Universal Backlight Inverter

This will show how to add a "Universal Backlight Inverter" to an existing monitor.

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INTRODUCTION

Here is my version of a jugaad approach to breath some new life in some older equipment. I received a few monitors through a federal auction. These are older monitors and it was deemed that any repair would be non-economical. Free, I take it:-) I checked two of the Dell monitors and noticed they did not have a backlight. I also checked the power supply and could not find any faults in the obvious parts, i.e. Caps, fuses and resistors. Until I have my MOSFET tester build, I deferred troubleshooting the power supply. I decided this would be a great project to install one of the "Universal Backlight Inverters" available at an online auction site for ~$4.00. The process will be the same for any brand of LCD display. The difference will be the way the monitors are assembled and the layout of the power supply. I tried to keep this guide as generic as possible. I am currently working on a PCB that will supply power, as well as brightness control. It will be build so that it can be used with any of the Universal inverters. But that is another guide.

TOOLS:

- Soldering Workstation (1)
- Utility Scissors (1)
- Phillips #2 Screwdriver (1)

PARTS:

- Universal Inverter (1)
- Hook and Loop Tape (1)
- Electrical Wire AWG#28 (1)

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Step 1 — Universal Backlight Inverter

- So, here is one of the Dell 1908FpB monitors. It did not come with a stand or any other accessory. The LCD looks odd, it just needed a heavy cleaning. That what those streaks are.

- First thing to do is to remove the front bezel. It simply snaps in. Use your fingertips in between the bezel and the LCD to pop the bezel loose.

- It does get a bit snug at the edges. Again, all that is needed is to pop the snaps with ones fingertips.

Step 2
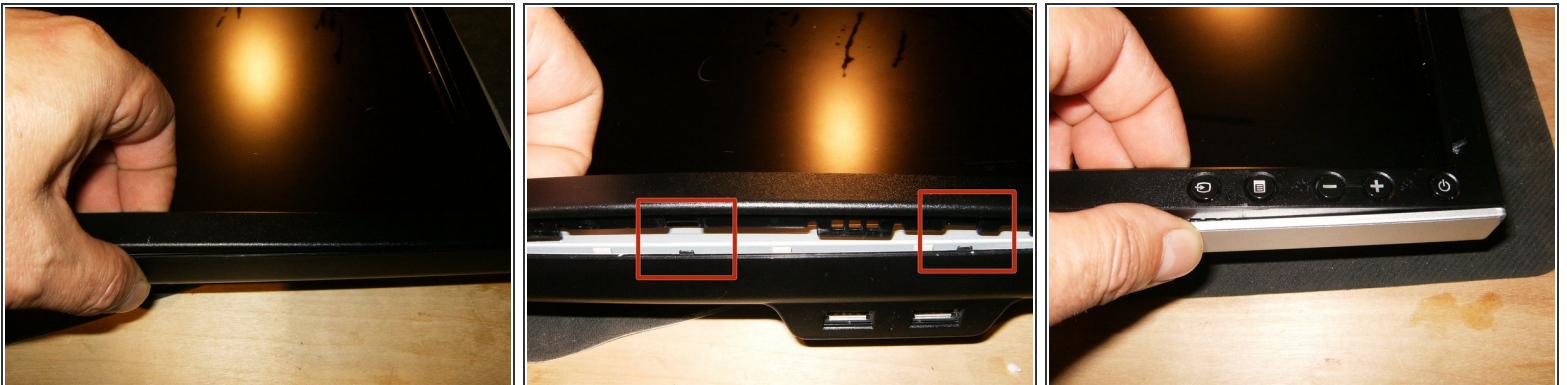
- This close-up shows the position of the fingertip to remove the bezel.

- This is one of the snaps that the bezel hooks into the back cover to remain fixed.

- The place to be careful at is around the button bar. There is a ribbon cable that attaches to those buttons. Simply continue to unsnap the bezel without removing it.

Step 3

- Here is the ribbon cable from the button bar. Just unsnap the front bezel, but do not remove it.

- Once the front bezel is completely unsnapped, but not removed, turn the monitor over.

- Remove the four Phillips screws from the VESA mount.

- The four screws are M4x10mm

Step 4
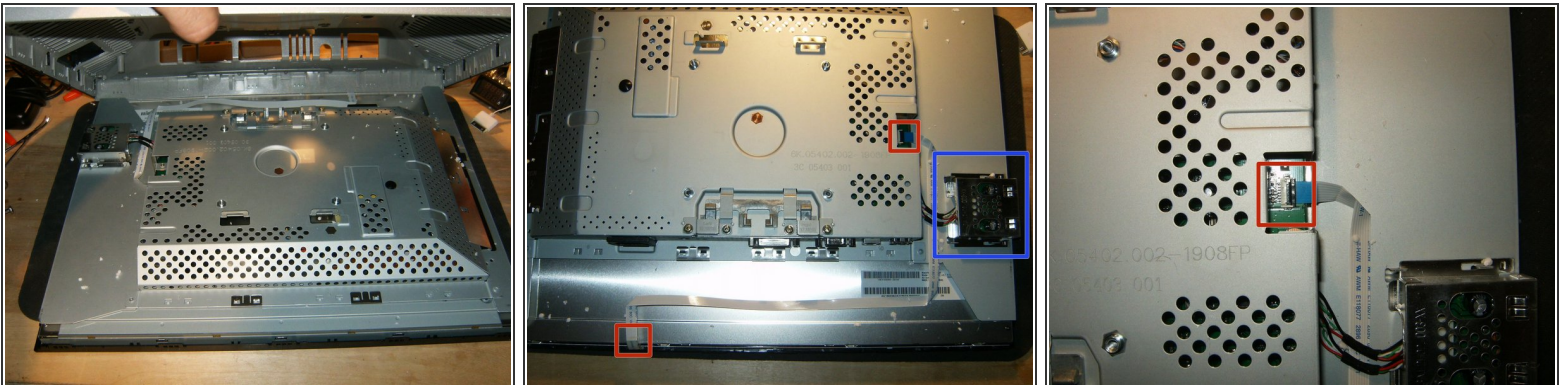
- With the four screws removed and the front bezel snapped off, the back cover simply pulls off.

- Here is the ribbon cable coming from the front button bar, the way it is routed and where it connects.

  - this monitor has an additional 2 USB ports

- The ribbon cable connector needs to be flipped open to remove the cable. Flip the black tab from left to right to open it

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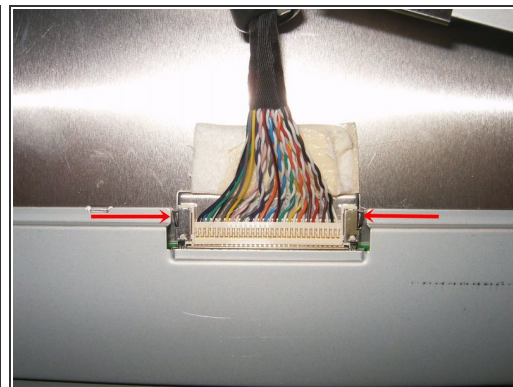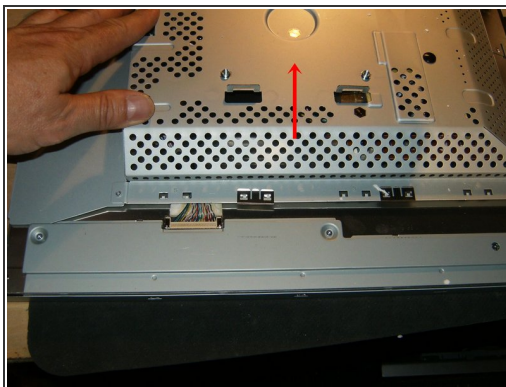
Step 5
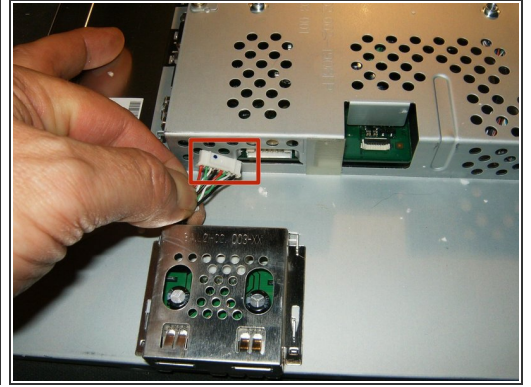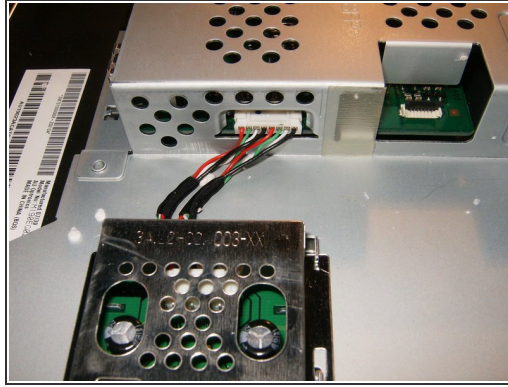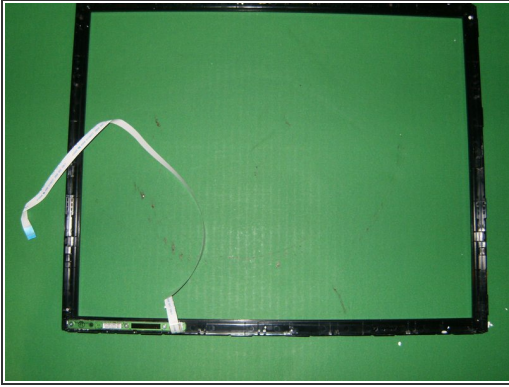
- With the ribbon cable disconnected, remove the front bezel.

- The additional USB ports use a push connector.

- Remove it by pulling on the Molex connector, not the cables.
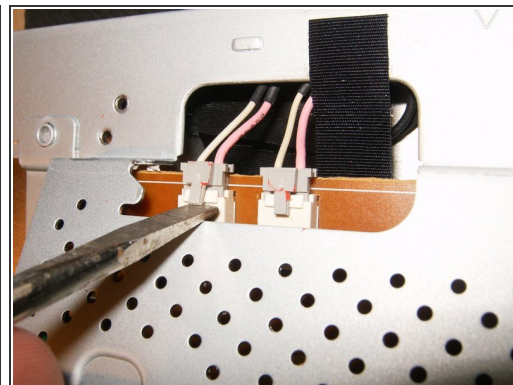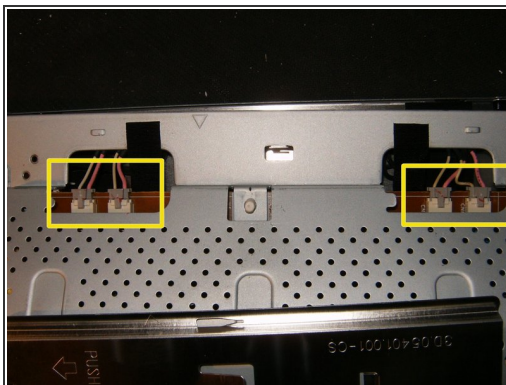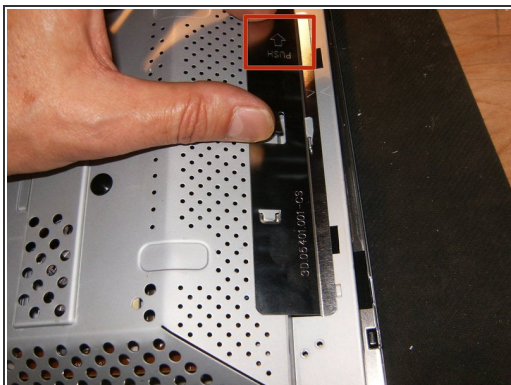
Step 6
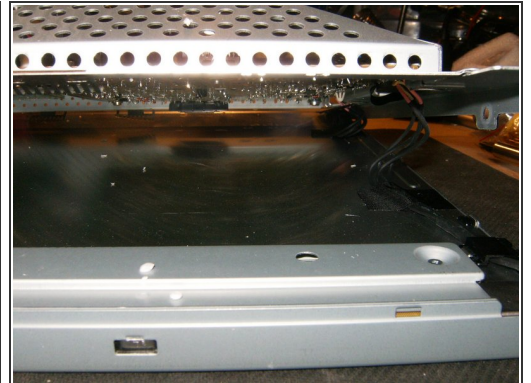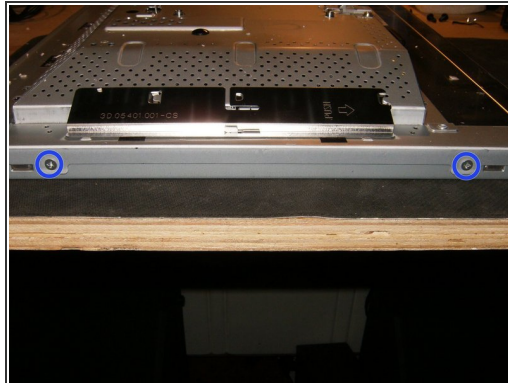
- Remove the two Phillips screws on the right

- then the two on the left.

- Do not remove the back panel yet, just gently lift it to reveal the LVDS cable

Step 7

- Here is the LVDS connector.

- Slide the cover up the panel a bit to get good access to the connector

- Remove the LVDS cable by squeezing the ends inward

Step 8

- This monitor had a cover over the CCFL connectors. Remove it by simply sliding it in the direction of the arrow that is marked on it.

- Here are the four connectors for the CCFL's.

- Remove the connectors by lifting the locking tab. This can be done with good fingernails or a small screwdriver, and then pull the connectors apart.

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Step 9

- All CCFL connectors removed. The position on the CCFL connectors is irrelevant. They will only fit one way into the connection.

- With the CCFL's disconnected separate the back case from the LCD

- The panel has two connectors on the top right, and two connectors on the bottom right.
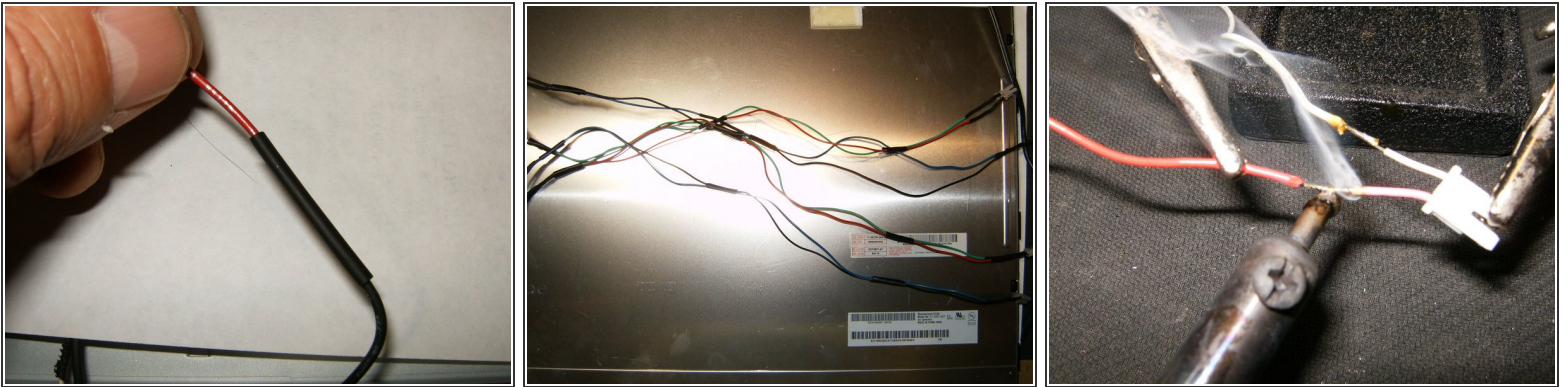
Step 10
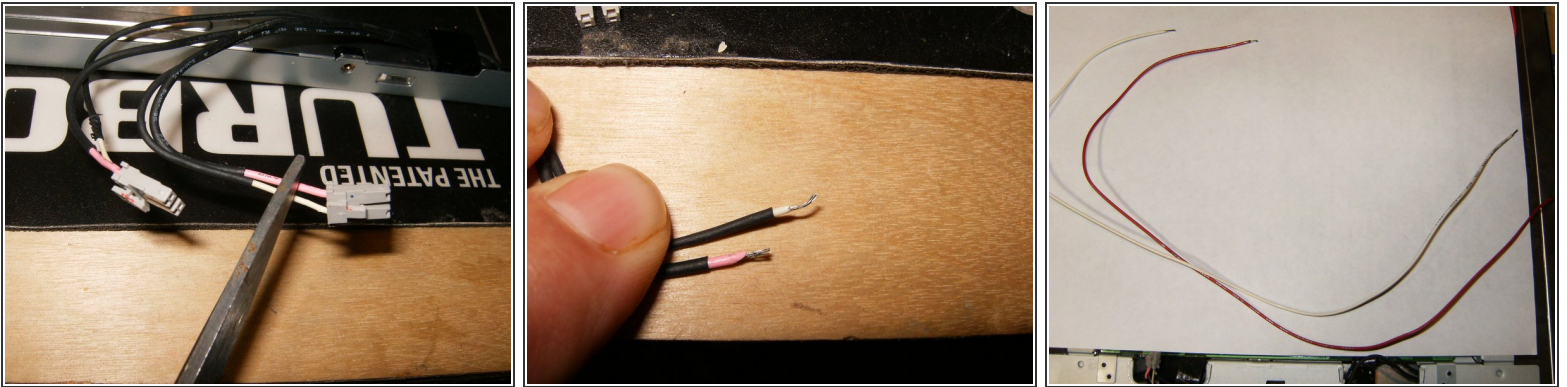
- Destruction! Simply use a pair of scissors, or any other cutting instrument, and cut the connectors. Leave about 1/2 inch to 3/4 inch of the cable on the connector.

- Remove the insulation from the cut ends.

- Use 2 28AWG wires. The length on these is about 12inches. Remove the insulation from all the ends.

Step 11
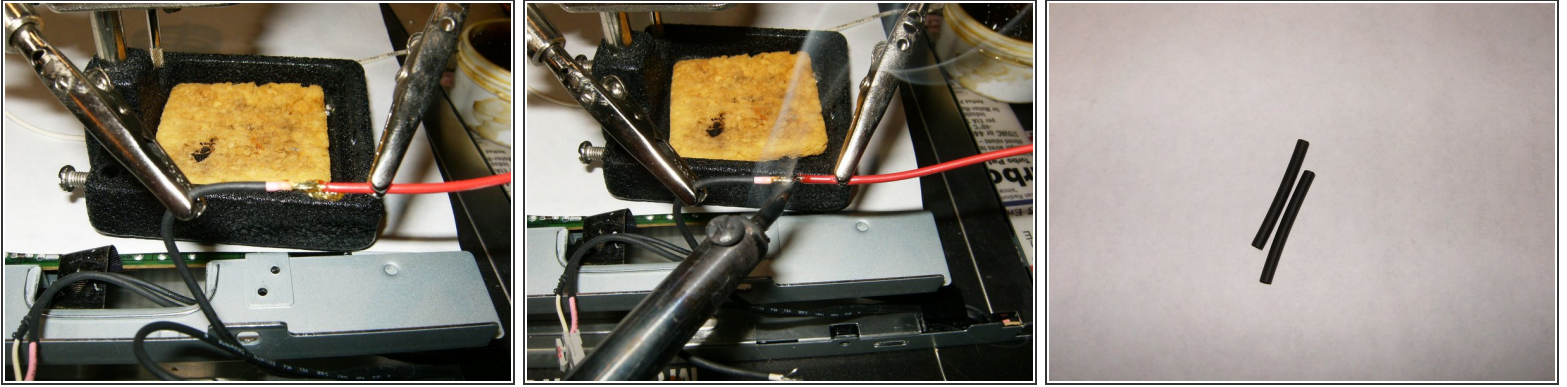
- Time for some soldering. It could also be accomplished with some other wire connectors, but I prefer to solder.

- Butt end the wires, use flux and solder the wires together.

- I had a few pieces of shrink tubing left over from other projects, electric tape can also be used,

Step 12

- to slide over the wire connection, to provide insulation.

- Continue to solder

- until all four connectors are extended.

- Do the same with the connectors. Make sure that you follow the proper wires to connect pink/pink and white/white

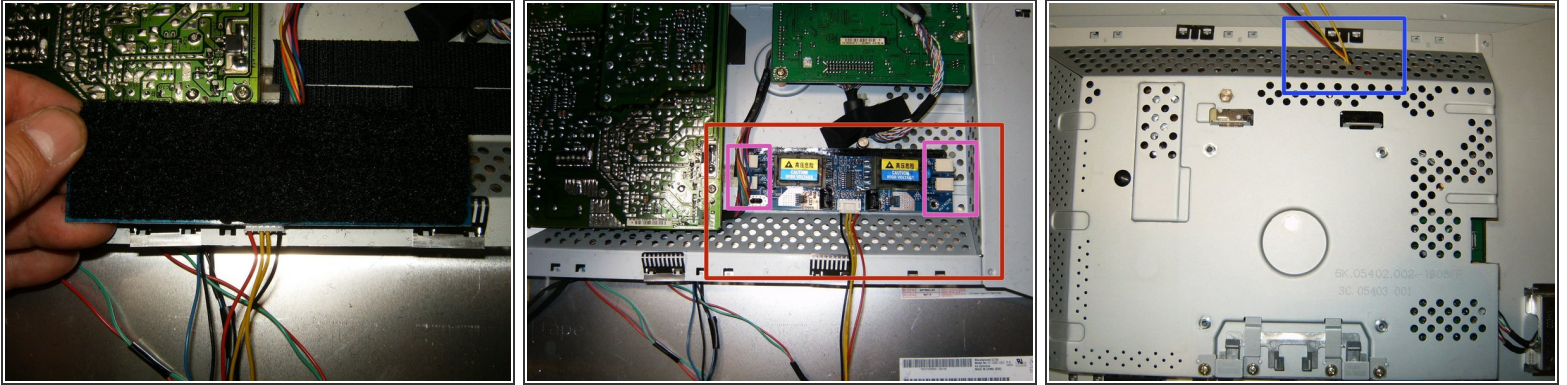This document was generated on 2019-09-19 01:18:32 AM (MST).

Step 13
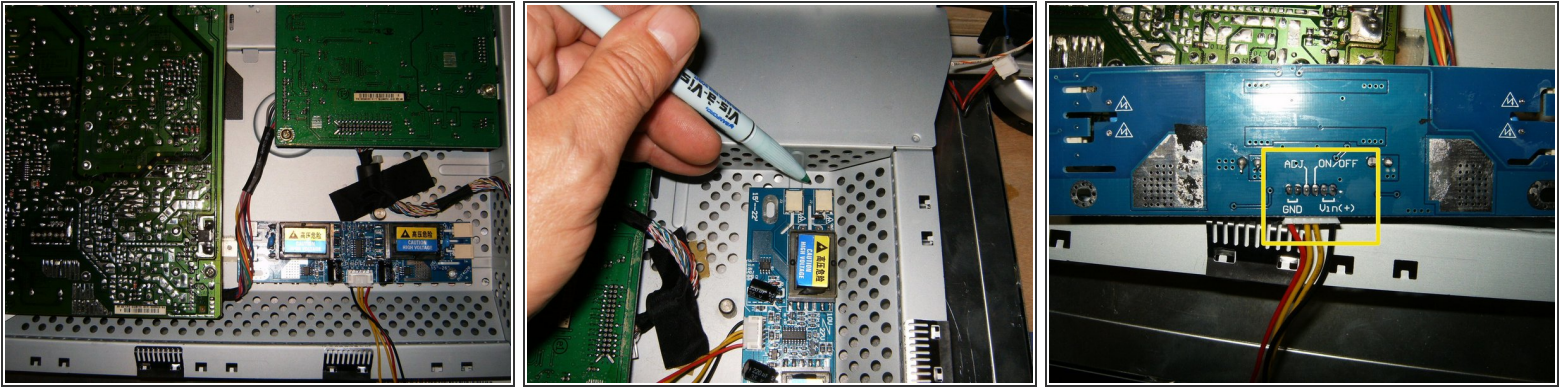
- Find a place for the inverter. Plenty of it in this model

- Mark the outline of the inverter with a marker in the case. This will give a guide for the hook and loop tape (Velcro).

- Before getting ready to mount the inverter, take another look at the bottom of the inverter (on this model) for a wiring description.

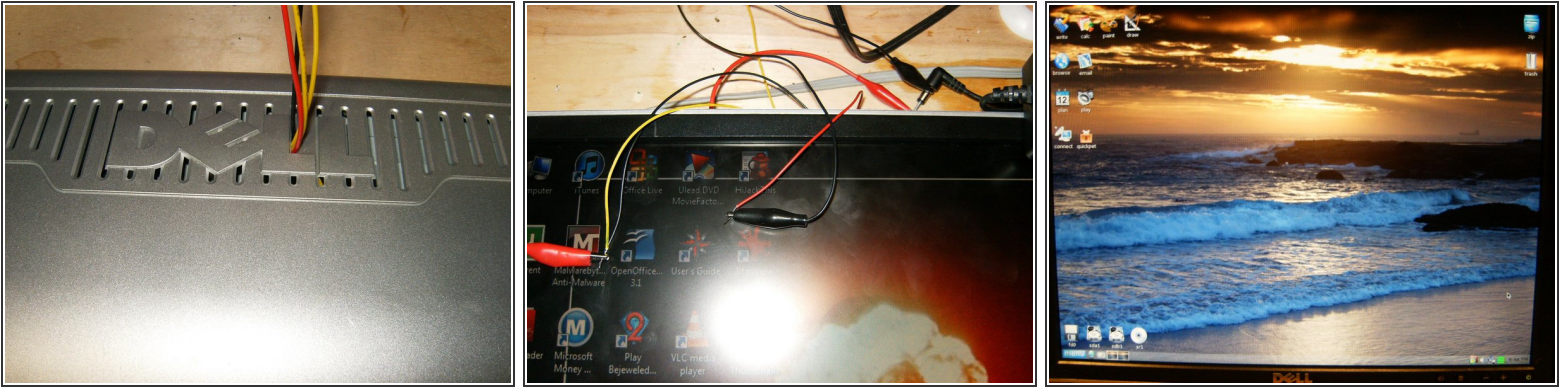## Step 14
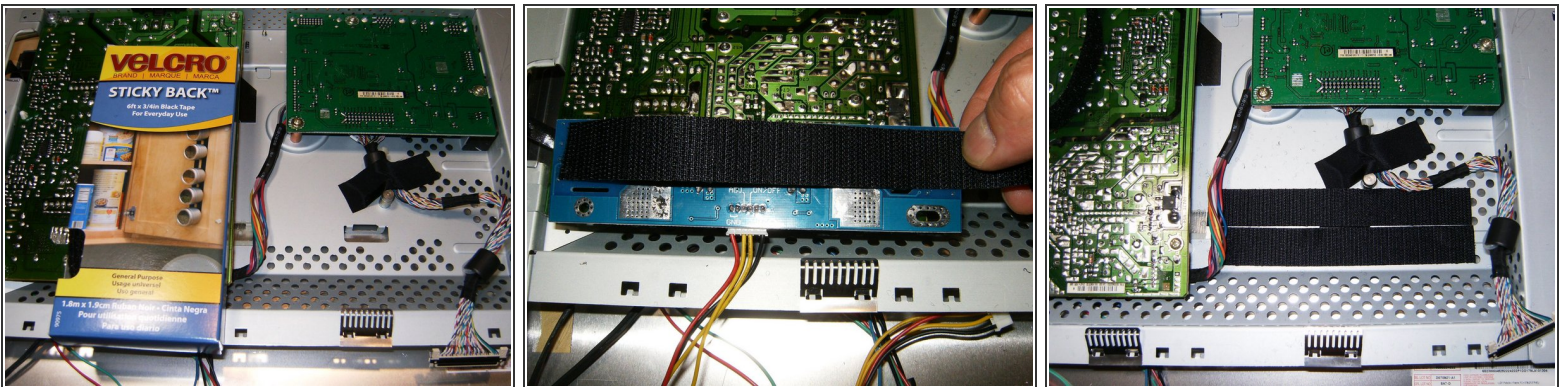
- The inverter will be attached to the case with some Velcro. This is available at most department stores and this brand has the glue strip on the back.

- Measure the length of the inverter and cut two strips.

- Apply two strips of Velcro to the previously marked case.

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Step 15

- Now apply two strips of Velcro to the back of the inverter.

- Place the inverter with the Velcro in the case. Once placed properly, insert the four backlight connector into the inverter.

- The monitor is now ready for reassembly. Fish the four wires from the inverter through an opening in the case.

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Step 16

- Once more, the four wires from the inverter need to be fished through am opening in the back

- Okay, now it's test time. Combine the Yellow On/Off wire with the Black Vin Wire. That will be the positive connection, the Red wire is ground and will be the negative. This inverter is rated 12-24Volt, so an old laptop power brick will be perfect.

- Data line connected to a computer and power to the inverter shows a great image. The only issue with this right now is that the power to the monitor and the backlight are separate. I did not find a suitable power source on the original power board. Also, the brightness can not be adjusted with this hook up.

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