



Apple Cinema Display (20-inch)

January 28, 2003



Take Apart

Apple Cinema Display (20-inch)



Tools

The following tools are recommended for the take apart procedures.

- 2 mm hex key
- 2.5 mm hex key
- jeweler's #1 Phillips screwdriver (for backlight bulb tray removal)
- #2 Phillips screwdriver
- black stick (nylon probe tool 922-5065)
- white cotton gloves (922-1592) (to prevent fingerprints on cosmetic surfaces)
- ESD wrist strap and mat or soft cloth

Important: The display plastics, inside and out, retain fingerprints and can scratch easily. Be very careful with tools, lay the display and plastic parts only on a clean soft surface, and wear clean white cotton gloves when handling and servicing the display.



Foot Assembly

Tools

This procedure requires the following tools:

- 2 mm hex key
- white cotton gloves (922-1592) (to prevent fingerprints on cosmetic surfaces)
- ESD mat or soft cloth

Part Location



Preliminary Steps

Before you begin, do the following:

- Place the display face down on an ESD mat or soft cloth

Note: Use care to prevent damage to plastics and wear white cotton gloves to prevent fingerprints.

Procedure

1. Remove three hex screws.
2. Lift the foot off the hinge.



3. Pull the ADC (Apple Display Connector) cable through the opening in the foot to separate the foot and the cable.
4. Remove the clear hinge cap.

Replacement Note: If the plastic “break-off” is noticeable, install it facing down.





Rear Cover and Rear Cosmetic Shield

Tools

This procedure requires the following tools:

- 2.5 mm hex key
- white cotton gloves (922-1592) (to prevent fingerprints on cosmetic surfaces)
- ESD mat or soft cloth

Note: Use care to prevent damage to plastics and wear white cotton gloves to prevent fingerprints.

Preliminary Steps

Before you begin, do the following:

- Place the display face down on an ESD mat or soft cloth
- Remove foot assembly and hinge cover

Procedure

1. Remove twelve hex screws on the rear cover.

Replacement Note: The three “shoulder” screws install along the bottom.

Replacement Note: Screws are easily stripped; do not overtighten.



2. Lift the rear cover from the top to help disengage it from the tabs on the front legs.



Replacement Note: Verify that the USB socket cover is in place, and that the arrowheads on the USB icon point up.

Replacement Note: Install the legs of the rear cover over the legs of the bezel first, then ensure that the seam of the rear cover and bezel seat flush and smooth all around.

3. Remove the cosmetic shield.



Replacement Note: Verify that the rear cosmetic shield and the clear plastic rear cover are free of dust, fingerprints and foreign matter before reassembling.



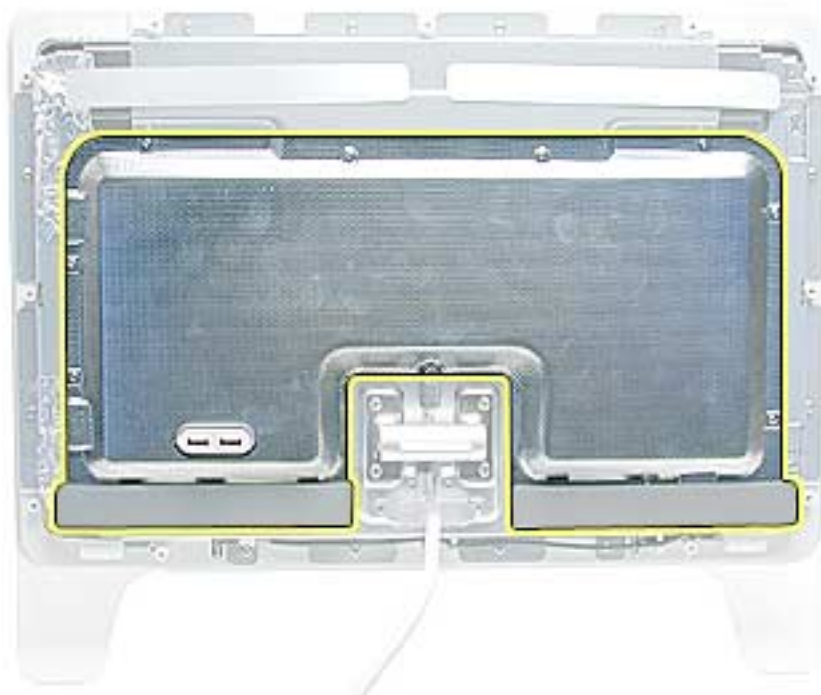
EMI Shield

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver
- black stick (nylon probe tool 922-5065)

Part Location



Preliminary Steps

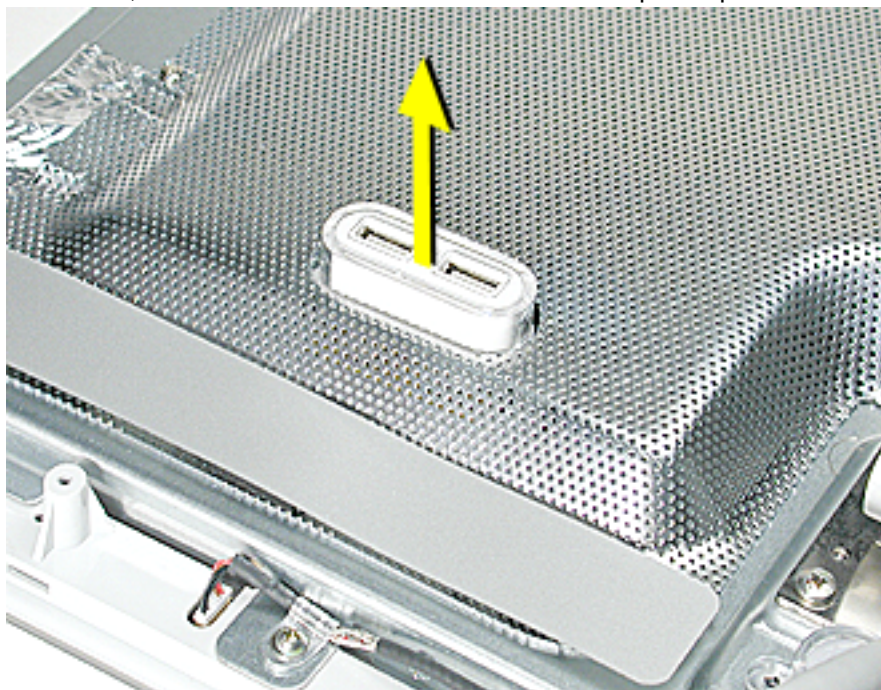
Before you begin, do the following:

- Remove foot assembly and hinge cover
- Remove rear cover and rear cosmetic shield

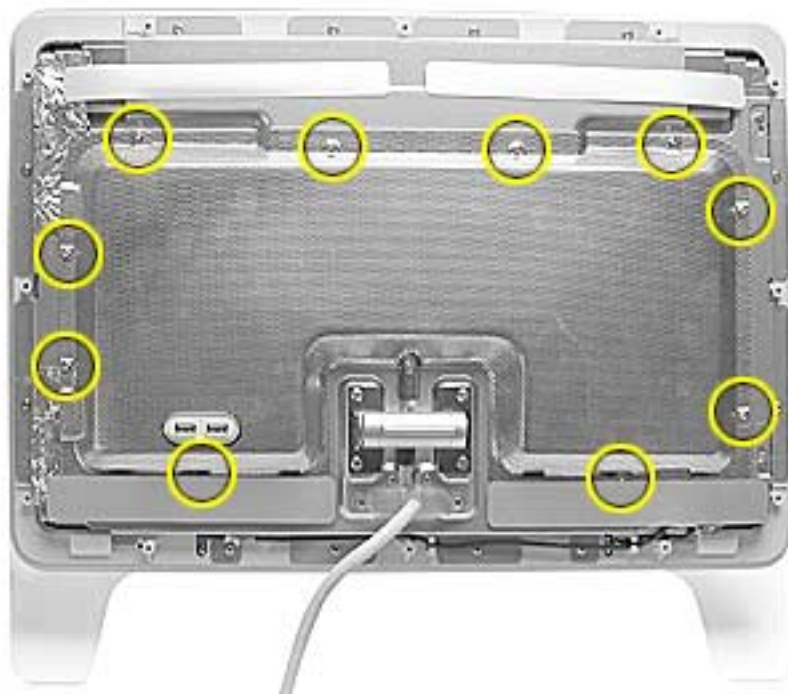
Procedure

1. Remove the USB socket cover.

Replacement Note: Verify that the clear plastic USB cover is in place over the USB socket, and that the arrowheads on the USB icon point up.



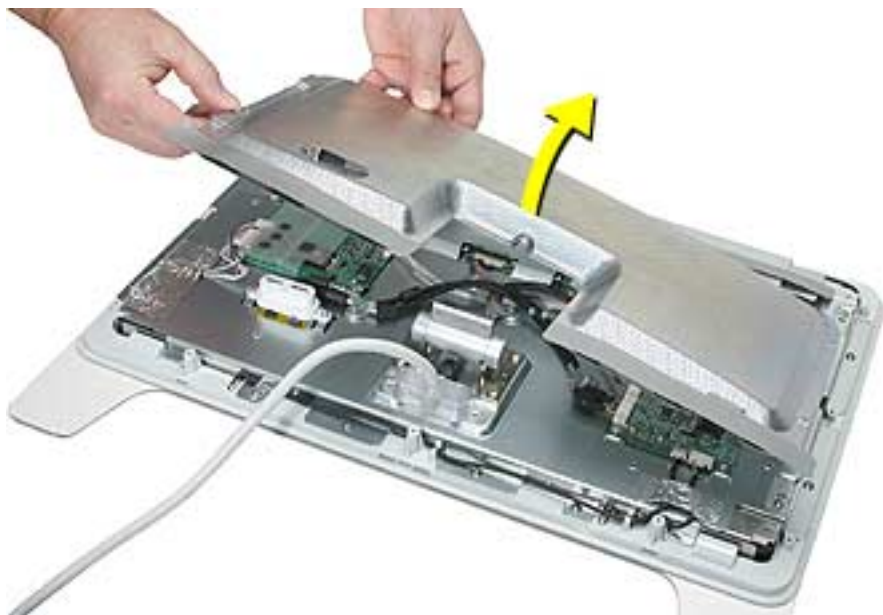
2. Remove ten Phillips screws on the EMI shield.



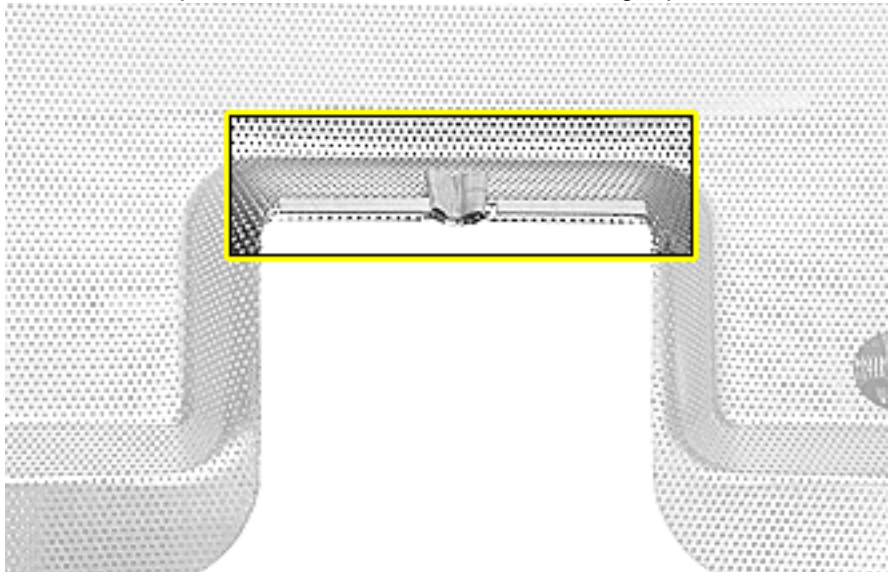
Note: Two screws are hidden under the edge of the vent labels along the bottom edge of the EMI shield. A black stick may help to raise the labels slightly for access.



3. Remove the EMI shield.



Replacement Note: Verify that the EMI gaskets are on the replacement shield. If not, transfer them to the replacement shield from the shield being replaced.



Replacement Note: If replacing the EMI shield, install new vent label adhesive sponges and vent labels. The labels may be transferable if in good condition.

Replacement Note: Verify that the ferrite bead around the ADC cable assembly, just above the hinge, is slid down so it does not interfere with the shield placement.



USB Cable Assembly

Note: The USB cable assembly comes with the USB socket.

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver

Preliminary Steps

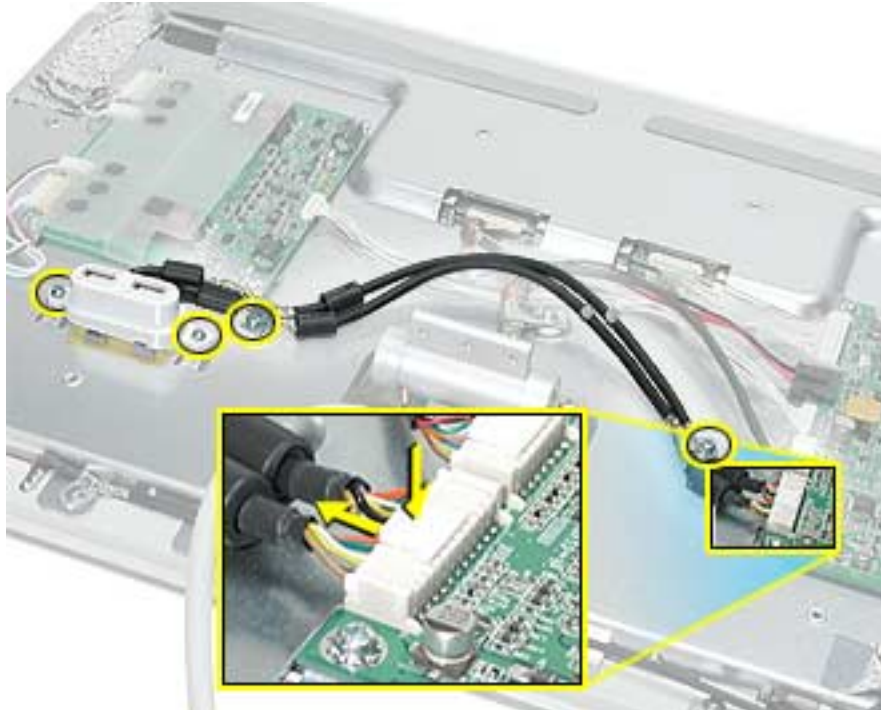
Before you begin, do the following:

- Remove foot assembly and hinge cover
- Remove rear cover and rear cosmetic shield
- Remove USB socket cover
- Remove EMI shield

Procedure

1. Remove four Phillips screws—two on the USB socket and two on the cable clamps.
2. Disconnect the cable connector from the main board and remove the USB cable assembly.

Note: Push down on the back end of the tab on the top of the cable connector to disengage the connector.



Replacement Note: Transfer the two identical cable clamps to the replacement cable assembly, if usable, otherwise install new clamps.



Hinge

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver

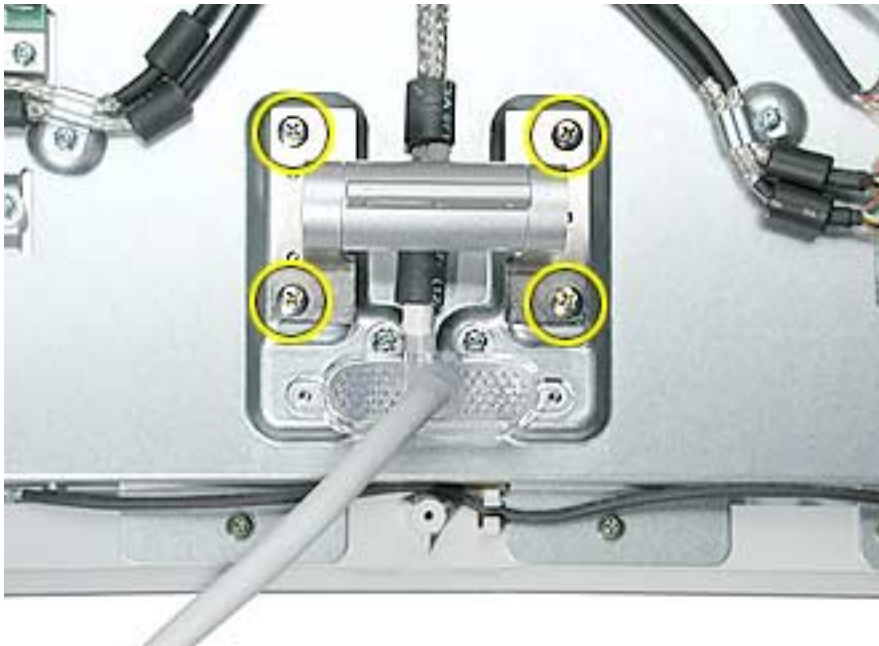
Preliminary Steps

Before you begin, do the following:

- Remove foot assembly and hinge cover
- Remove rear cover and rear cosmetic shield
- Remove USB socket cover
- Remove EMI shield

Procedure

1. Remove four Phillips screws. Remove the hinge.



Replacement Note: The hinge foot is keyed with three holes that must fit onto pins on the chassis.



ADC Cable Assembly

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver

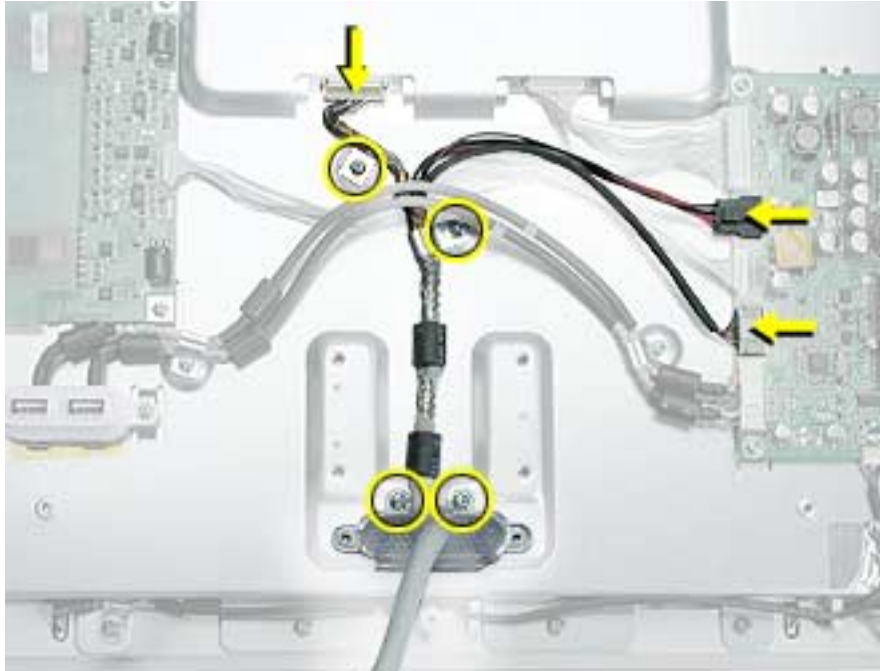
Preliminary Steps

Before you begin, do the following:

- Remove foot assembly and hinge cover
- Remove rear cover and rear cosmetic shield
- Remove USB socket cover
- Remove EMI shield
- Remove hinge

Procedure

1. Remove four Phillips screws—two from the ADC cable hold down block and two from the cable clamps.
2. Disconnect the ADC cable's one cable connector from the panel, and two connectors from the main board.



3. Remove the ADC cable assembly.

Replacement Note: Transfer the two cable clamps to the replacement cable assembly, if usable, otherwise install new clamps.



Main Board

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver
- ESD wrist strap

Preliminary Steps

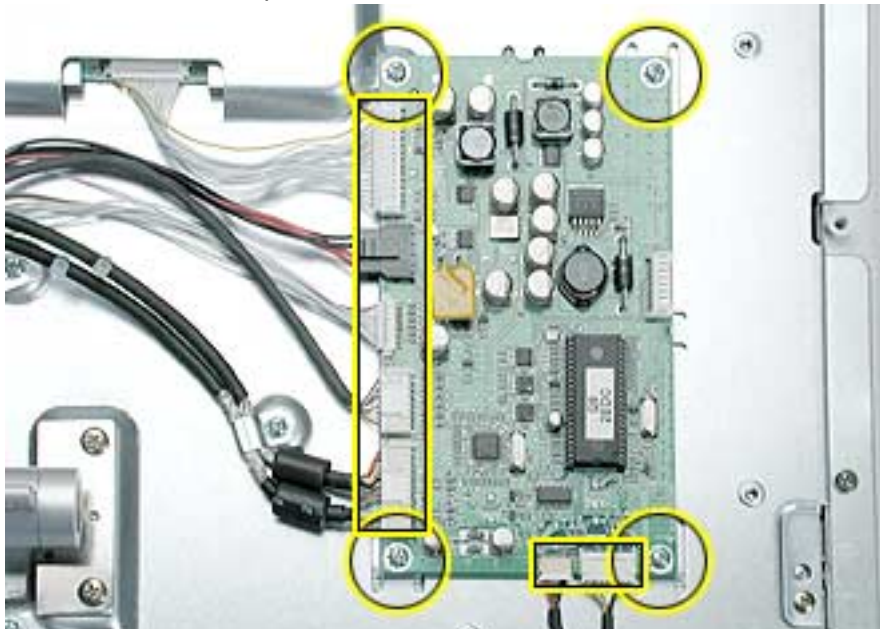
Before you begin, do the following:

- Remove foot assembly and hinge cover
- Remove rear cover and rear cosmetic shield
- Remove EMI shield

Procedure

Note: Wear an ESD wrist strap when performing this procedure.

1. Disconnect the cable connectors from the main board.
2. Remove four Phillips screws and remove the board.



Replacement Note: Verify notches along board edges align with tabs on chassis.



Inverter Board

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver
- ESD wrist strap

Preliminary Steps

Warning: The inverter board generates high voltage when the display is plugged in. Do not touch the inverter board components, pins or connectors, when the display is connected to the computer.

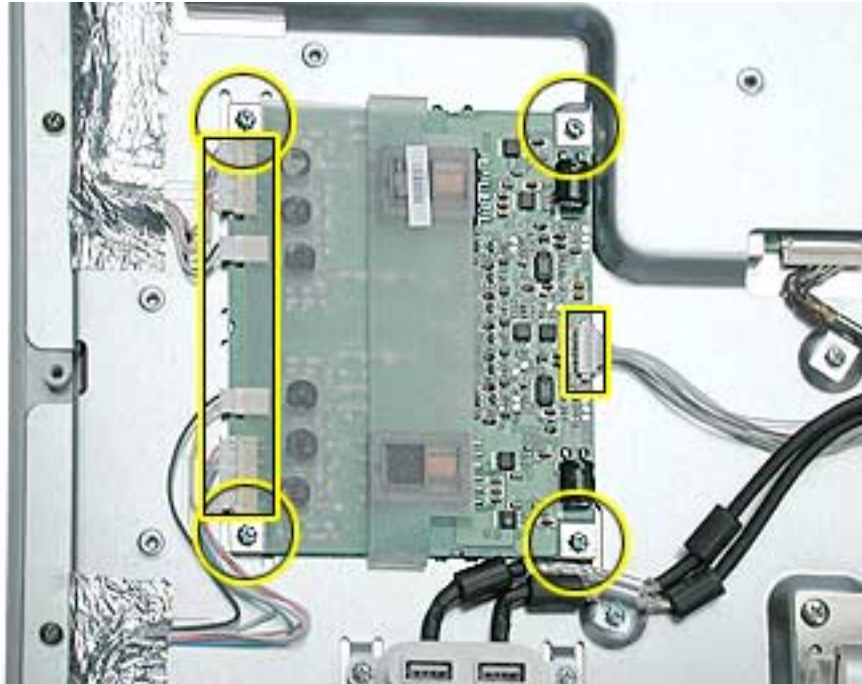
Before you begin, do the following:

- Remove foot assembly and hinge cover
- Remove rear cover and rear cosmetic shield
- Remove EMI shield

Procedure

Note: Wear an ESD wrist strap when performing this procedure.

1. Disconnect the cable connectors from the inverter board.
2. Remove four Phillips screws and remove the board.



Replacement Note: Verify notches along board edges align with tabs on chassis.



Display Panel

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver
- black stick (nylon probe tool 922-5065)
- white cotton gloves (922-1592) (to prevent fingerprints on cosmetic surfaces)

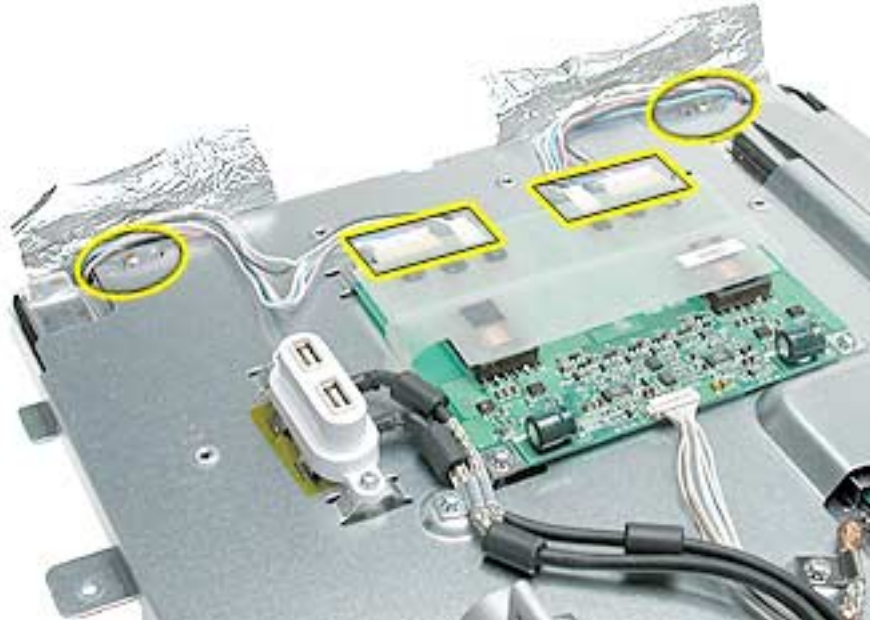
Preliminary Steps

Before you begin, do the following:

- Remove foot assembly and hinge cover
- Remove rear cover and rear cosmetic shield
- Remove bezel and inner bezel assembly
- Remove EMI shield

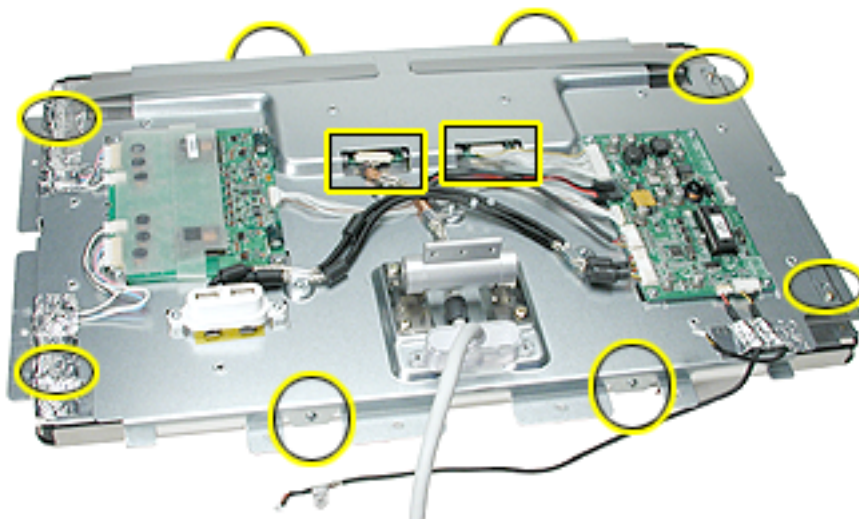
Procedure

1. Carefully peel back the adhesive foil that secures the backlight bulb wires, to free the wires and expose the screws that secure the left side of the display panel.
2. Disconnect the backlight bulb wire connectors from the inverter board.



3. Disconnect cable connectors to the display panel.
4. Remove the four Phillips screws located at the corners.
5. Remove two Phillips screws along the top side of the chassis, and two Phillips screws along the bottom side of the chassis.

Important: Support underneath the display assembly if lifting it up while removing screws, to prevent the display from falling out of the chassis.



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6. Remove chassis, being careful not to catch wires.



Replacement Note: Be careful not to catch or pinch the backlight bulb wires.

Replacement Note: Replace the long corner screws first, before the top and bottom side screws.

Note: The top side and bottom side screws are different. The screws for the top have a flat head. The screws for the bottom have a rounded head.



Bezel

Tools

This procedure requires the following tools:

- #2 Phillips screwdriver
- black stick (nylon probe tool 922-5065)
- white cotton gloves (922-1592) (to prevent fingerprints on cosmetic surfaces)

Part Location



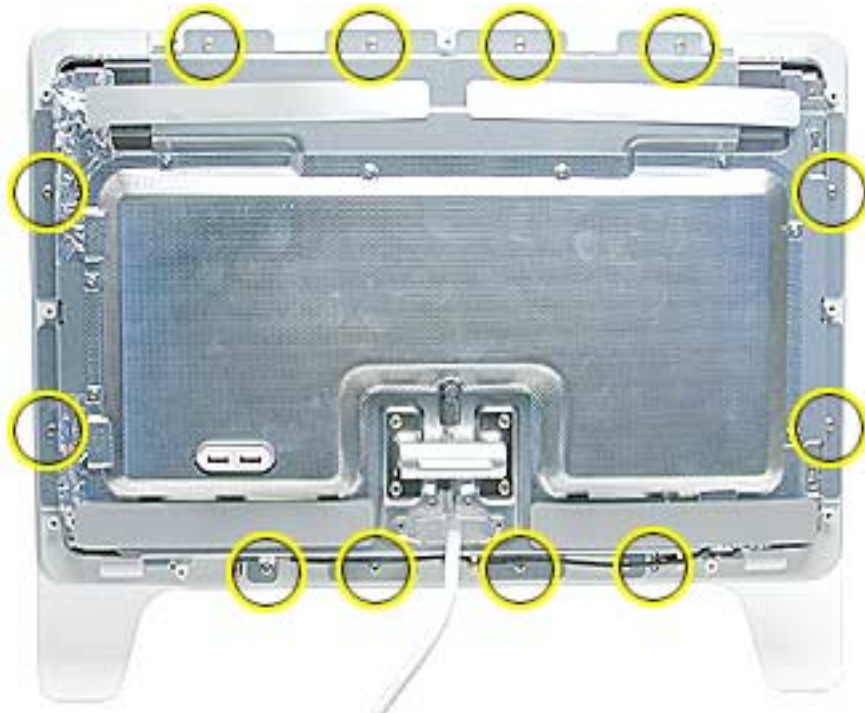
Preliminary Steps

Before you begin, do the following:

- Remove rear cover and rear cosmetic shield

Procedure

1. Remove twelve Phillips screws.



2. Disconnect the power switch and launch switch wire connectors from the inner bezel.

Replacement Note: When reattaching the cable connectors, the board will be springy. Verify secure connection.





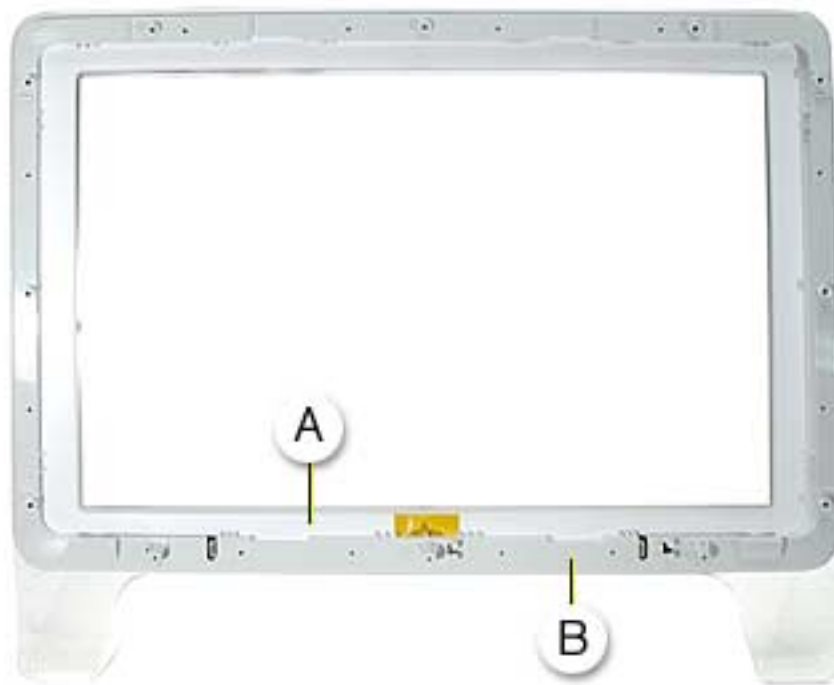
3. Carefully separate the wire clips enough to remove the wires.



4. Lift the display assembly from the inner bezel assembly.



5. Locate the bezel (A) and inner bezel (B).



6. To remove the inner bezel from the bezel, start at a corner and lift up on the inner bezel while using a black stick to push in and disengage the bezel clips through the rectangular slots, shown.



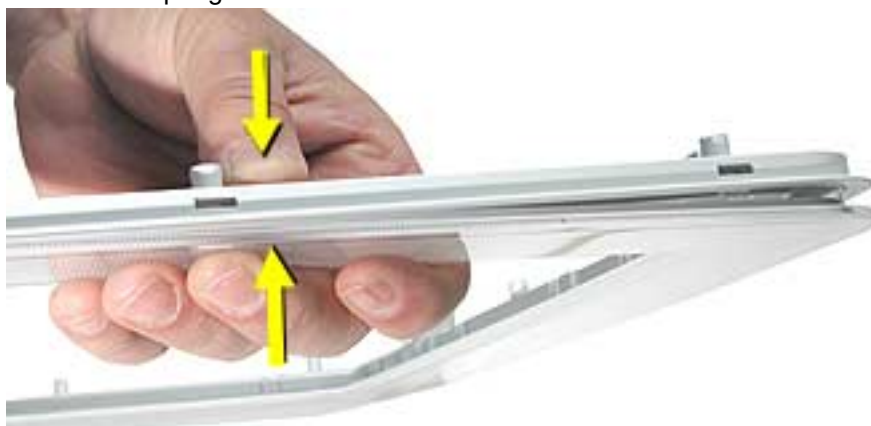
7. Lift off the inner bezel.



Note: The bezel cosmetic shield with logo are also removable.



Replacement Note: When reassembling the bezel and inner bezel, make sure to snap each bezel clip together.



Replacement Note: Verify that the bezel and inner bezel are free of dust, fingerprints and foreign matter before reassembling.



Touch Switches

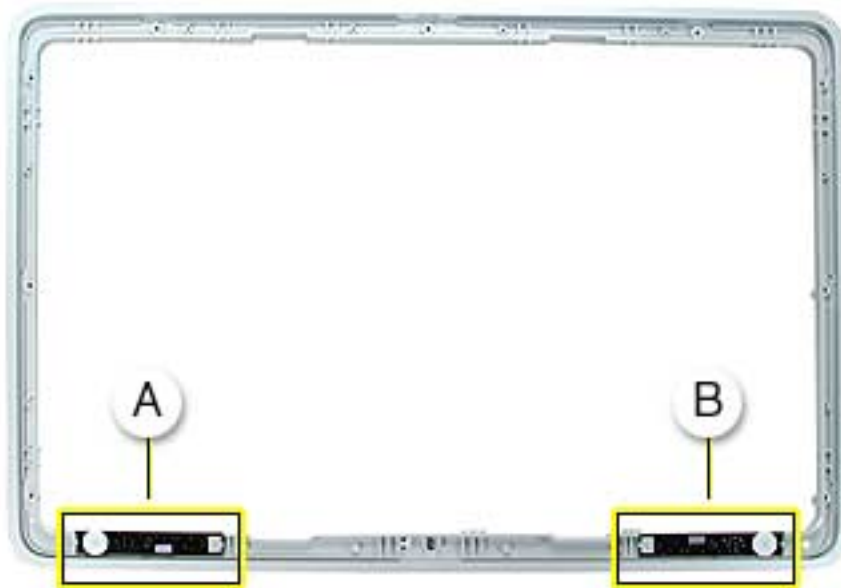
Tools

This procedure requires the following tools:

- #2 Phillips screwdriver
- black stick (nylon probe tool 922-5065)
- white cotton gloves (922-1592) (to prevent fingerprints on cosmetic surfaces)

Part Location

Note: The launch switch board (A) and the power switch board (B) are identical.



Preliminary Steps

Before you begin, do the following:

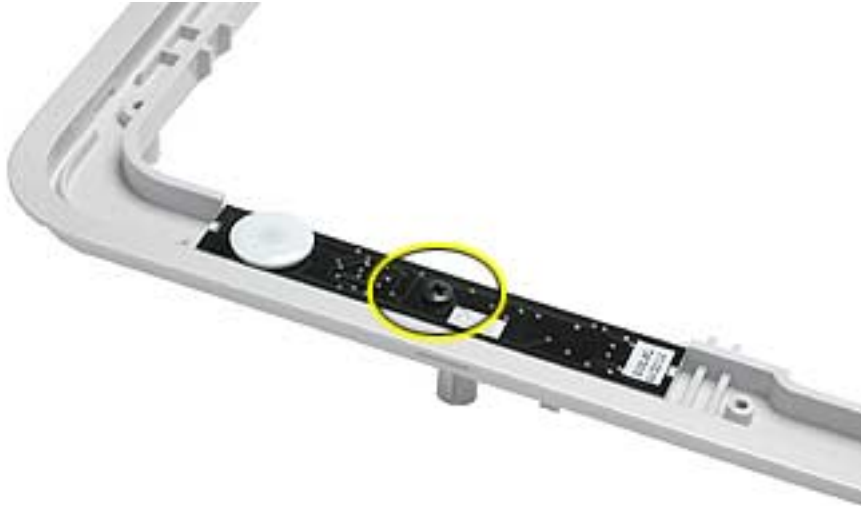
- Remove bezel

Note: If inspecting or replacing the touch switch cables, also remove the EMI shield.

Procedure

1. Remove the Phillips screw.

Replacement Note: Screws are easily stripped; do not overtighten.



Replacement Note: Make sure that the rubber boot is in place on the inner bezel before installing the switch board.



Replacement Note: Ensure that the notches at the ends of the board fit onto the tabs on the inner bezel.



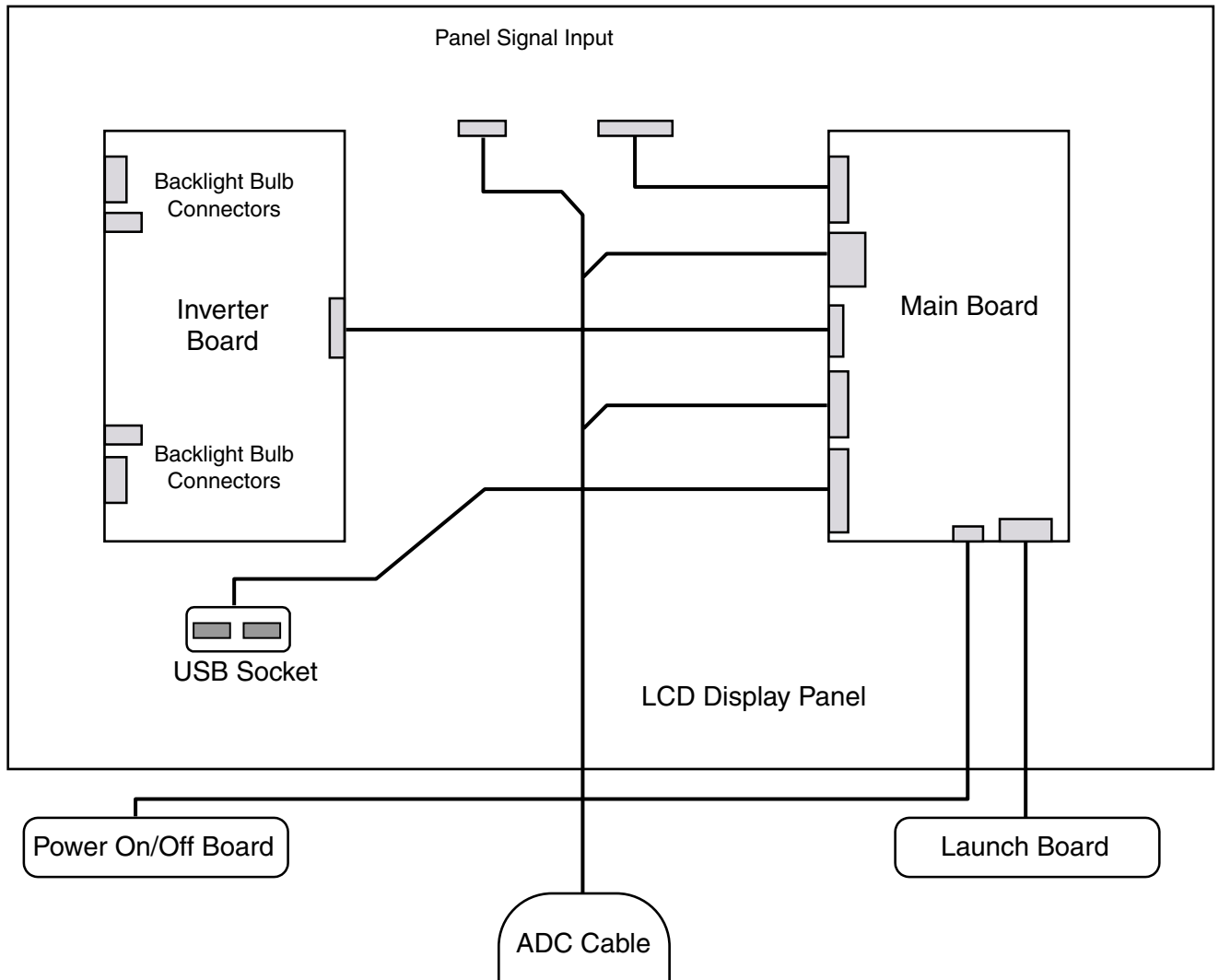
Replacement Note: When reattaching the cable connector, the board will be springy. Verify secure connection.



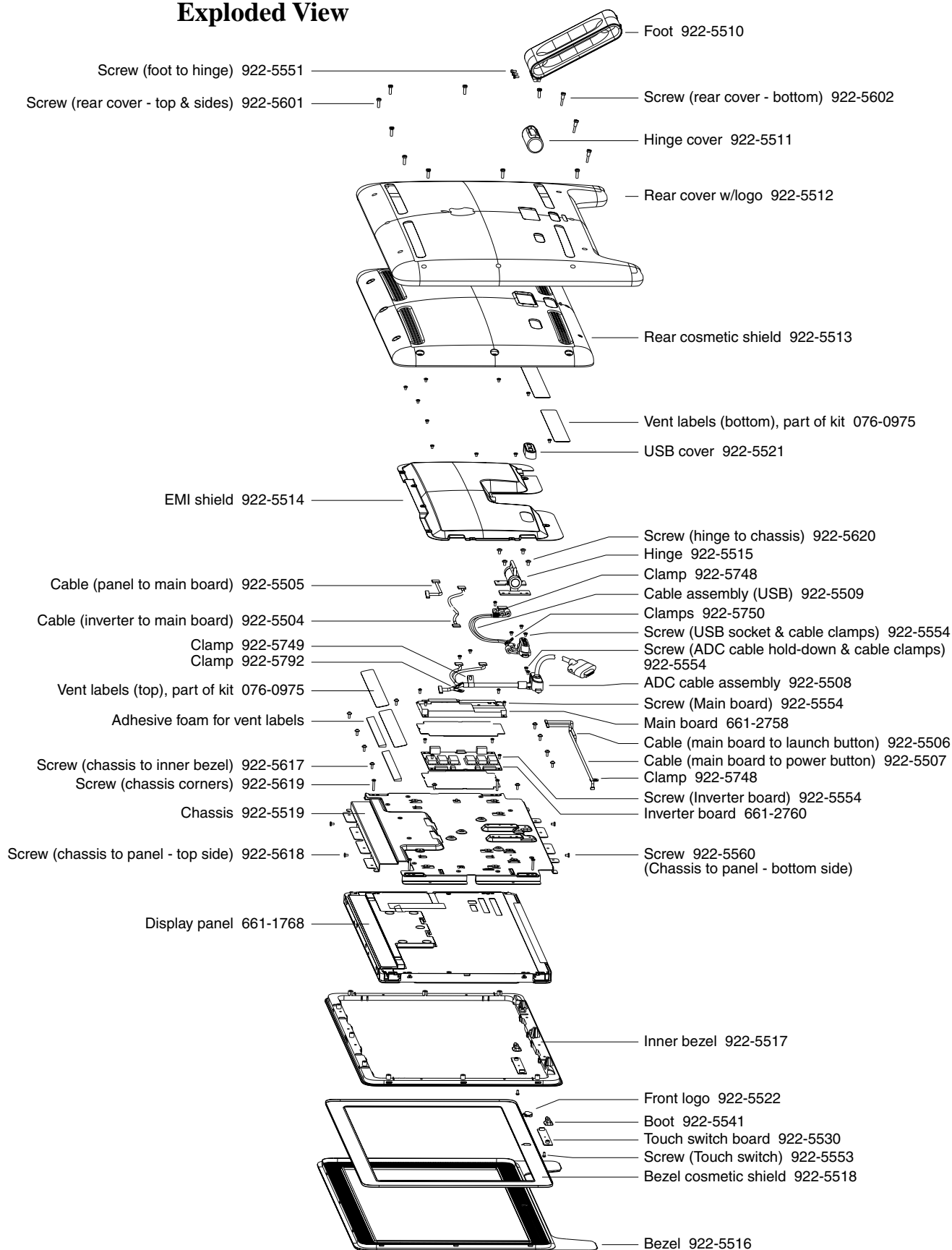
Views

Apple Cinema Display (20-inch)

Block Diagram



Exploded View



Screw and Cable Clamp Matrix

	922-5551	2.0 mm Hex, 8.8 mm (L)	Foot to Hinge(3)
	922-5602	2.5 mm Hex, 22 mm (L)	Rear Cover - bottom (3)
	922-5601	2.5 mm Hex, 15.4 mm (L)	Rear Cover - top & sides (9)
	922-5619	#2 Phillips, 19.8 mm	Chassis corners (4)
	922-5618	#2 Phillips (flat-head), 6.2 mm	Chassis to panel - top side (2)
	922-5560	#2 Phillips (round-head), 5.8 mm	Chassis to panel - bottom side (2)
		#2 Phillips, 5 mm	EMI shield to chassis (10)
	922-5554	#2 Phillips, 8.2 mm	Inverter board (4), main board (4), ADC cable hold down block and cable clamps (4), USB socket and cable clamps (4)
	922-5620	#2 Phillips, 8.4 mm	Hinge to chassis (4)
	922-5617	#2 Phillips, 10.7 mm	Inner bezel to chassis (12)
	922-5553	#2 Phillips, 7.7 mm	Touch switch boards (2)
	922-5748	Cable clamp	Power switch cable (1)
	922-5749	Cable clamp	ADC main cable (1)
	922-5792	Cable clamp	ADC cable to panel (1)
	922-5750	Cable clamp	USB cable (2)