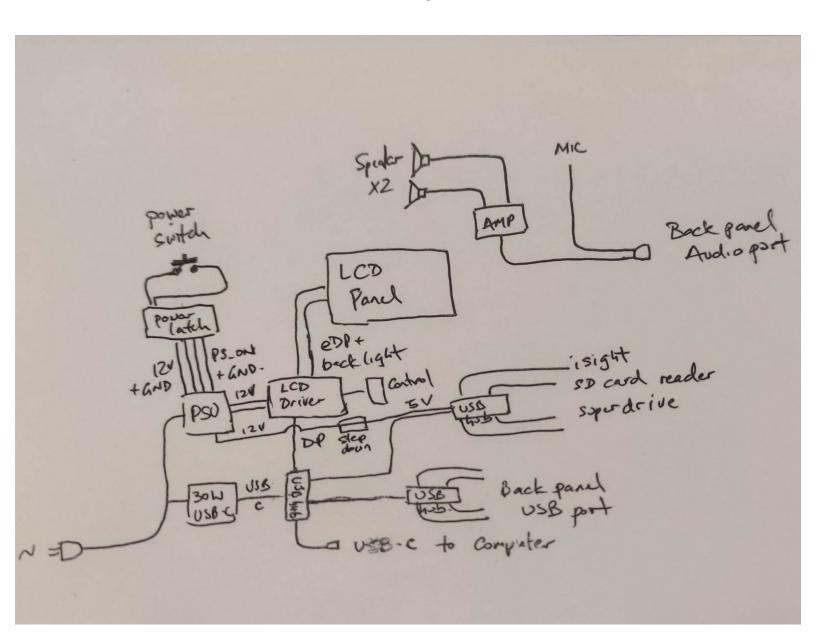![iFixit logo]

# Converting iMac Intel 27" to an USB-C monitor with 30W charging

This is a work in progress Convert a broken iMac to an USB-C monitor with 30W charging

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www.iFixit.com

# INTRODUCTION

I have an iMac with a broken graphics card, and it seems like a waste to just throw it away, so I've decided to convert it into a monitor, and hopefully get all the accessories working. (iSight, SuperDrive, SD card reader, and Speakers)

This is a work in progress

## TOOLS:

- Soldering Iron (1)
- Hot Glue Gun (1)
- heatshrink tubing (1)
- Heavy-Duty Suction Cups (Pair) (1)
- T6 Torx Screwdriver (1)
- Nylon cable connector strips (1)

## PARTS:

- Display Driver Board (1)
1
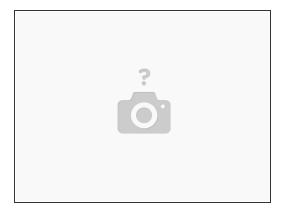*https://item.taobao.com/item.htm?id=538195353176*
- 12v latching power switch module (1)
*Optional*
- SATA Optical Drive USB Cable (1)
- Donor USB cables (2)
- Powered USB hub (preferably 12v, or you will need an extra 5v stepdown board) (1)
- USB "man" style hub, with ports connected to the board with wires (1)
- USB-C hub with DisplayPort interface (1)
- 30W USB-C charger (1)
- 2 pin power extension cable (1)
- USB-C to USB-C cable (1)
- USB-C Female to USB-C Female Cable (1)
- DisplayPort cable (1)
- 12v Stereo Amplifier Module (1)

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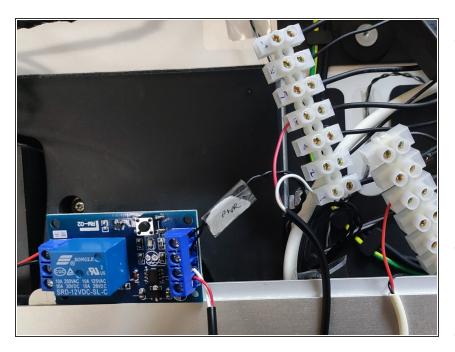www.iFixit.com

## Step 1 — Remove stuff



- Follow teardown guide to remove logic board, video card, hard drive

## Step 2 — Connect Driver Board



- Connect Driver Board to display

- I got mine here. https://item.taobao.com/item.htm?id=5381...

- Connect a DisplayPort (male) to mini DisplayPort (female) cable to the driver board and hotglue the female end to the iMac back panel
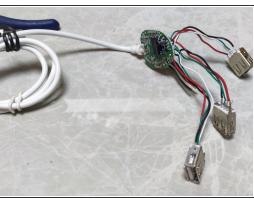
## Step 3 — Connect Power to Driver board



- (Optional) If you want to use the original iMac power button, connect the switch to the 12v latching module, PP12V_G3H + GND to power in, and connect the PS_ON pin to the output. Latching module should be configured to pull to ground when "on"

- If you just want it to be always on and use the driver power button, short PS_ON to GND

- Pinout guides here: Can anyone tell me what these PSU pin abbreviations mean? PSU 614-0446

## Step 4 — Hook up internal USB devices



- Disassemble USB Man-style hub, cut cables, insert USB sockets into usb openings, hot glue USB ports from the inside and solder everything back together

- Something like this... https://www.amazon.com/Kikkerland-US006-...

- you need another 5v/12v powered 4 port hub to connect the iSight, SuperDrive, SD Card Reader and the rear ports. And some donor USB cables...

- iSight Pinout +5v = brown, D+ = Purple, D-= grey GND=black. Unfortunately Apple uses different colors for different revisions. Pinout of the iMac's built in iSight.

- SD Card Reader Pinout +5v = orange, D+ = grey, D-= purple, GND=unshielded cable. Again, Apple uses different colors for different revisions, although you'd think the cabling color scheme would be at least internally consistent.... https://www.tonymacx86.com/threads/apple...

- Connect the USB-SATA bridge to the SuperDrive and the USB hub. I had to cut away some plastic to fit the USB adapter

- Power the USB hubs with the 12v pins, or use a DC-to-DC stepdown board to convert 12v to 5v. (The power supply doesn't provide a 5v rail...)
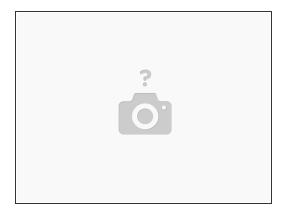
## Step 5 — Bonus steps



- You can also get the Apple IR receiver working! the first wire in the left ( marked V on the board ) is D-, second is D+, third is 5V and the last wire is Ground.
  https://www.tonymacx86.com/threads/apple...

- The Bluetooth module is also USB, but need a 3.3v line
  https://homokozo.czo.hu/iMac2011mod/iMac...

- Hmm need more internal usb ports

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## Step 6 — More bonus steps



- Thinking about getting the speakers and Mic working as well. We are going to need a USB soundcard and an amplifier that can handle driving the built in 17W speakers

- DIYaudio.com seems like a pretty deep pit to jump in.

- Do I need a fan controller? I think I need a fan controller.

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

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