locate the inverter cable cover. Connect the inverter cables as shown, making sure the connectors lie flat inside the cable cover. **Note:** Route the cables through the cable clips so that the darker cables are barely visible and have little slack.



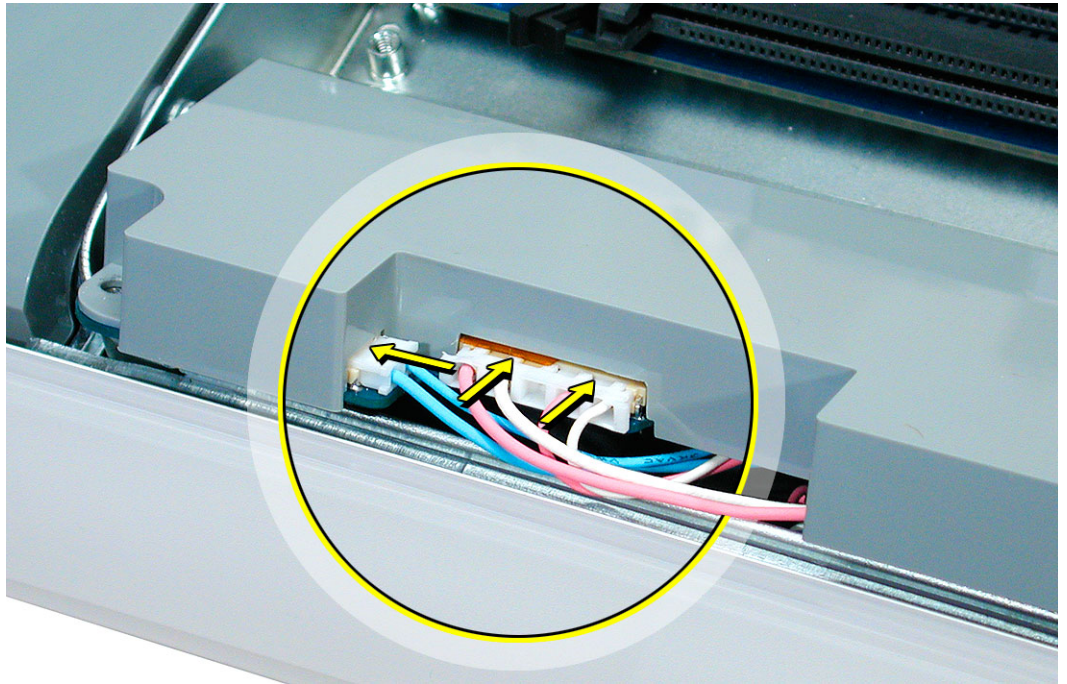
12. Lower the cable cover, pressing down steadily until the tabs lock the cover into place.



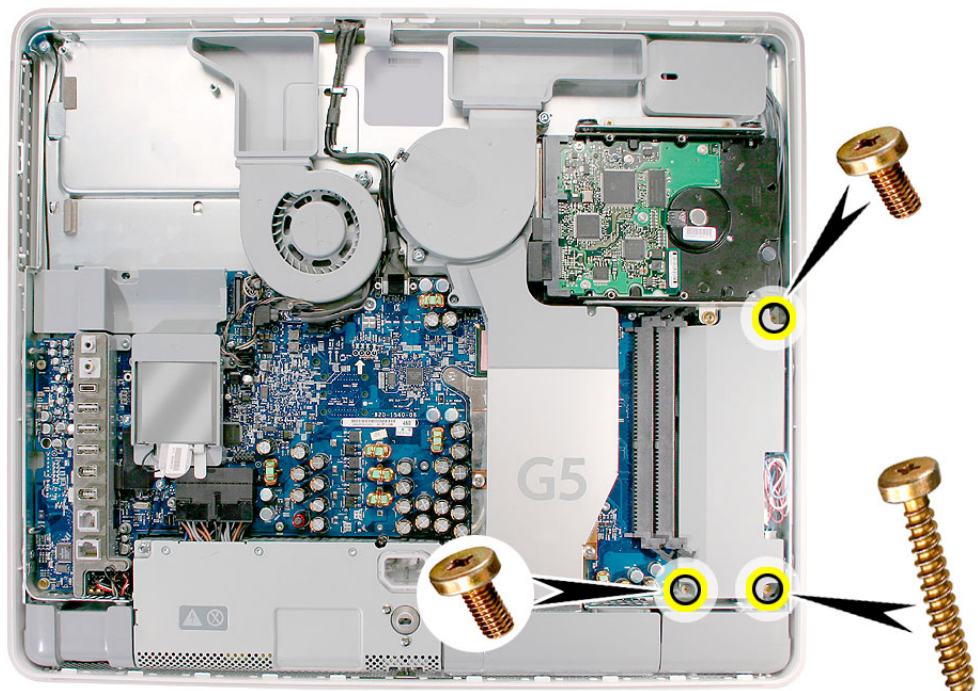
13. Press in the latches on the memory slots in and route the black inverter cable along the side of the hard drive. Connect the black inverter connector (circled) to the connector under the gray fan duct. Use a needlenose pliers to push the connector into the keyed connector. **Note:** The connector is keyed so it can plug in only one way; the teeth on the connector face up. Tuck the remaining black cables under the board.



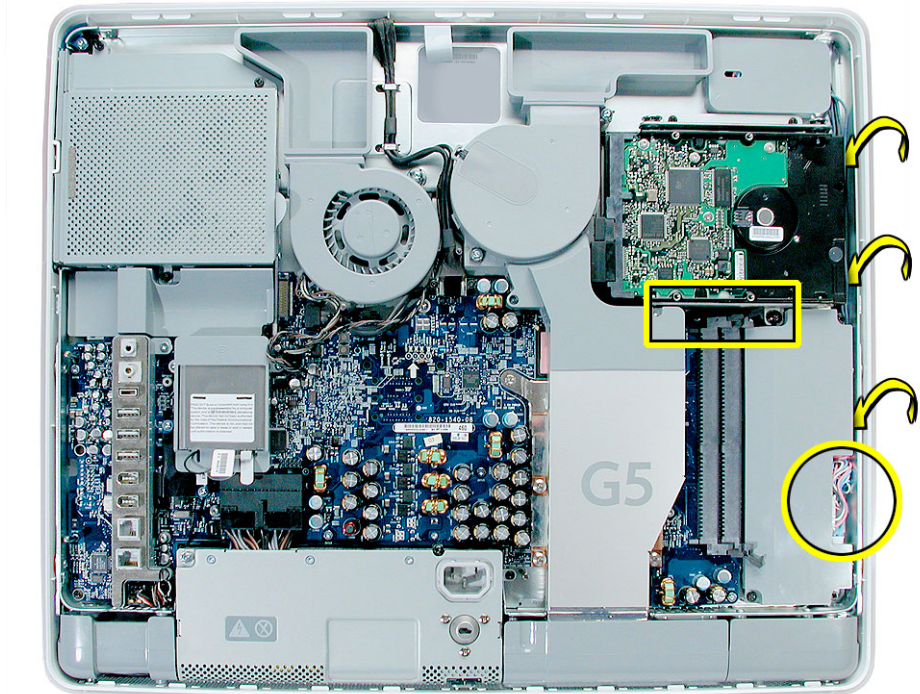
14. Connect the inverter cables, connecting the larger connector first. **Note:** The connectors are keyed, and plug in only one way.



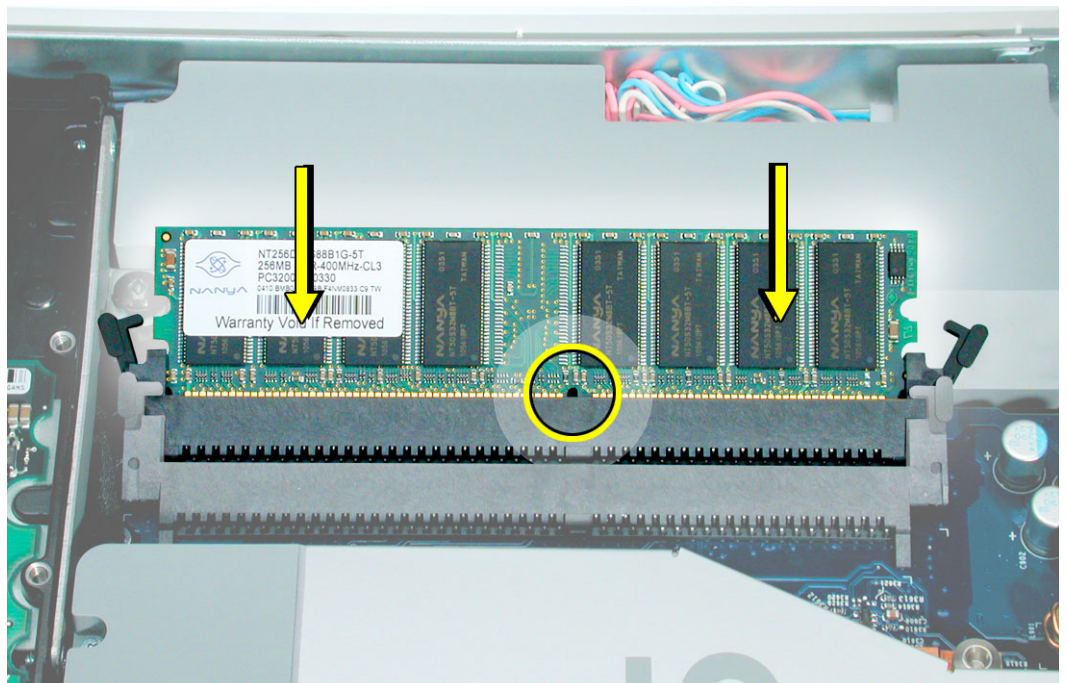
15. Install the gray plastic inverter at a slight angle as if it were sliding under the memory slots. Replace the three screws.



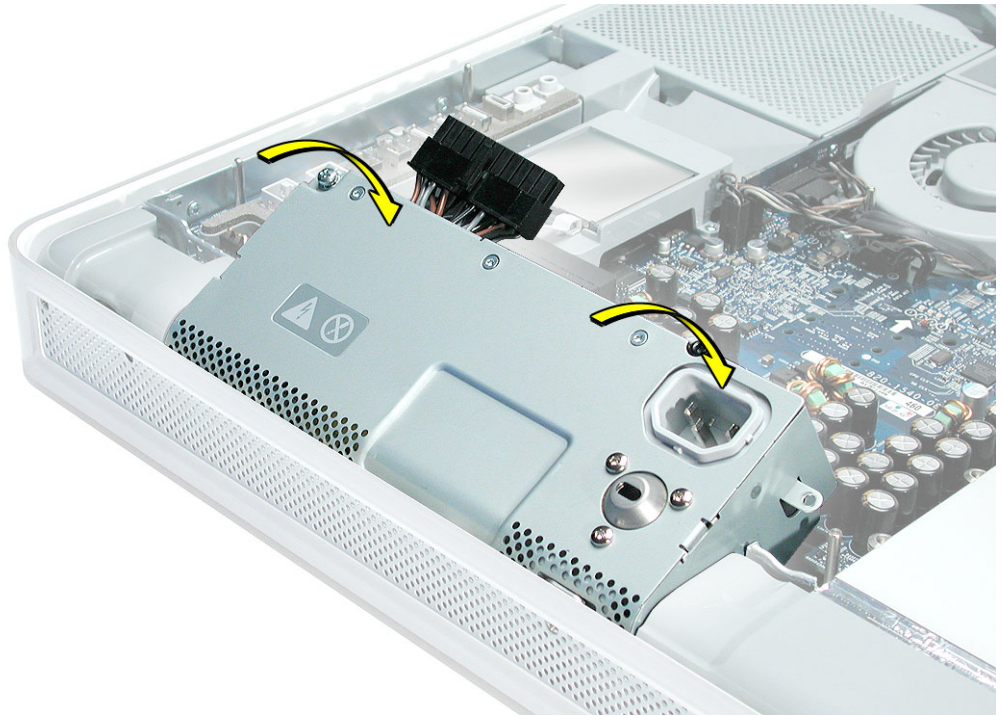
16. Tuck the inverter cables along the edge of the hard drive and next to the memory tabs.



17. Replace the memory module(s) by lining up the notch on the module with the notch on the slot. Press firmly on the memory module until it clicks into place. Use your thumb and index finger to push the module into the slot.



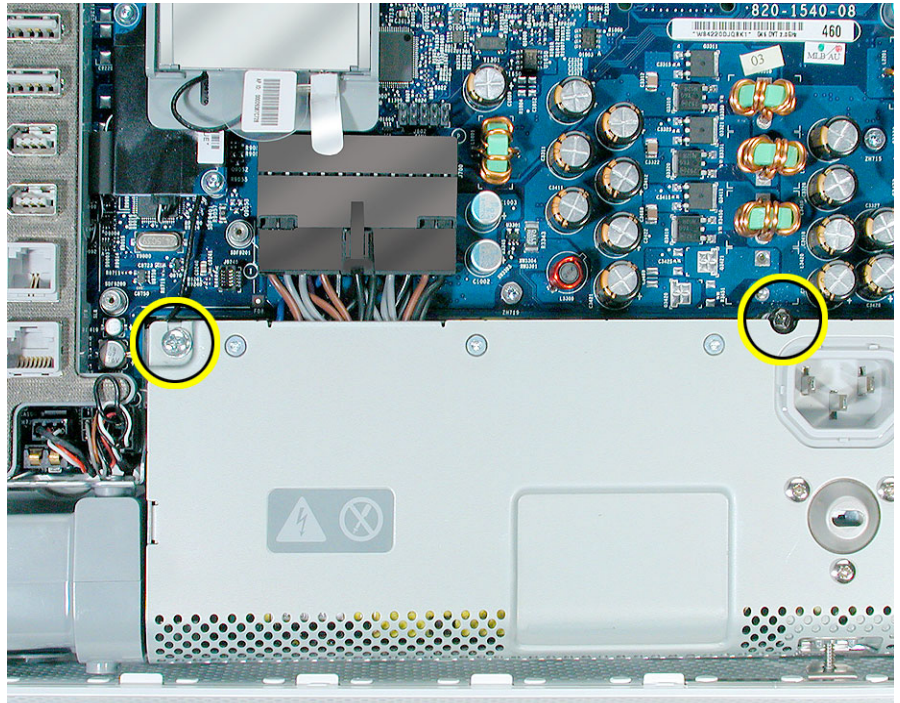
18. Replace the power supply. Tilt up the power supply until it clears the edge of the main circuit board.



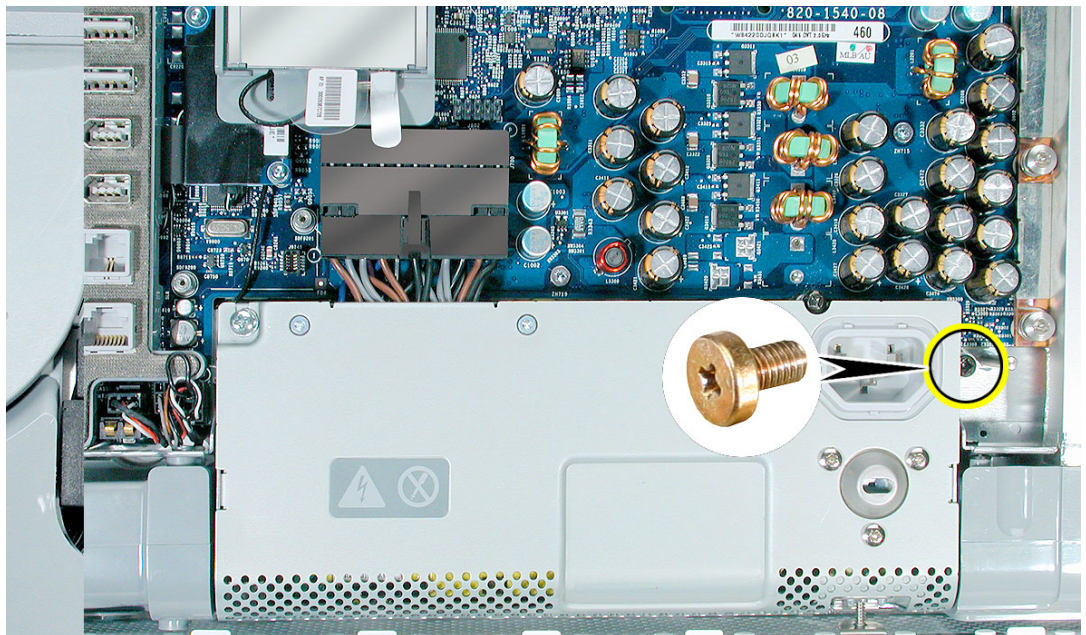
19. The power supply should be flush with the gray plastic parts on the right and left sides.



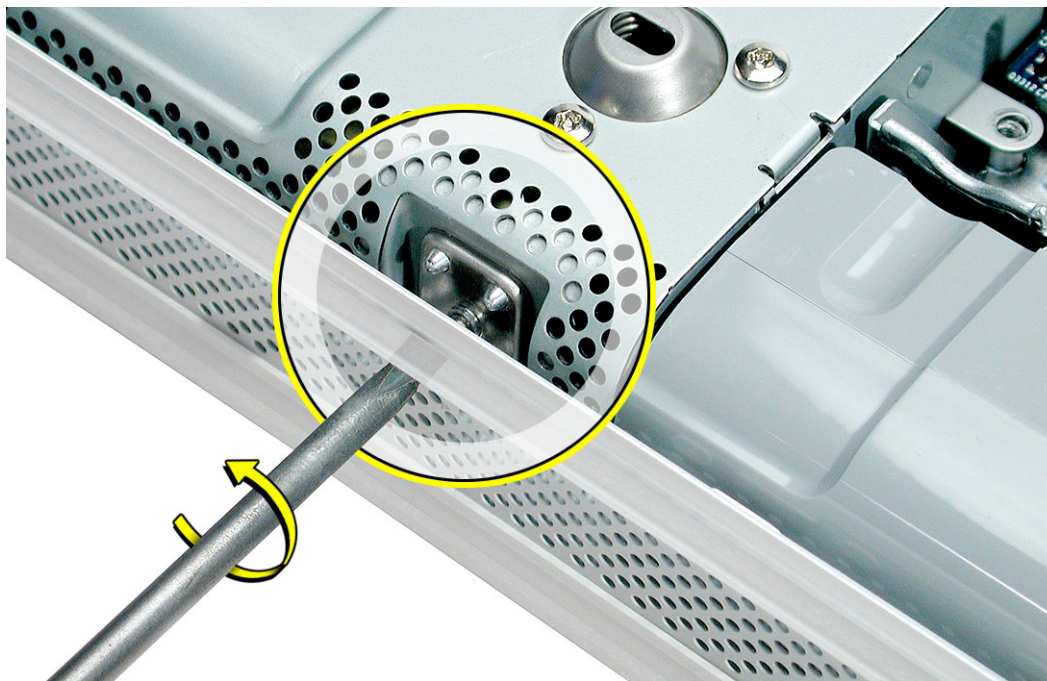
20. Connect the black power supply connector and tighten the two captive screws (circled), turning them clockwise



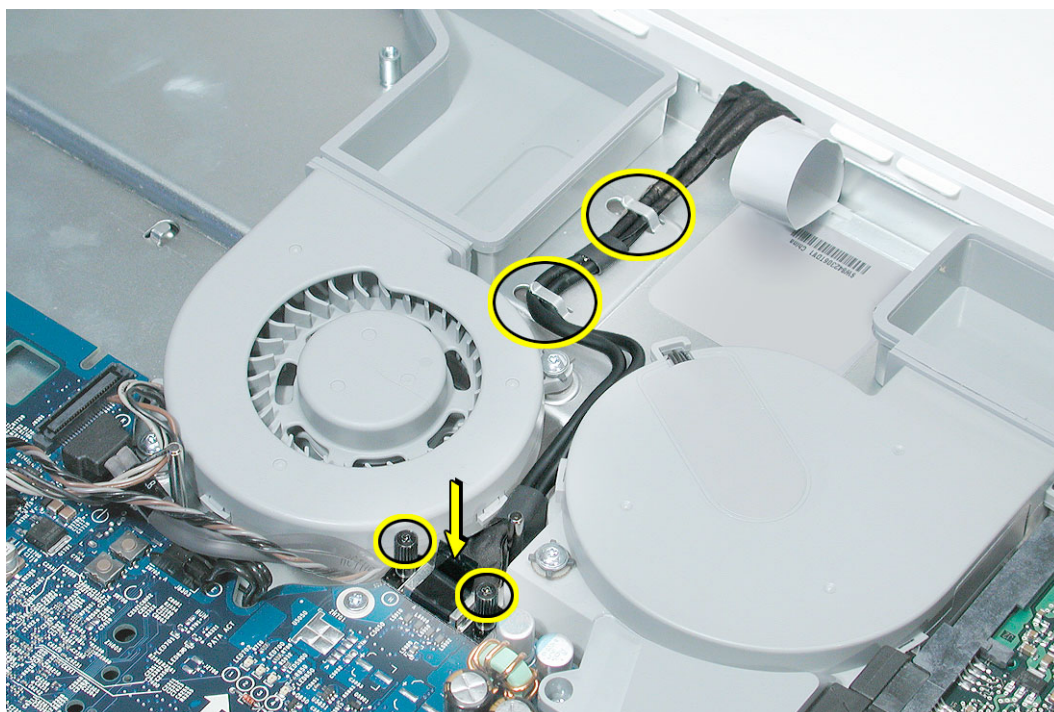
21. Replace the remaining screw on the right.



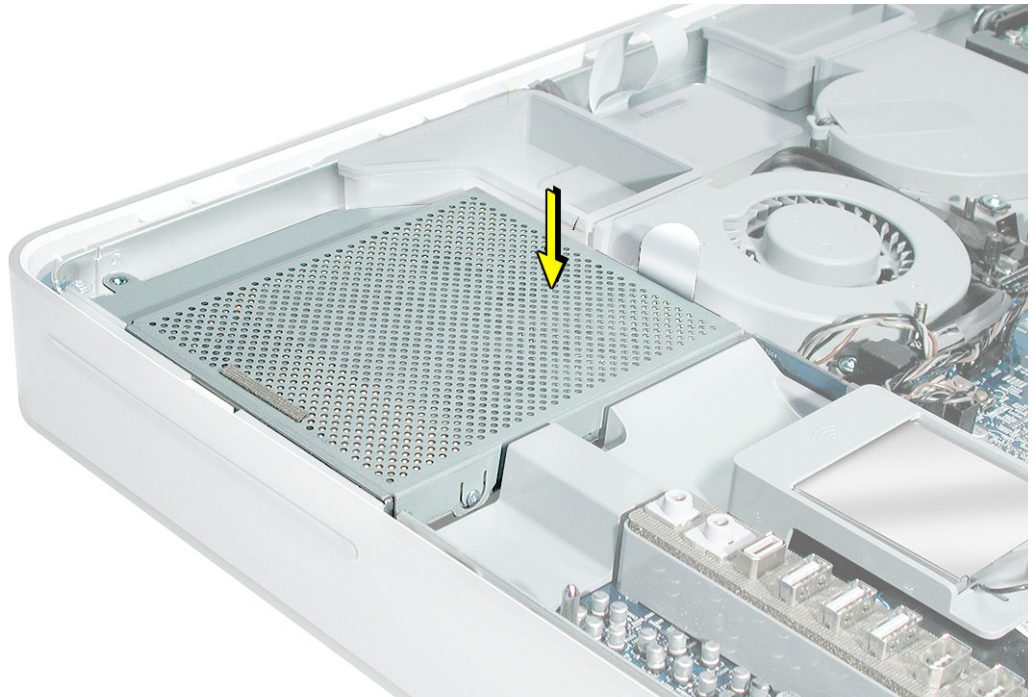
22. Turn the middle case screw counterclockwise about five revolutions. This step prepares the back cover to be installed and secured.



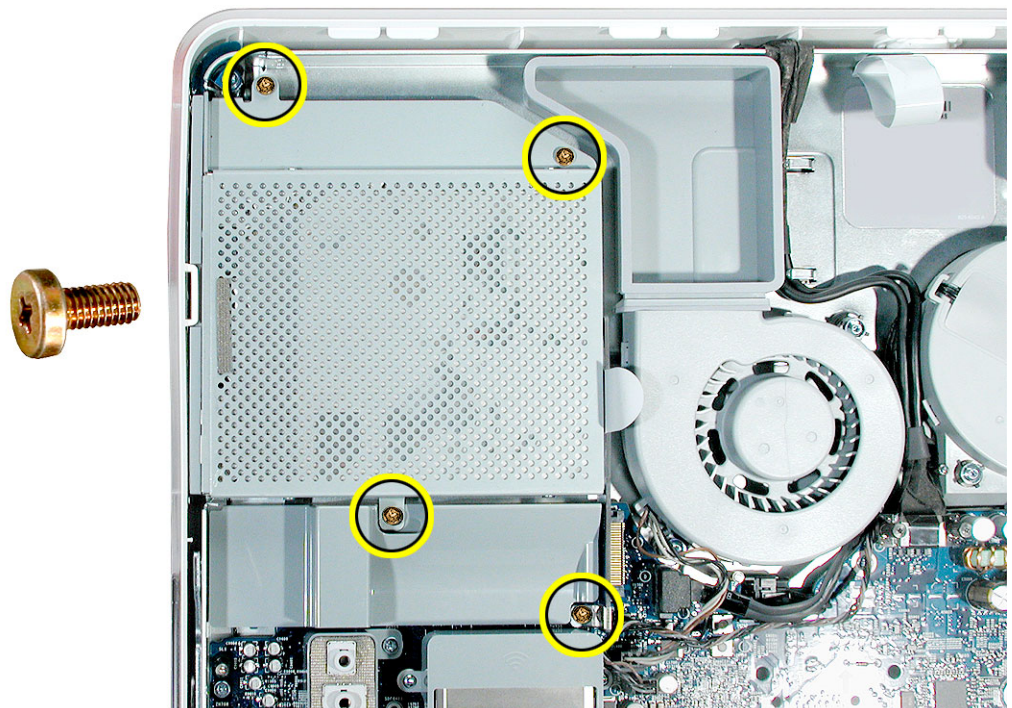
23. Attach the black video cable connector to the board and replace the two screws. Make sure the cable is tucked under the metal cable clips.



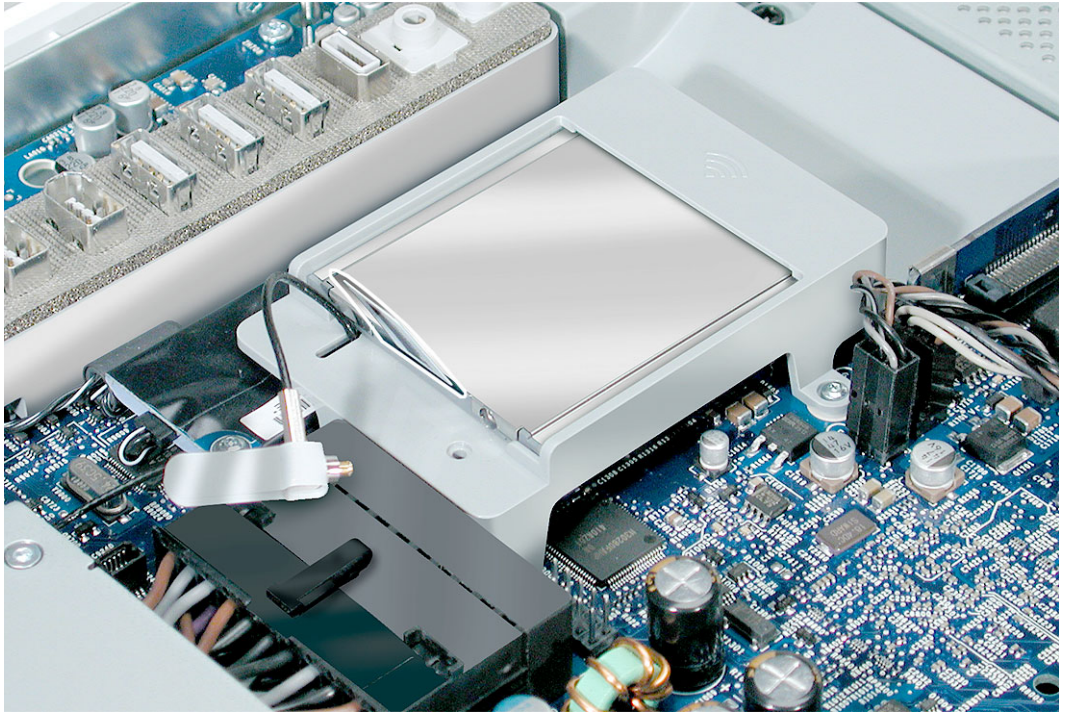
24. Slide the optical drive into place and press down near the tab to reconnect the drive. If the drive won't click into place, check that the fan cables (near the connector) are out of the way.



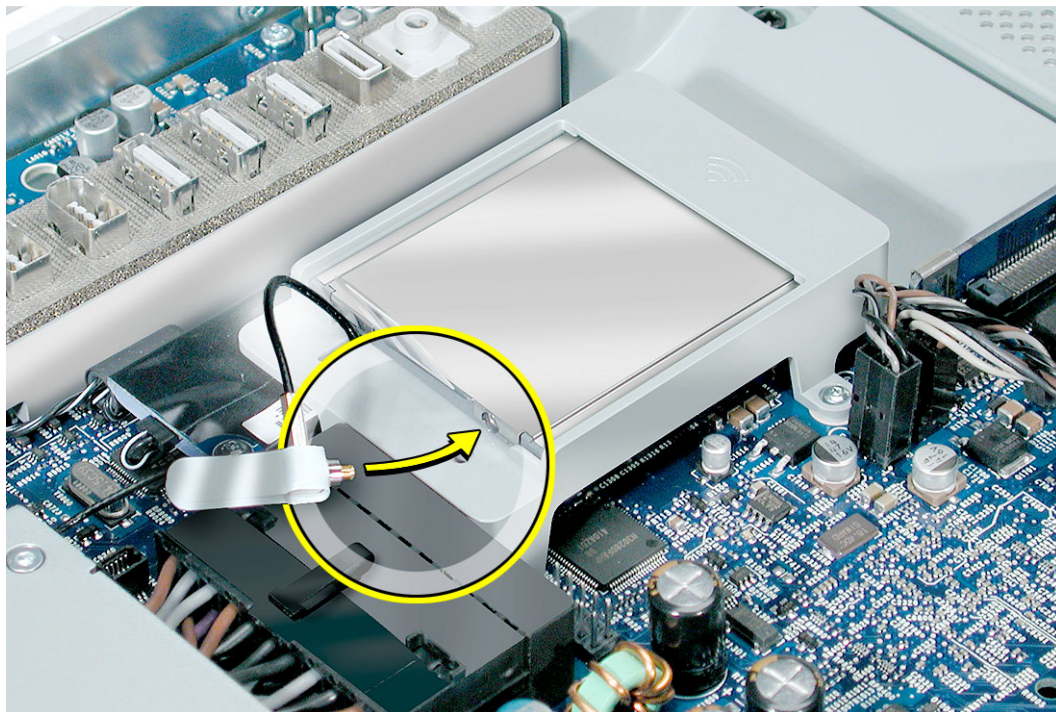
25. Replace the four optical drive screws.



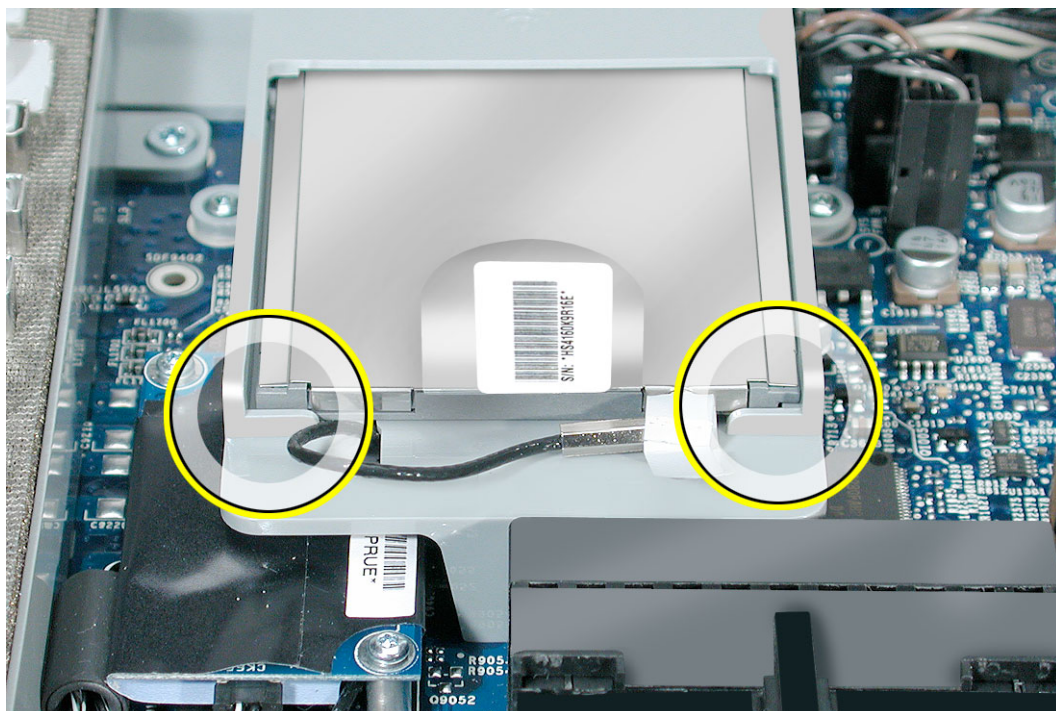
26. If present, slide the AirPort Extreme card into the AirPort card guide channel until it clicks into place.



27. Connect the antenna cable to the end of the installed AirPort Extreme card.



28. Make sure the AirPort Extreme card is flush with the plastic AirPort card guide rails. (circled below).





## Display/Bezel

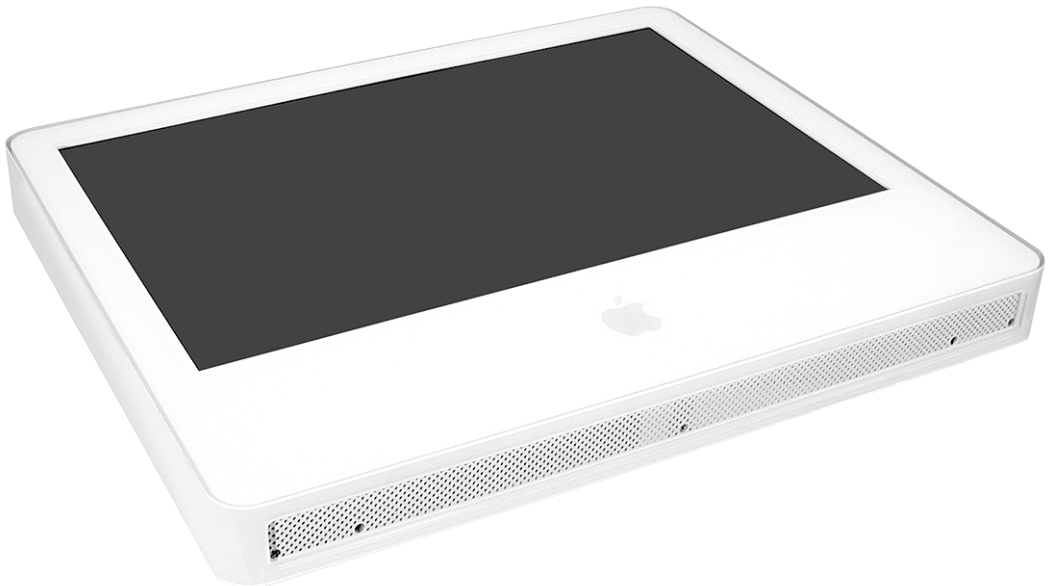
### Tools Required

- Use the screwdriver provided, or a Phillips #1 screwdriver, preferably with a magnetized tip
- Needlenose pliers
- Screw tray or equivalent to hold the screws

### Preliminary Steps

Before you begin, remove the cover.

### Part Location



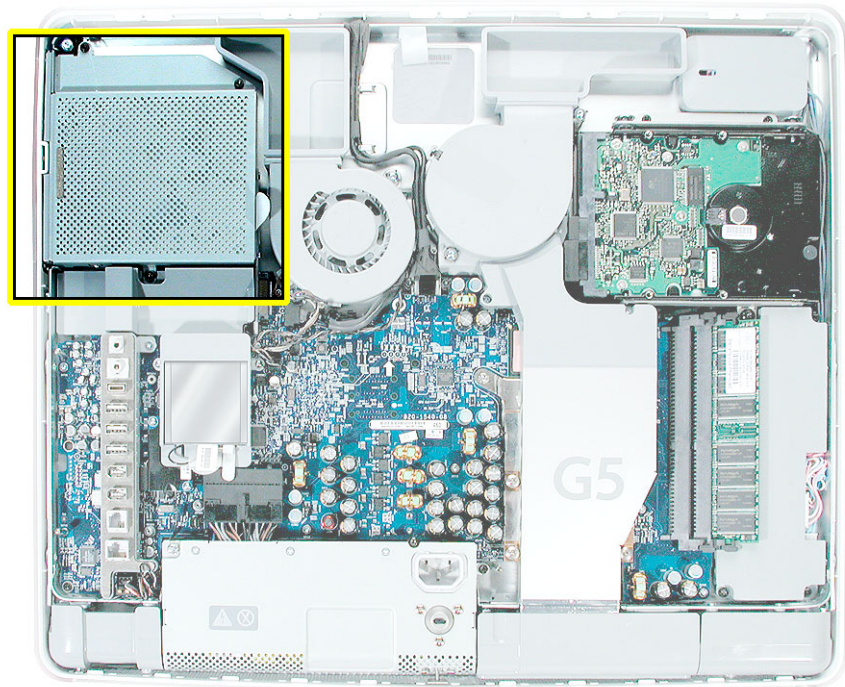
## Removing the Display/Bezel

1. To access the display/bezel assembly 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.

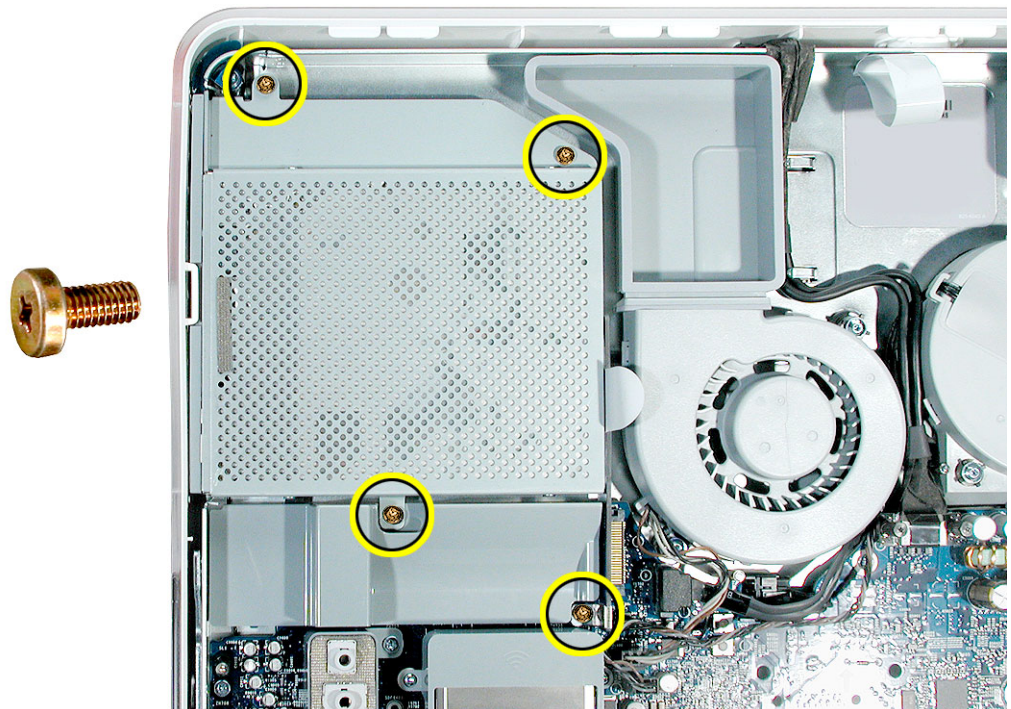
**Warning: Always discharge static electricity before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished installing the part and closed the computer.**



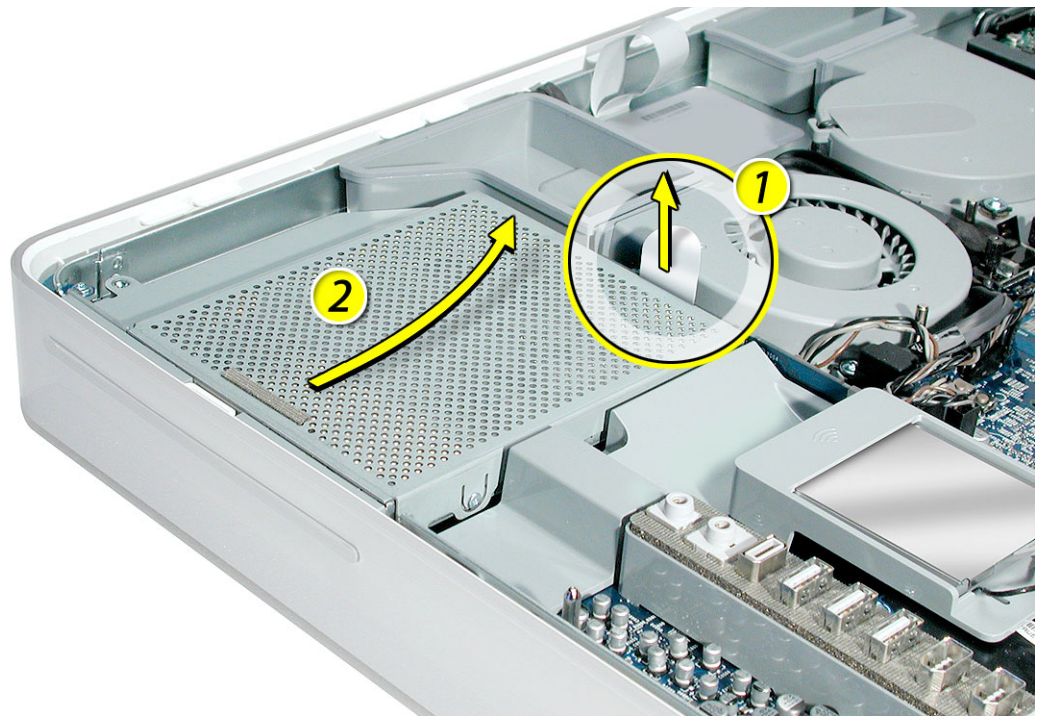
3. Locate the optical drive in the top left corner.



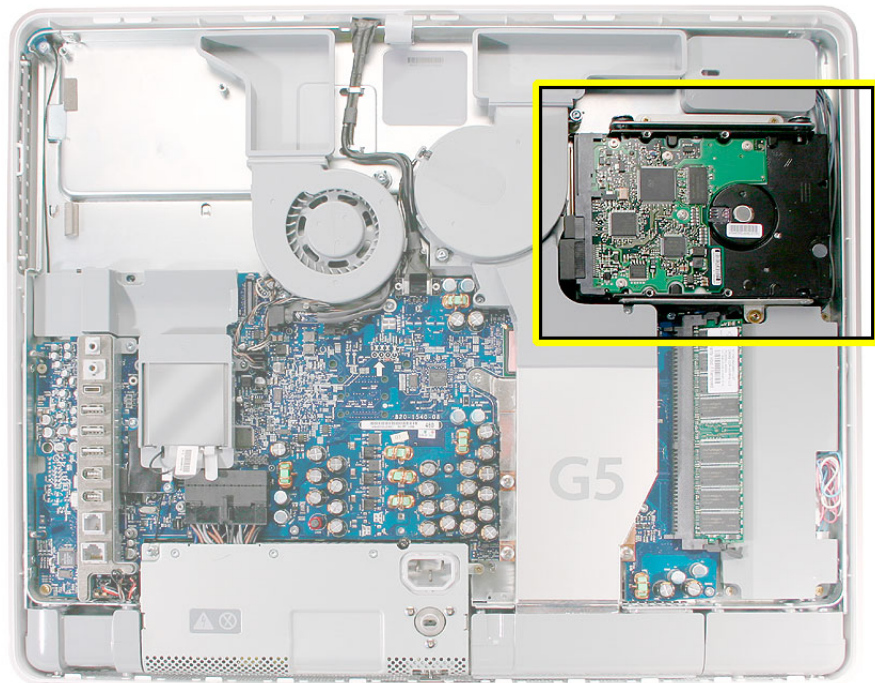
4. Using the tool provided, or a Phillips #1 screwdriver, remove the four optical drive screws circled below. Set the screws aside.



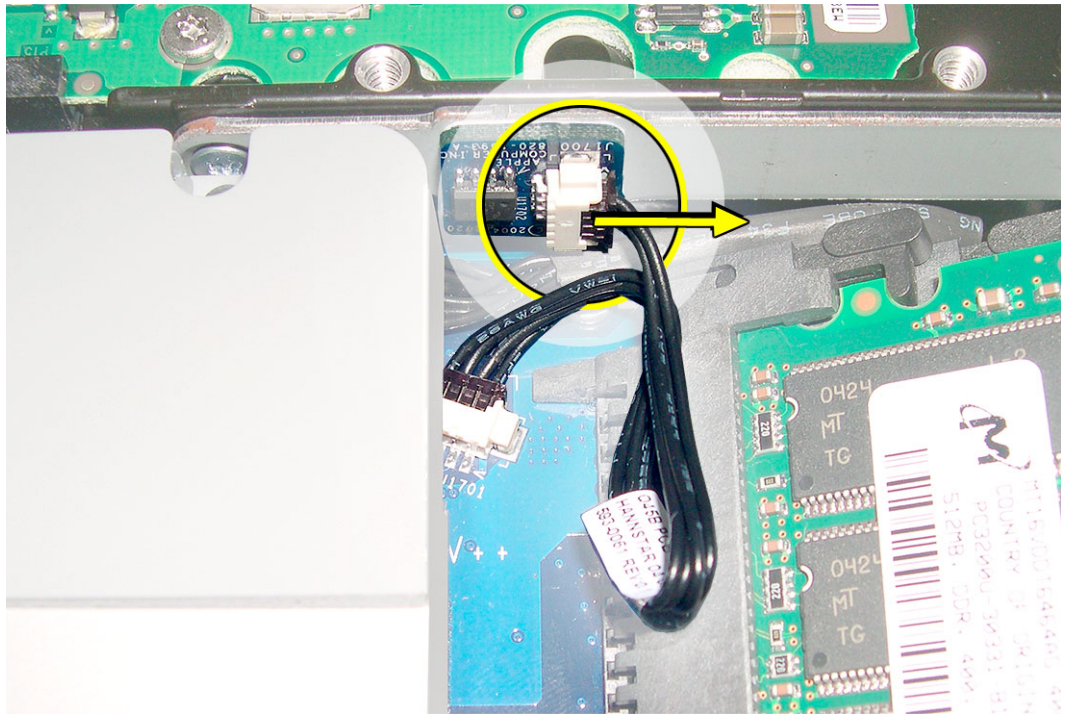
5. Pull the optical drive tab straight up and then to the right. Set the optical drive aside.



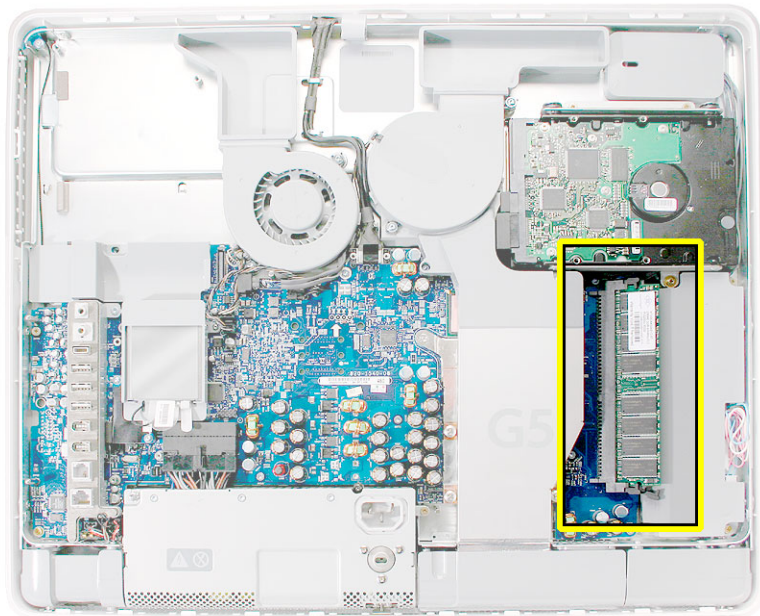
6. Locate the hard drive near the top right corner.



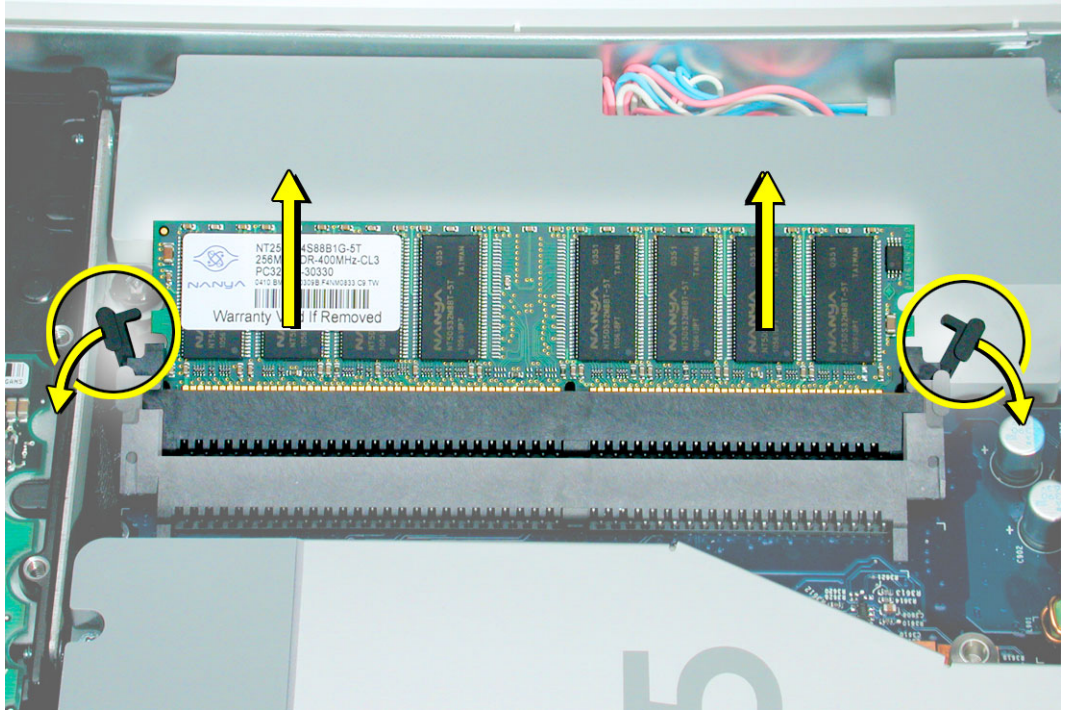
7. Disconnect the black cable on the side of the hard drive. **Note:** Do not disconnect the other end of the cable. Leave the hard drive in place.



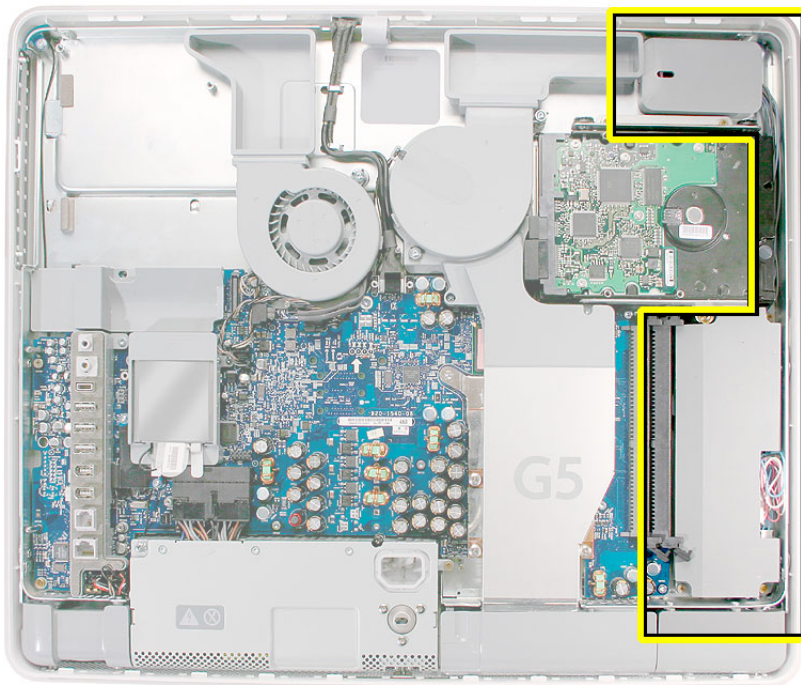
8. Locate the memory module(s) in the bottom right corner. You must remove the memory to gain access to the next module.



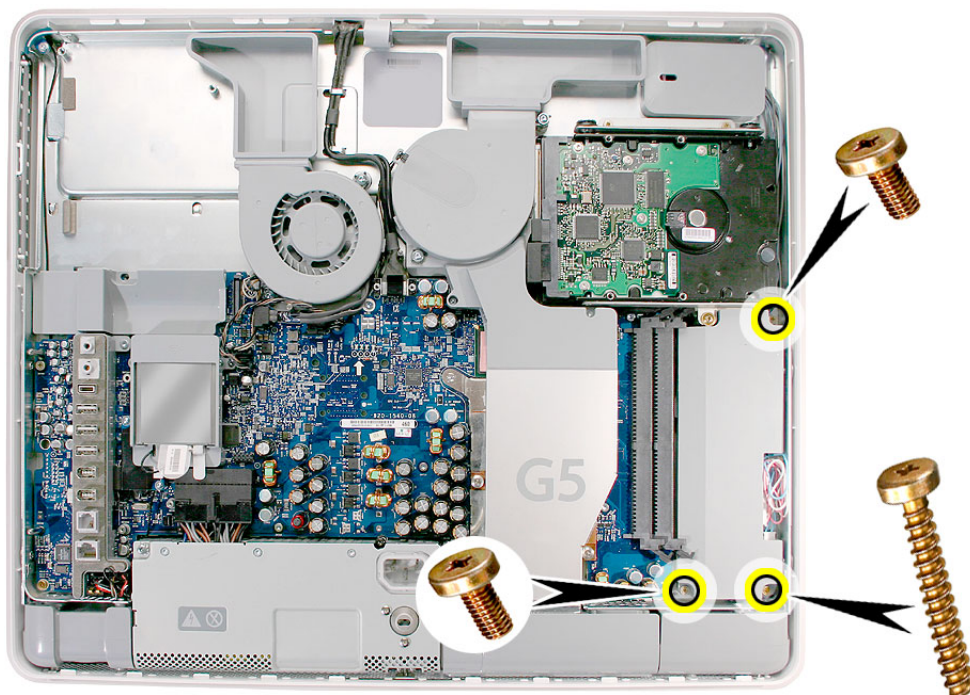
9. Rotate the computer counterclockwise so the memory is in the position shown below.
10. To release the memory from its slot, push down on the two side latches (circled below). Then pull the memory module out of the slot. Repeat this step if you have a second memory module.



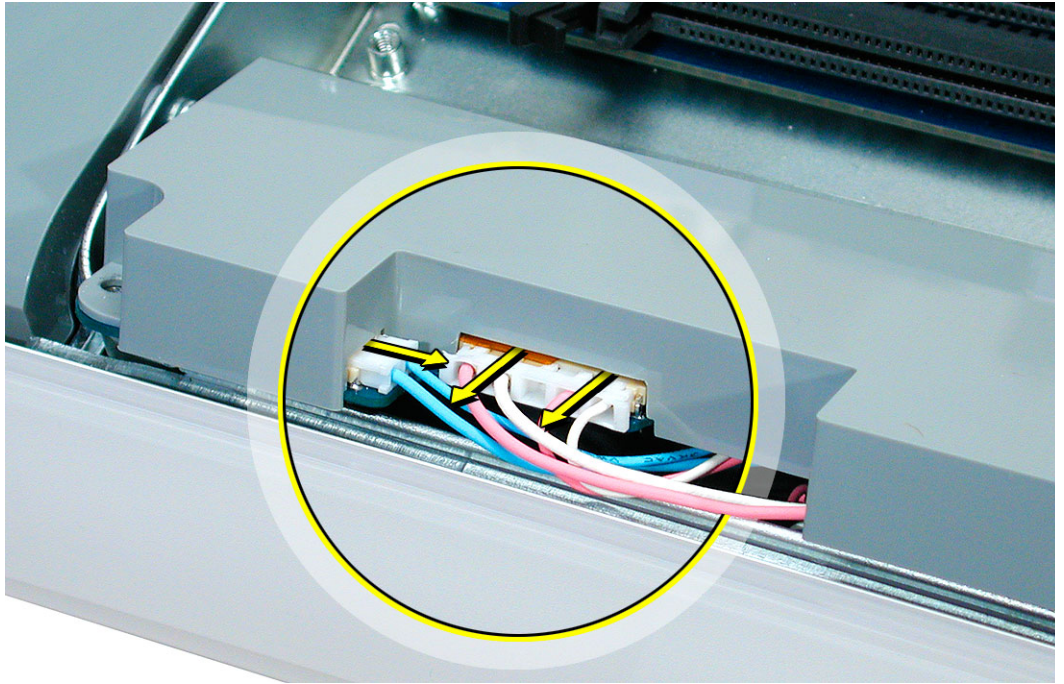
11. Locate the gray plastic module on the right side of the computer. This is the inverter. You must remove the inverter to gain access to the display/bezel



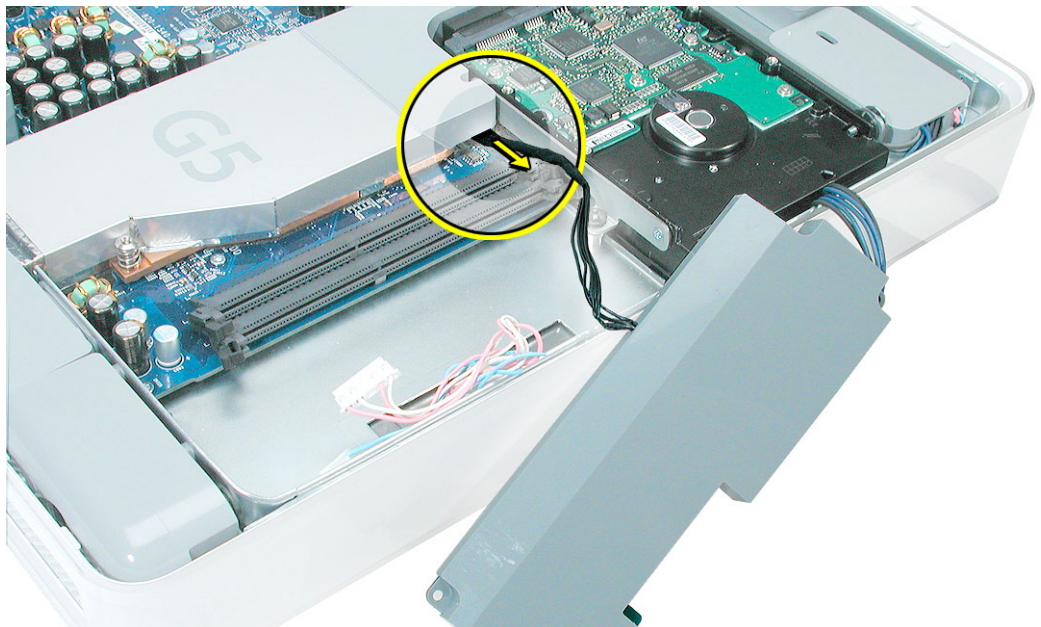
12. Remove the three inverter screws (circled below). **Note:** The inverter screw in the bottom right corner is longer than the other two screws.



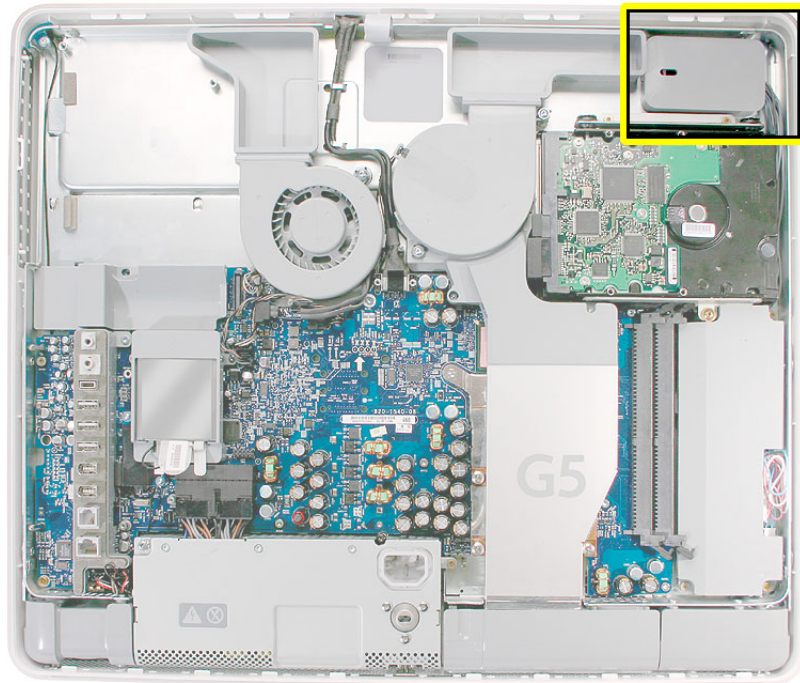
13. Rotate the computer clockwise so you see the inverter cables as shown below. Tilt the inverter to access the two white cable connectors.
14. Disconnect the cables by pulling on the connector, not on the cables. Disconnect the smaller connector first.



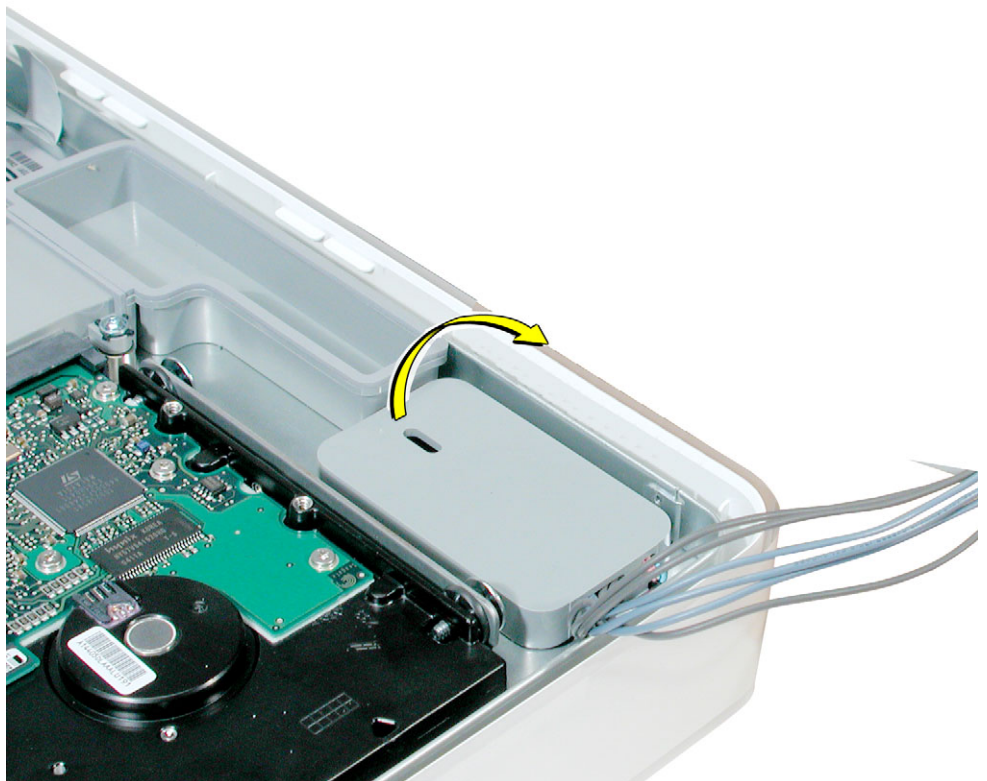
15. Lift the inverter out of the computer. Disconnect the black connector (circled below) located **under** the gray fan duct. Gently pull the black cable to disconnect the connector. Shift the hard drive to the right if you need more room to access the cable.



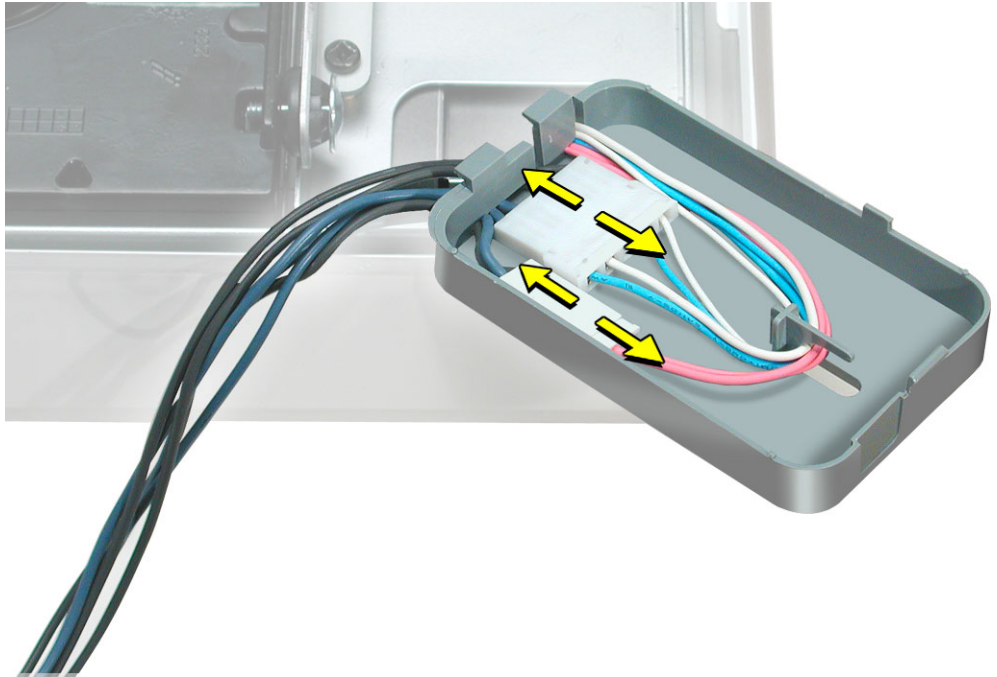
16. Locate the small, gray inverter cable cover in the top right corner.



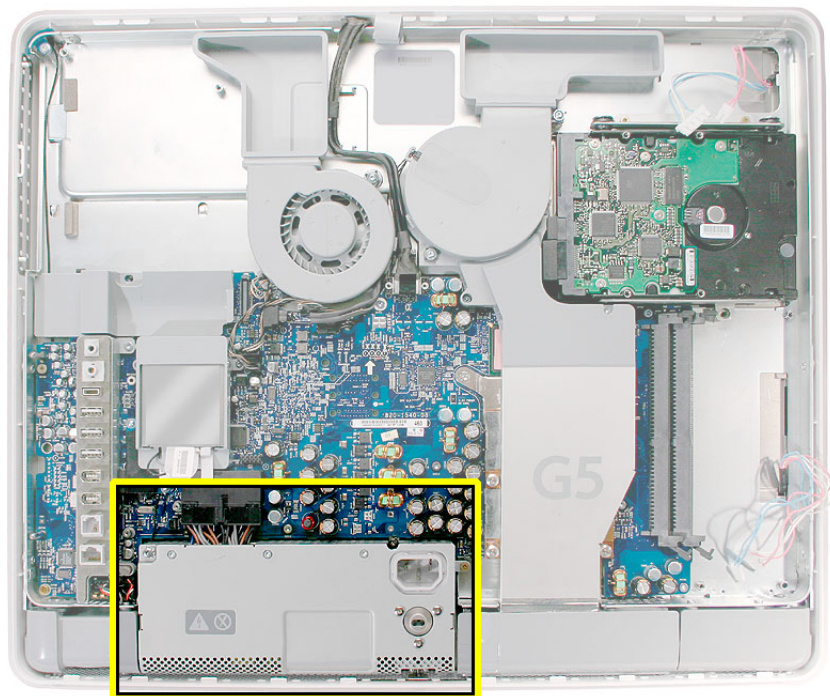
17. To unhook the cover, pull it in the direction of the arrow shown below.



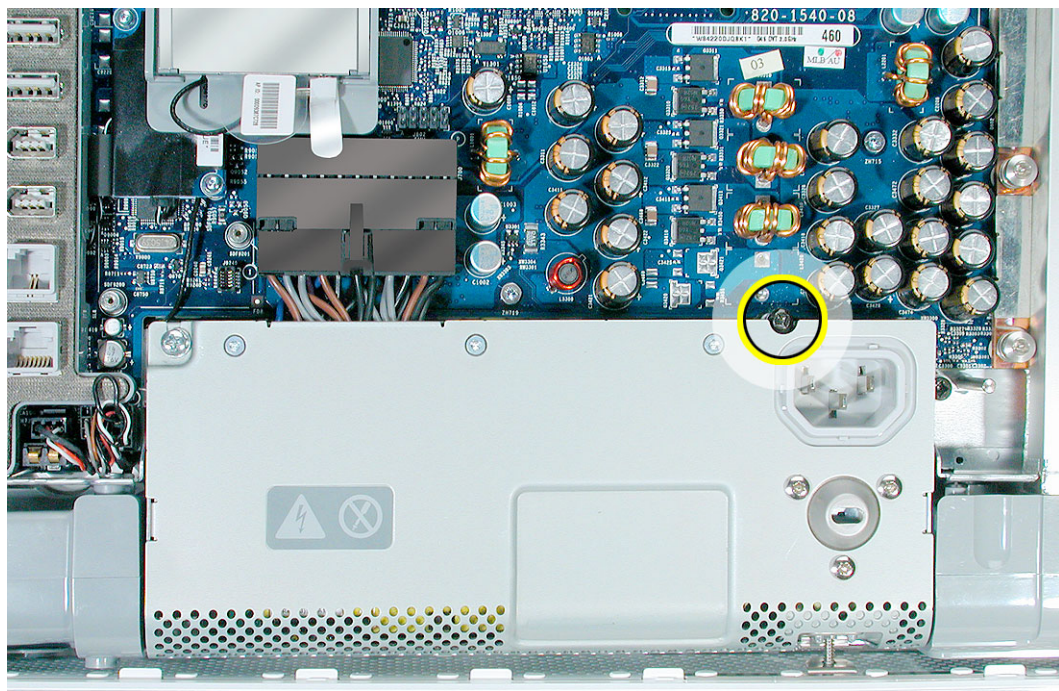
18. Disconnect the two white connectors underneath the cover. Pull on the connectors, not on the cables. Free the cables from the clips inside the cover. Set the inverter and cable cover aside.



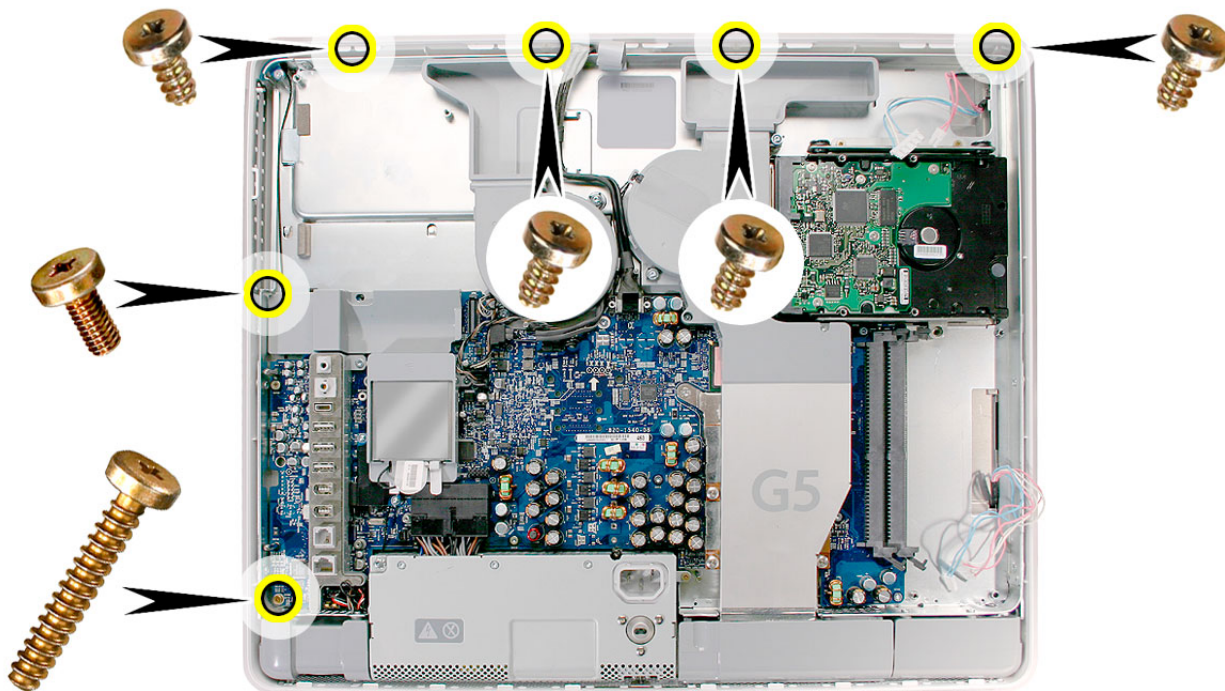
19. Locate the power supply at the bottom of the picture.



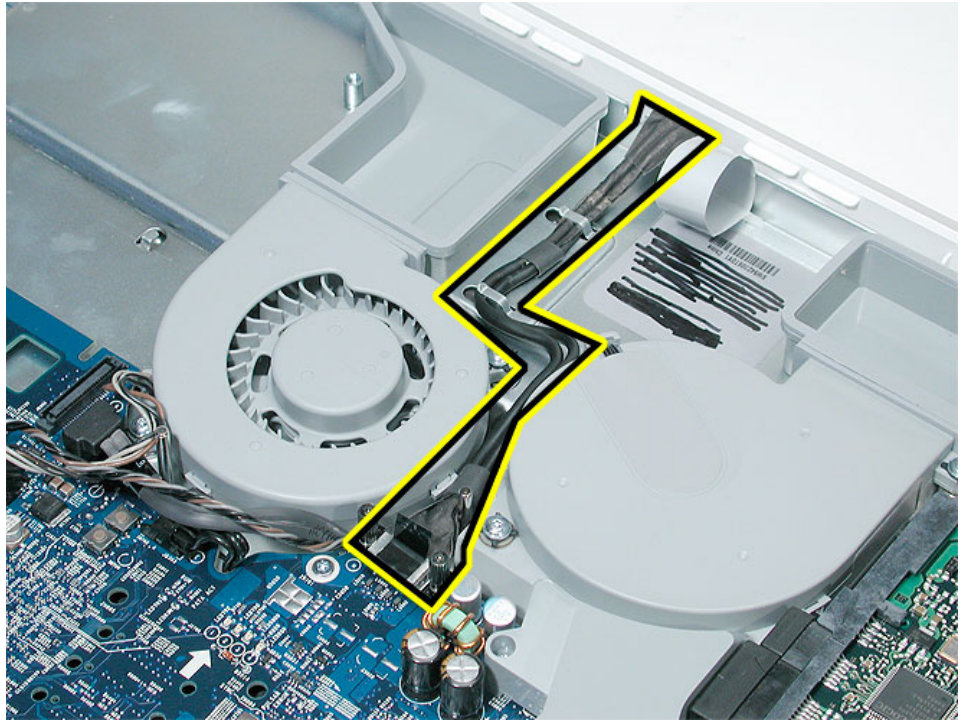
20. Loosen the captive power supply screw (circled below) by turning it counterclockwise. The screw is captive; it will not come out. **Note:** You do not need to remove the power supply.



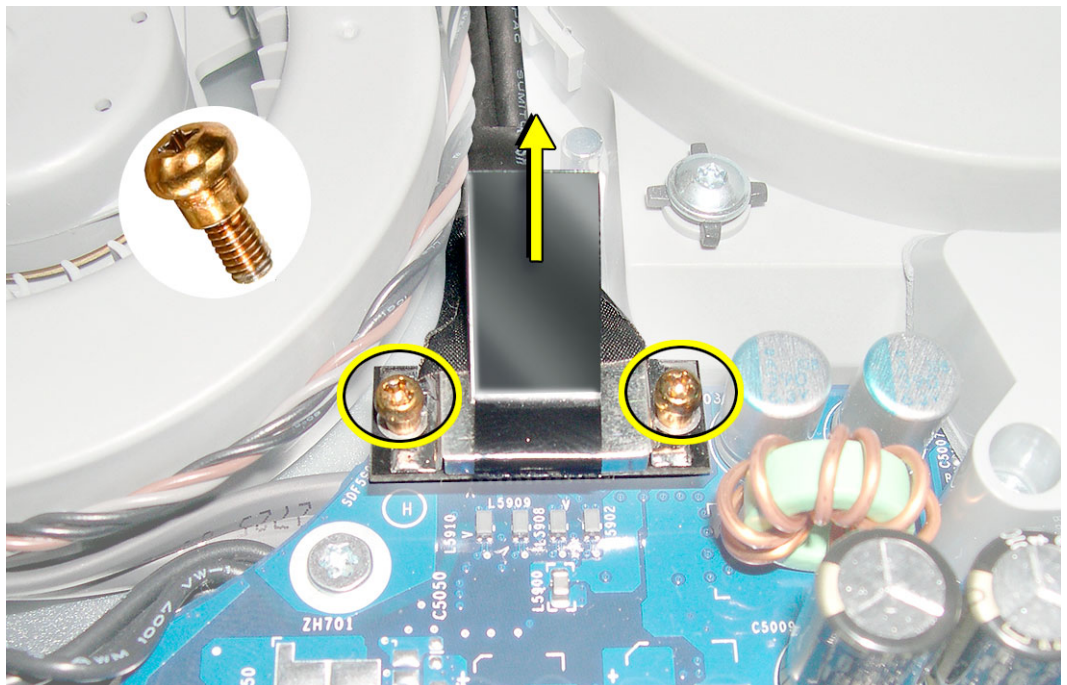
21. Remove the six screws attaching the midplane to the display/bezel.



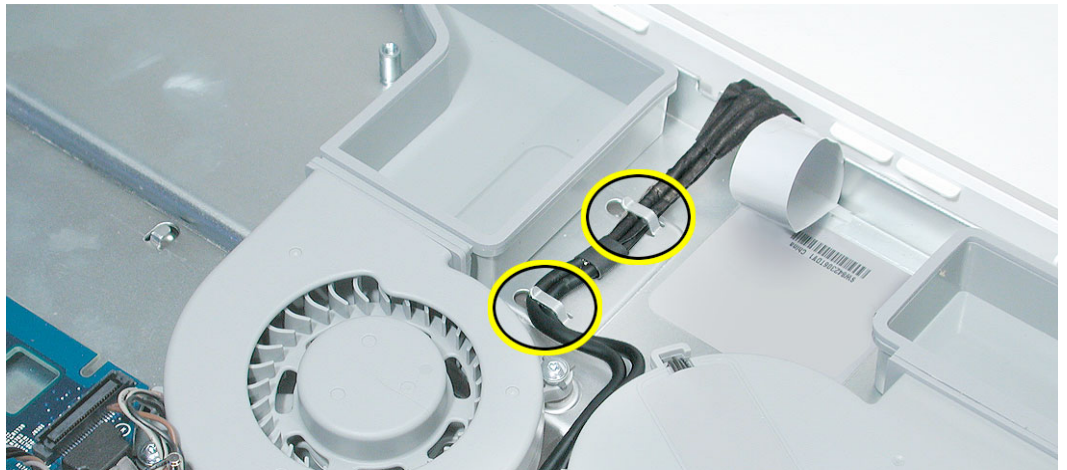
22. Locate the black video cable running alongside the fan.



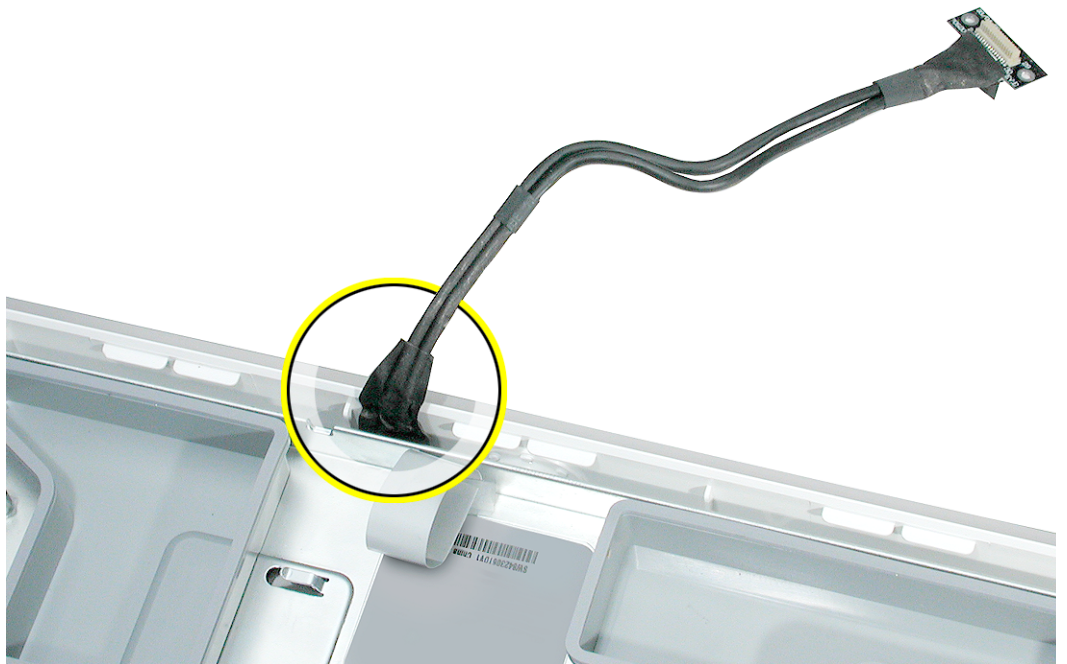
23. To disconnect the cable from the board, remove the two screws at the end of the cable and pull up the black tab.



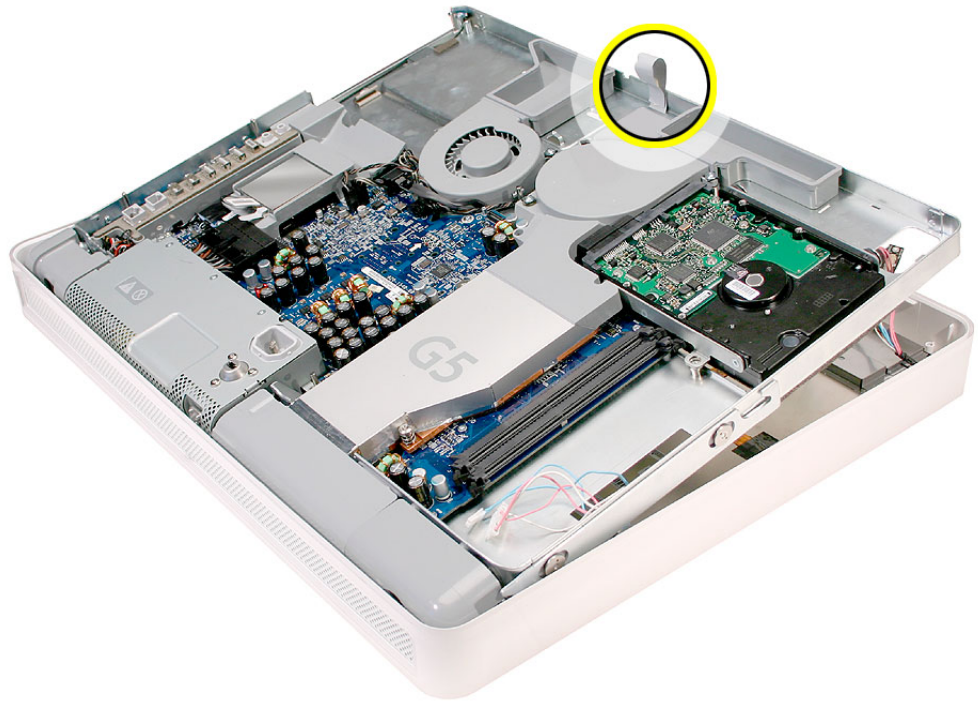
24. Release the cable from the metal cable clips (circled below)



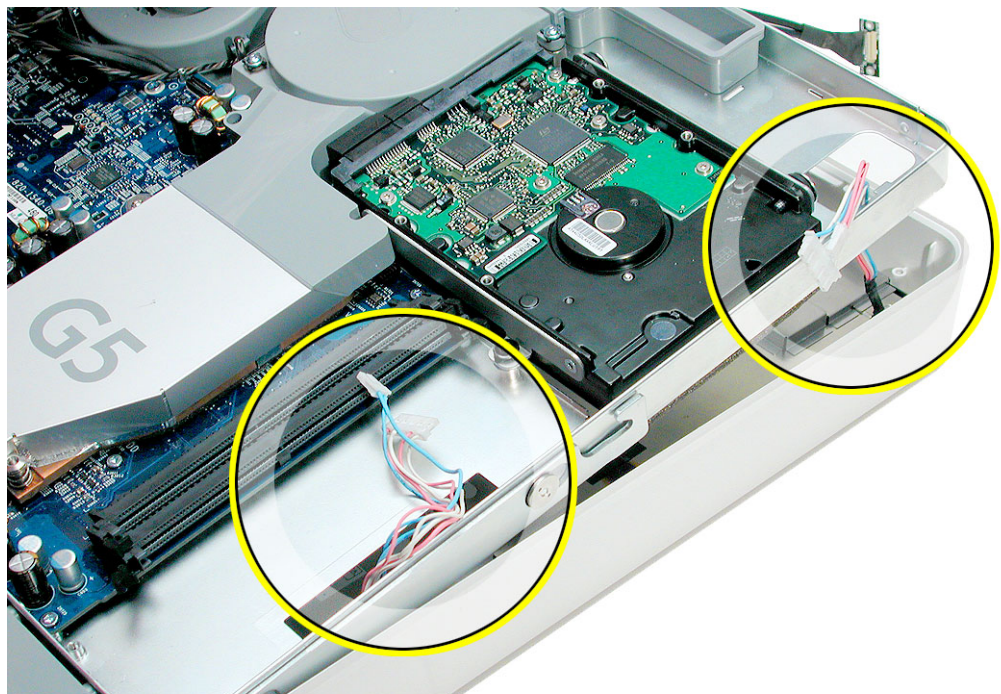
25. Flip the cable back, so it is out of the way for the next step.



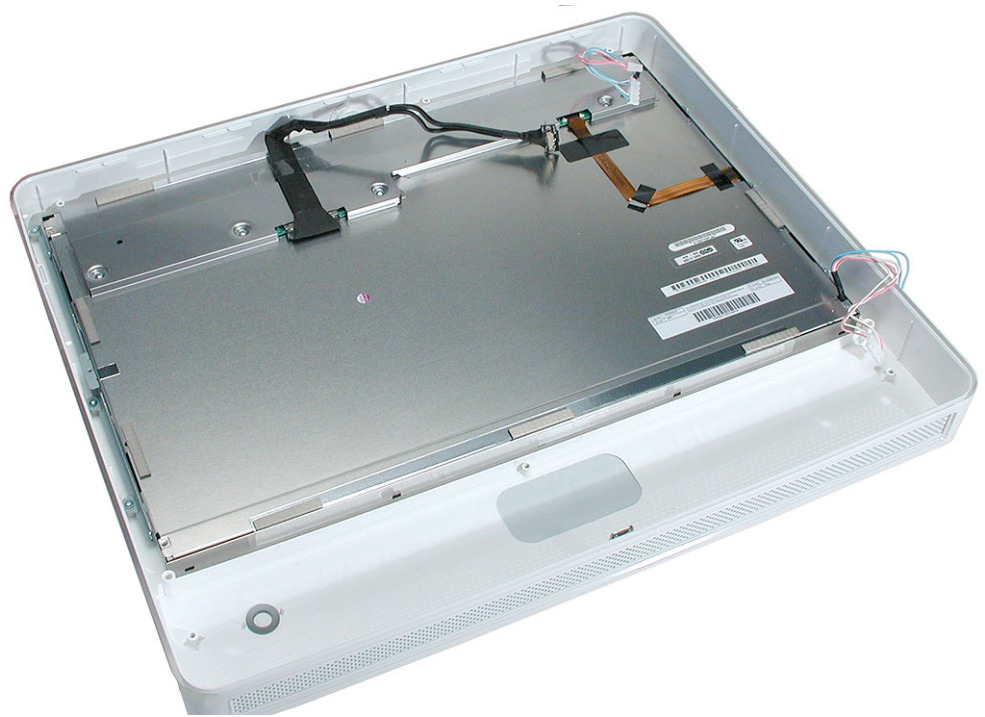
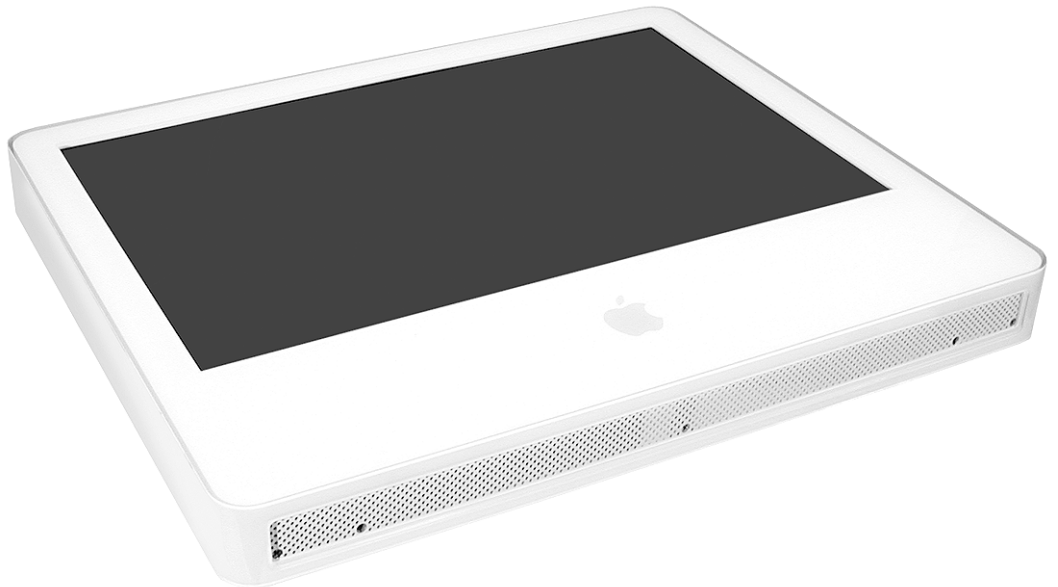
26. Locate the pull tab. Pull the tab up to release the midplane assembly from the display/bezel.



27. Push the inverter cables down through the openings on the midplane assembly. Lift the midplane assembly up and set it aside. **Warning:** Because the hard drive is not screwed into the midplane assembly, be careful it doesn't fall out when you lift the midplane.



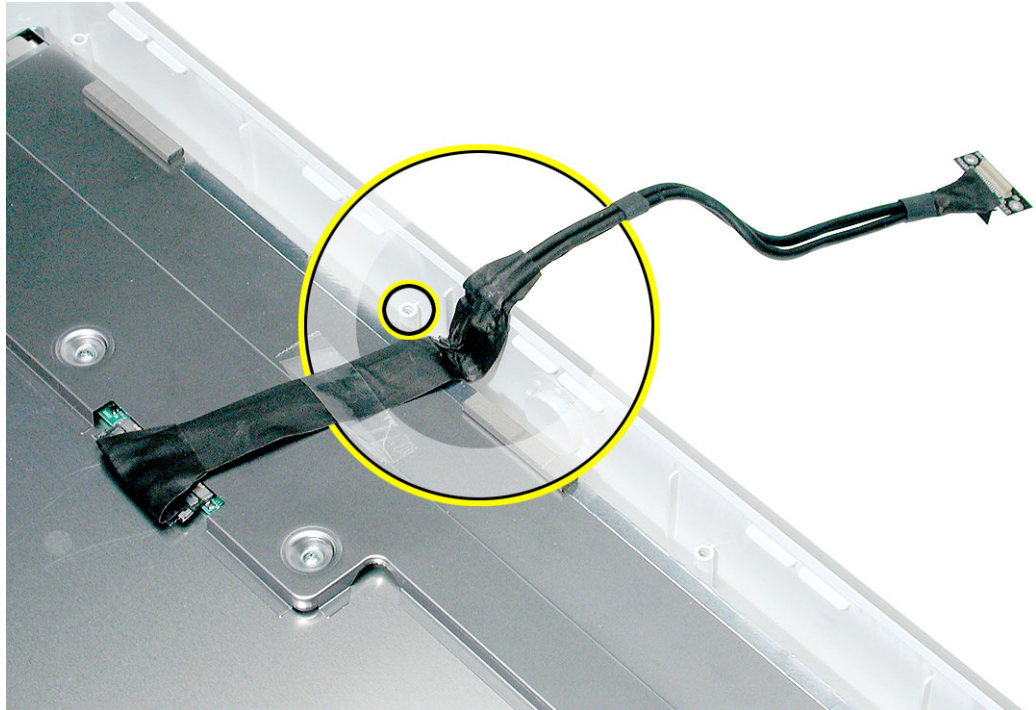
- 
28. With the midplane removed, you are left with the display/bezel service part (front and back shown below). **Important:** Return this display/bezel to Apple in the packaging provided.



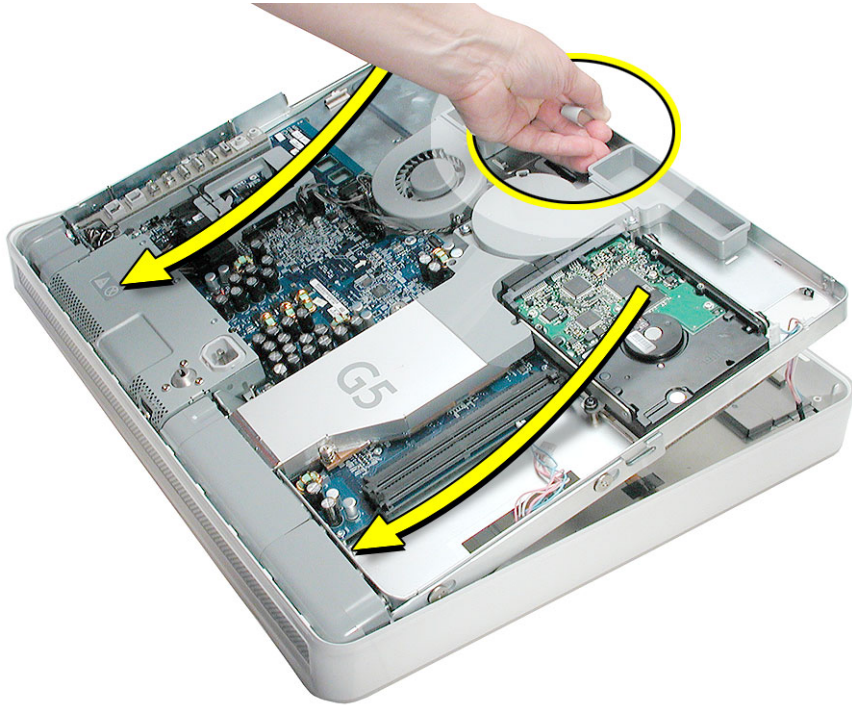
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## Replacing the Display/Bezel

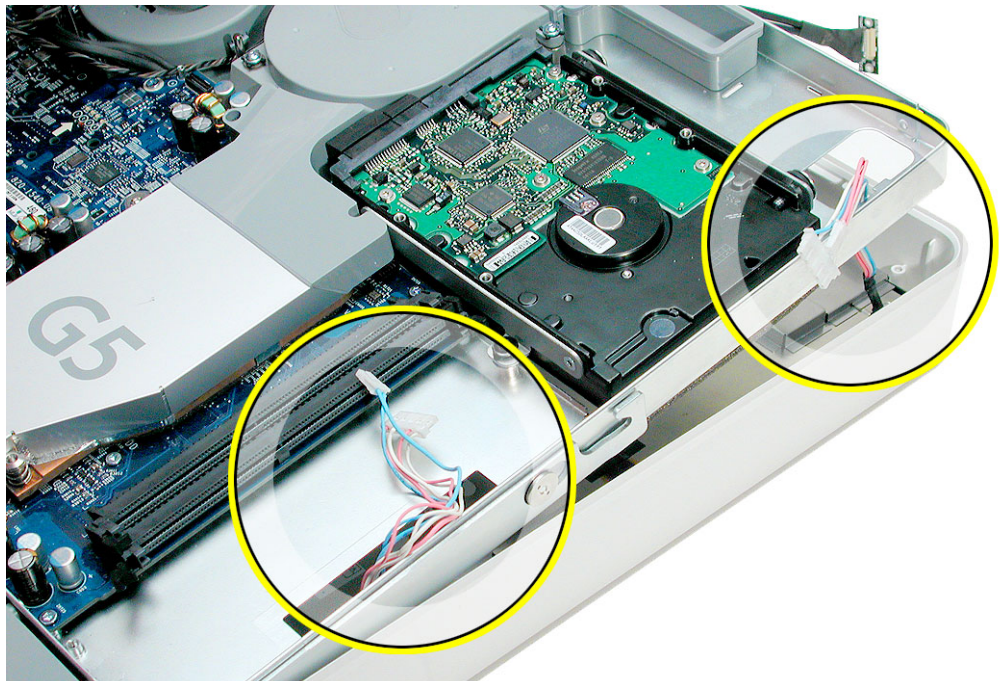
1. Remove the replacement display/bezel assembly from its packaging.
2. Position the assembly with the display face down on a clean soft cloth.
3. Make sure that the black video cable is tucked into the groove on the bezel as shown. Use the screw hole (smaller circle) as a guide for the cable placement.



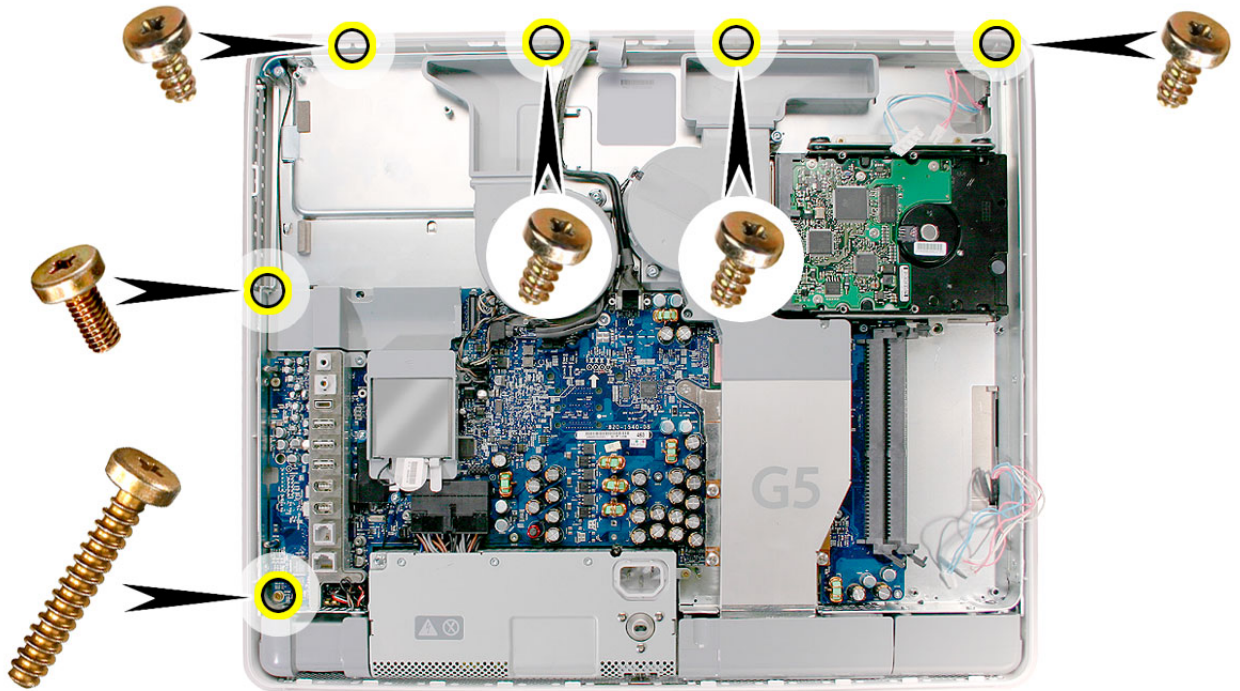
4. Position the midplane over the replacement display/bezel assembly housing.
5. Lower the midplane into the display/bezel assembly housing. Use the tab (circled) to lift and adjust the midplane into the housing. **Note:** If the midplane won't fit into place, turn the middle case screw (on the power supply) clockwise five revolutions.



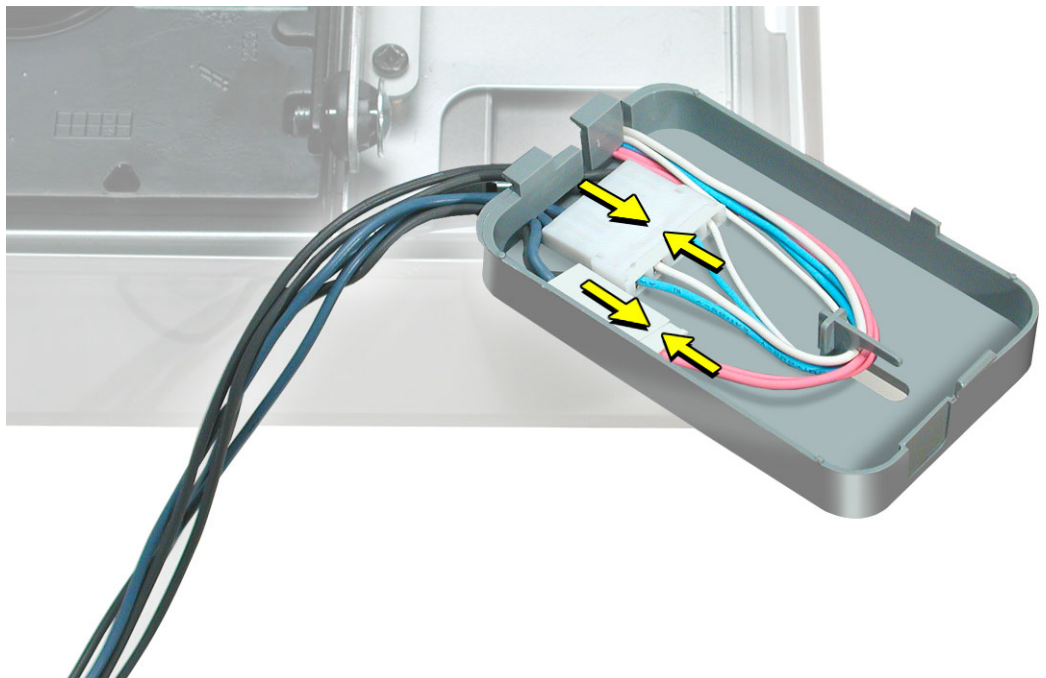
6. As you lower the midplane, make sure to pull the inverter cables through the openings on the right side of the midplane.



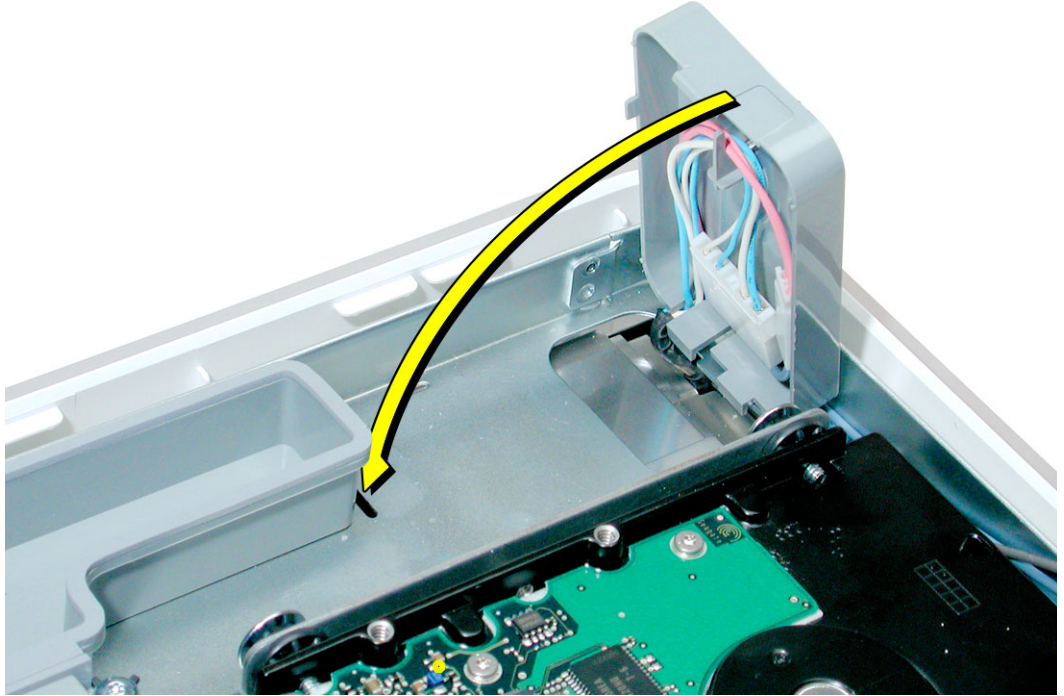
7. Replace the six case screws, (The shorter self-tapping screws attach along the top.)



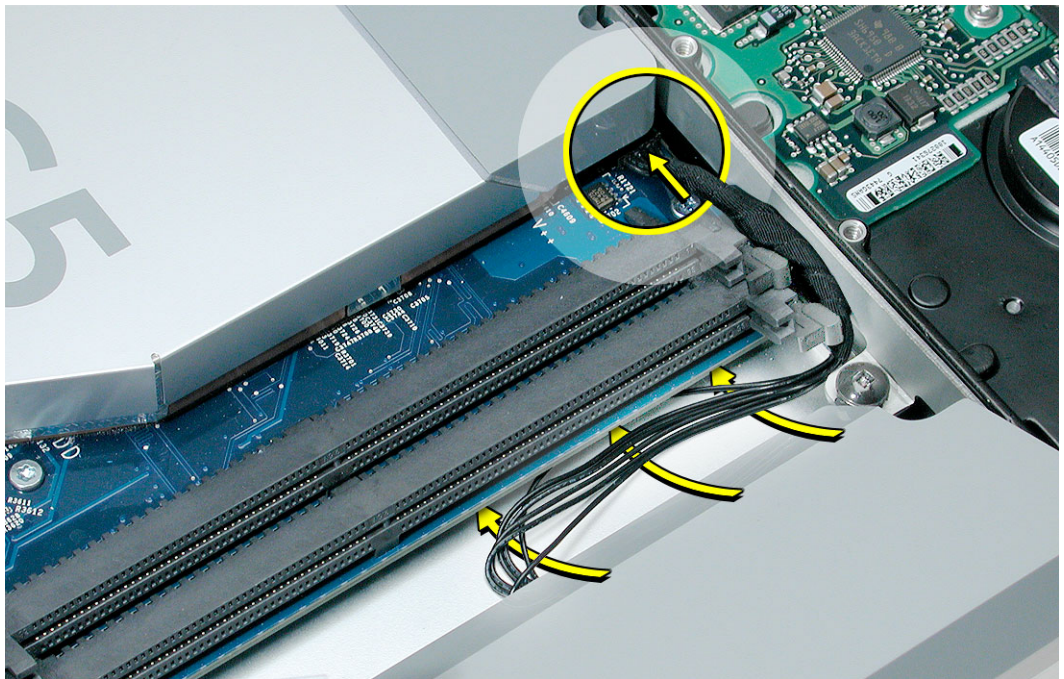
8. Locate the inverter cable cover. Connect the inverter cables as shown, making sure the connectors lie flat inside the cable cover. **Note:** Route the cables through the cable clips so that the darker cables are barely visible and have little slack.



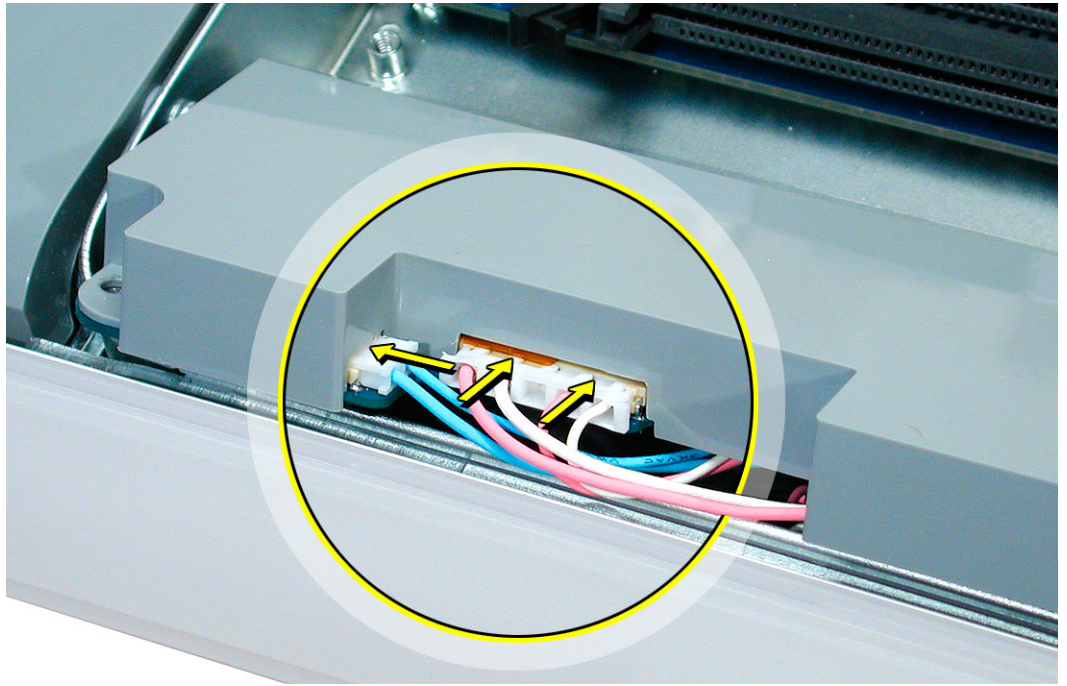
9. Lower the cable cover, pressing down steadily until the tabs lock the cover into place.



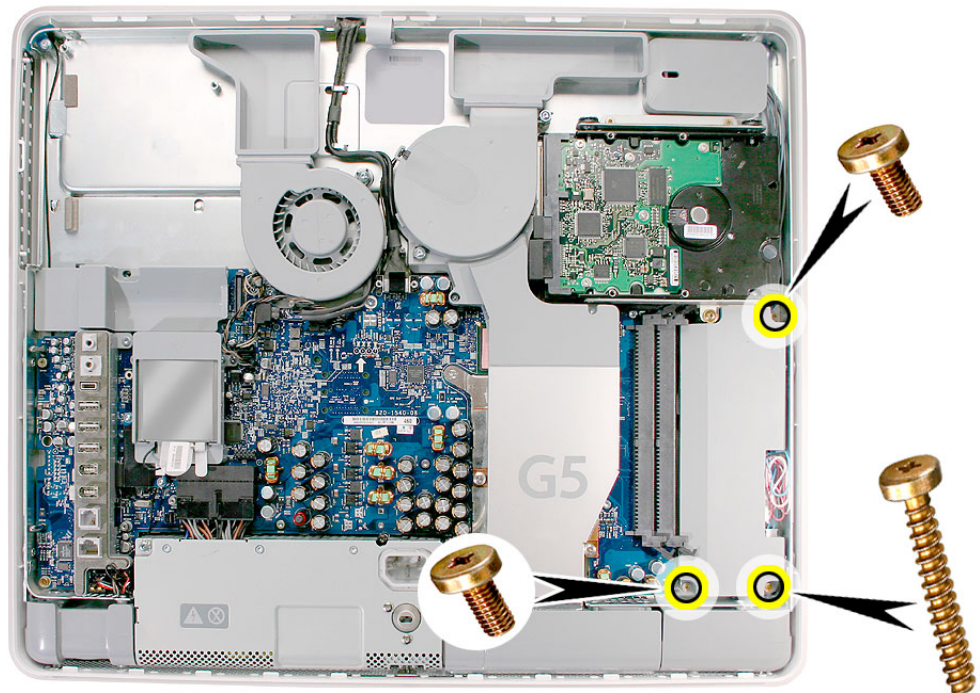
10. Press in the latches on the memory slots in and route the black inverter cable along the side of the hard drive. Connect the black inverter connector (circled) to the connector under the gray fan duct. **Note:** The connector is keyed so it can plug in only one way; the teeth on the connector face up. Tuck the remaining black cables under the board.



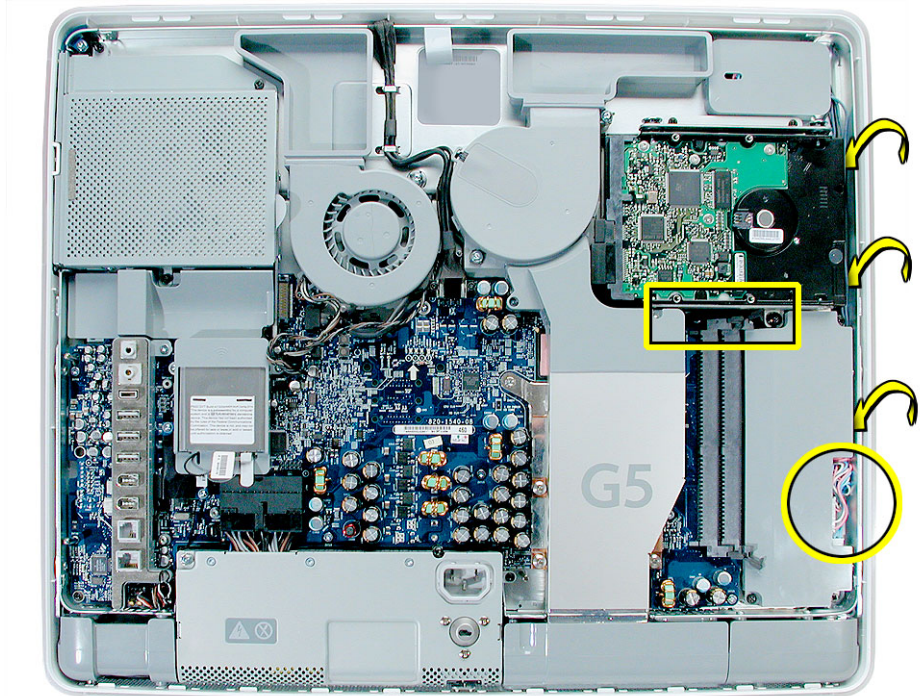
11. Connect the inverter cables, connecting the larger connector first. **Note:** The connectors are keyed, and plug in only one way.



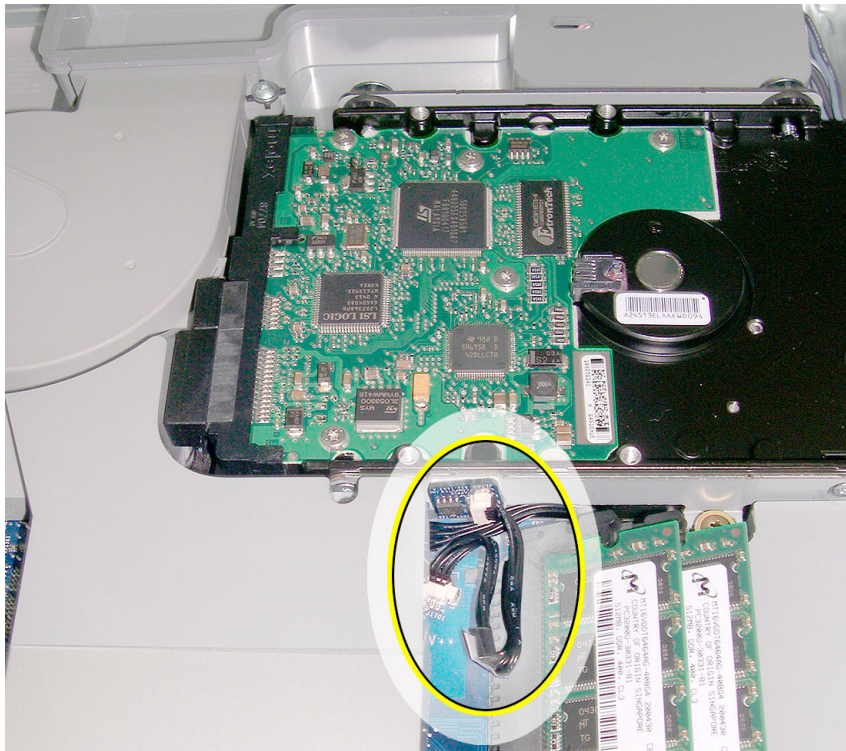
12. Install the gray plastic inverter at a slight angle as if it were sliding under the memory slots. Replace the three screws. The longer screw goes in the bottom right corner.



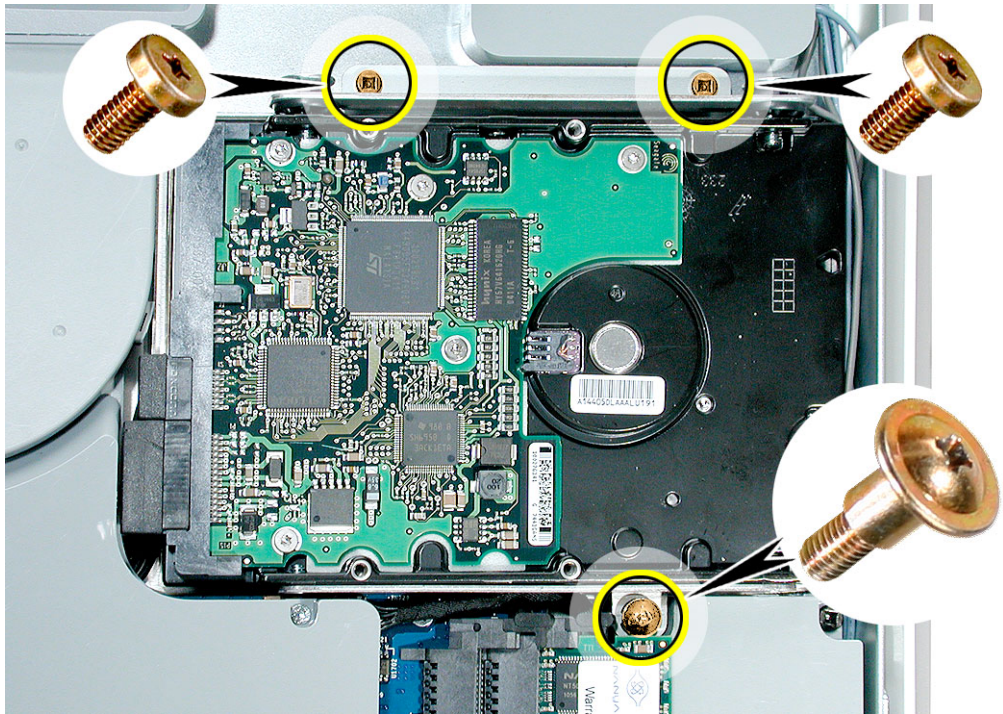
13. Tuck the inverter cables along the edge of the hard drive and next to the memory tabs.



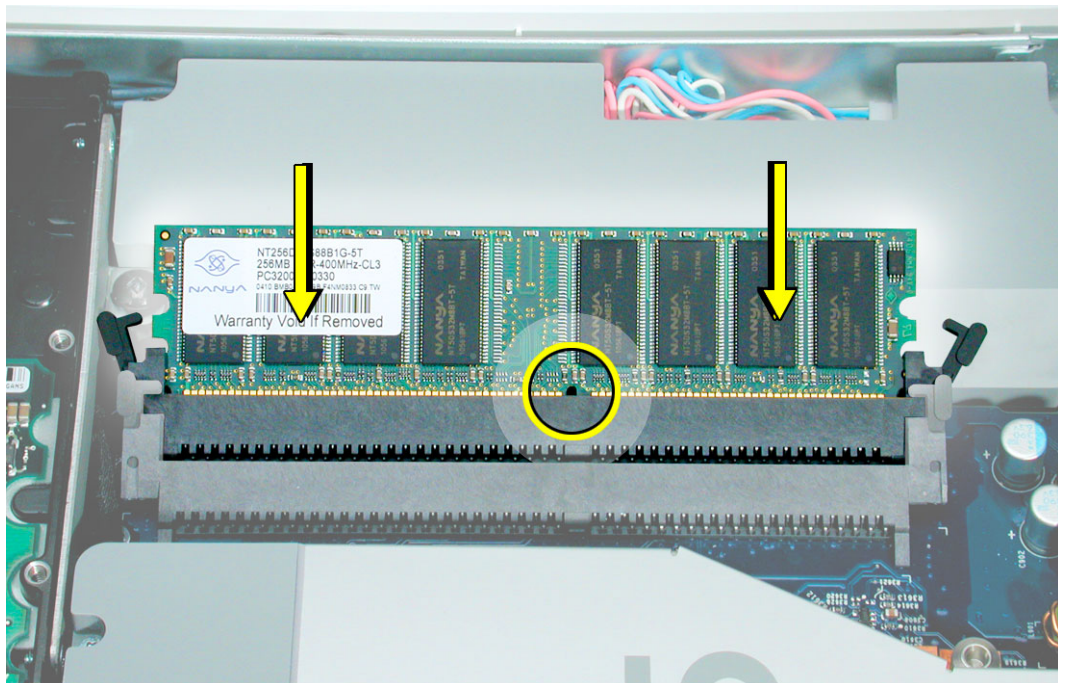
14. Reconnect the black cable to the white connector on the side of the hard drive.



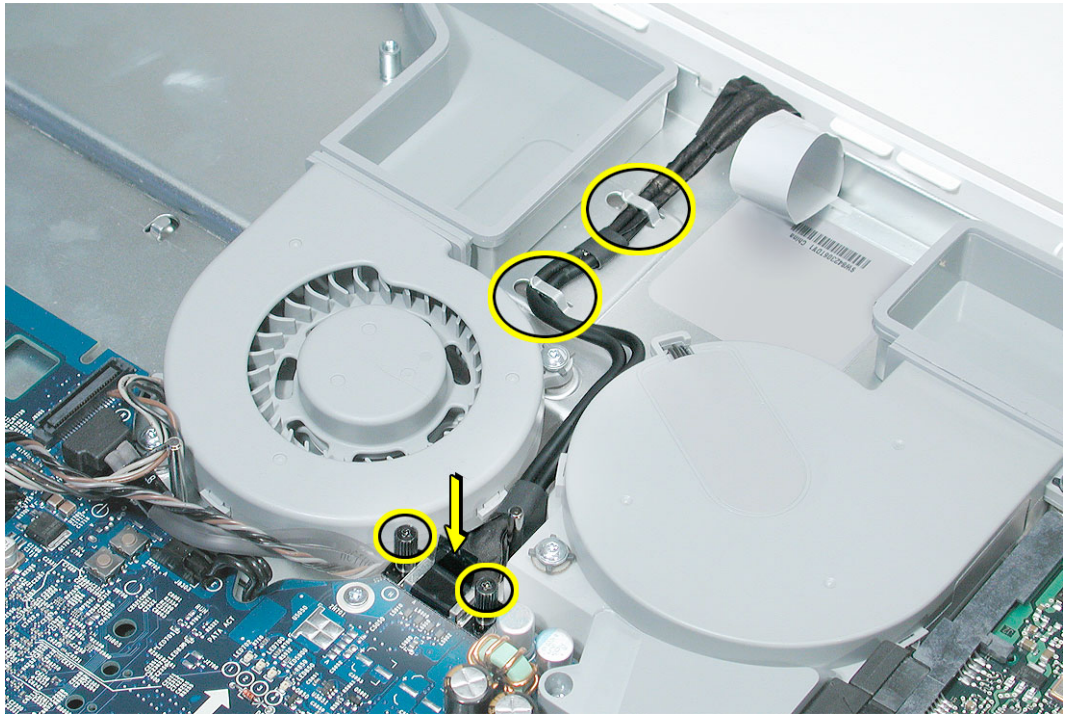
15. Replace the hard drive screws.



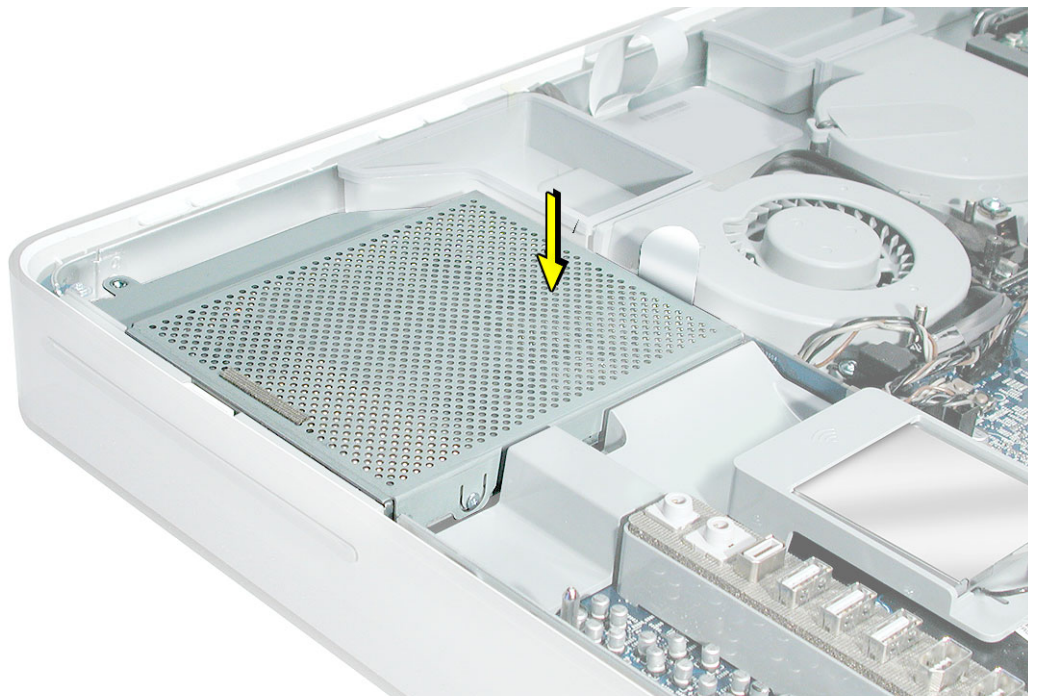
16. Replace the memory module(s) by lining up the notch on the module with the notch on the slot. Press firmly on the memory module until it clicks into place. Use your thumb and index finger to push the module into the slot.



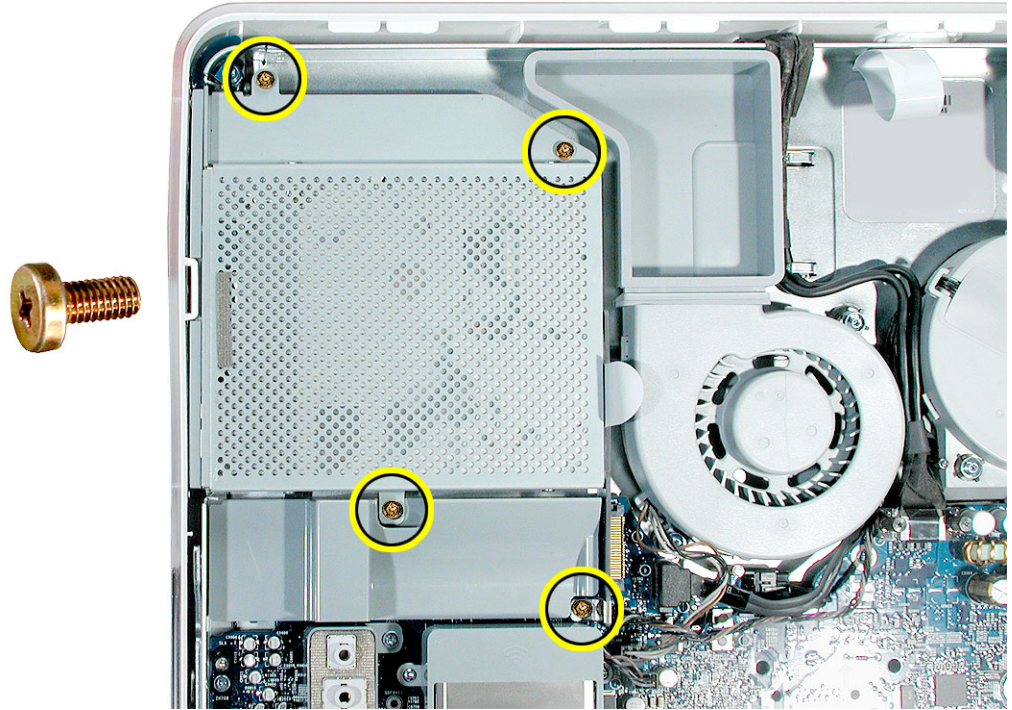
17. Attach the black video cable connector to the board and replace the two screws. Make sure the cable is tucked under the metal cable clips.



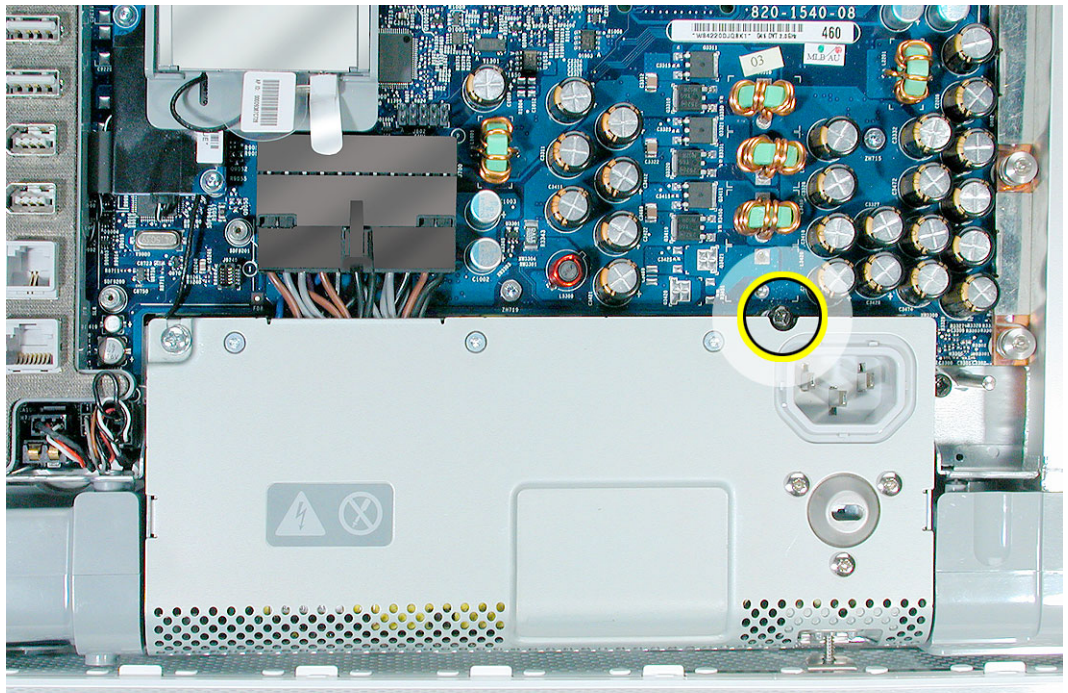
18. Slide the optical drive into place and press down near the tab to reconnect the drive. If the drive won't click into place, check that the fan cables (near the connector) are out of the way.



19. Replace the four optical drive screws.



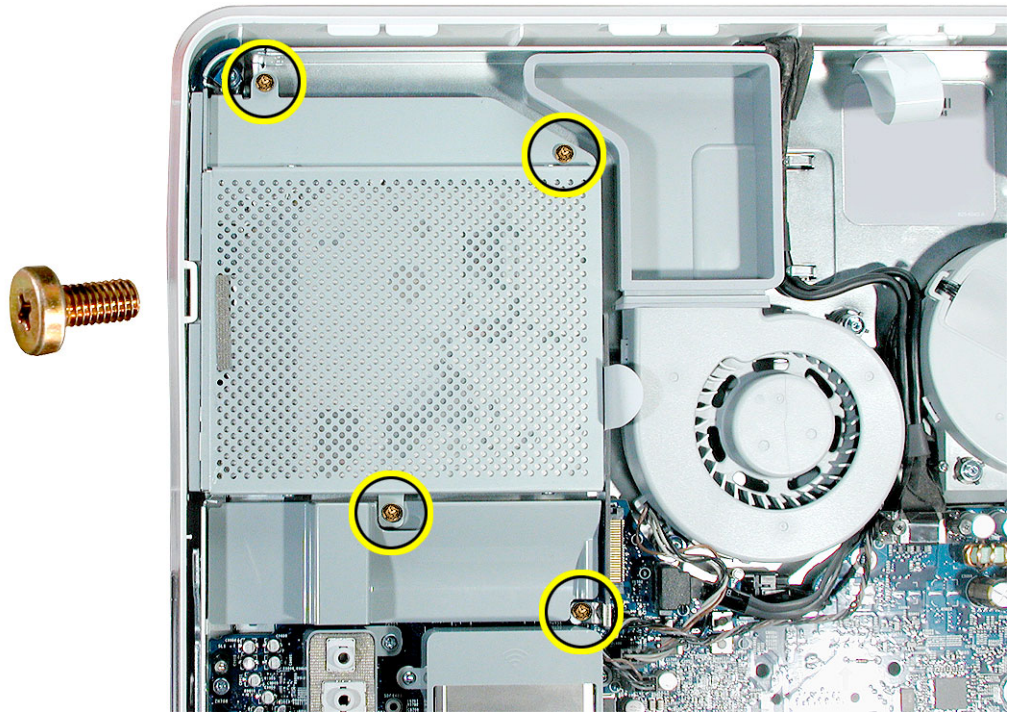
20. Tighten the captive power supply screw, turning it clockwise.



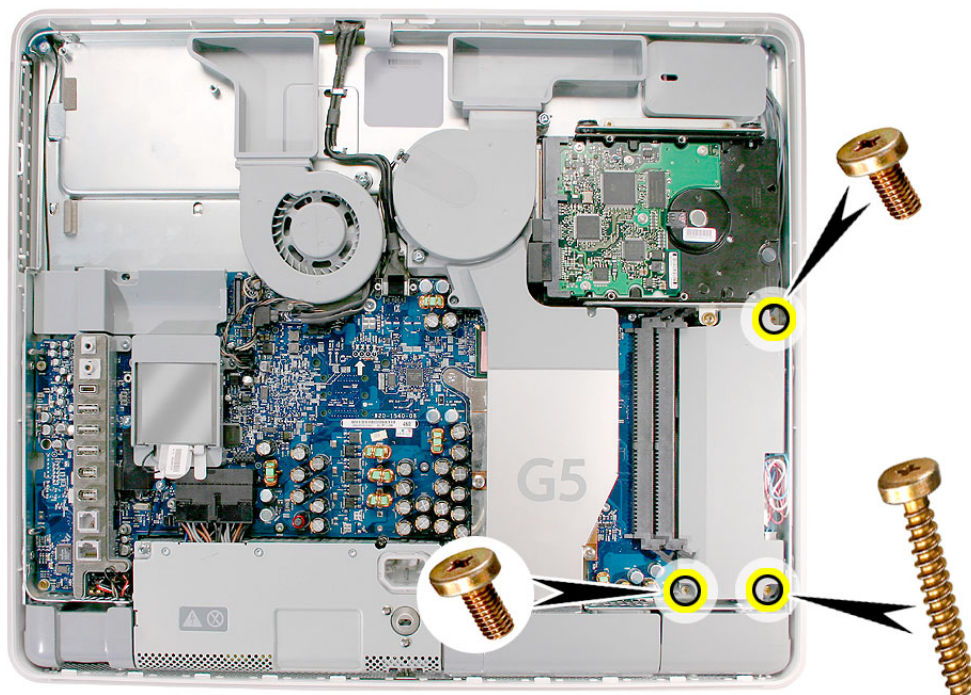


# Screw Charts

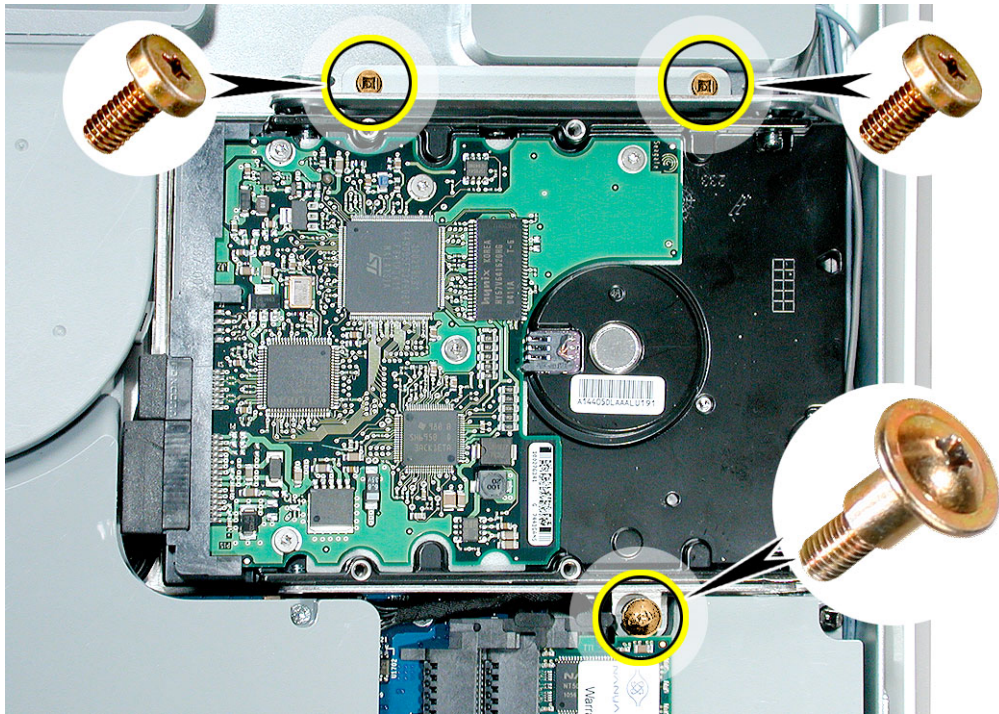
To Access the Optical Drive



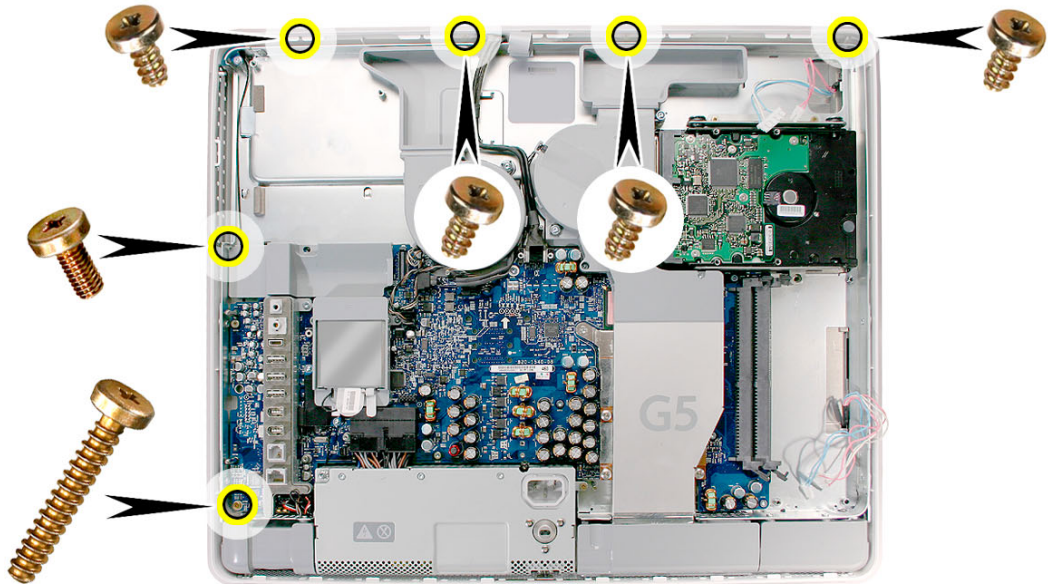
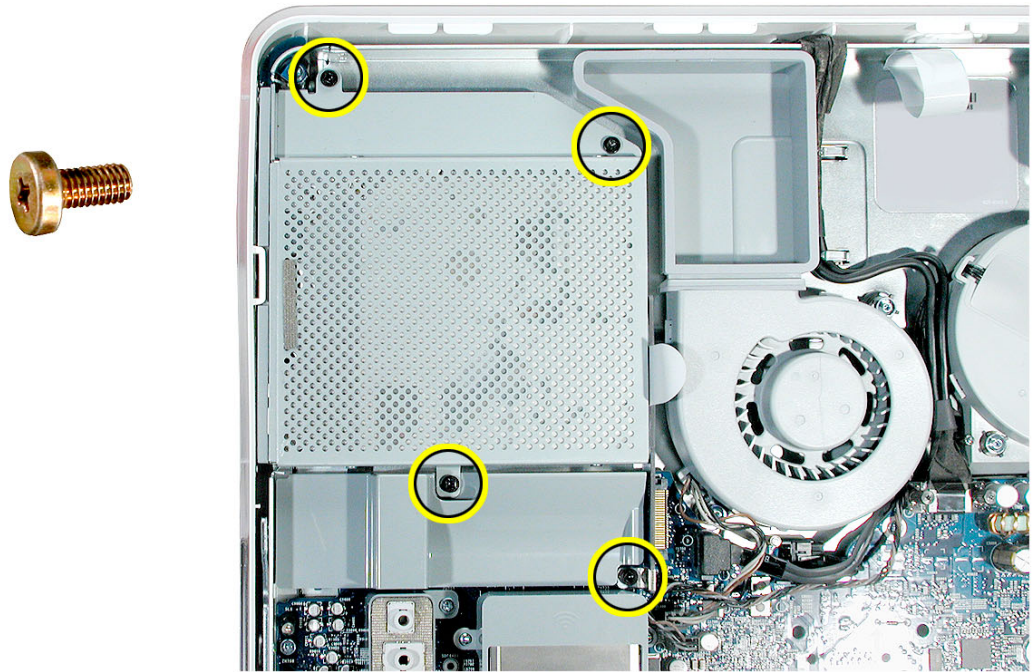
## To Access the Inverter



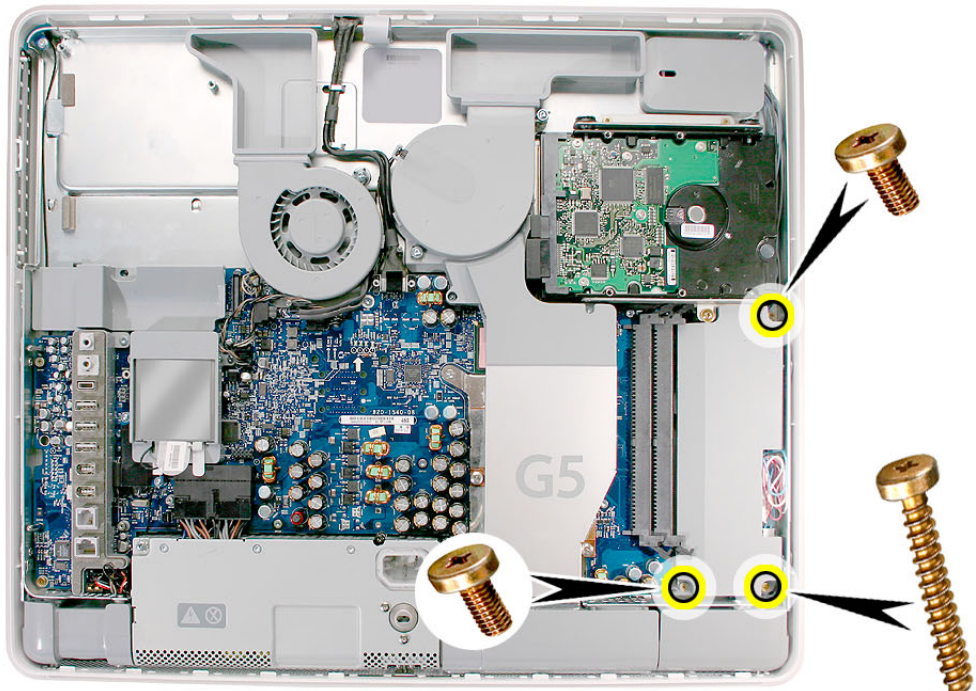
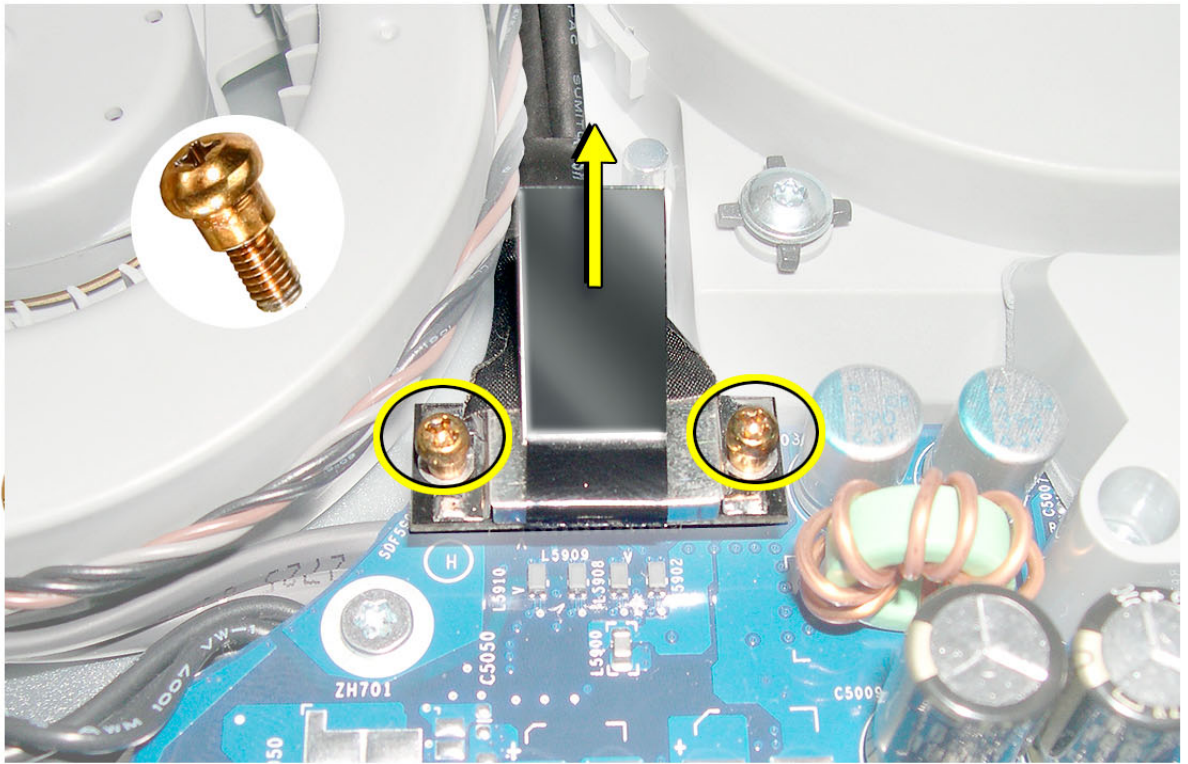
## To Access the Hard Drive



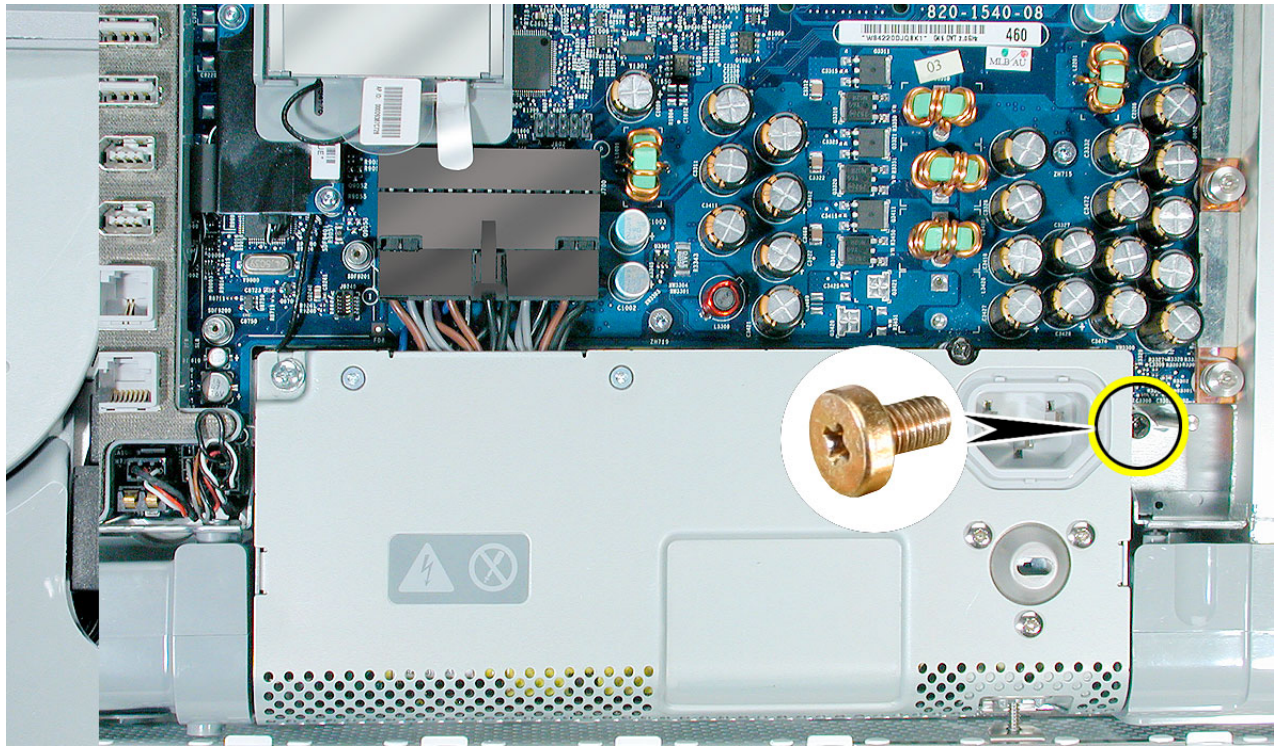
## To Access the Display/Bezel-Part 1



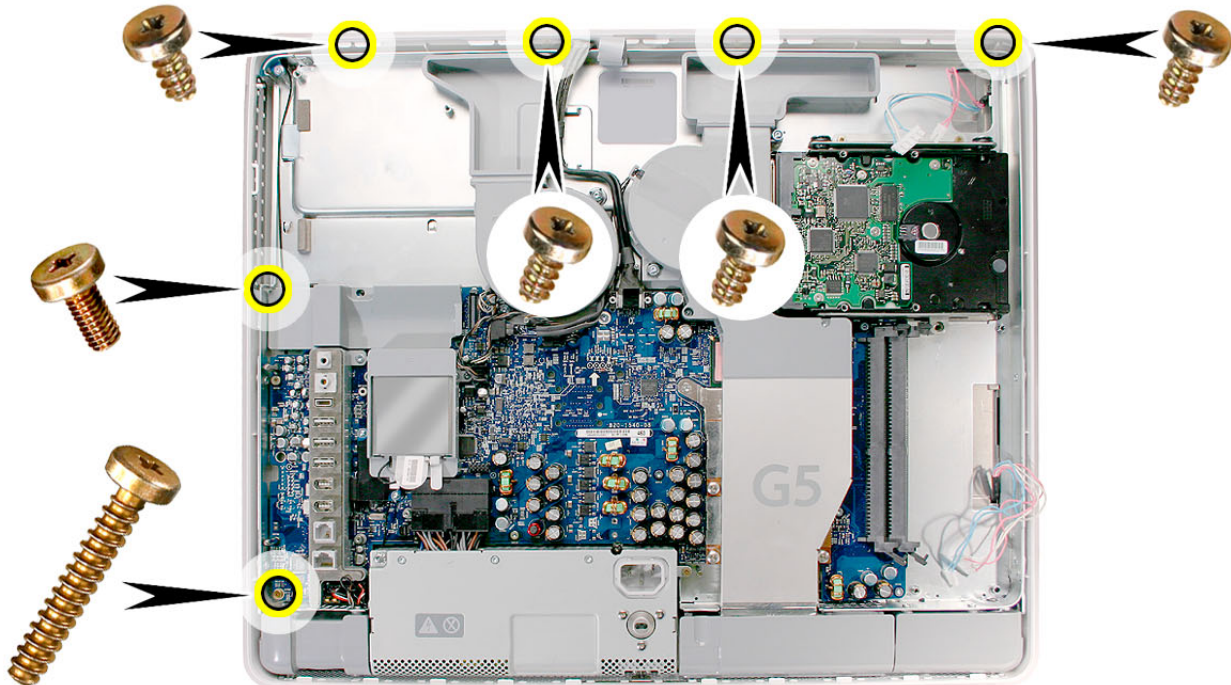
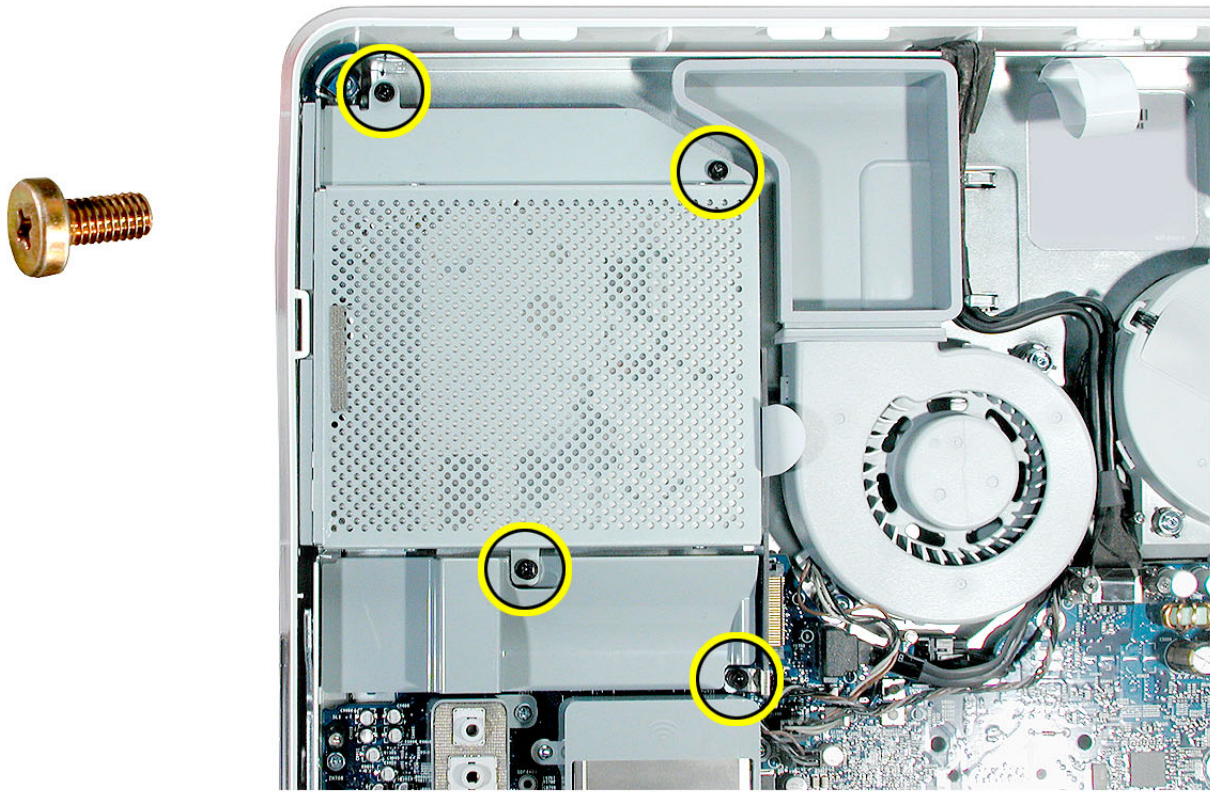
## To Access the Display/Bezel-Part 2



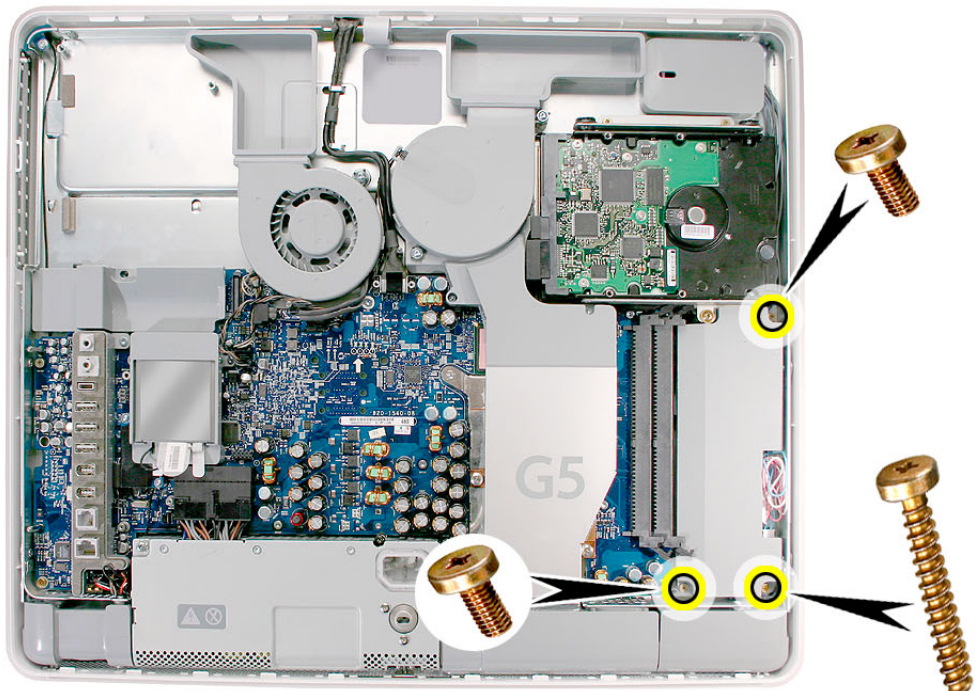
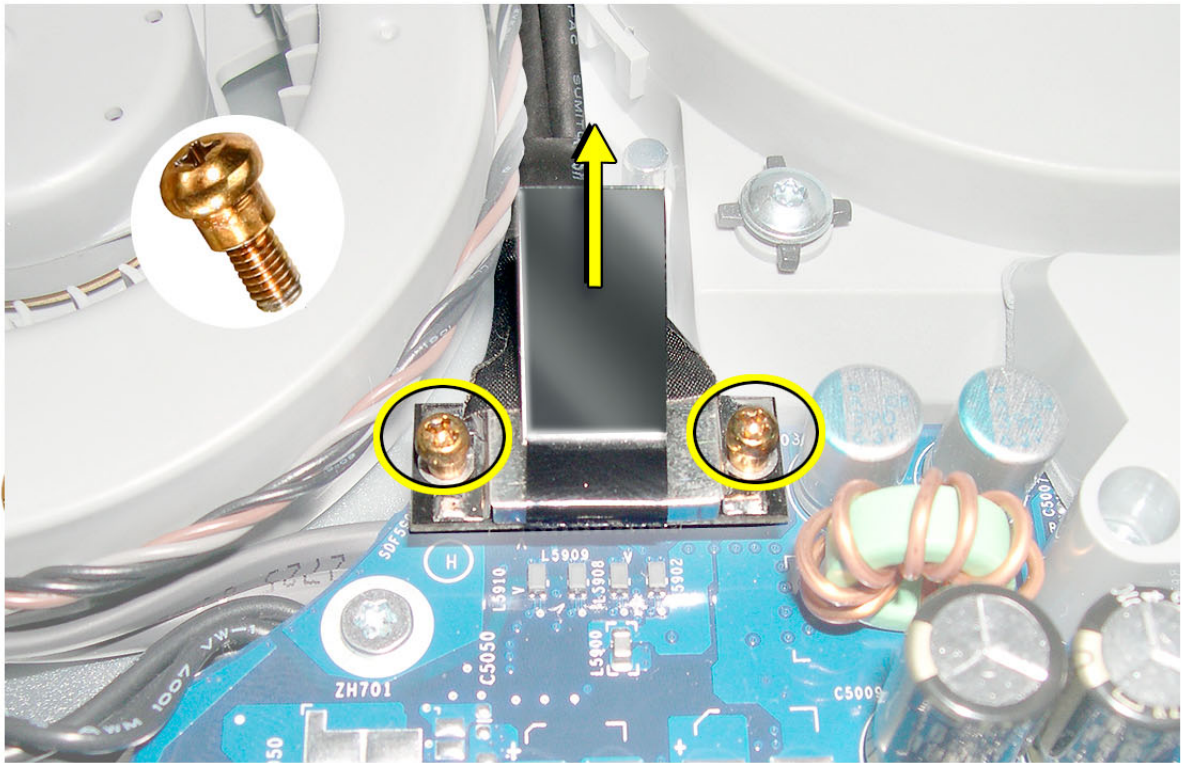
## To Access the Display/Bezel-Part 3



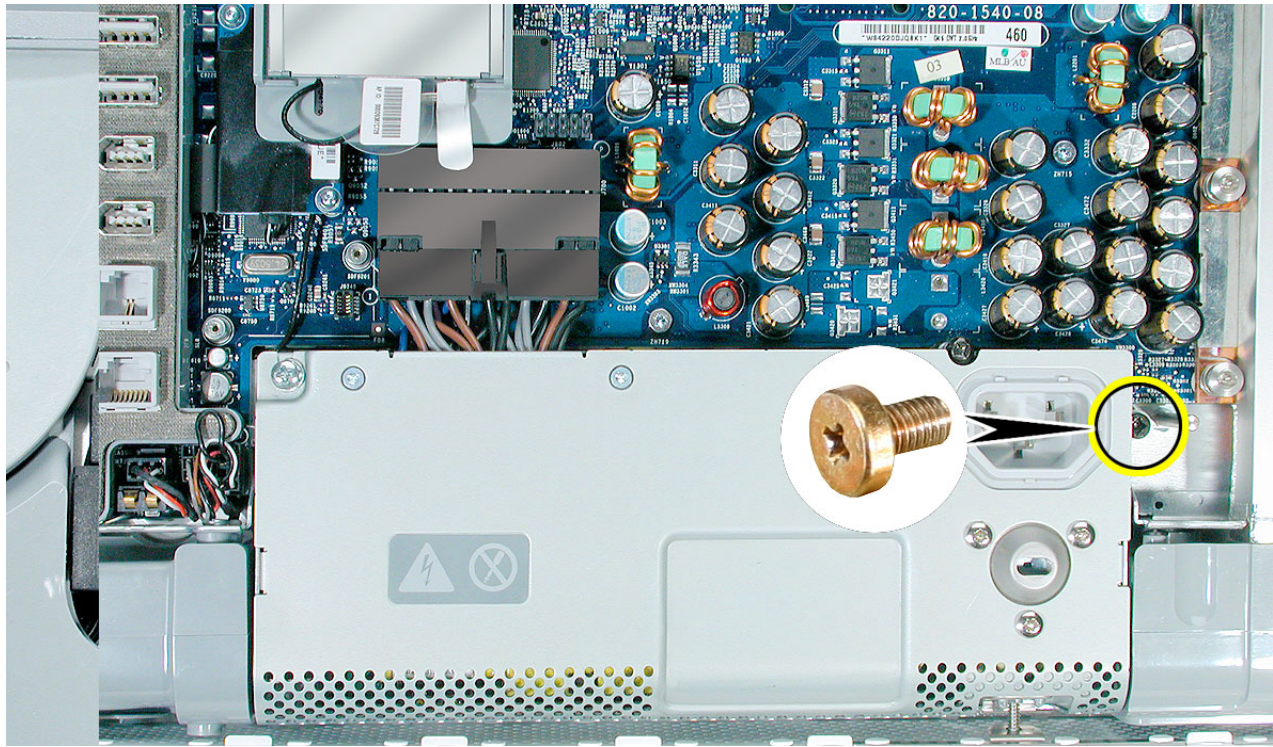
## To Access the Midplane Assembly-Part 1



## To Access the Midplane Assembly-Part 2



## To Access the Midplane Assembly-Part 3







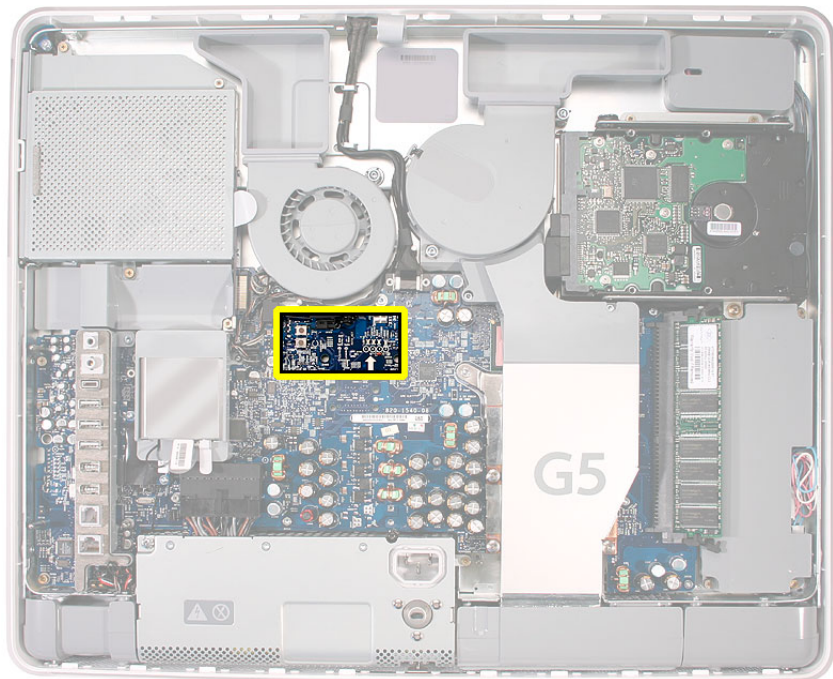
Troubleshooting  
iMac G5, 20-inch



# General Information

## 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.

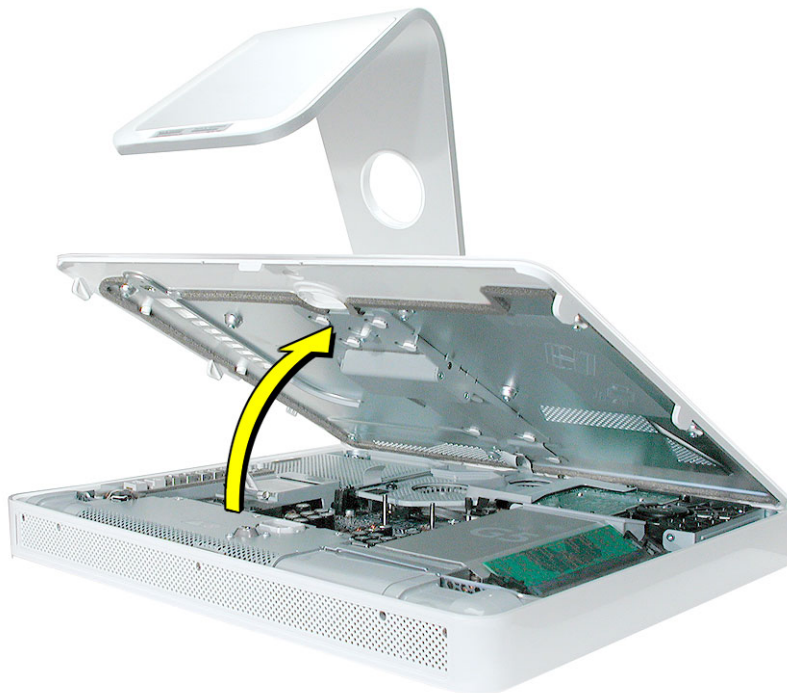
3. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of the computer and slowly lay it down so the screen is flat against the surface and the bottom is toward you.



4. Raise the foot and use a Phillips #1 screwdriver to loosen the three screws at the bottom of the computer by turning them completely counterclockwise. 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.

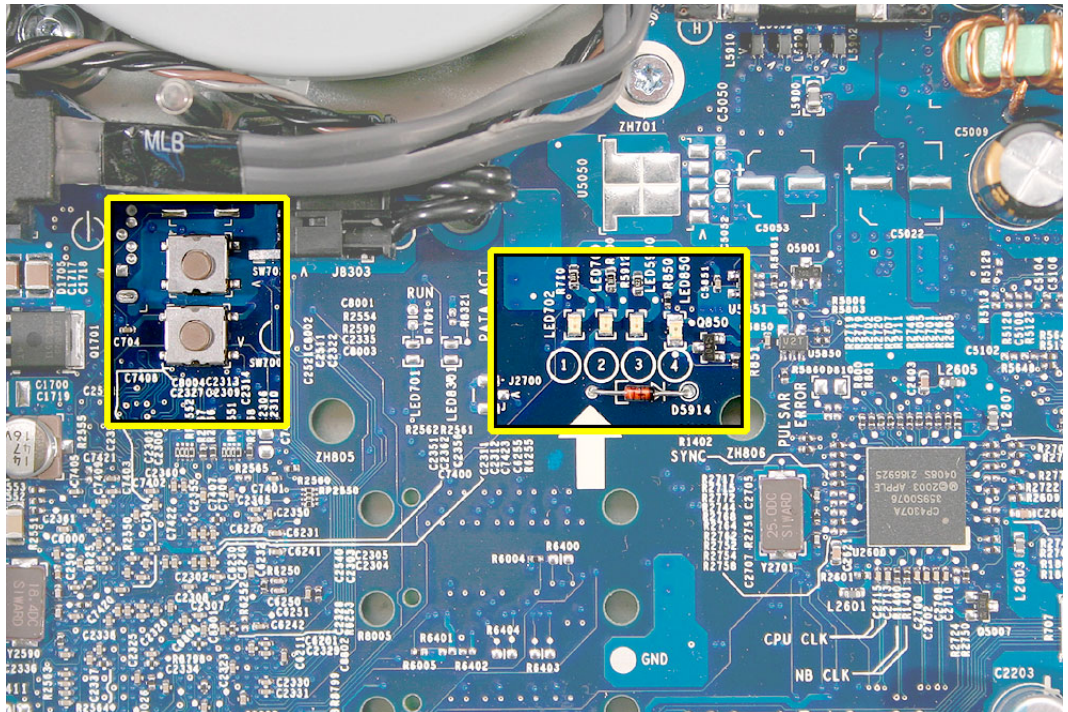


6. To protect the computer from electrostatic discharge, ground yourself by touching a metal surface inside the computer. **Warning:** Always discharge static electricity before you touch any parts or install any components inside the computer. Don't walk around the room in socks or bare feet, for example,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



7. Locate the large white arrow in the middle of the board. Above this arrow, you'll see four LEDs (explained below).

To the left of the LEDs are two buttons. The top button is the internal power button. Pressing this button give you the ability to power on the computer with the back cover off. The lower button is the SMU button The SMU reset button (shown below) is similar to the PMU button on previous iMac computers.

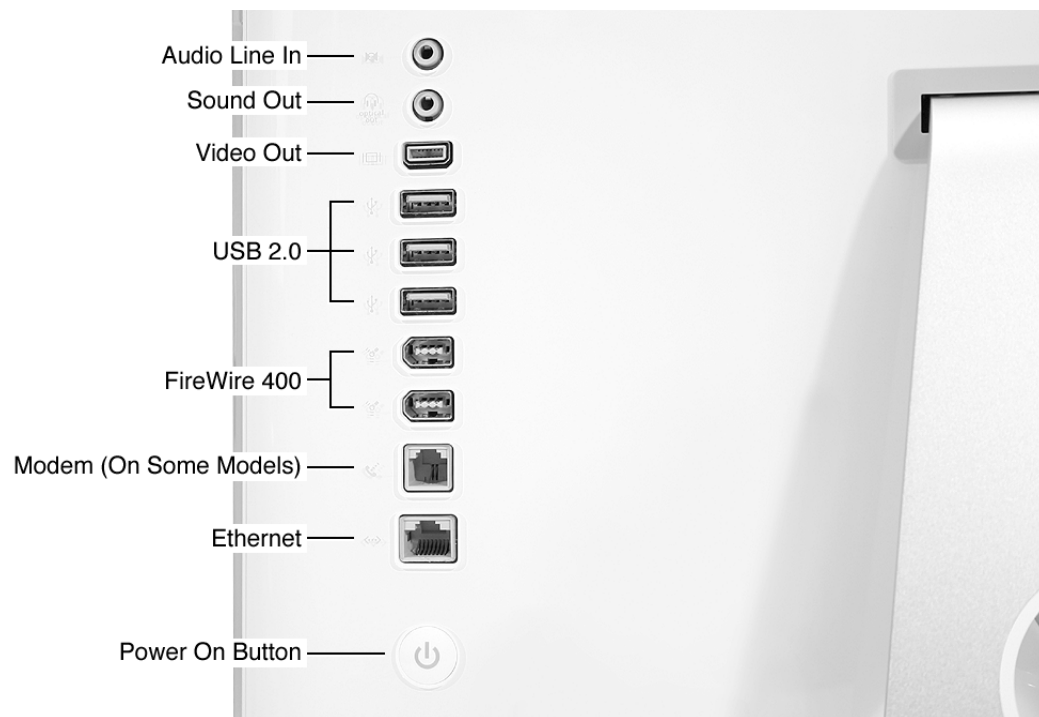


## LEDs

- **LED 1** indicates that trickle voltage from the power supply has been detected. This LED will be ON when the computer is turned off and your power supply is working correctly.
- **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.

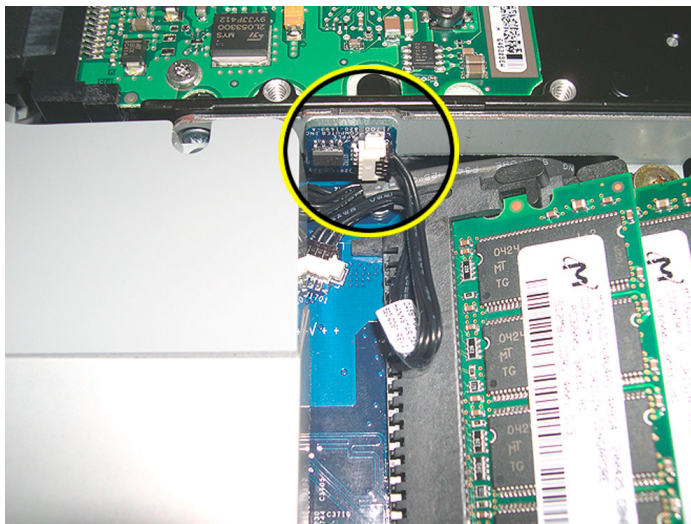
## Ports

The iMac G5 ports are shown below.

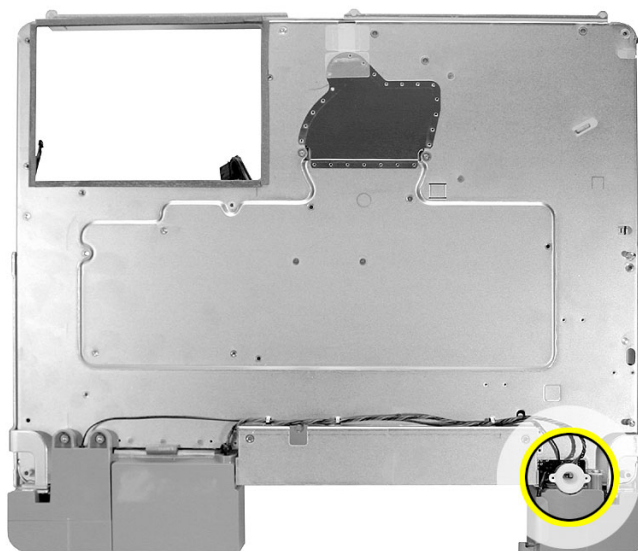


## Spares Kit

1. A spares kit is included with each replacement part. All spares kits include the Phillips #1 tool and extra screws for the replacement module. All customer removable screws are brass colored. **Do not remove screws unless they are brass colored, or you will void the warranty.**
2. An extra thermal sensor cable (shown below) is included with the hard drive. If the original sensor becomes damaged during the disassembly, attach the sensor to the main board and to the end of the hard drive (as shown).



3. An extra LED gasket/light tube is included with the midplane and display/bezel spares kit just in case the original gasket falls off the midplane. The gasket/tube (shown below) is located in the bottom right corner on the underside of the midplane.



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## **Service modules**

- Midplane Assembly (available with or without Bluetooth)
- Display and Bezel assembly
- Hard drive, with carrier
- Power supply
- Optical drive
- Backup battery
- AirPort Extreme card
- Memory DIMMs, DDR 400
- Inverter
- Back Cover and Foot
- Fan Cover (only on 17-inch with Serial ATA drive)

## **Midplane Replacement**

The following items are not separate, orderable parts. To replace them, you must replace the midplane assembly.

- Fan(s)
- Main logic board
- Midplane chassis
- Logic board cables
- Speakers
- I/O panel

## **Display/Bezel Replacement**

The following items are not separate, orderable parts. To replace them, you must replace the display/bezel assembly.

- Flat panel display
- TMDS video cable
- Inverter-to-display cable
- Display bezel housing (white case)

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## **DDR Memory**

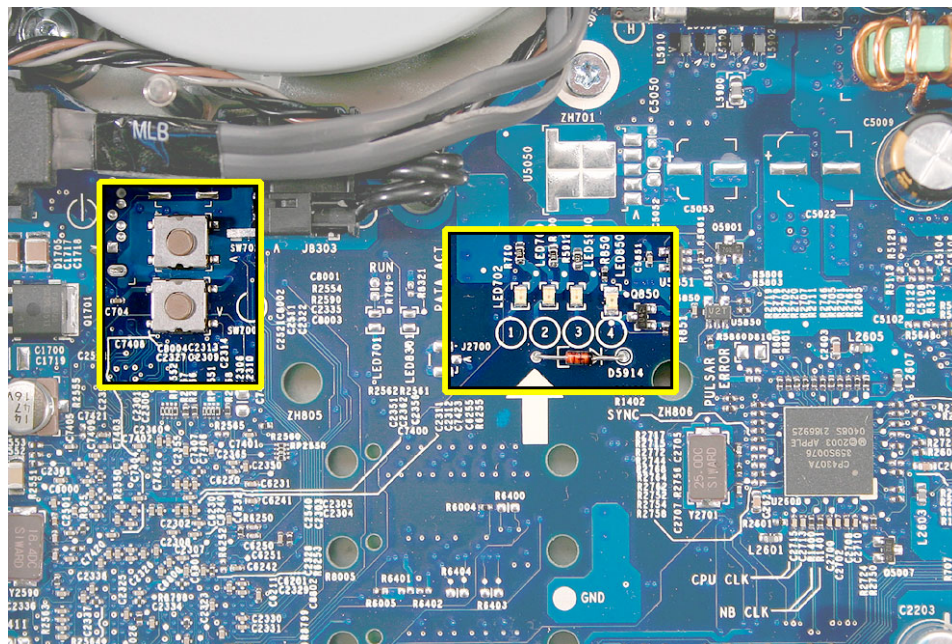
iMac G5 computers work with memory modules (DIMMs) that meet all of these criteria: PC3200, 2.5V, unbuffered, 8-byte, nonparity, 184-pin, 400Mhz DDR SDRAM.

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.

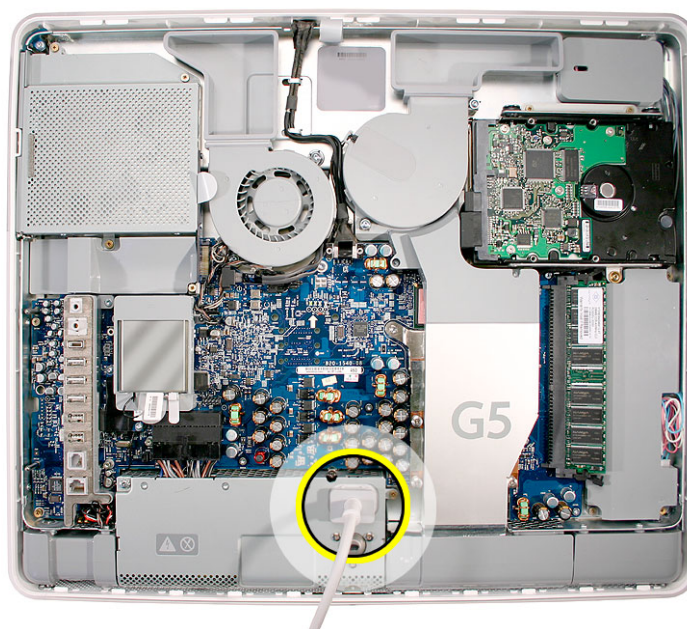
## Power Button on the Midplane Board

The internal power button gives you the ability to power on the computer with the back cover off the computer. The power button is the top button of the two buttons, located to the left of the diagnostic LEDs.

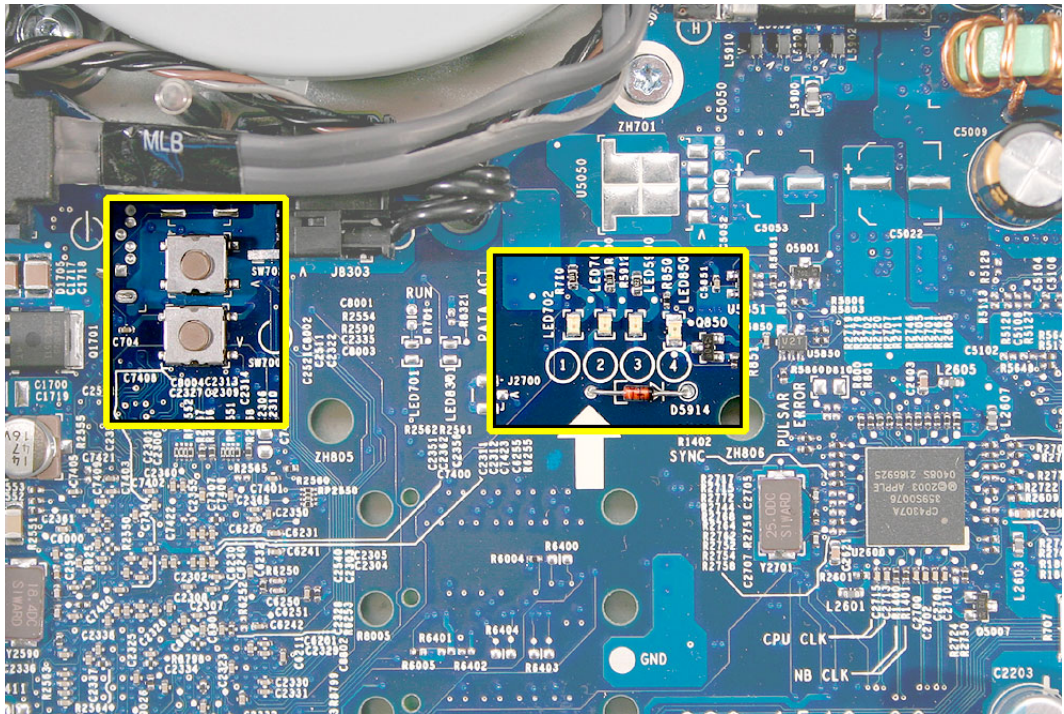


To power the computer on with the back cover off:

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



3. Press the power button with your finger or a nylon probe tool. The LEDs will come on indicating the computer status.



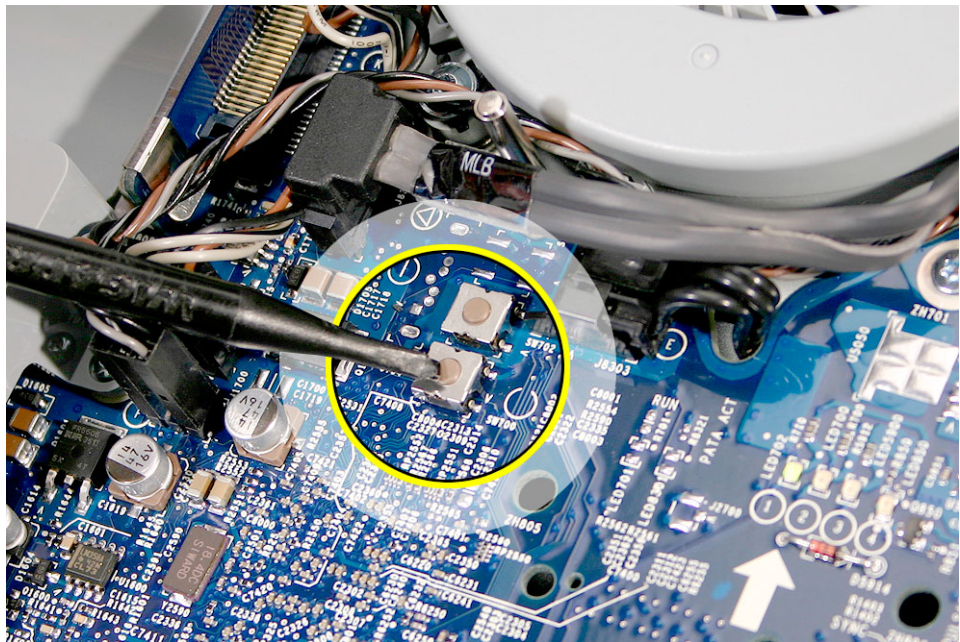
4. To shut the computer off with the back cover off, press the power button for at least five seconds.

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## SMU Button on the Midplane Board

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 reset button (shown below) is similar to the PMU button on previous iMac computers.



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.

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**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.



# Symptom Charts

## How to Use the Symptom Charts

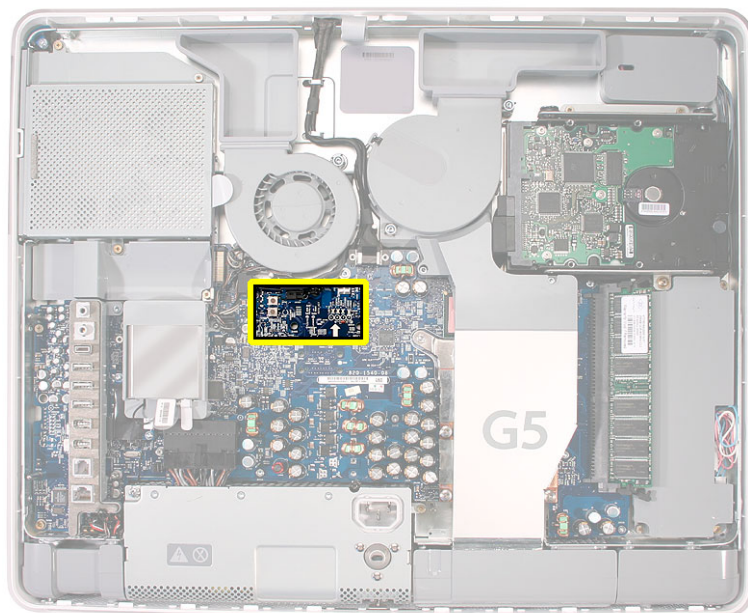
The Symptom Charts included in this chapter will help you diagnose specific symptoms related to the product. Because cures are listed on the charts in the order of most likely solution, try the cures in the order presented. Verify whether or not the product continues to exhibit the symptom. If the symptom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

## No Power

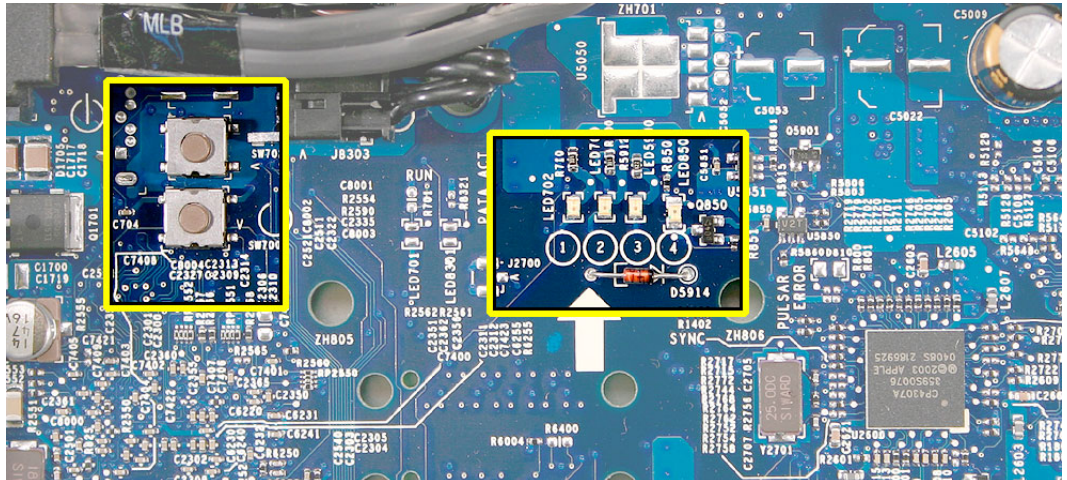
**In a No Power situation the system is completely dead. There is no LED, no hard drive or fan activity and the screen is black.**

1. Verify power outlet is good.
2. Replace power cord.
3. Remove the back cover.
4. Reconnect the power cord to both the iMac and the wall outlet
5. Look at the small LEDs in the center of your computer.



6. Is LED #1 on or off?

**LED #1 is on.** Turn the iMac on by pressing the top button to the left of the LEDs on the blue board (the logic board) Go to step 7.



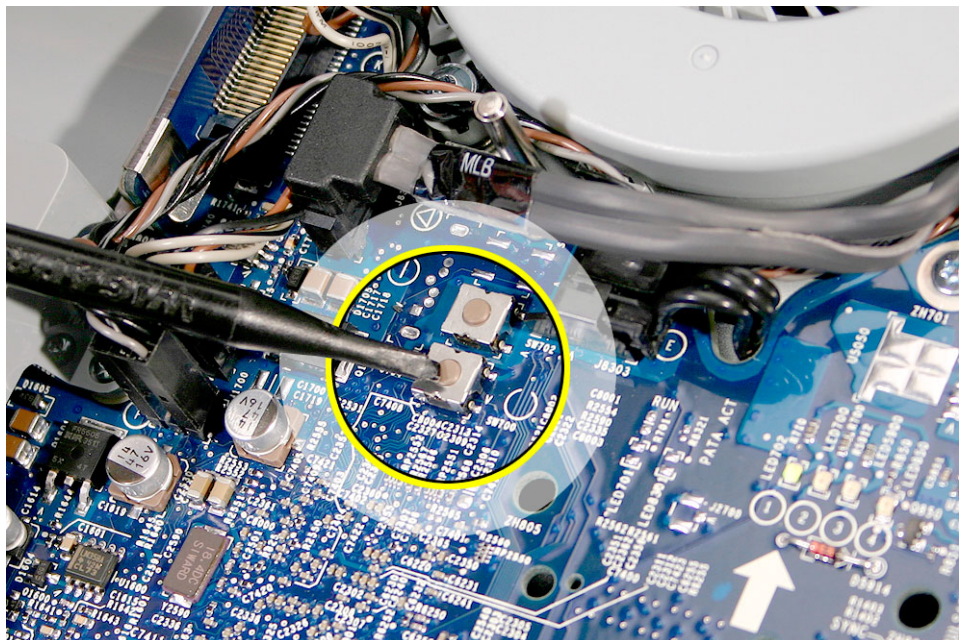
**LED #1 is off.** This indicates that your power supply needs to be replaced.

7. Does the computer start up normally after pressing the internal power button?

**Yes:** Press the power button for at least five seconds to shut the computer off again. Unplug the power cord from the iMac, and replace the back cover back.

Return the computer to the upright position. Plug in the computer, and press the power button to turn on the computer. Make sure the computer is starting up properly.

**No:** Press the other small metal button on the logic board. This is the SMU (System Management Unit) reset button. Go on to step 8.



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8. Does the computer start up normally now?

**Yes:** Press the power button for at least five seconds to shut the computer off again. Unplug the power cord from the iMac, and replace the back cover back.

Return the computer to the upright position. Plug in the computer, and press the power button on the back cover to turn on the computer. Make sure the computer is starting up properly.

**No:** LED #1 lit up after you plugged in the power cord, which means your power supply is fine. However, even after you pressed the SMU reset button the computer wouldn't start up. This indicates that your midplane assembly needs to be replaced.

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## No Video

**In a no video situation the system may show an LED on the front of the computer, there may be hard drive and/or fan activity but the screen is completely black.**

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 settings to see when the computer is suppose to sleep.

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

3. Reset your computer's PRAM (Parameter RAM).

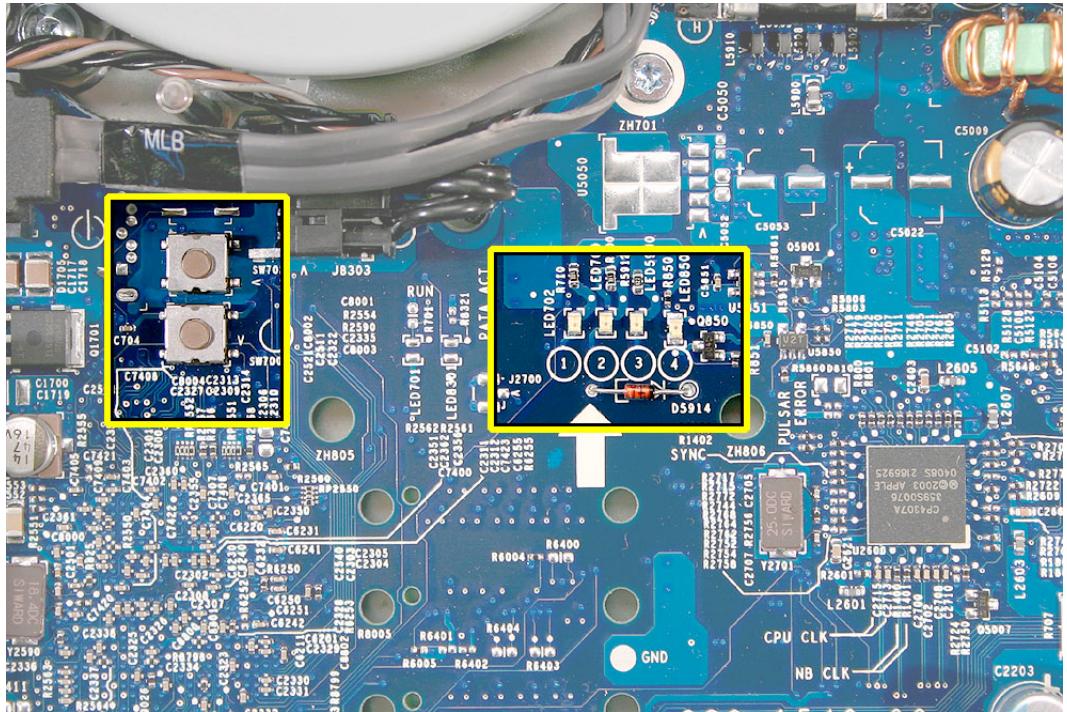
- If your iMac is on, turn it off by pressing the power button for five seconds. You should hear the drives and fans go quiet.
- Wait for a few seconds.
- While the computer is off, with your left hand, hold down the Apple key, the option key next to it, and the letter R. When you have them all pressed 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 hear more than one startup chime. When you hear the second chime, you have reset your iMac's PRAM. At that point, come back to this page and we'll continue where you left off.

4. Now that you've reset PRAM, do you see video on your computer's display?

**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. See Removing the Back Cover for complete instructions on this procedure.
6. With the back cover removed, locate the diagnostic LEDs 1 through 4 above the large white arrow on the main logic board.

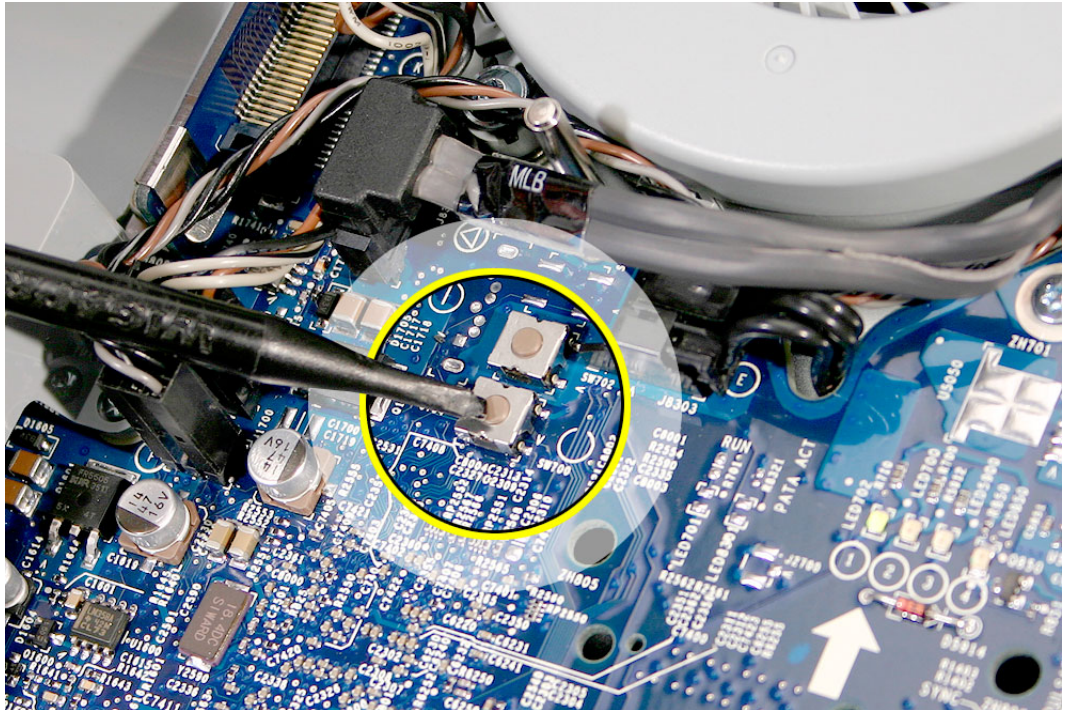


7. Plug the power cord into the iMac G5 and into a known good AC outlet. LED #1 should come on if you're computer has been starting up properly. If LED #1 is Off, see iMac G5: Troubleshooting No Power for further troubleshooting information.
8. Turn the computer on by using the internal power button, the top button of the two buttons (to the left of the diagnostic LEDs).
9. When the computer starts up, LED #2 will light after you hear the boot chime indicating the midplane is processing power correctly. If LED #2 does not light, go to step 11 for instructions on resetting the SMU. If LED #2 remains off after resetting the SMU, your midplane needs to be replaced. Order and install the midplane for your computer.
10. LED # 3 will light last indicating that the midplane and LCD assembly have communicated and the LCD is ready to receive video. Does LED #3 come On?

**Yes:** This indicates that your miplane is working correctly to produce video. Continue to step 12.

**No:** Continue to step 11 to reset System Power Management. The replacement midplane has been installed. Do you have video now?

11. Press the SMU reset button to reset System and Power Management. This is the small metal button below the internal power button as shown.



After pressing the SMU button, does LED #3 light now?

**Yes:** Press and hold the power button until the machine powers off. Start the machine again and confirm that LED #3 is reliably lighting. Continue to step 12.

**No:** If LED #3 is Off, this indicates that your midplane needs to be replaced.

12. With LED #3 showing on, turn the machine off by holding in the internal power button until the machine powers off. Unplug the machine and reinstall the back cover. Return the computer to the upright position. Plug in the computer and start the computer up. Does the unit have video now?

**Yes:** Restart the computer and make sure that the computer is now operating properly.

**No:** Look closely at the display and see if it is completely black or if the video is very, very dim. Continue to next step.

13. Is the display completely black or just very, very dim?
  - **Completely black.** Your LCD needs to be replaced. Order and install the LCD display panel for your computer.
  - **Very dim video.** Your inverter board needs to be replaced. Order and install the inverter board for your computer.

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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 midplane.

### 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 midplane assembly.

## 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

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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.

**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 midplane.

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## 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 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.

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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 on the computer 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 midplane.

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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 midplane.

## 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 midplane assembly.

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## AirPort

### Not able to connect wirelessly with AirPort

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 card installed. Go on to step. 5

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

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

**Yes:** Problem solved.

**No:** Replace the AirPort Extreme card.

6. Now that we know your iMac recognizes your AirPort card, check your antenna. If the AirPort antenna is not plugged in all the way, you may have very short AirPort range.
7. Remove the back cover. Reconnect the antenna cable to the AirPort card. Press the antenna connector firmly, to make sure it's fully connected to the iMac. You should be ready to go wireless now.
8. If your antenna is plugged in properly and your AirPort 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 card/
10. Replace the midplane.

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## My AirPort signal seems to be very weak

1. Check your antenna. If the AirPort antenna is not plugged in all the way, you may have very short AirPort range.
2. Remove the back cover. Reconnect the antenna cable to the AirPort card. Press the antenna connector firmly, to make sure it's fully connected to the iMac. 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 AirPort 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 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 card/
5. Replace the midplane.

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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 midplane assembly.

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 midplane

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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 midplane assembly.

## **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 midplane.

### **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 if they have any suggestions or assistance.

- 
3. Try a known good USB mouse.
  4. Replace the mouse.
  5. Replace the midplane.

### **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 midplane.

## **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 midplane.
- **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 midplane assembly.

### **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 midplane.

– **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 midplane assembly.

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### **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 midplane.

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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 midplane.

## 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?

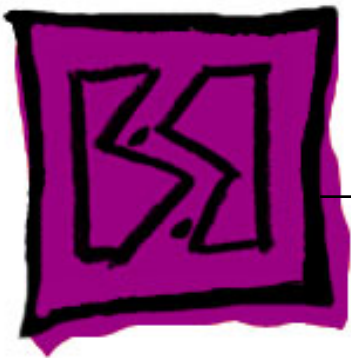
**Yes:** Your device works when plugged directly into the computer. This indicates a conflict with one of the other USB devices. You can test by gradually adding your devices back and seeing where the issue occurs, then contacting the manufacturer of the device(s) for assistance.

**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 midplane

### 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.



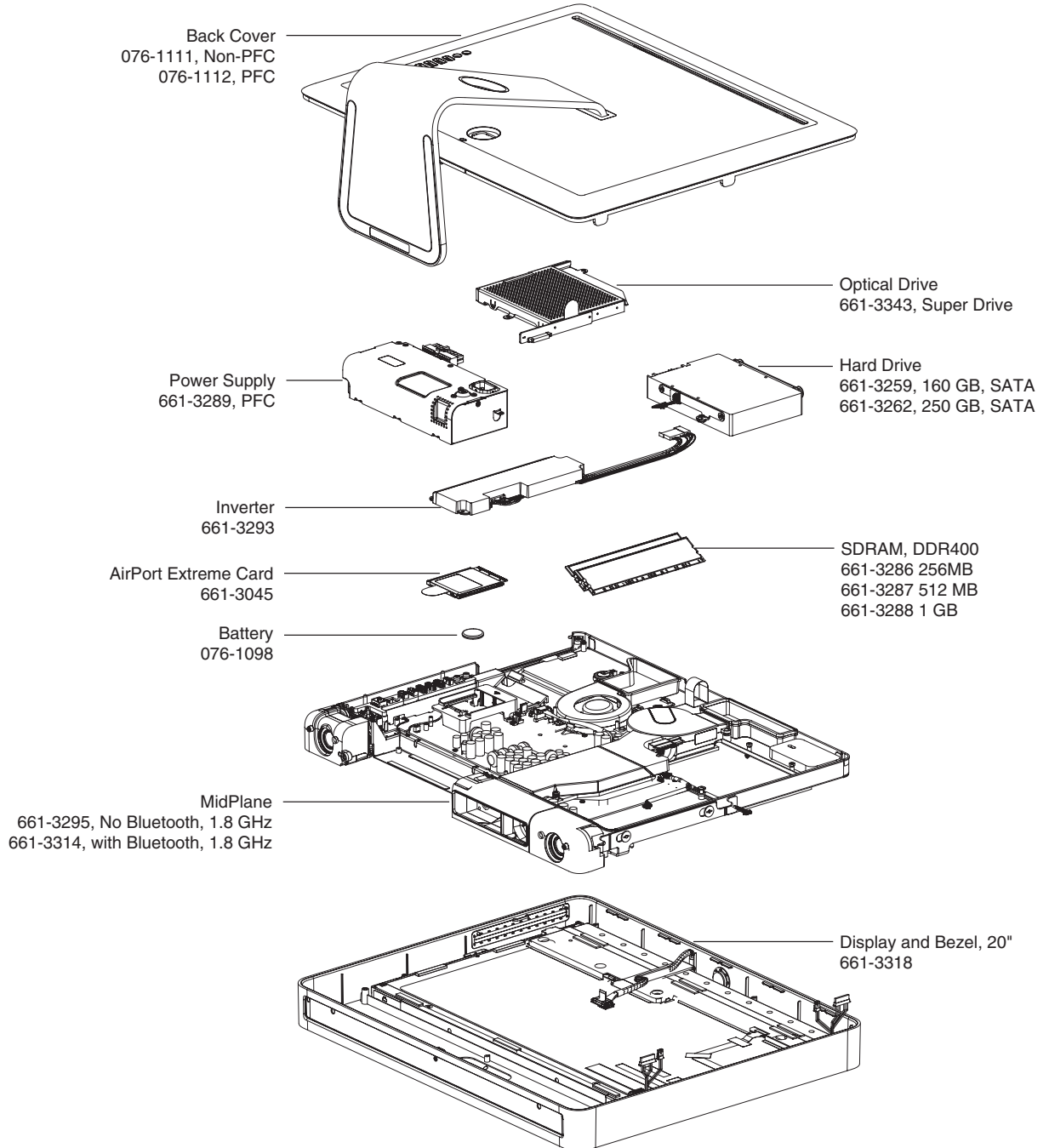
Views

iMac G5, 20-inch



# Exploded View

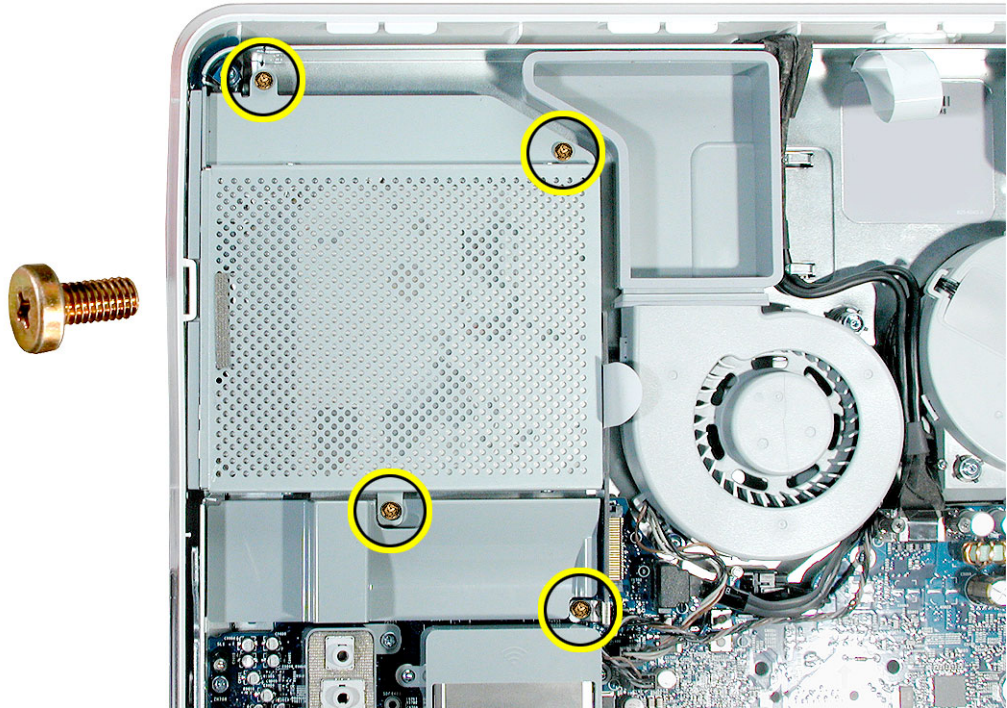
## iMac G5, 20-inch



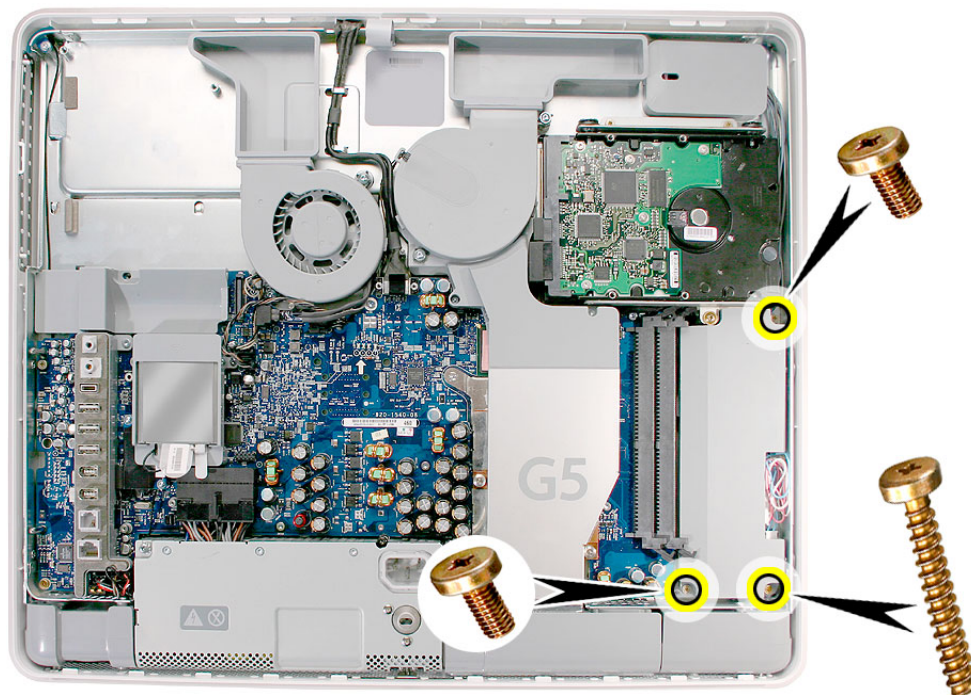


# Screw Charts

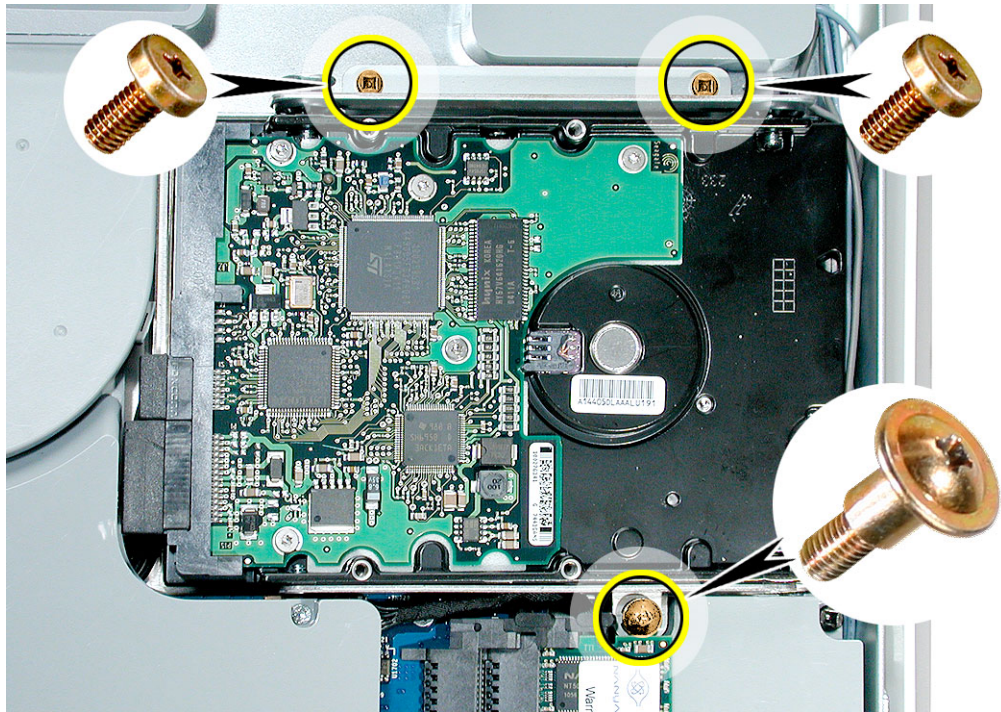
To Access the Optical Drive



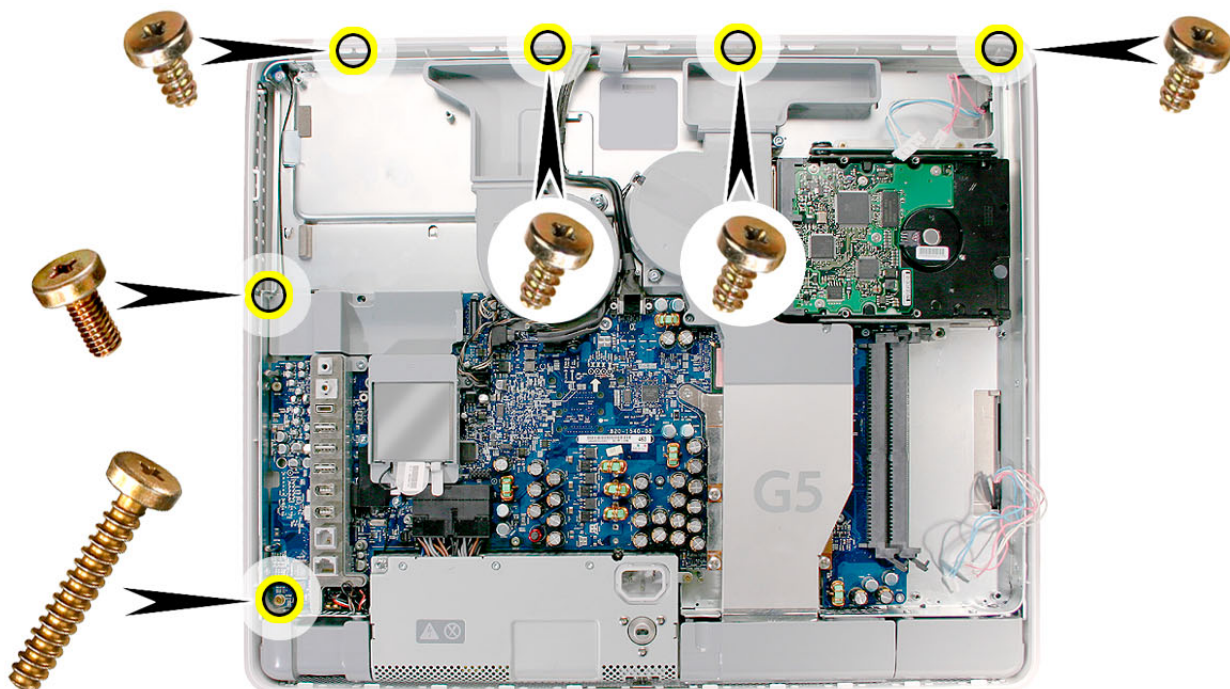
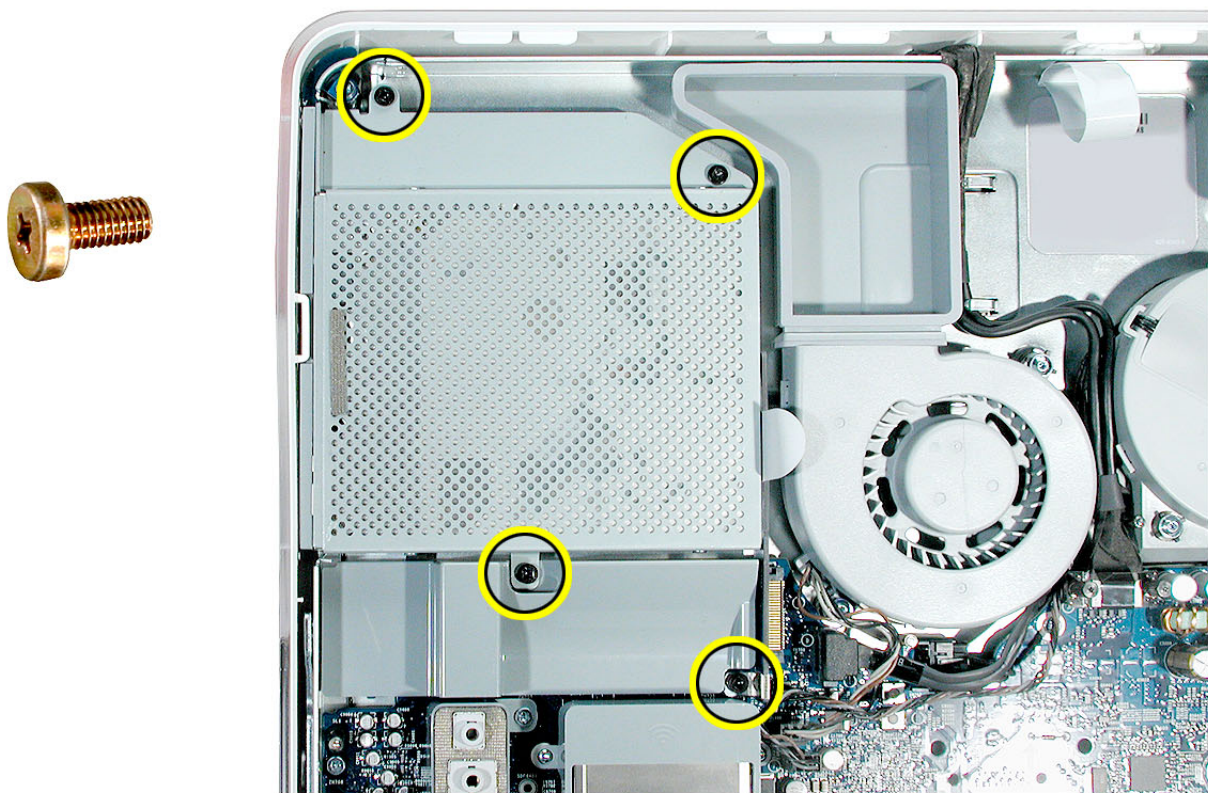
## To Access the Inverter



## To Access the Hard Drive

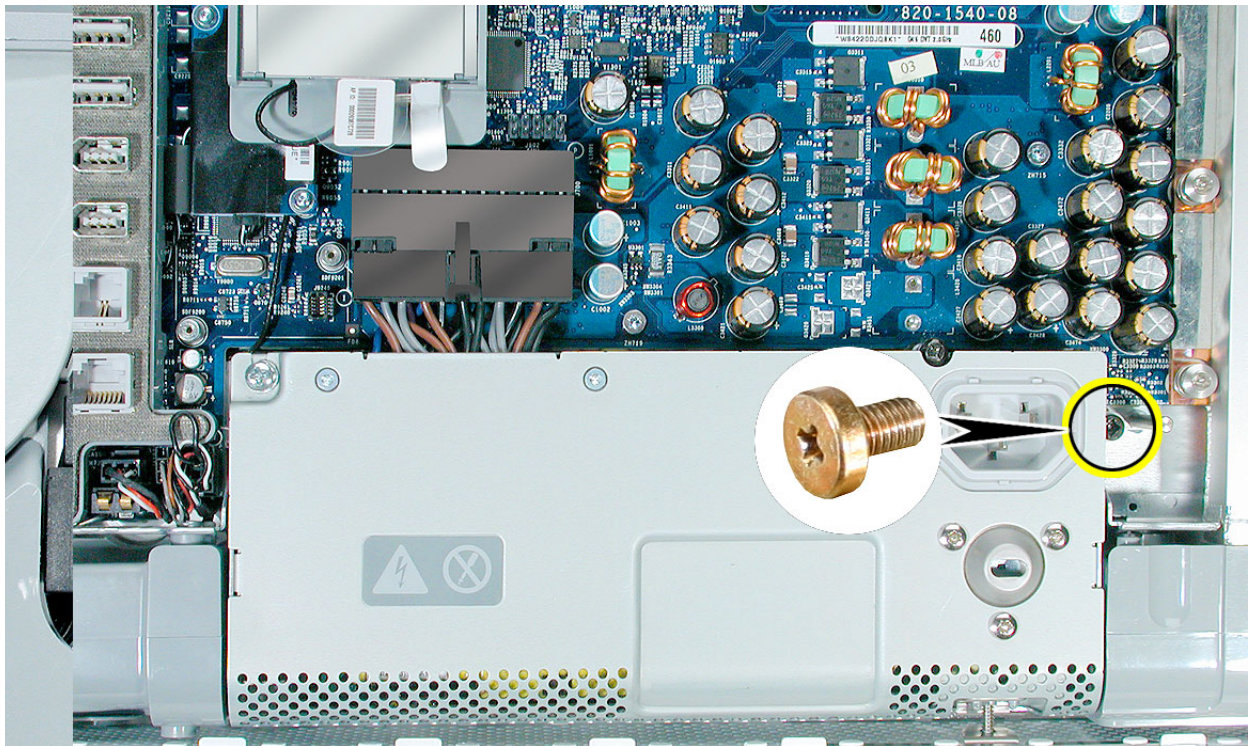


## To Access the Display/Bezel-Part 1

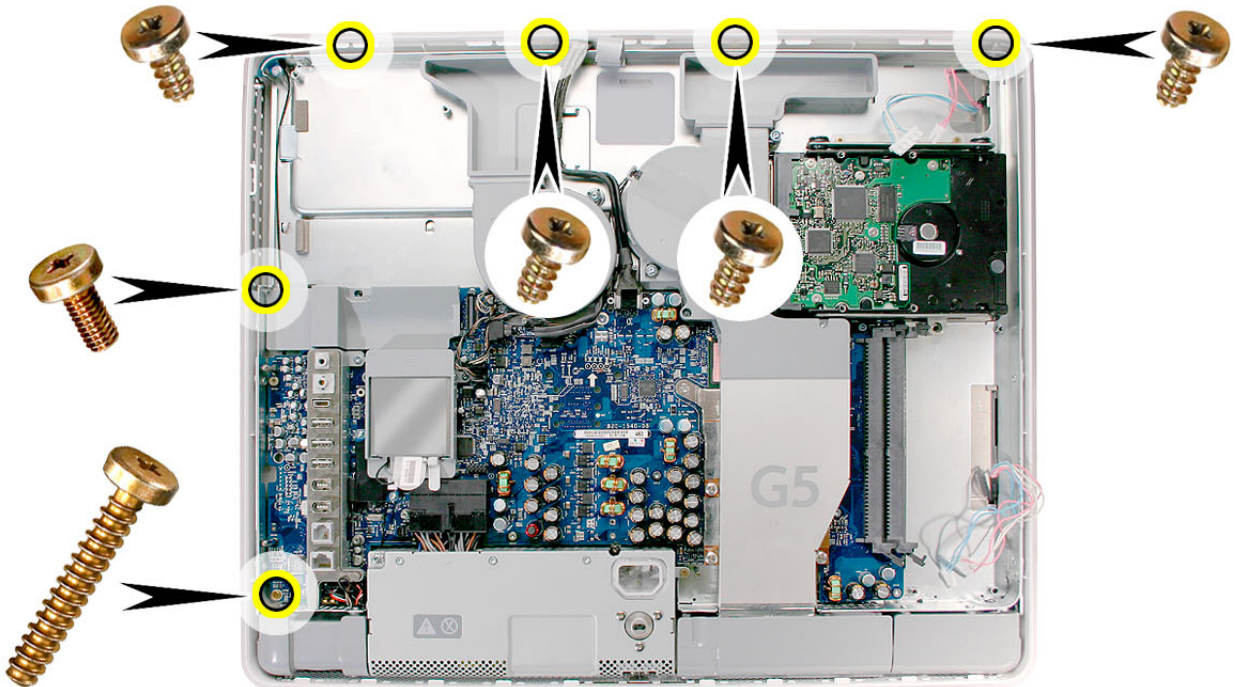
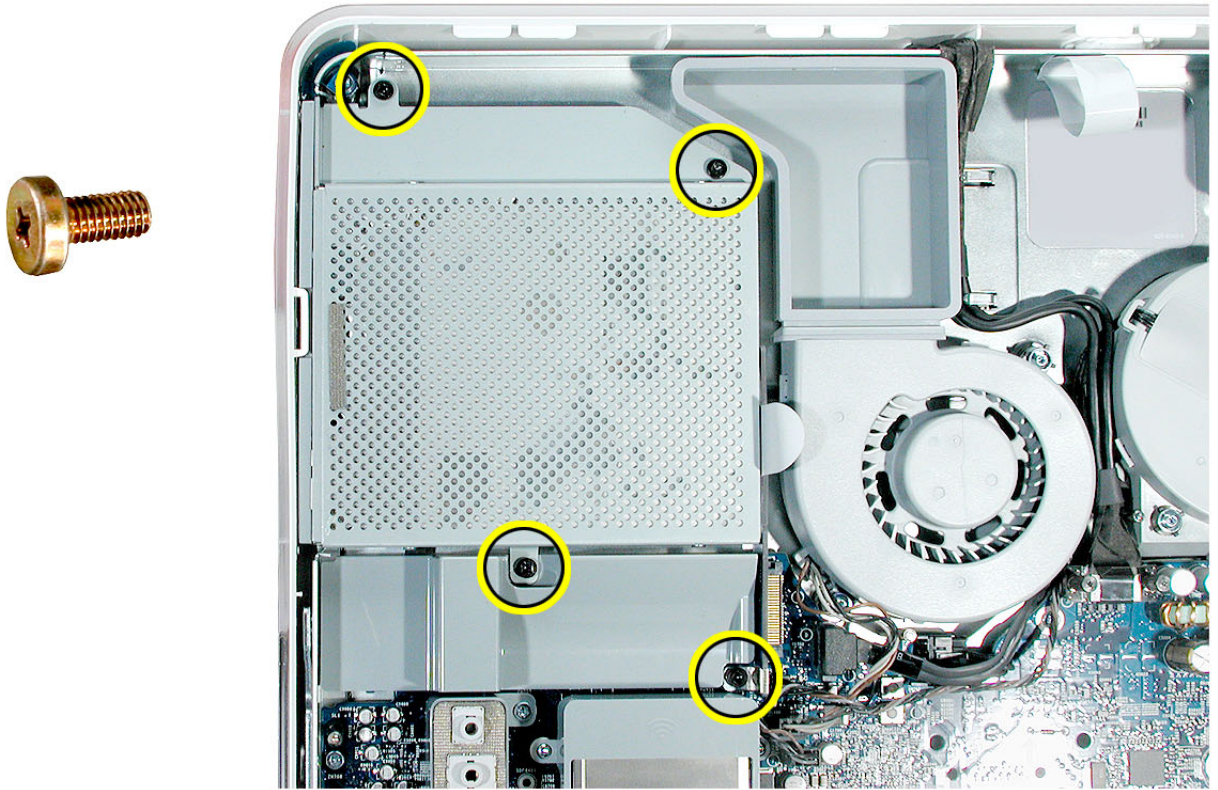




## To Access the Display/Bezel-Part 3

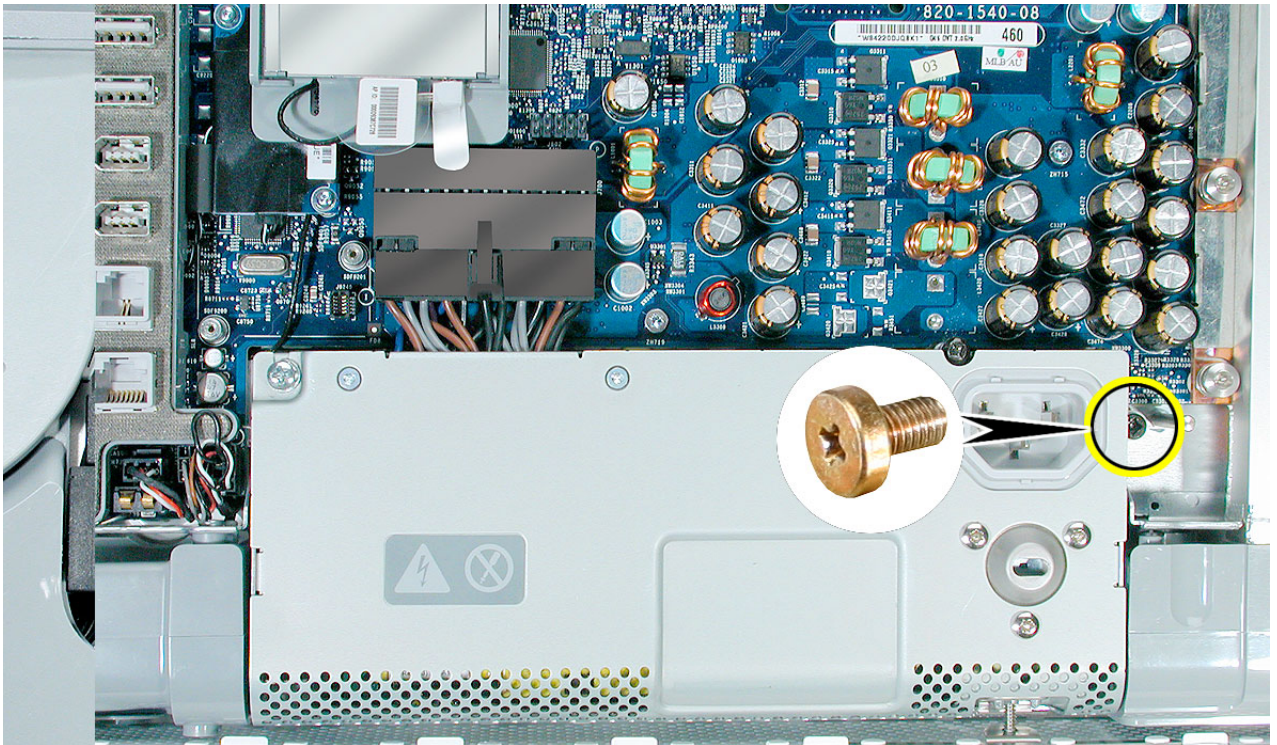


## To Access the Midplane Assembly-Part 1





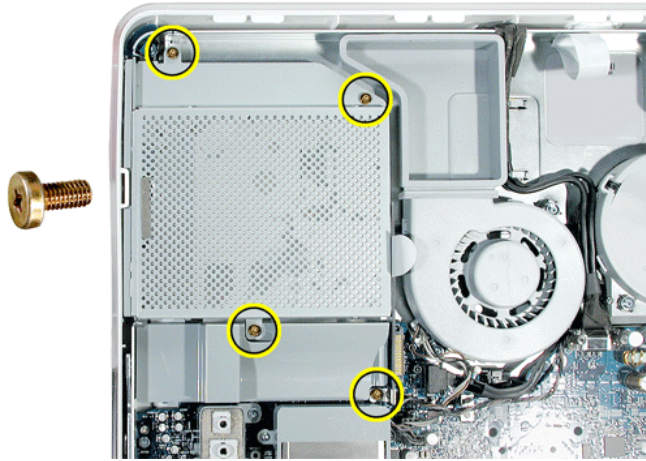
## To Access the Midplane Assembly-Part 3



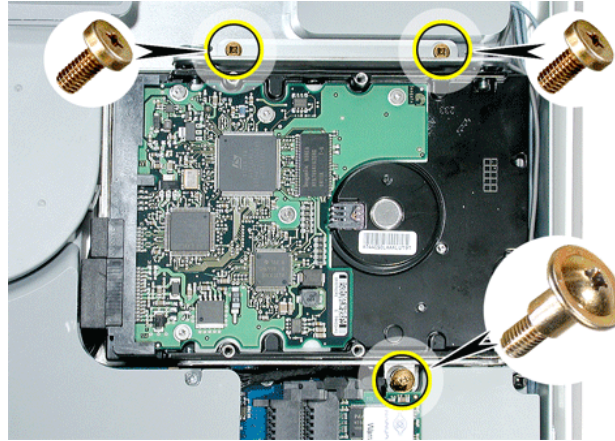
# iMac G5 (20-inch) Screw Locations

There are some components that have additional captive screws that must be loosened to allow removal. Please see the take apart documentation for details. All customer removable screws are brass colored. Do not remove screws unless they are brass colored, or you will void your warranty.

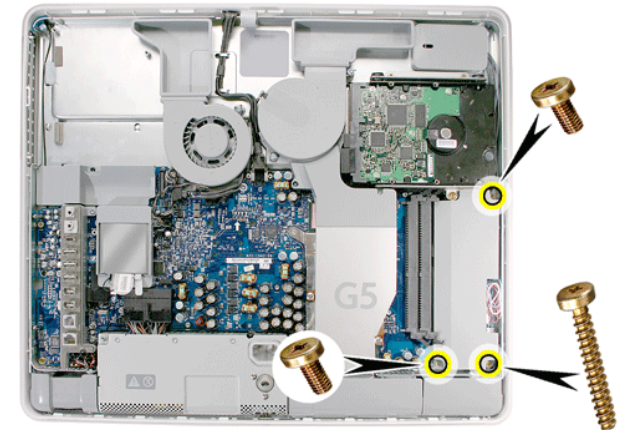
## Optical Drive (4 screws)



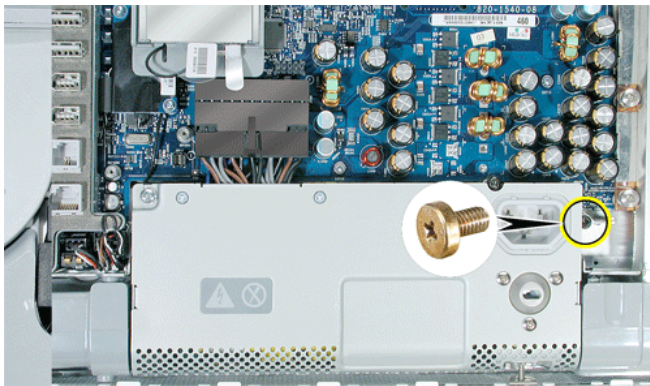
## Hard Drive (3 screws)



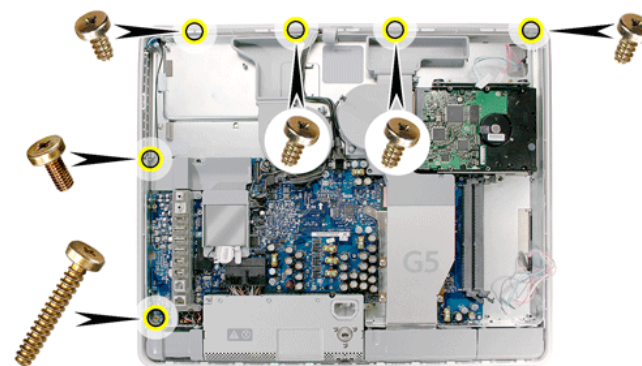
## Inverter (3 screws)



## Power Supply (1 screw)



## Midplane (6 screws)



## Video Cable (2 screws)

