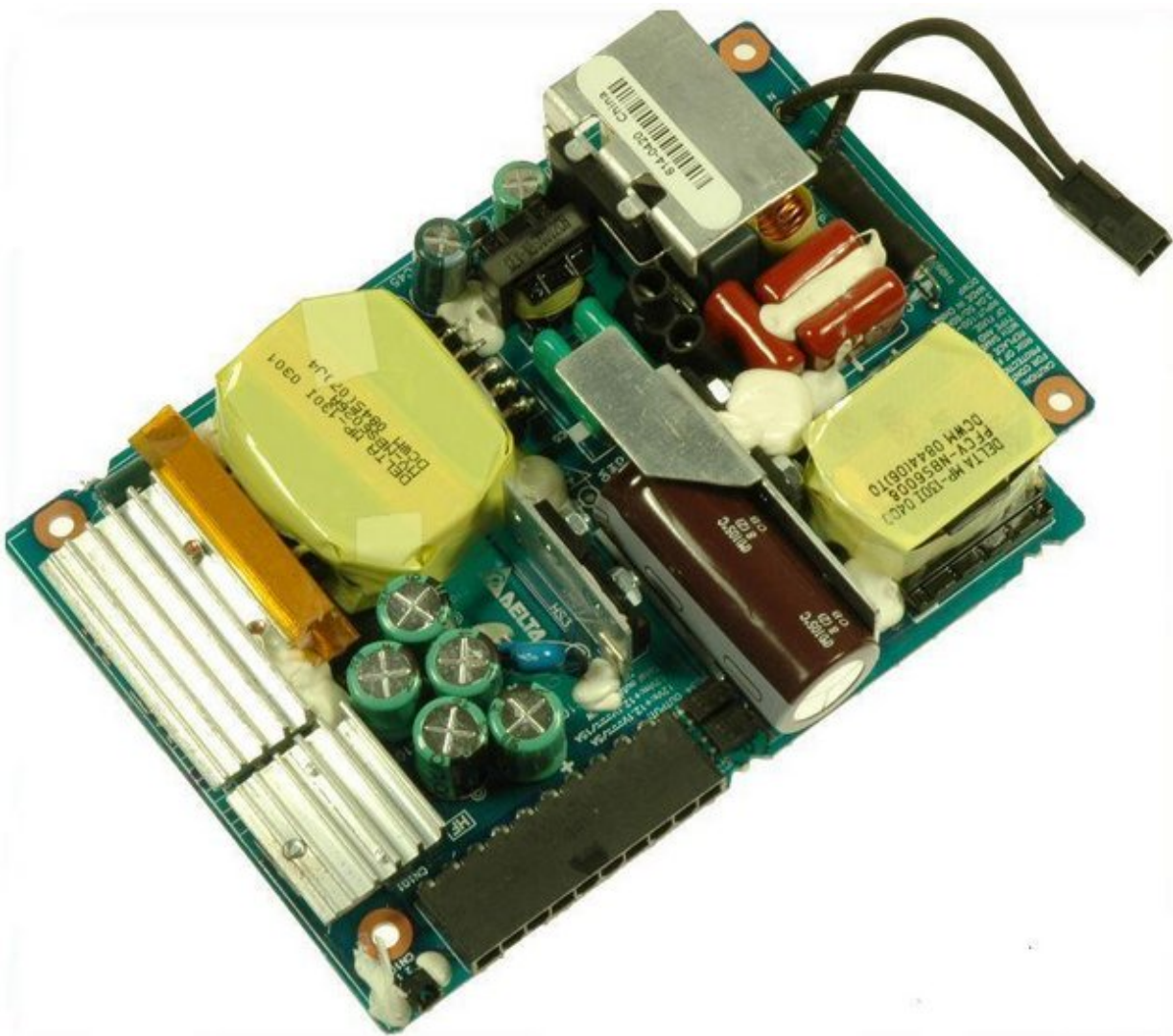




# iMac Intel 20" EMC 2210 Power Supply Output Voltage Test

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## INTRODUCTION

**\* The purpose of this guide is to provide detail on testing of the iMac PSU voltages.**

- Should only be attempted by those with experience working with a multimeter or voltmeter and LIVE equipment.
- If you don't know how to use a meter to measure voltages then you should not proceed.

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## TOOLS:

- [Heavy-Duty Suction Cups \(Pair\)](#) (1)
  - [Digital Multimeter](#) (1)
  - [Phillips #1 Screwdriver](#) (1)
  - [T8 Torx Screwdriver](#) (1)
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## Step 1 — Access Door



- Loosen the single Phillips screw in the center of the access door.
- ⓘ This screw is captive in the access door.
- Remove the access door from your iMac.

## Step 2 — Glass Panel



- i** The glass panel is fixed onto the front bezel with fourteen magnets around its perimeter.

  - Stick two suction cups to opposing corners of the glass panel.
- i** To attach the [suction cups](#) we sell, first position the suction cup with the movable handle parallel to the face of the glass panel. While lightly holding the suction cup against the glass, raise the movable handle until it is parallel with the other handle.
- i** If your suction cups refuse to stick, try cleaning both the glass panel and the suction cup with a mild solvent such as Windex.

### Step 3



- Gently pull the glass panel straight up off the iMac.
- ⚠ The glass panel has several positioning pins around its perimeter. To avoid shearing these pins off the glass panel, be sure to only pull straight up during removal.
- ★ Be meticulous about cleaning the LCD and the inside face of the glass panel before reinstallation, as any fingerprints or dust trapped inside will be annoyingly visible when the display is on. Placing the glass flat, inside face down, on a fresh aluminum-foil surface is a good way to keep it clean.

### Step 4 — Front Bezel




- Remove the following 12 screws securing the front bezel to the rear case:
  - Eight 13 mm T8 Torx.
  - Four 25 mm T8 Torx.




## Step 5



- Place your hands at the top corners of the bezel (to the side) and lift the bezel 2-3cm from the body by working from the top. After this you can also disengage the bottom of the bezel (the memory modules will prevent the bottom of the bezel to detach first). When reassembling, start with the bottom of the bezel.

 The top of the bezel hosts a microphone attached to the logic board. Gently lift the bezel to not damage the microphone wiring or connector by accidentally pulling the cable.

 At this point, you can either detach the microphone cable and remove the bezel, or keep the microphone cable attached and rest the bezel on your work surface or the chassis of the Mac.

- **To fully detach the bezel:**  
disconnect the microphone cable connector, removing tape as necessary.
- **To keep it attached,** leave the microphone cable attached to the logic board, and place the bezel 'above' the chassis, with the microphone cable forming a hinge.

⚠ If you keep the microphone attached to the chassis, make sure you don't accidentally damage the microphone or logic board by bumping into the loose bezel.

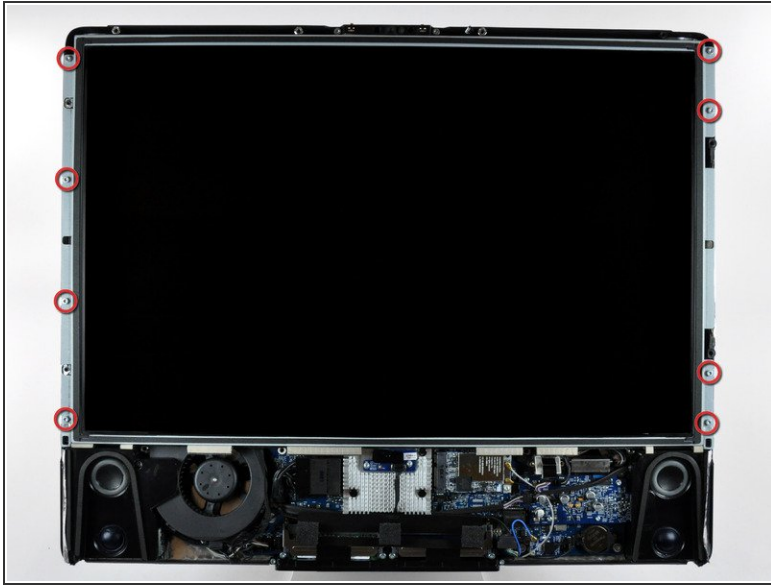
## Step 6



When reassembling the bezel:

- be sure to tuck the microphone cable and connector into the void next to the camera board.
- Gently guide the microphone connector and cables through the  $\pm 1$  in long slot at the right of the iSight camera. Once the bezel is properly assembled, gently push the microphone connector and cable into the bezel through that slot.

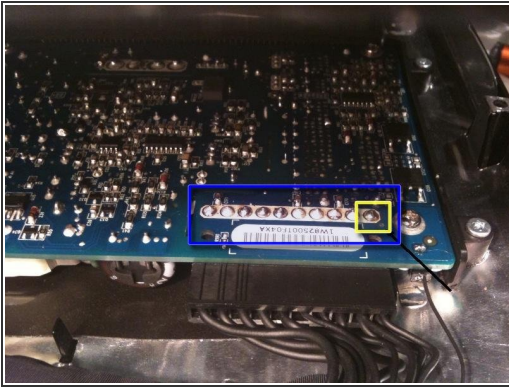
## Step 7 — iMac Intel 20" EMC 2210 Power Supply Output Voltage Test



- After removing the front bezel, you need to remove the 8ea 12mm T8 screws around the perimeter of the LCD
- ⚠ Rotate the iMac so the TOP EDGE is facing you and GENTLY lift the LCD up about 75mm (3in) and prop up the LCD with something NON CONDUCTIVE.
- ⚠ Lifting the LCD in this way exposes the rear of the PSU to allow access to the PSU connector. When the imac is connected to the mains (**even if switched OFF**) there is **MAINS VOLTAGE** on this board






## Step 8



PIN	1	2	3	4	5
Standby	0	0	0	0	3.8V
ON	0	12V	0	2.2V**	0
PIN	6	7	8	9	10
Standby	0	0	12V	0	0
ON	0	12V	12V	12V	0



### **REMEMBER - there is MAINS voltage on the PSU so use extreme caution**

- Use the chart provided as a reference and test the various voltages with your meter being sure to restrict the probes to the 10 solder joints on the PSU connector shown within the BLUE rectangle. Shorting any part of the PCB will almost certainly cause damage to the imac
- All voltage measurements are taken with PIN 1 as reference (Marked with the YELLOW square). Pin 1 is marked on the board by a dot and is the right hand pin when viewed as shown in photos
-  **STANDBY** means system connected to mains outlet but imac turned off - Diagnostic LED 1 will be illuminated on logic board
-  Pin 5 is the PSU enable line - Logic board pulls this line low (0V) to enable PSU (probably via a resistor)
-  Pin 4 voltage varies according to the PSU temperature and is inversely proportional to PSU temperature. Higher Temp = Lower Voltage. My measurement was taken at around \*\*24 Deg Celsius.
- Reassemble your iMac in reverse order. When lowering the LCD ensure you don't crimp or crush the LCD back-light cables

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