

Pioneer Elite CLD-97

Digital Noise Reduction (DNR) Auto-off Mod

DIY Installation Guide

Background:

The CLD-97 laserdisc player has one of the best video quality outputs of any laserdisc player released. Unfortunately, it auto-enables its DNR every time the unit is powered on. Videophile purists have to physically press the “DNR” button on the player to turn this function off with every play. This mod turns DNR to a default “off” position. If you want to turn it on, you simply press the DNR button once and it will go on. In other words, it does not “break” the DNR function but merely reverses the default setting to “off.”

Tools Needed/Recommended:

Screwdriver, soldering equipment, 3/32” hex head L wrench, DNR mod kit (or build your own), CLD-97, voltmeter, x-acto knife, large magnifying glass, patience.

DNR mod kit:

If you don't want to make the mod kit yourself and would like to purchase the components (transistor and resistor) from me, please contact me (see contact info below). I am not in this to make money, nor am I a professional. I would be willing to send you the two components pretty much at cost (if I have any left). **I offer no warranty on the mod kit components nor any damage that you may do to your player trying to install it.** If you do not feel comfortable doing this mod, I suggest sending the player to a professional shop.

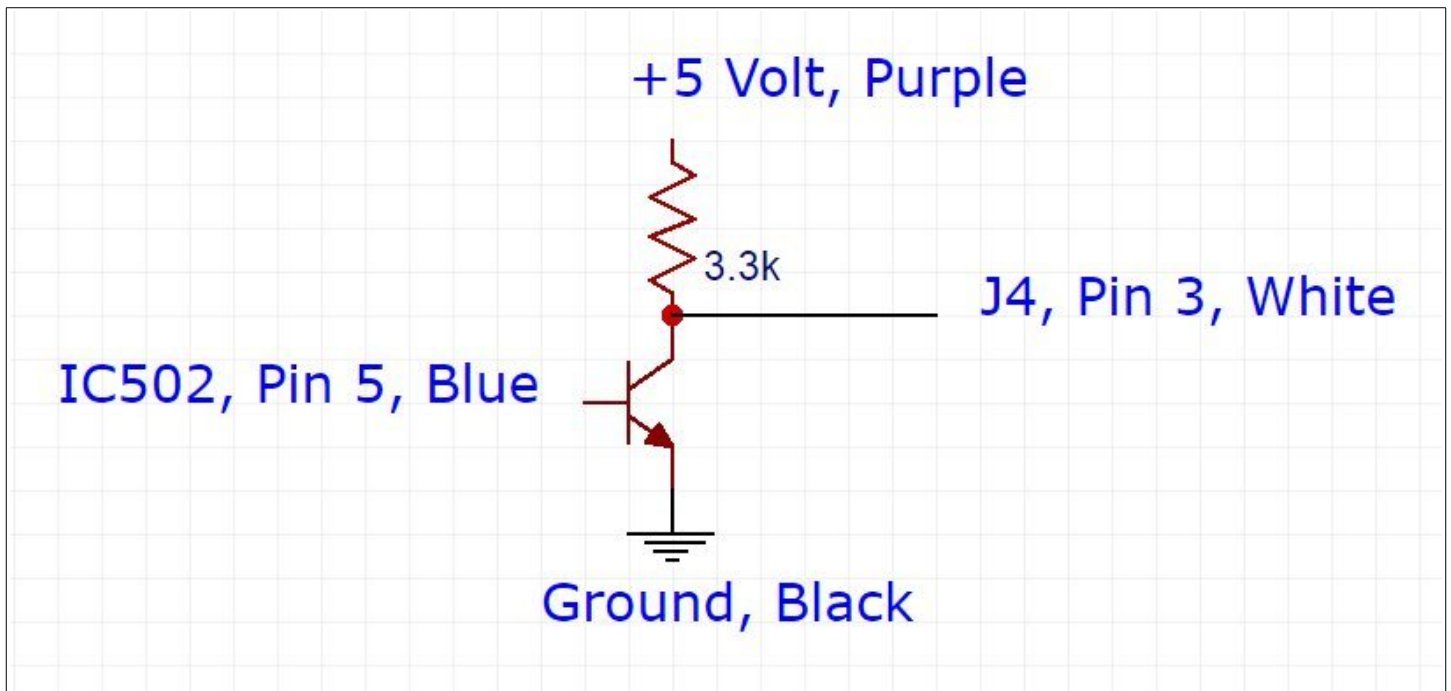
Contact Info:

If you have any questions or comments I can be contacted on the forums at www.lddb.com under the username “**invenio**”.

Credits/Thank you:

A super big thank you to Duncan from Bayview Electronics (<http://www.laserdiscservice.com/>) for all his help. He designed the mod electronics.

First let's look at the DNR mod itself. Below is the component schematic with appropriate connections. I labeled the connection points as well as the wire coloring reflected in this guide.



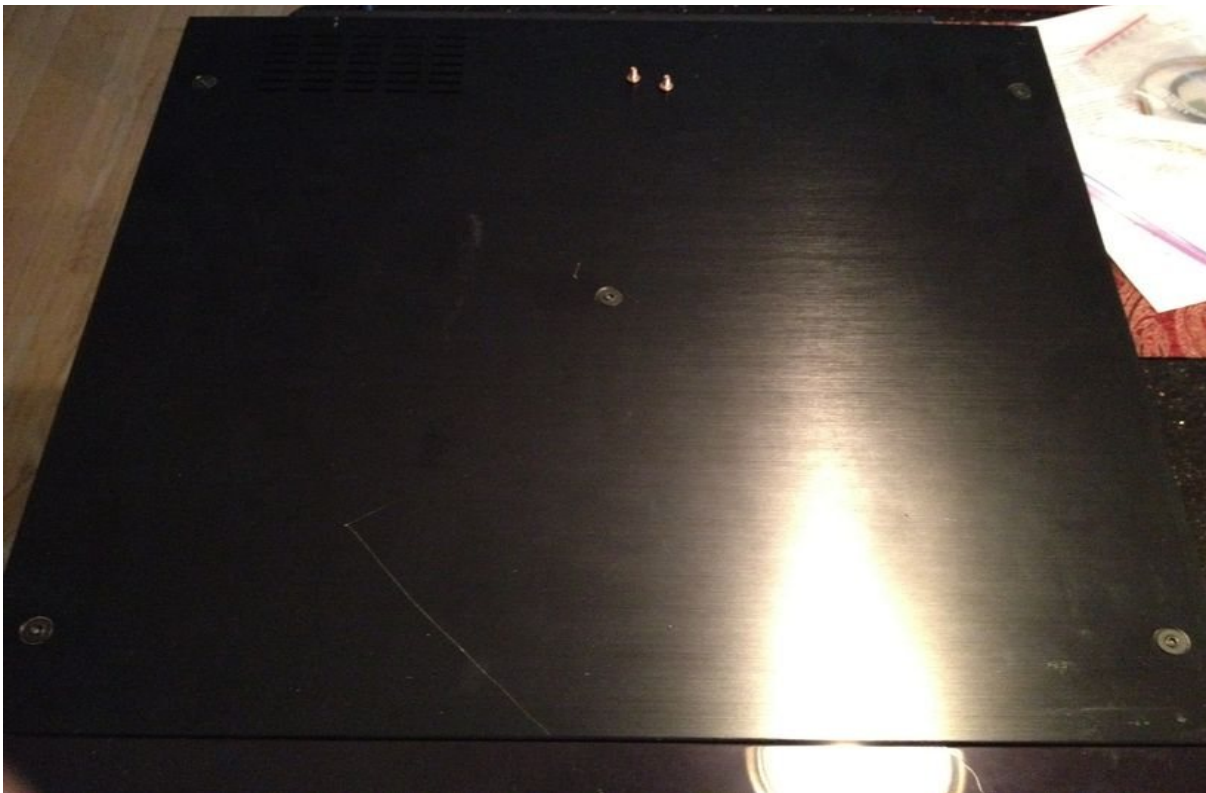
In addition to the wires there are two basic components. A 3.3k ohm, $\frac{1}{4}$ watt resistor and a 2SC1740 transistor (or equivalent).

If you are going to make the mod yourself, take care not to leave any exposed components that may come in contact with other conductive materials in the laserdisc player. One easy solution is to wrap the finished mod with electric tape.

I would work in a well lit (and ventilated for soldering) area. The modification will take approximately one hour, but take your time and don't rush.



First, remove the wooden side panels by removing the 4 screws that hold these on. Next, the top of the player will have 5 hex head screws. You need a hex L wrench set, size 3/32" fits well into the screws.

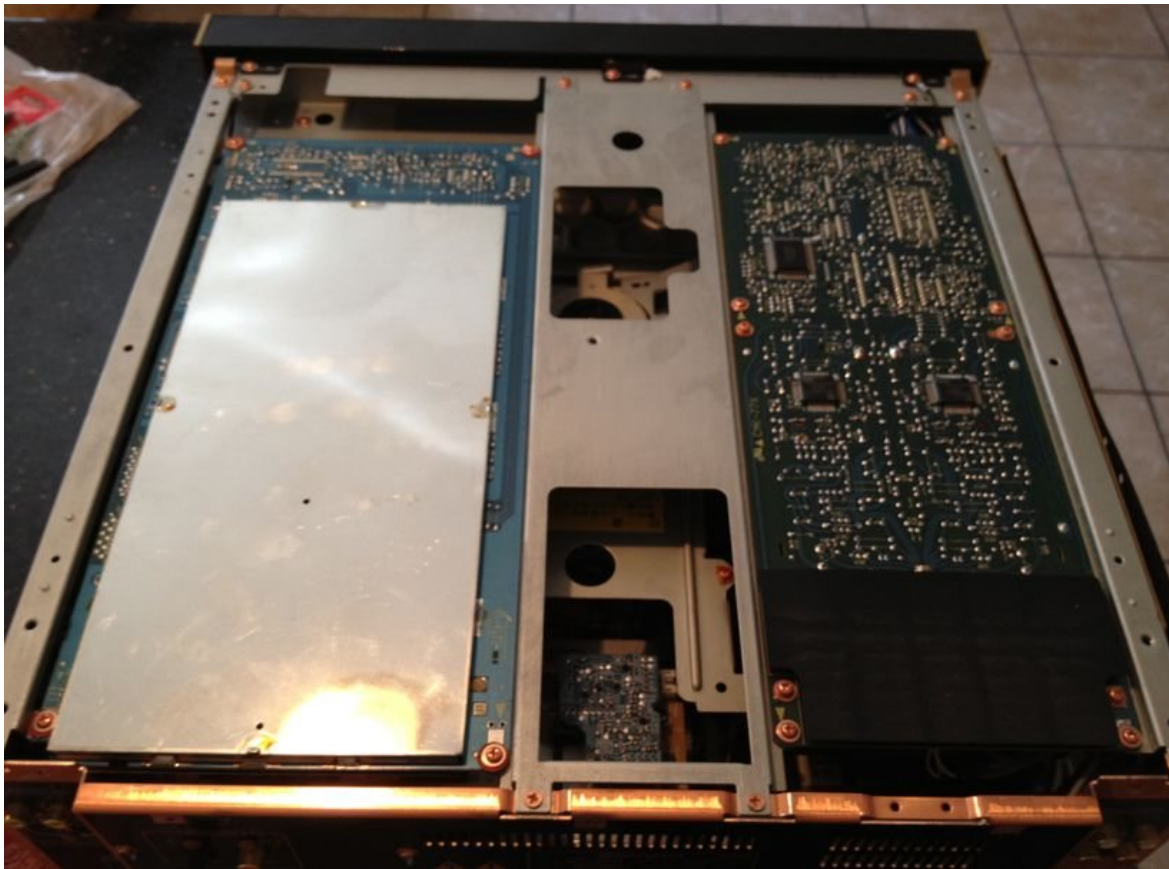




You can now remove the top cover.

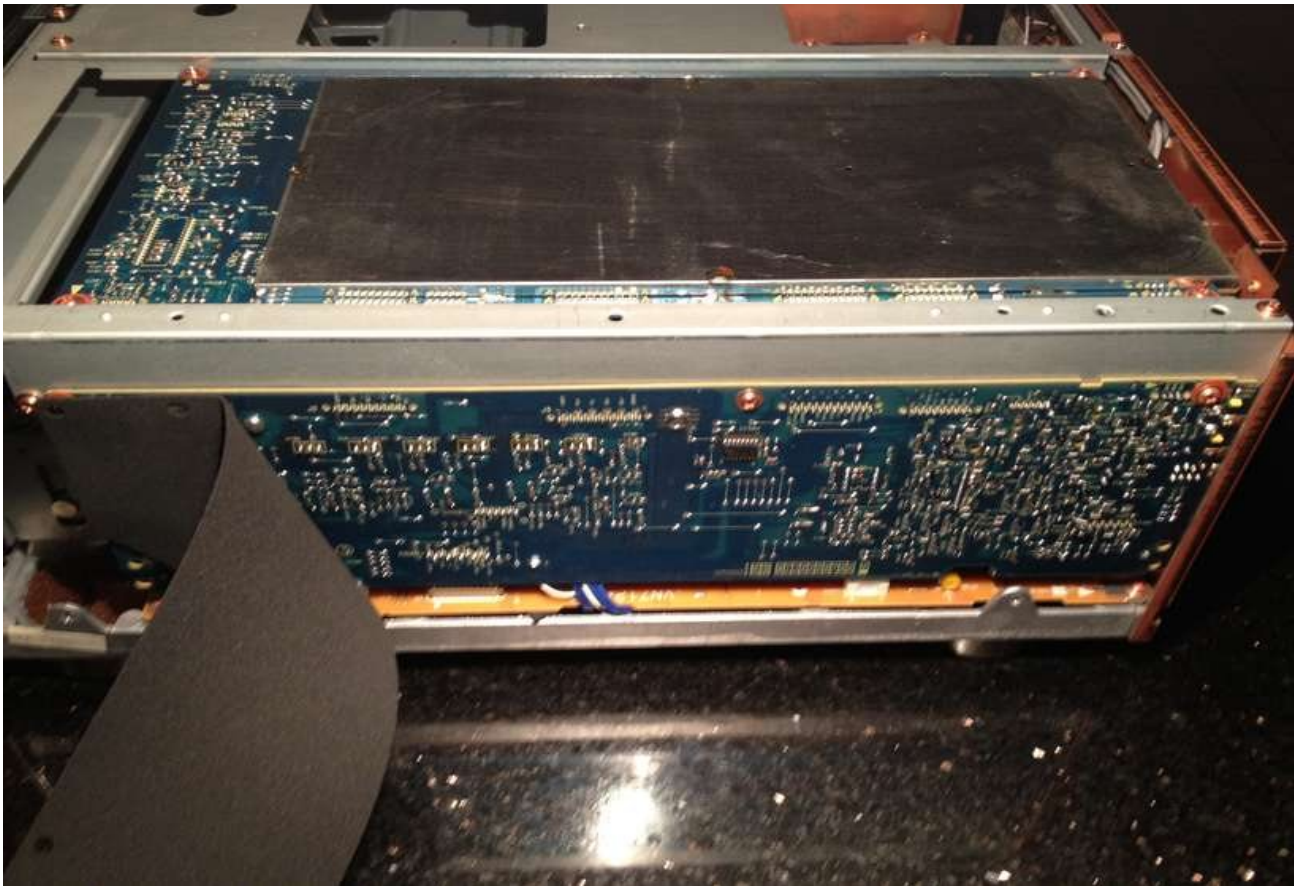


There are 5 screws to remove from the back so that the metal housing can be pulled off of the player.

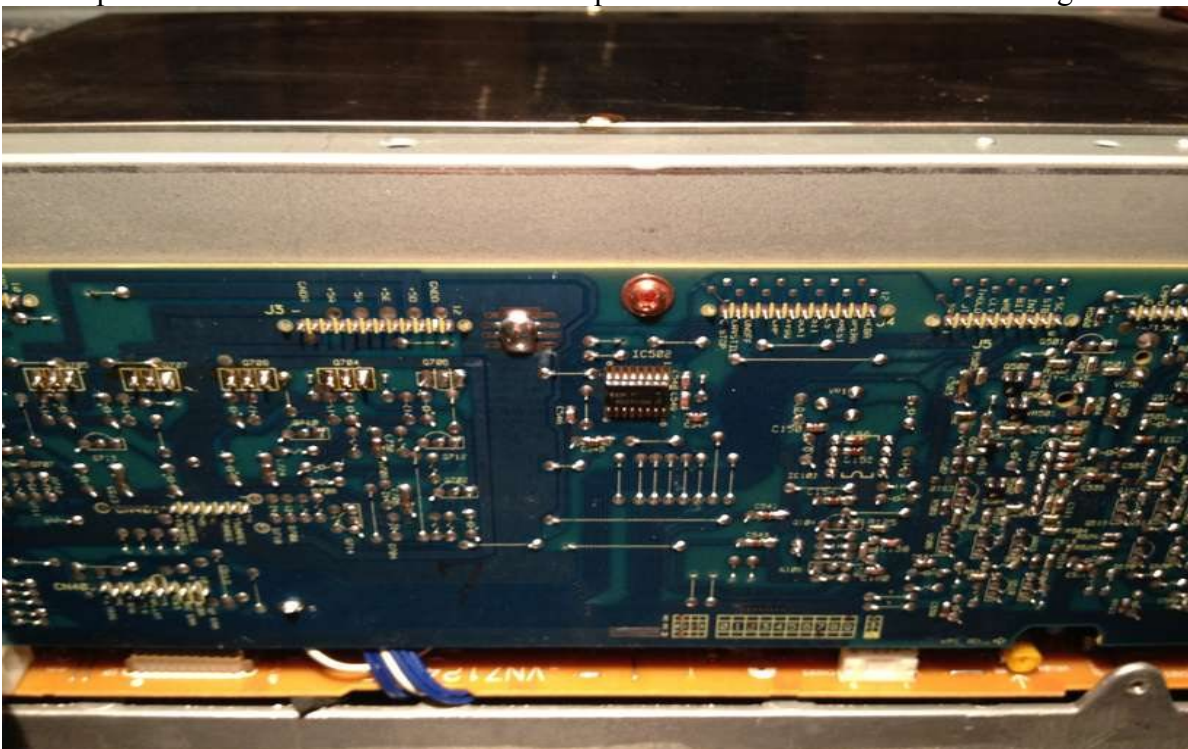


The above view is from the back of the player. The circuit board that we will be working on is on the Left side from this view. The picture bellow shows the side panel with the protective material over the area we will work on.

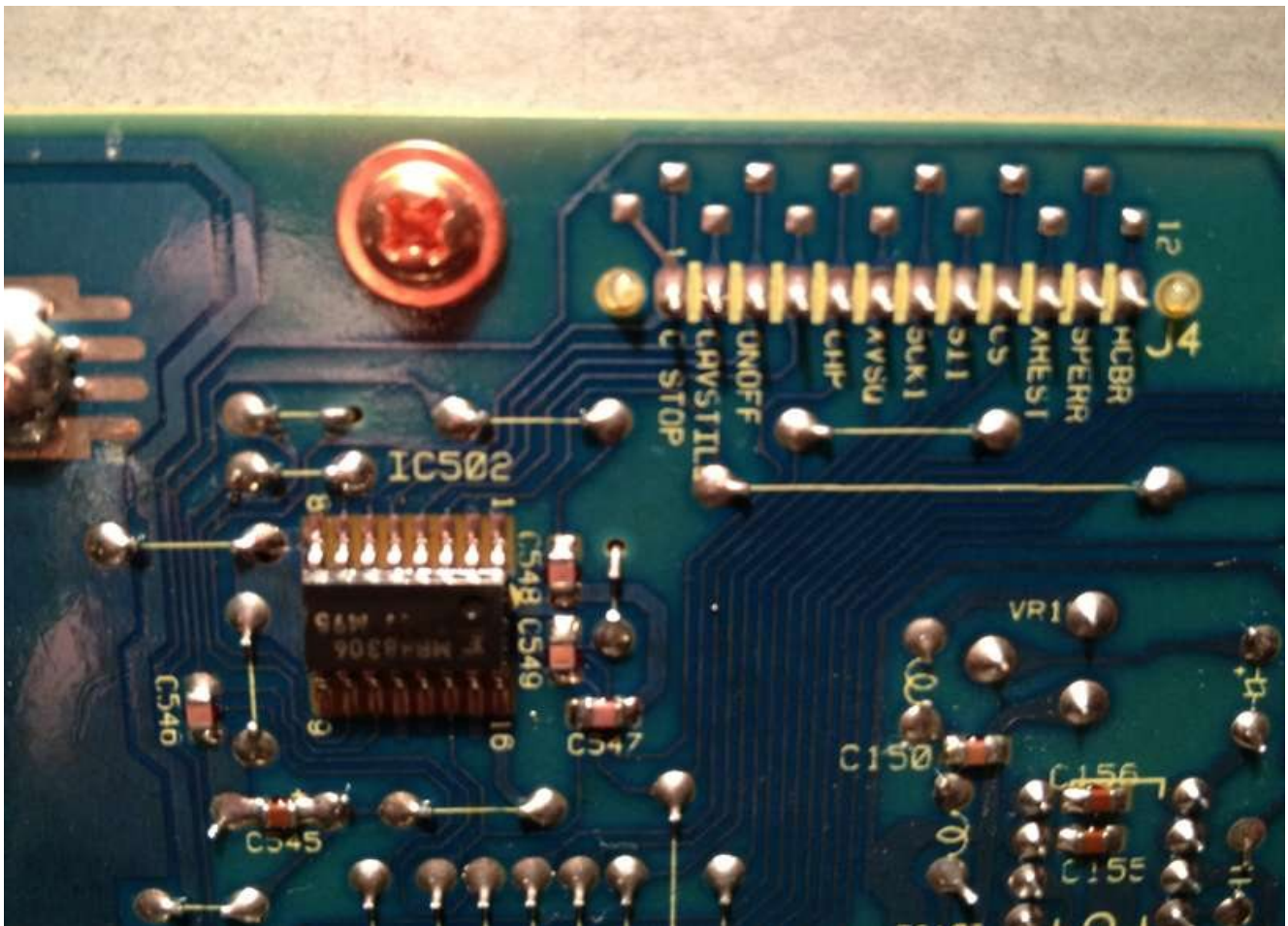




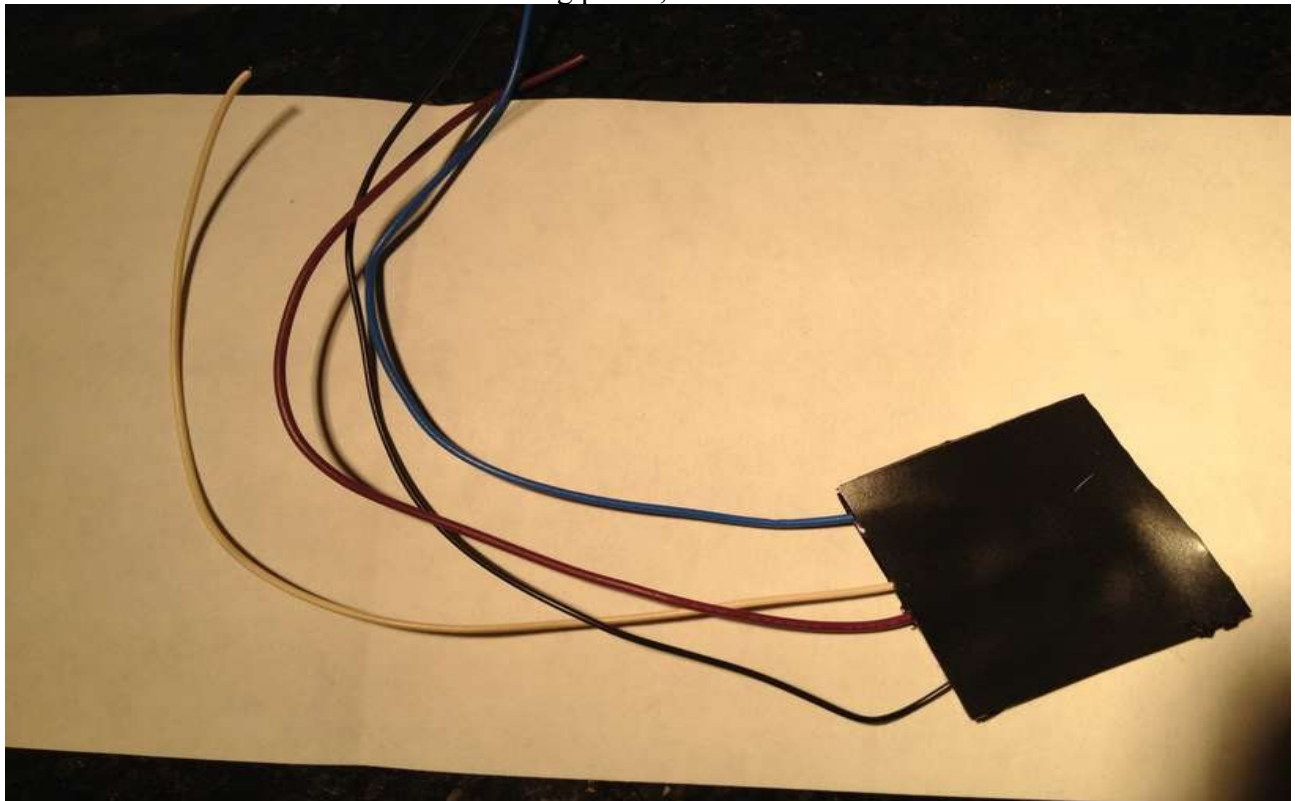
You can peel the protective foam off on either side to expose the area that we will be working on.



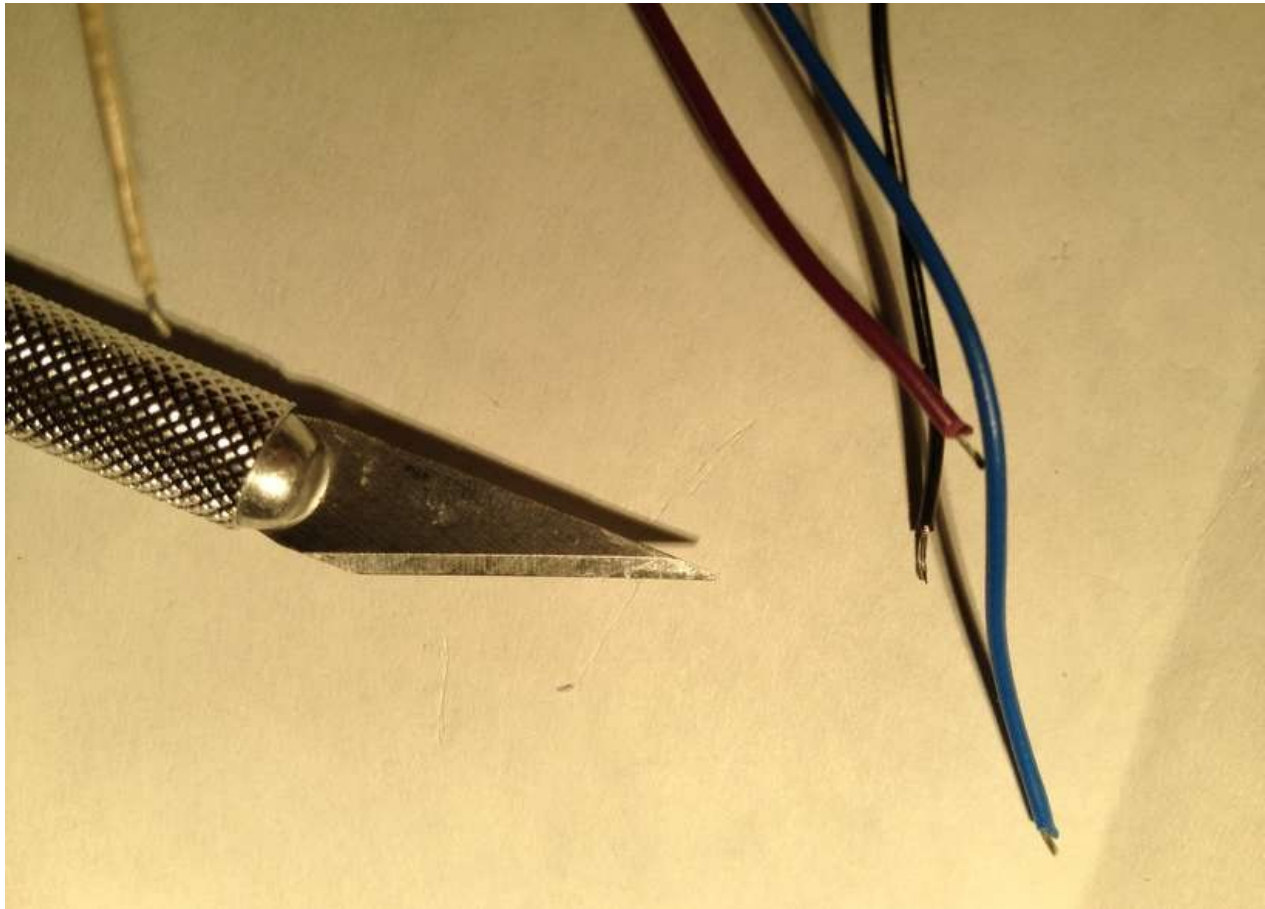
You may find it helpful to put something under the side of the player to angle the side up so it is easier to work with.



The above picture is the closeup of the area that we will be working on and contains all the contact points that we will solder. Before we talk about the soldering points, let's look at the mod itself.



There are 4 wires that will need to be connected.



I used an X-acto knife to strip the insulating plastic off the tiny wires but you can try using a wire-stripper. Note that the wires are VERY thin so very little pressure is needed. I would recommend only leaving a small section exposed so as to minimize short circuits once it's soldered onto the circuit board.

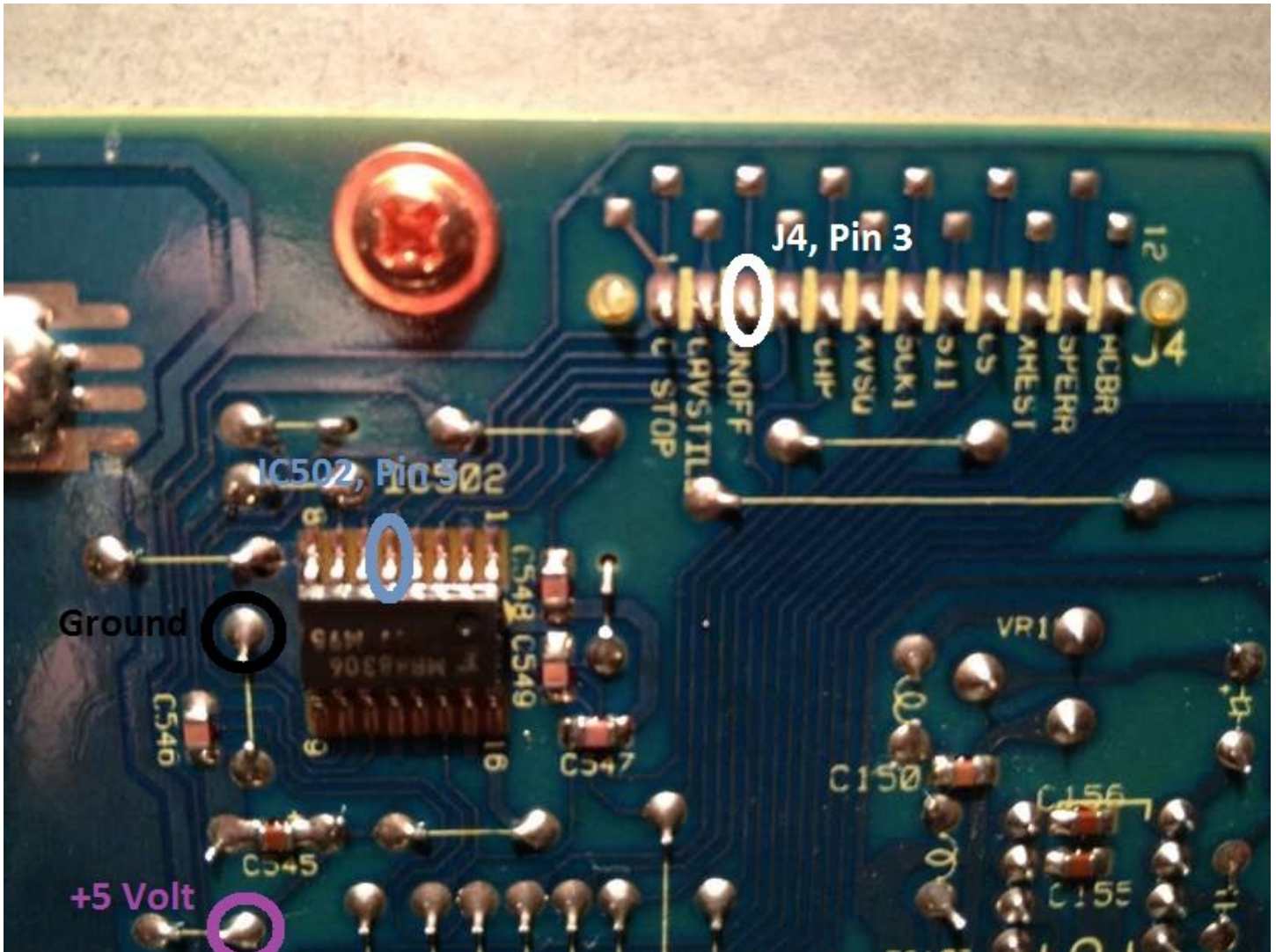
The following are the wire colors and corresponding circuit board connection points:

BLACK=GROUND

PURPLE=+5 VOLT

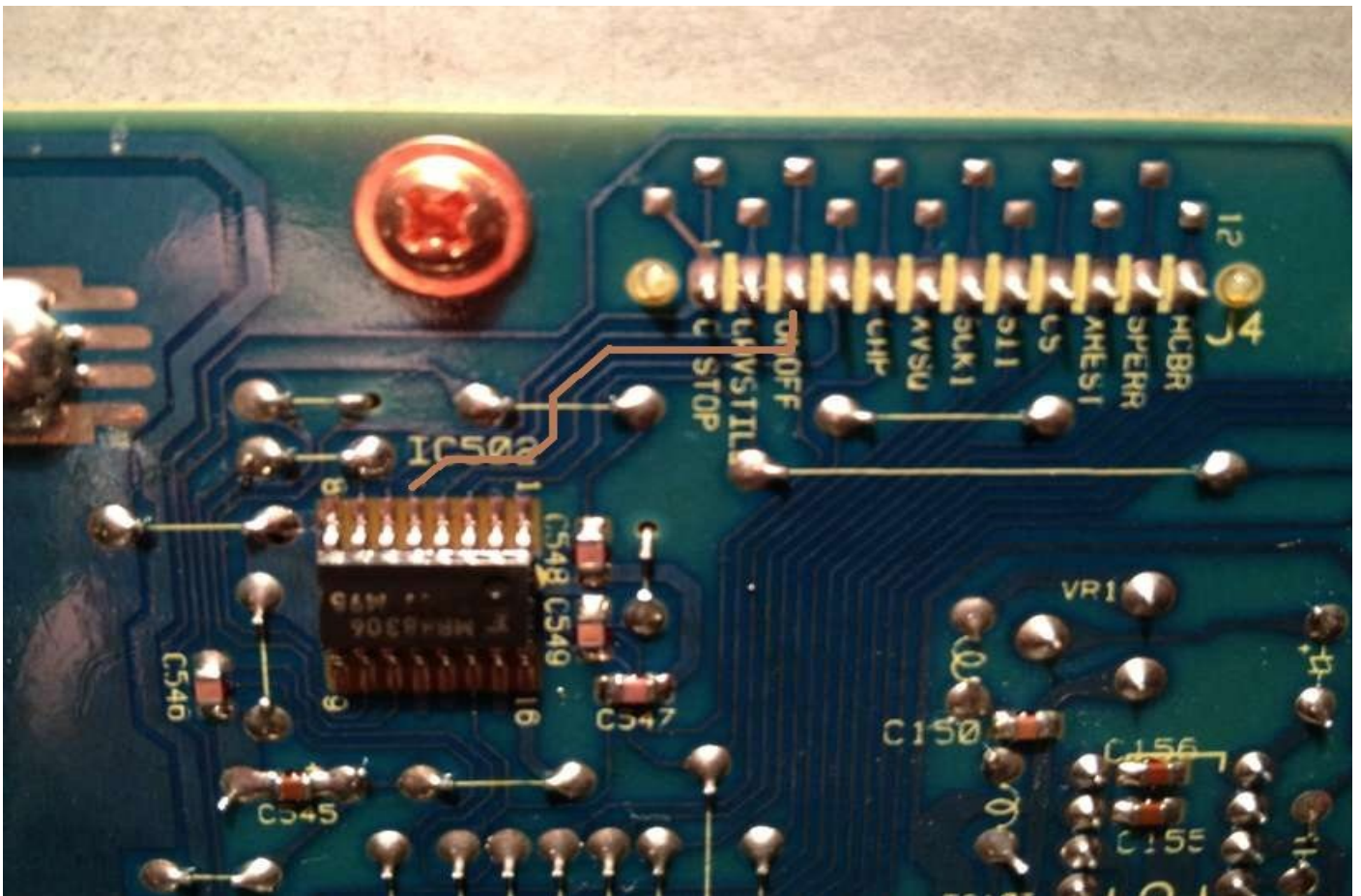
BLUE=IC502, PIN 5

WHITE=J4, PIN3

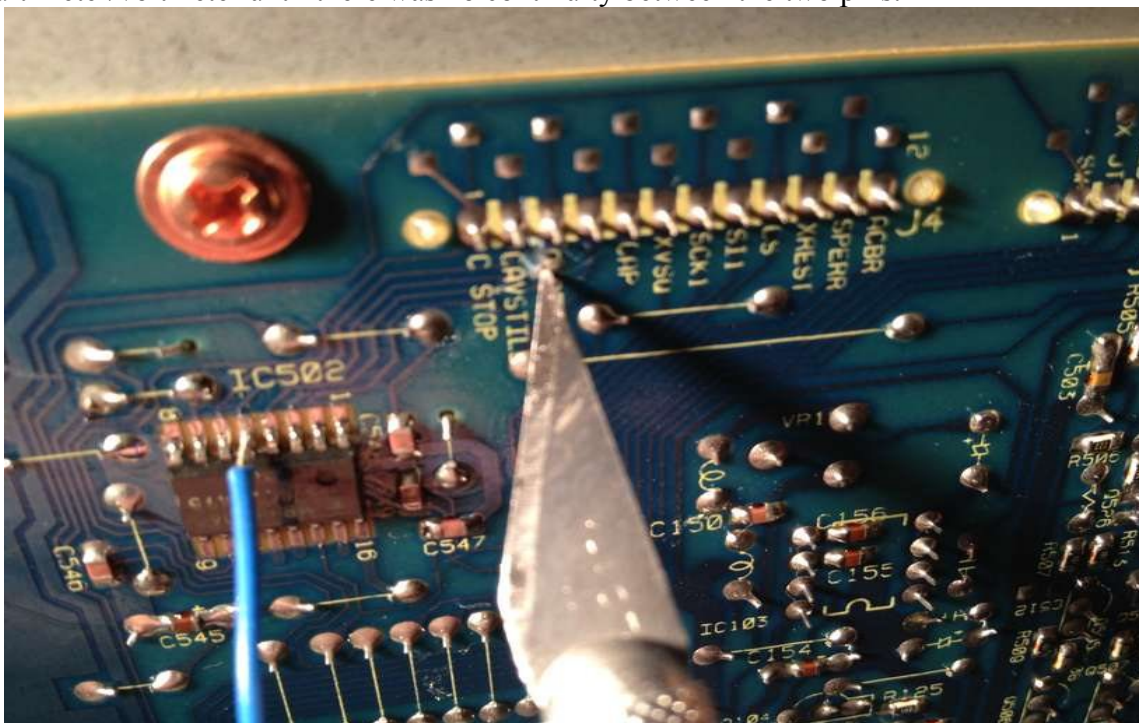


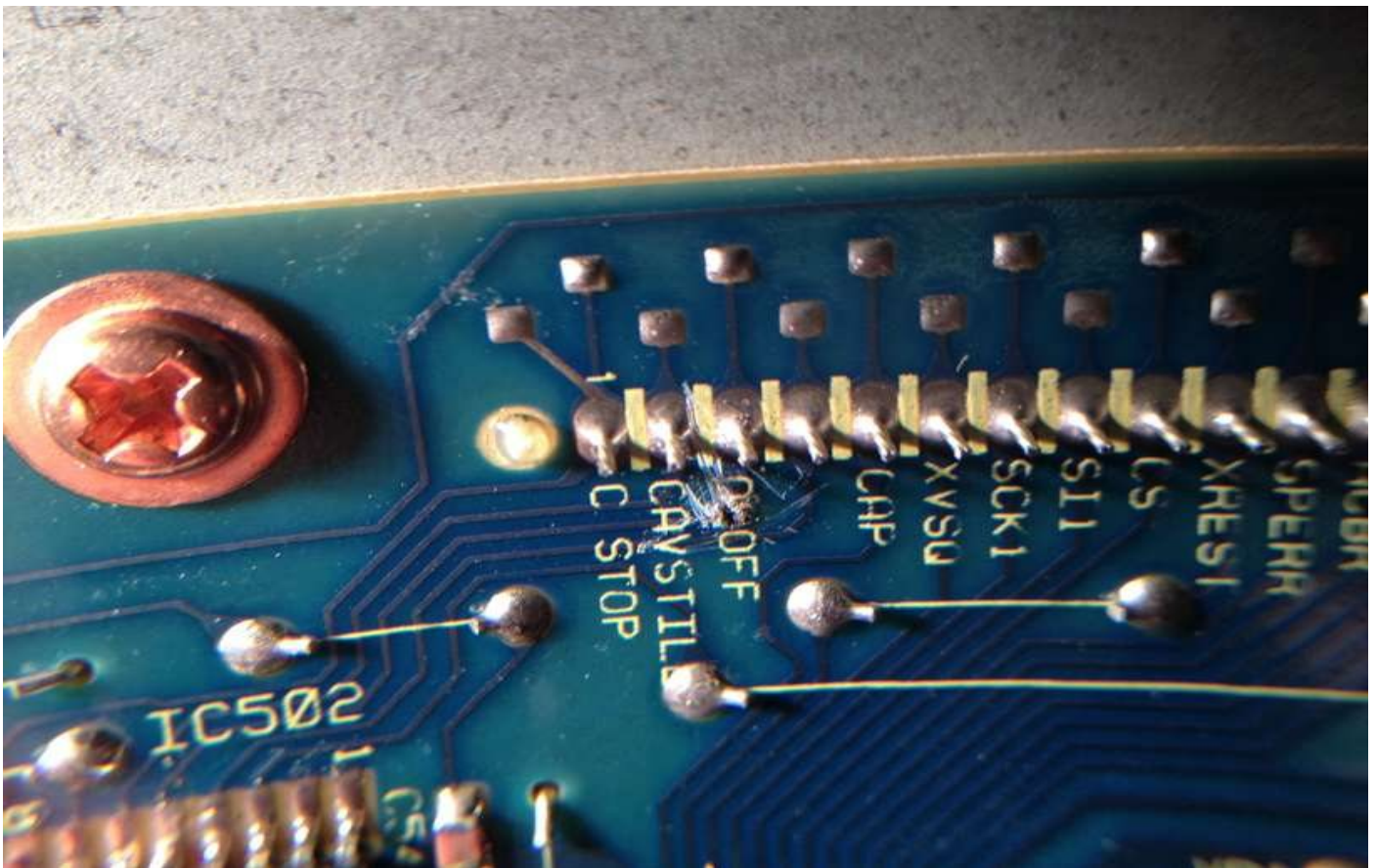
Above are the corresponding solder/connection points.

HINTS: For J4, Pin3 you can solder onto the pin itself (which I did), or you can go above to the connector if you are worried about hitting another pin. IC502, Pin 5 is the one you really have to be careful with as it is very close to the other pins and you don't want to damage the surrounding components with the heat of the soldering iron. I recommend placing VERY LITTLE solder onto the end of the wires prior to attachment. Last but not least, use your voltmeter to make sure the connections are good and I always check the solder point circuits with surrounding circuits to make sure you didn't make a connection to some adjacent component by accident.

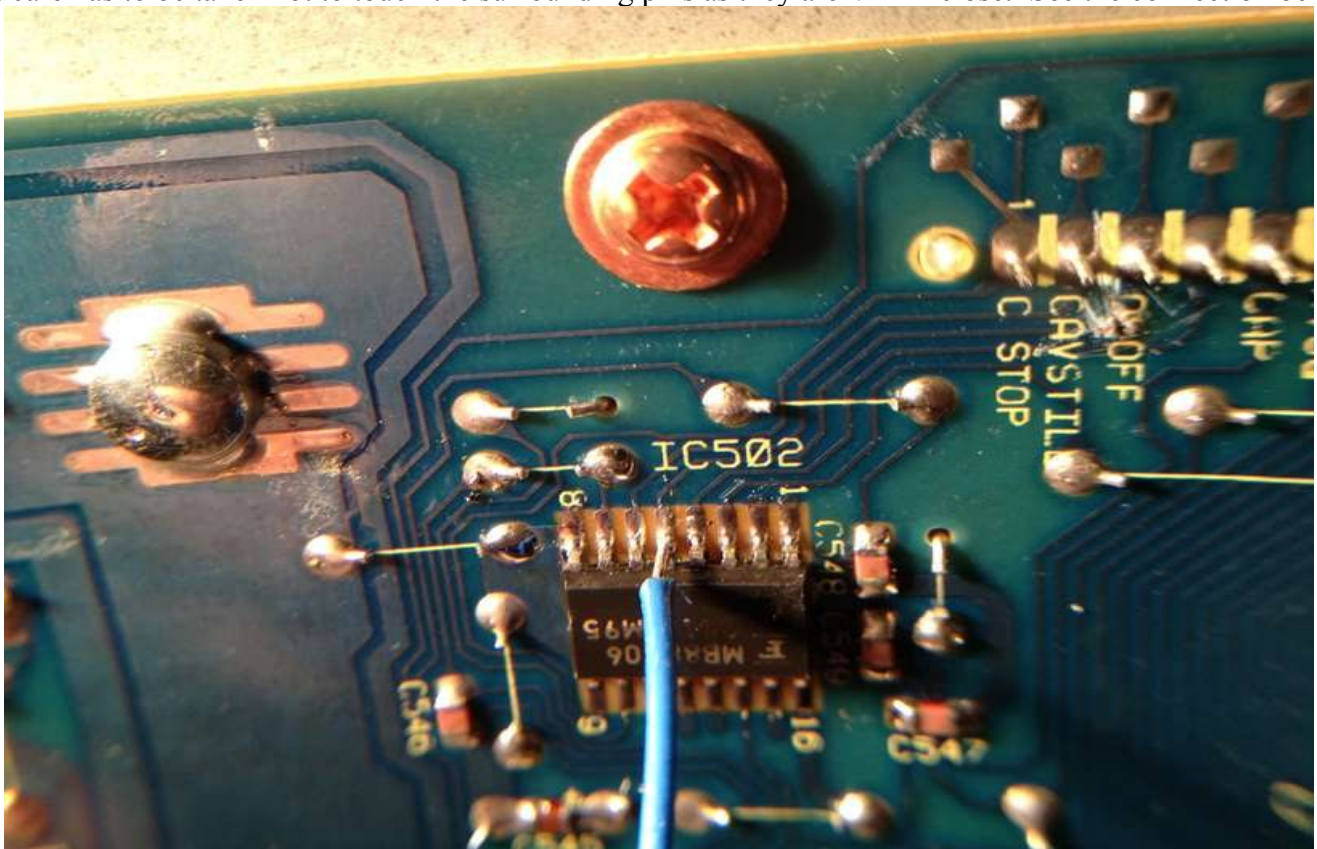


In addition to soldering, you have to break the connection point between J4, Pin 3 and IC502, Pin 5. In the picture above I have outlined the connection. You can break the connection anywhere along the line but the easiest point is right under J4, Pin3 as there is the most room at this location. Take care not to break or damage any of the other components. You can use any technique you want but I found that scraping the connection with an X-acto knife worked well. I did this very carefully and after each “scrape” I would check the connection with my multimeter/voltmeter until there was no continuity between the two pins.

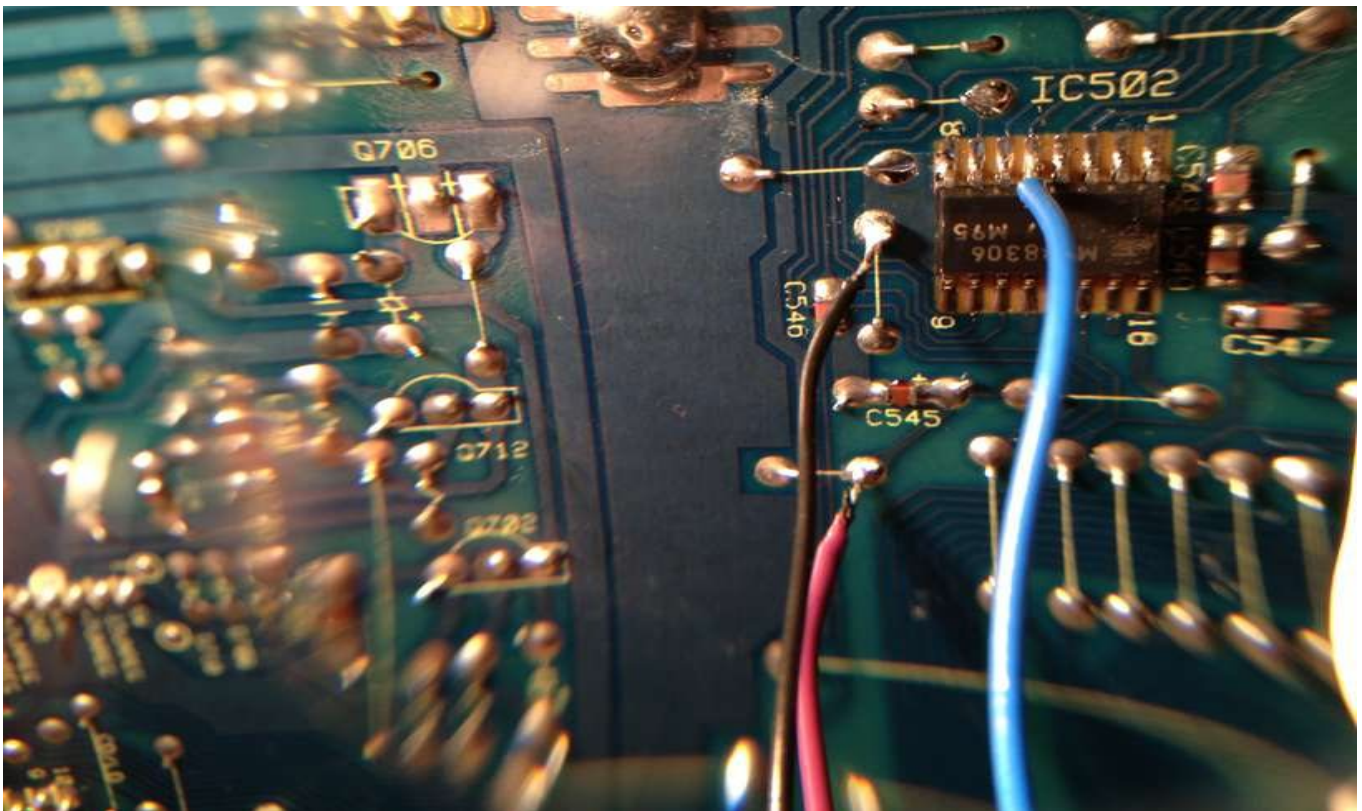




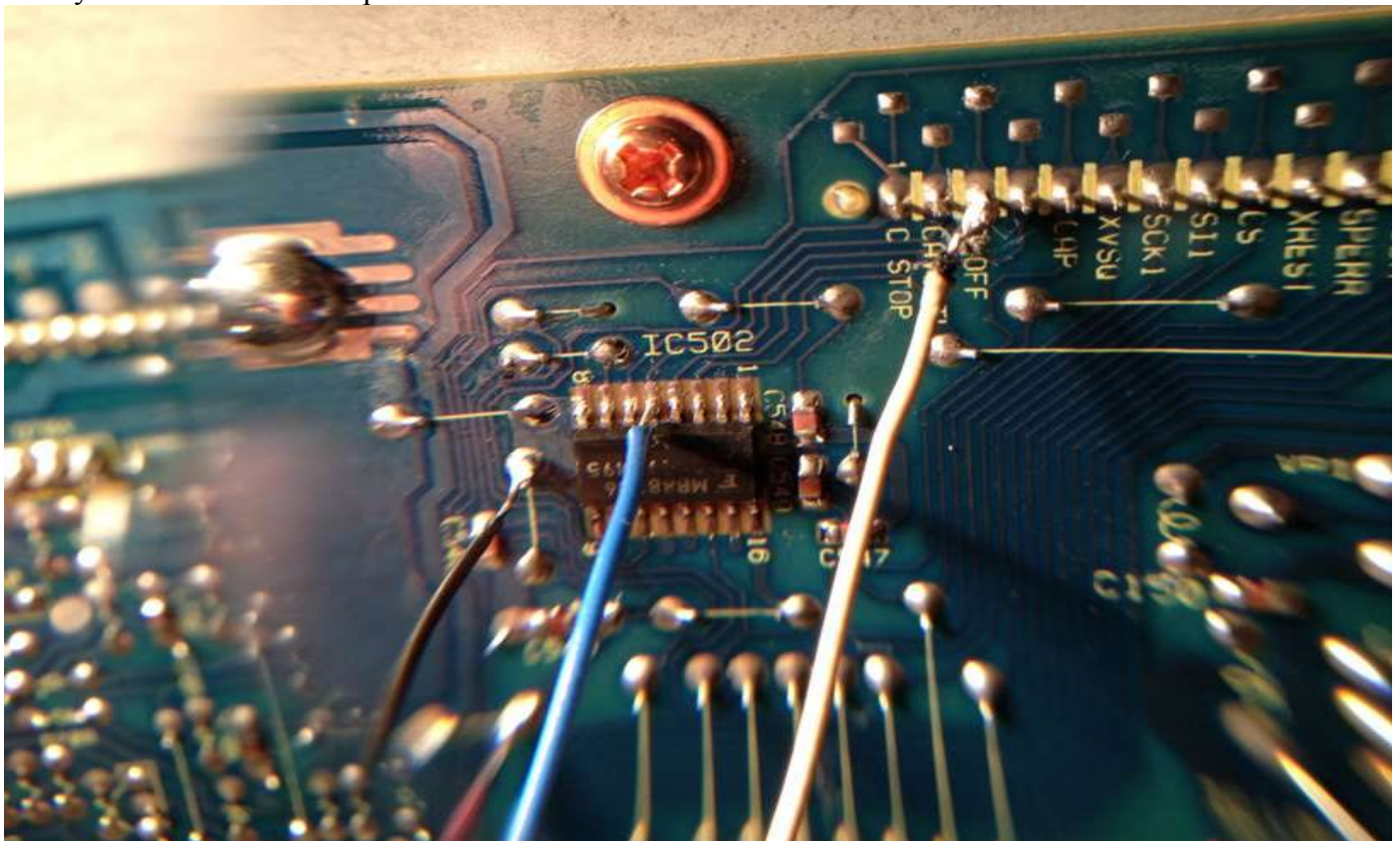
The closeup above shows the connection broken after scraping with the X-acto knife. Ok, let's get to the attachments. First will be the IC502, Pin 5 connection. I would start with this as it is the most difficult and great care has to be taken not to touch the surrounding pins as they are VERY close. See the connection below.



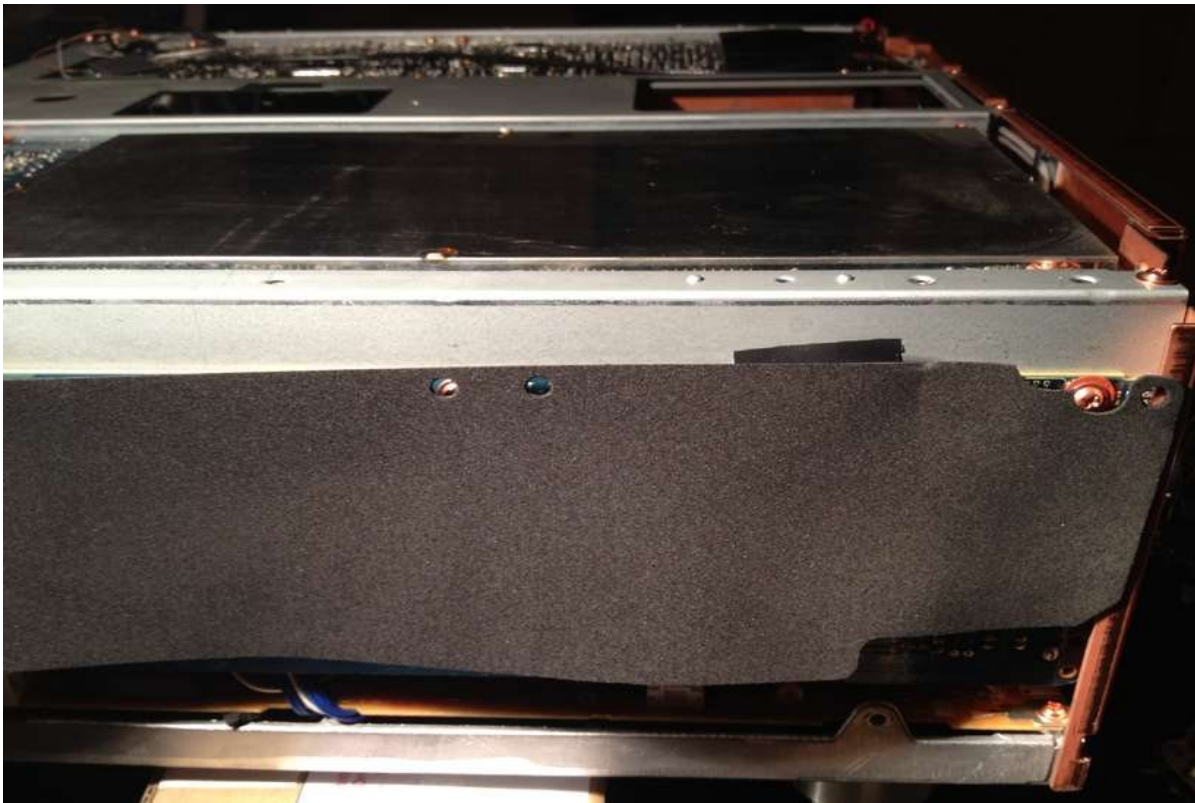
Above you can see a slightly angled view of the connection. Use VERY LITTLE solder on the wire.



Above you can see the solder points done for the Ground and +5 Volt connections.



Last but not least, the J4, Pin 3 connection is on the upper right of the picture. Once again, you can alternatively attach this to the connection above the pin close to the edge of the circuit board if you don't want to go directly on the pin.



You are all finished. Just push the mod gently against the circuit board and soft protective material which you can stick back to it's original position. Take care not to put too much pressure on the area when placing the metal housing back on the unit.

NOTE: Although this mod reversed the DNR on/off setting, it **did not** change the onscreen text to display the correct DNR on/off value. In other words, if you press the "DNR" button it will say the DNR is "off" when in fact you just turned it on. The onscreen display will now be the opposite of the true value.