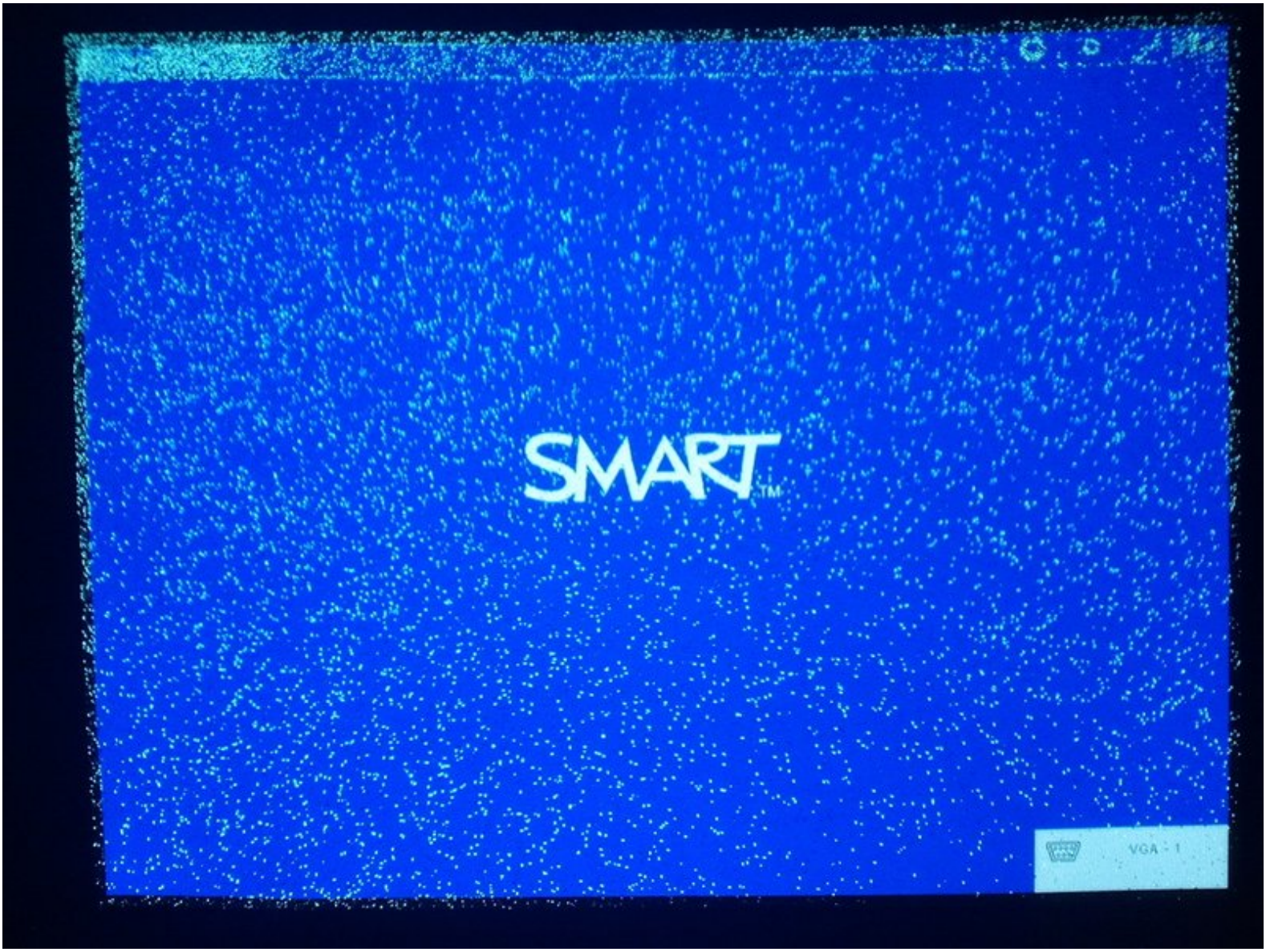
Smart UF75 DMD chip Replacement

Replacing the DMD chip in a Smart UF75 DLP projector to repair frozen pixels that appear as black or white speckles covering the screen.

Written By: David42



INTRODUCTION

The Smart UF75 projector uses a Digital Micromirror Device (DMD) with 1024*768 small mirrors that move to switch each pixel on or off.

A faulty DMD displays black or white specks all over the screen where individual mirrors have stopped moving.

TOOLS:

- Phillips #2 Screwdriver (1)
magnetic
- Phillips #1 Screwdriver (1)
- Electrical Tape in 6 Assorted Colors (1)

PARTS:

- DMD chip 1076-6339B (1)

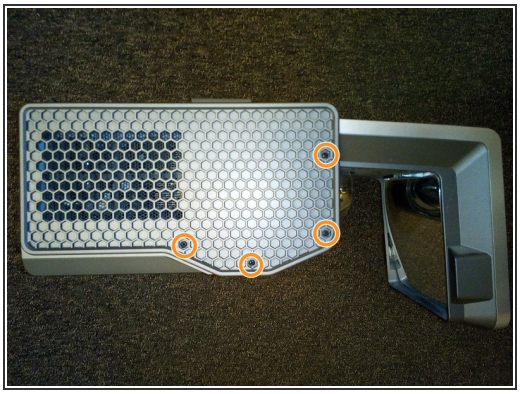
Step 1 — Remove the bulb module

- Use a flat screwdriver or coin to remove the flap covering the bulb module
- Loosen these 2 Philips #2 screws. These screws should stay captive within the bulb module.
- Lift this handle and pull out the bulb module.

It is important to avoid dust getting into the optical parts. I vacuumed the bulb area with a soft brush attachment then vacuumed other dusty areas as they were exposed during the disassembly.

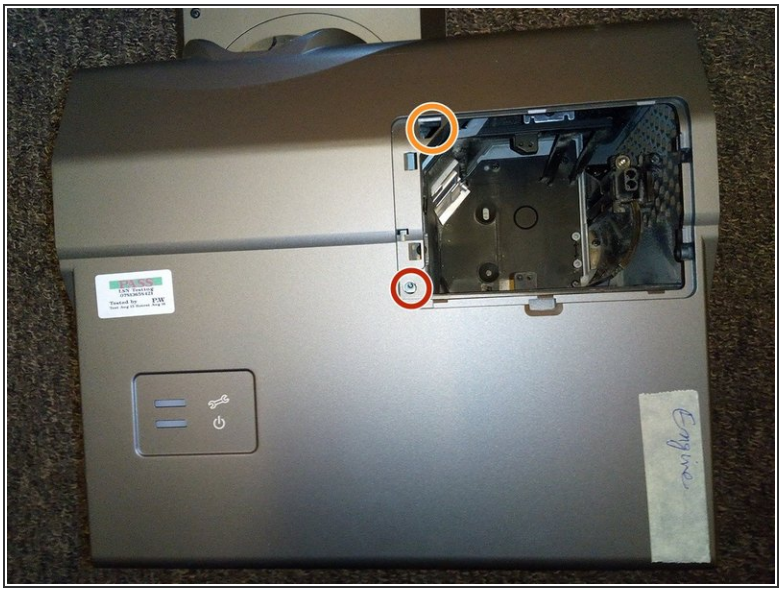
Do not touch the mirror. The delicate front silvered mirror surface is easily scratched.

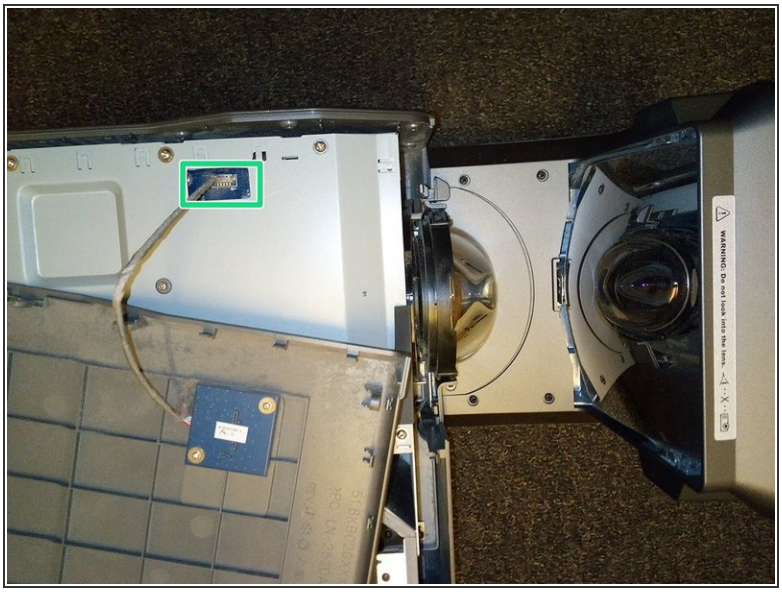
Step 2 — Remove the lid


- Remove these 3 black 5mm Philips #2 screws from the right side panel.
- Remove these 4 black 5mm Philips #2 screws from the left side panel.
- Remove these 3 black 5mm Philips #2 screws from the rear panel.

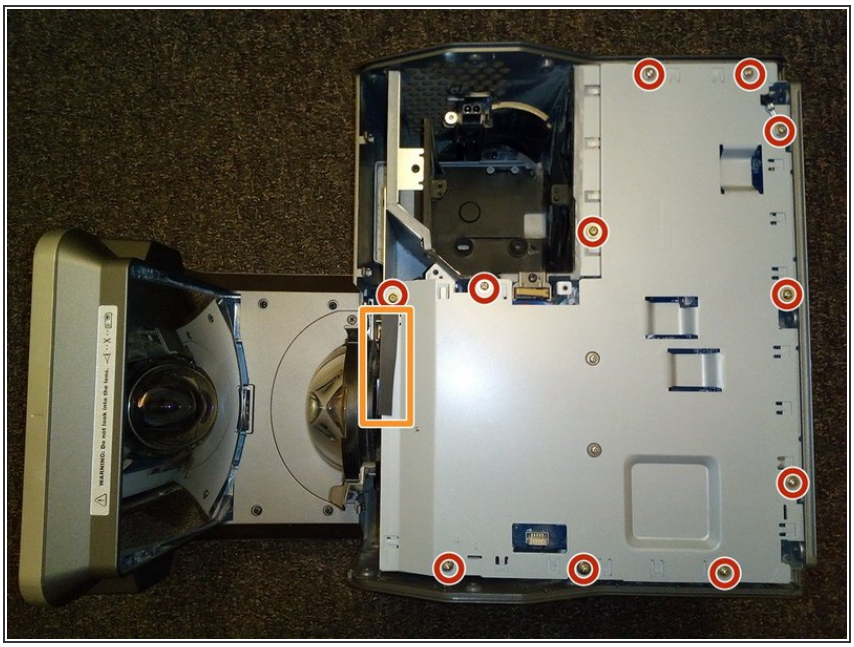
Step 3 — Remove the lid





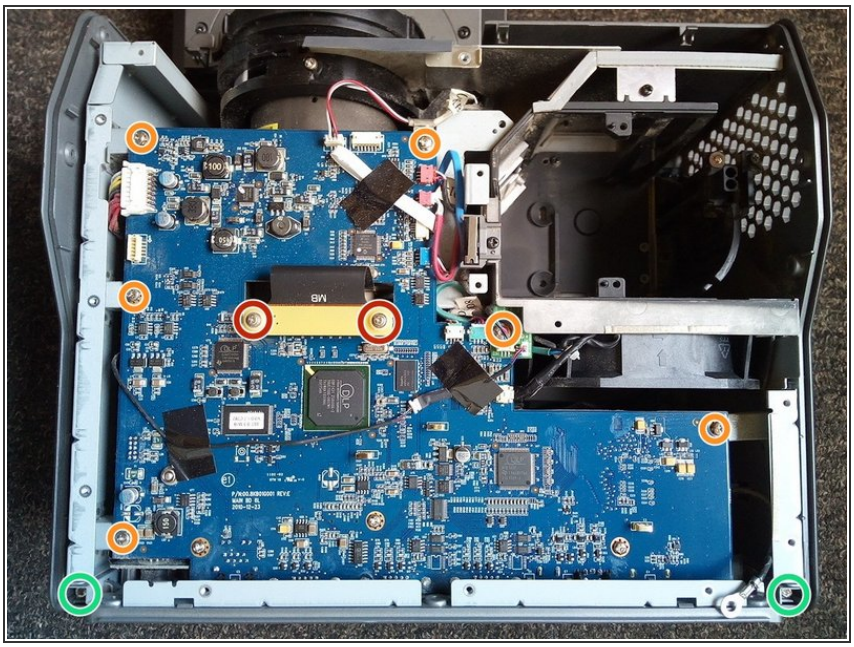
- Remove this 7mm Philips #2 screw under the bulb cover.
- Remove the 7mm Philips #2 screw deep in this hole. A magnetic screwdriver essential for removing and replacing this inaccessible screw.
- The lid can now be removed by gently prising it off starting at the hole for the bulb.
- Unplug this cable then put the projector lid to one side.

Step 4 — Remove the metal cover



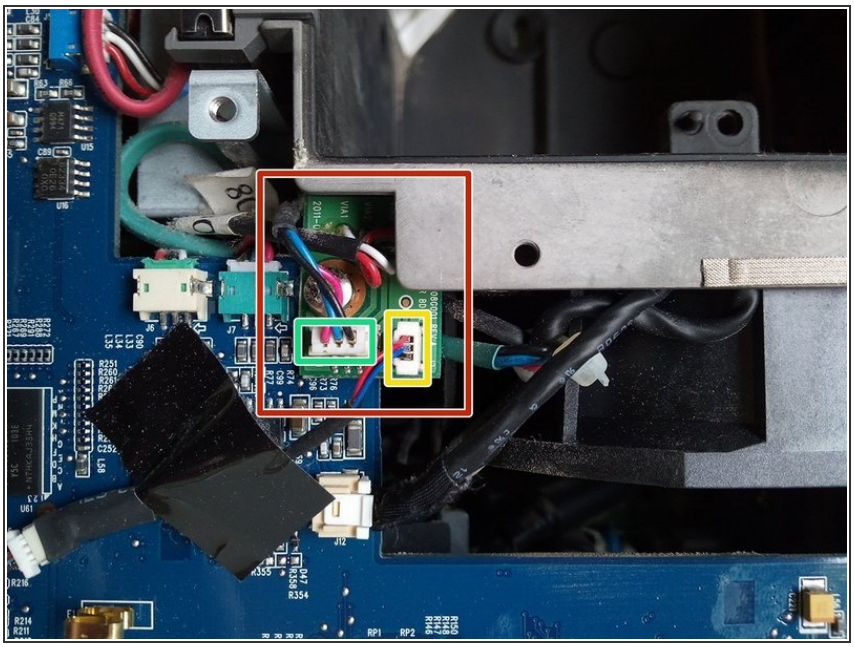
- Remove these 11 silver 5mm Philips #2 screws from the metal cover.
- Unpeel this black card that is stuck to the metal cover.
- Lift off the metal cover to reveal the main circuit board

Step 5 — Unscrew the main circuit board



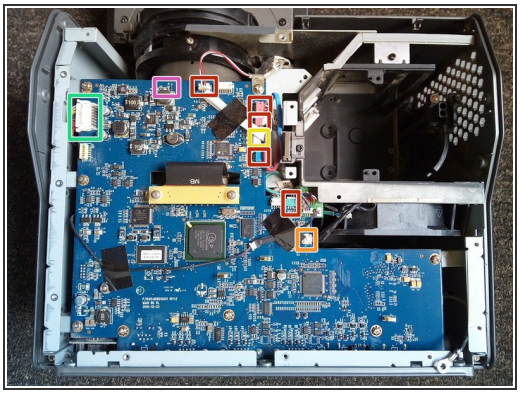
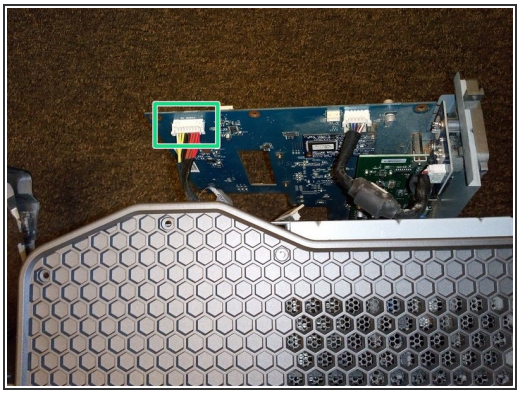
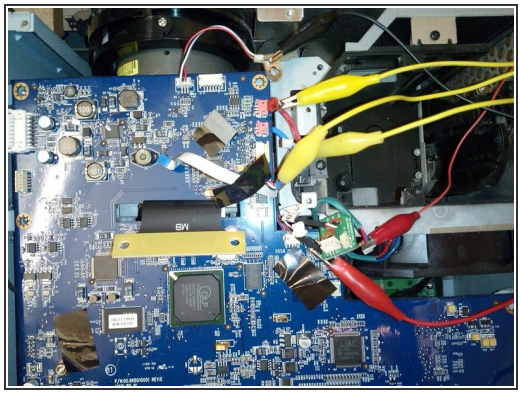
- Remove these 2 silver 8mm Philips #1 screws and their white plastic washers then unplug the ribbon cable. This plug will drop through the hole in the board when you lift off the board.
- Remove these 6 silver 8mm Philips #2 screws from the main circuit board.
- Remove these 2 silver 6mm Philips #2 screws that attach the board of plugs at the back of the projector.

Step 6 — Release the small circuit board



- Projectors built in 2010 have a small extra circuit board here. You can skip this step if you have a newer projector without this extra circuit board.
- Unplug this wire from the small circuit board. Peel back the two pieces of tape holding down the wire, leaving one end of each piece of tape attached to the board for the later re-assembly
- Remove the other plug from this small circuit board. The small circuit board is now free to come away with the main circuit board.

Step 7 — Unplug the main circuit board

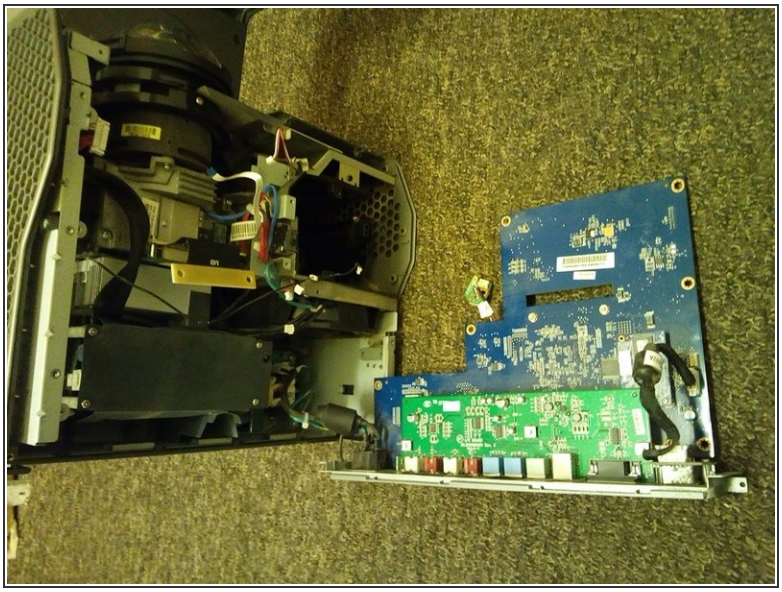




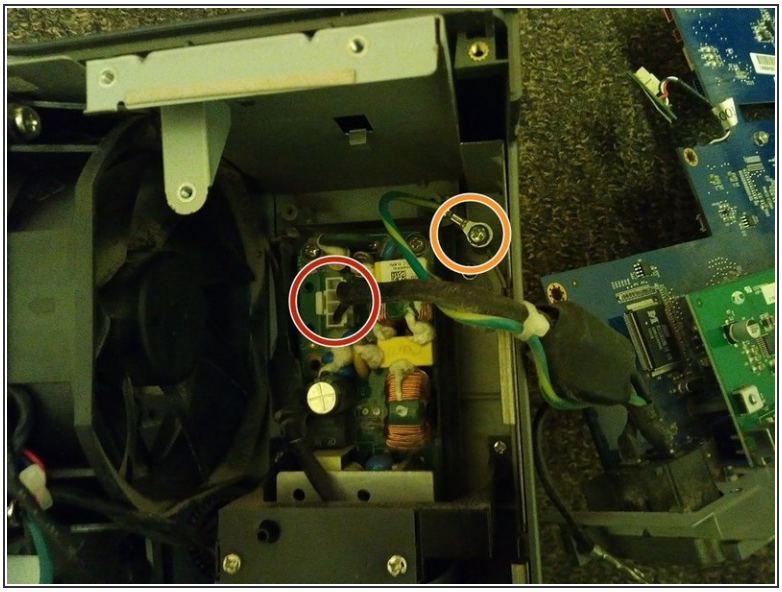
- Unplug these 5 plugs. These plugs are stiff but there are no clips or catches to release. I used a combination of pliers and miniature side cutters to grip the two edges of each plug and work it loose.
- Remove this plug by pressing down the back of the plug to release the catch
- Gently remove this thin ribbon cable by pulling back the plastic plug then pulling out the cable. Untape the ribbon cable from the board.
- Later models have an extra wire here that needs to be unplugged.
- Remove this larger plug by squeezing the two ends to release the clips. On later models, this plug is underneath the board, so you will need to release it while you are removing the circuit board

Hint: With so many small plugs it is easy to leave a plug under the board during re-assembly. Clipping a long wire to each plug makes them more obvious.

Hint: Take a picture showing how the small plugs are connected on the main circuit board to help re-assembly because the plug arrangements vary slightly between projectors.

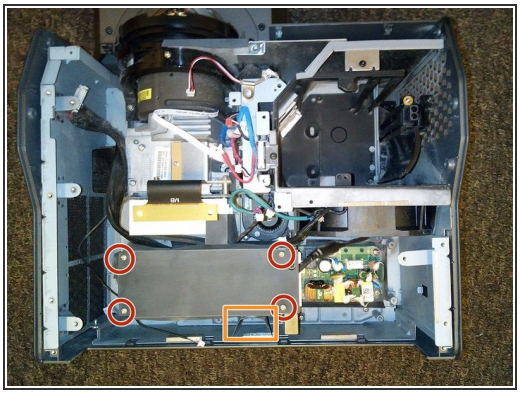
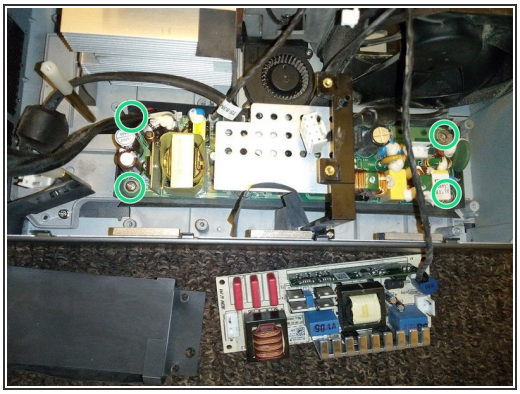
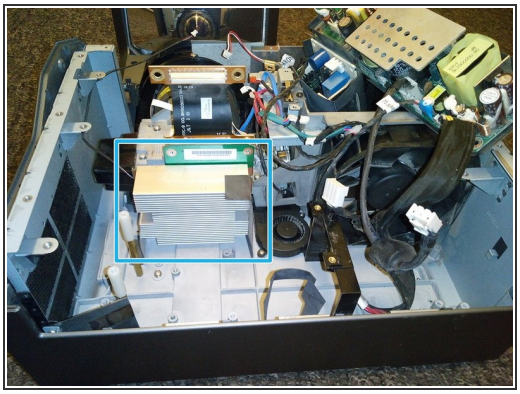
Step 8 — Remove the main circuit board





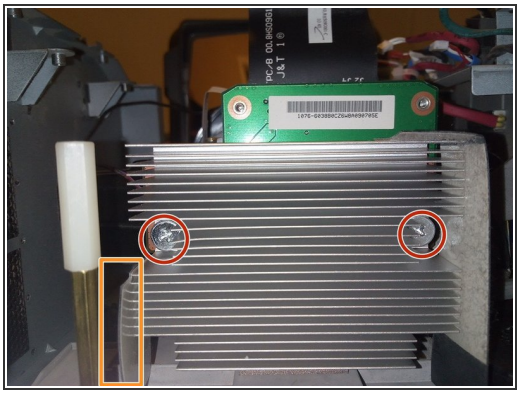
- Remove the main circuit board by lifting the board from the back end where the external plugs are attached.
- Unplug this mains plug.
- Disconnect the earth lead by unscrewing this silver 5mm Philips #2 screw with its captive serrated washer.

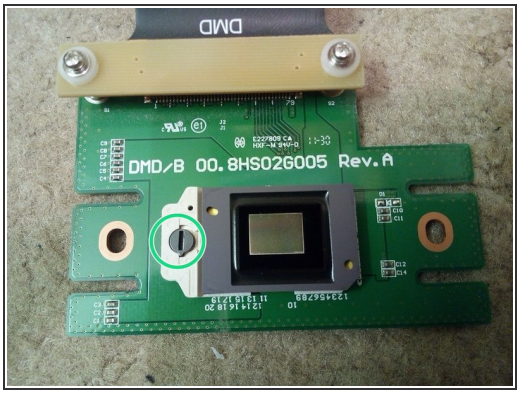
Step 9 — Move the power supplies

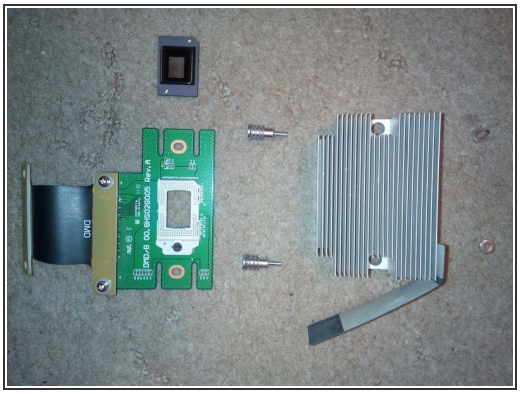




- Remove these 4 silver 6mm Philips #2 screws to release the top power supply.
- Peel off this cardboard that is glued to the power supply cover.
- Unplug the large plugs at each end of the power supply and move the power supply out of the way. You can leave the smaller fan wire connected.
- Remove these 4 silver 8mm Philips #2 screws from the lower power supply then move the power unit to the side, along with the card it is resting on.
- You now have clear access to the DMD heatsink.

Step 10 — Remove the DMD module







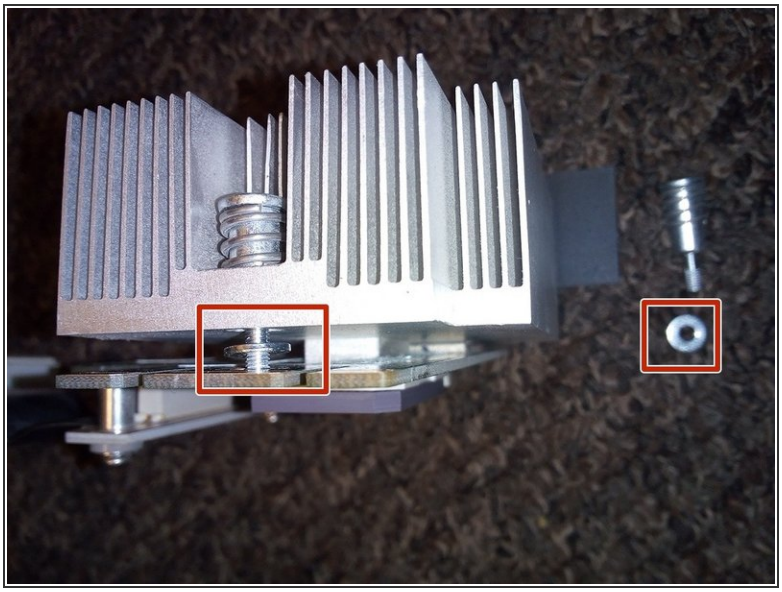
⚠ Before removing the DMD heatsink, clean any dust from the area to prevent dust getting into the optical system.

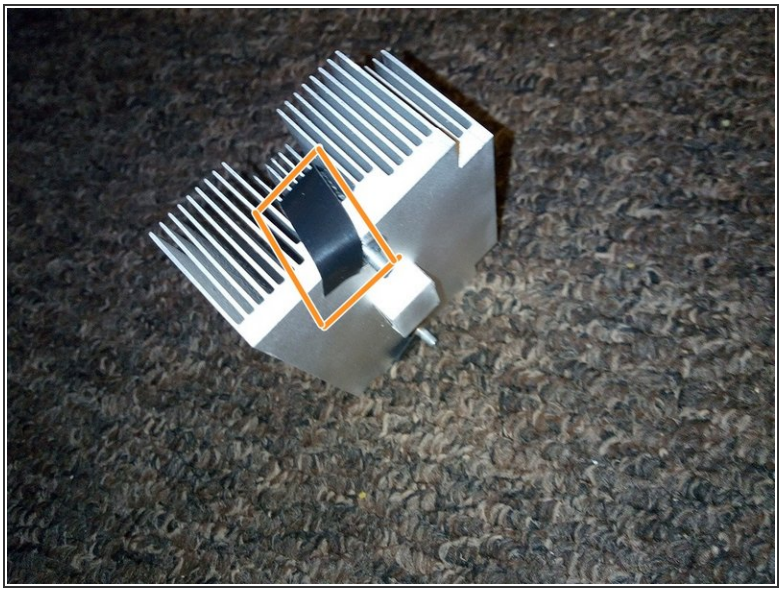
- Remove these 2 Philips #2 screws holding the DMD heatsink. Two washers will drop down behind the heatsink when you remove these bolts. You will be able to retrieve these when you have removed the heatsink.
- Peel back this sticky card to free the heatsink.
- Pull back the heatsink then remove the DMD module
- To remove the DMD chip, turn this screw half a turn anticlockwise.

⚠ Be careful not to get dust into the hole where the DMD module was. Those sensitive optical components should be protected from dust

⚠ Do not touch the surface of the DMD chip. The surface exposes 1024*768 tiny moving mirrors.

Step 11 — Fit the new DMD module





⚠ A poor thermal contact between the DMD chip and the heatsink could lead to premature failure of the chip. This projector uses thermal tape between the chip and the heatsink to ensure a good thermal contact.

- Re-fitting the spacer washer that fits between the heatsink and the DMD board is tricky.
- Use a thin strip of electrical tape to hold the washer and bolt in place while you re-assemble. The tape can be removed before tightening the bolts.

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

