

UAV – Ultimate Atari Video – A7800

Basic Install guide – because this is really easy mod to do! The UAV is a wonderful piece of tech for what it can do. To summarize, the UAV is a replacement video encoder and output for pretty much every Atari console and computer Atari released in the 8-bit arena. This guide will only focus on the install for the Atari 7800.

NOTE! – This guide assumes you can use a soldering iron and understand the basics of where what needs to be connected to what in regards to wires onto the AV out connections as that won't be detailed here.

Tools Needed –

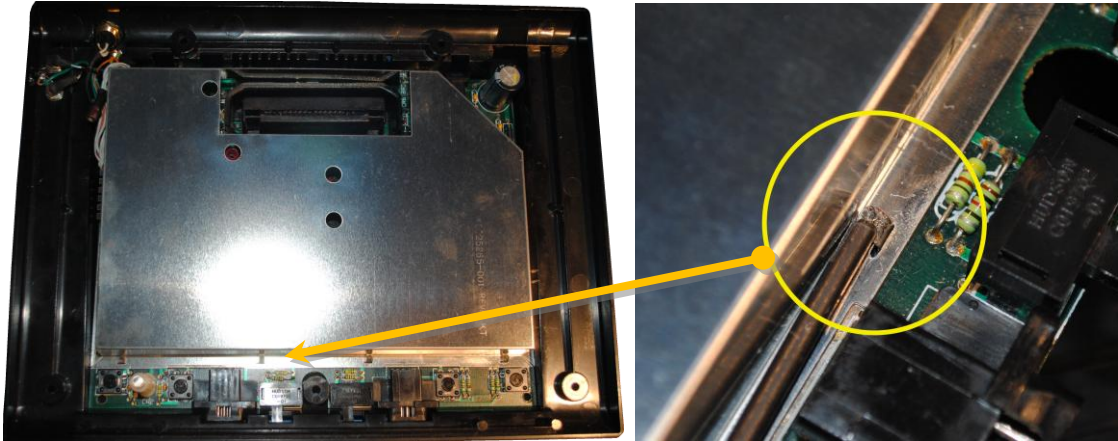
- #2 Phillips screwdriver – For taking the 7800 case apart
- Need nose pliers – to assist with bending up the RF shield tabs
- Soldering iron – cause that solder isn't going to attach itself
- Solder – cause the wire isn't going to attach itself
- Lengths of small gauge wire – different colors make it easier for each connection
- A way to attach the mod board inside – I use 3M 10LB Velcro
- RCA Jacks panel mount (2 min) – for your Composite Video and Audio Out
- S-Video Jack panel mount – for S-Video output
- 10uf 16v axial or radial capacitor – Audio filtering
- Heatshrink tubing – for that slightly more professional look
- Small cable ties – for even more professional look and to keep the wires together
- Multimeter – to verify continuity of connections and check for shorts

Basic Process –

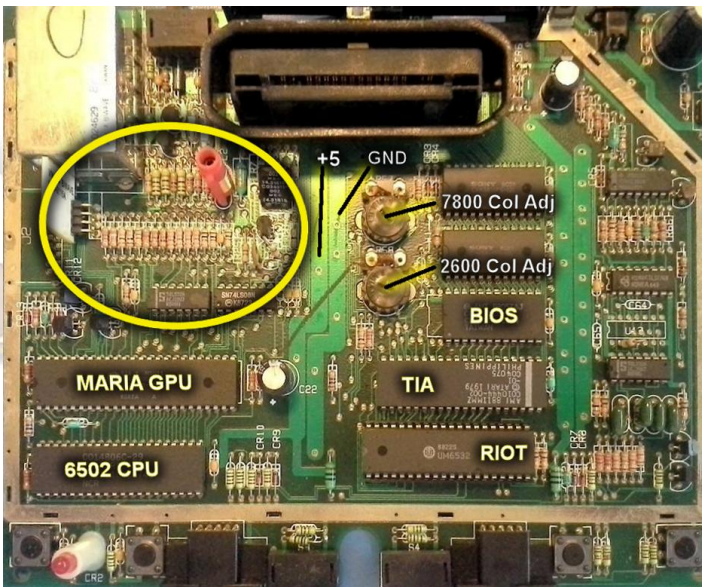
1. Start by removing the top cover from the 7800 by removing the 5 screws along the bottom of the case. Two in the rear section, three in the front. (Set top case aside)



2. Remove the upper RF shield by using your needle nose pliers to twist the hold down metal tabs and make them stand straight up and flat so they will fit through the slots they originally come up from.

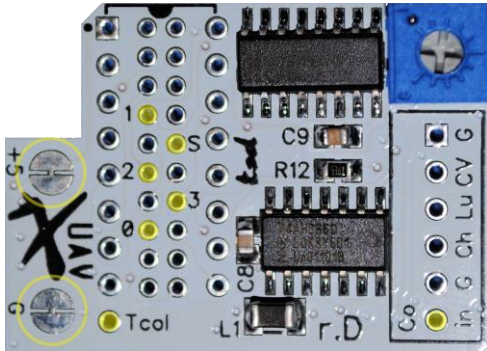


3. Locate the area where wires will be attached on the resistor ladder section just to the right and below the RF modulator area. The area circled in yellow is the resistor section for video taps.

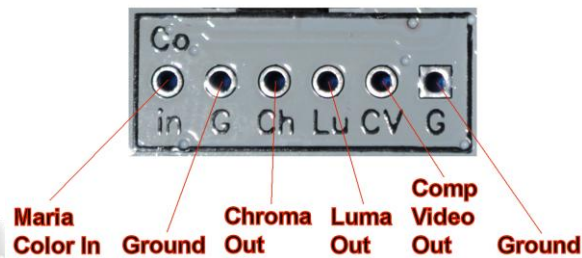


4. Decide where you want to mount the UAV inside the system. It is small enough to fit on top of any of the internal chips. But I would avoid placing it on the 6502 or Maria as they get hot.
5. Measure out the lengths of wire you will need for connections from the UAV to the resistor section and also from the UAV to where you decide to place your AV out jacks. 15 total connections will be made to the UAV if you use both composite and s-video outputs.

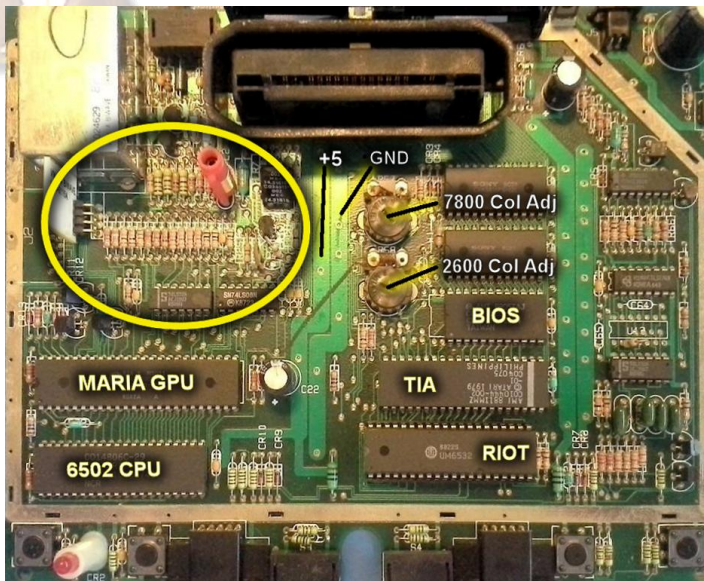
- Solder your wires onto the UAV first as that will be more difficult. Solder your wires that will go to the resistor section along with your **+5** and **Gnd** to the highlighted areas on the UAV:



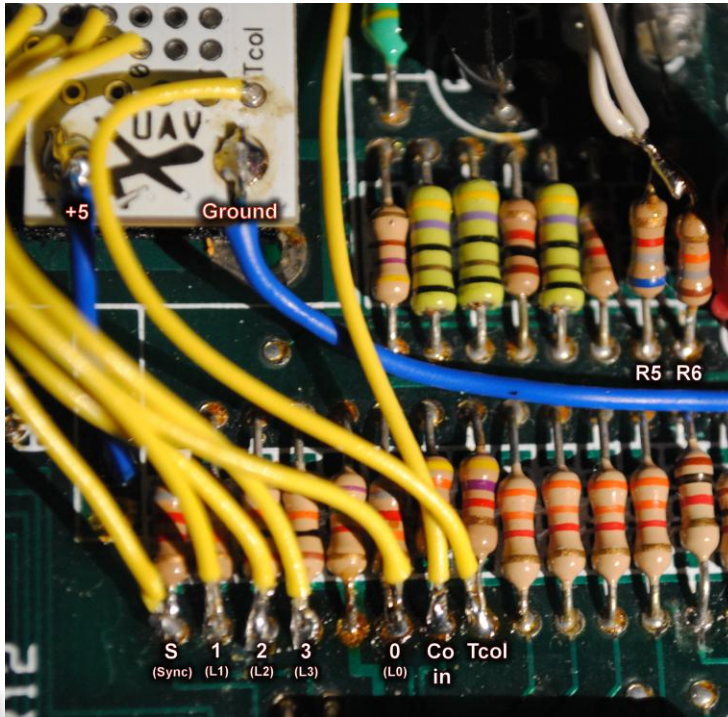
- Solder your wires from the UAV Video out section that will be connected to your AV out connections: (Chroma & Luma are for S-Video, Comp Video is Composite)



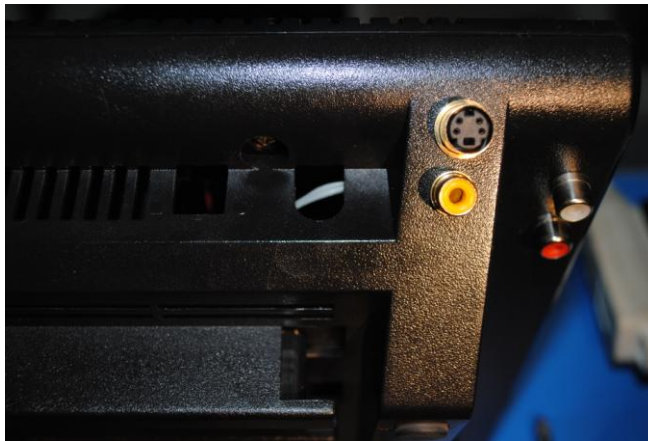
- Now solder the other ends of your **+5** and **Gnd** wires from the UAV to the **+5** and **GND** rails as labeled in the upper center below:



9. Solder the other ends of your resistor connection wires from the UAV to the following locations on the South legs of the resistors shown below. **NOTE: 1 on the UAV matches to 1 on the resistor labels below. So 1 to 1, 2 to 2 and so on. Trim your wires as needed for proper length.**

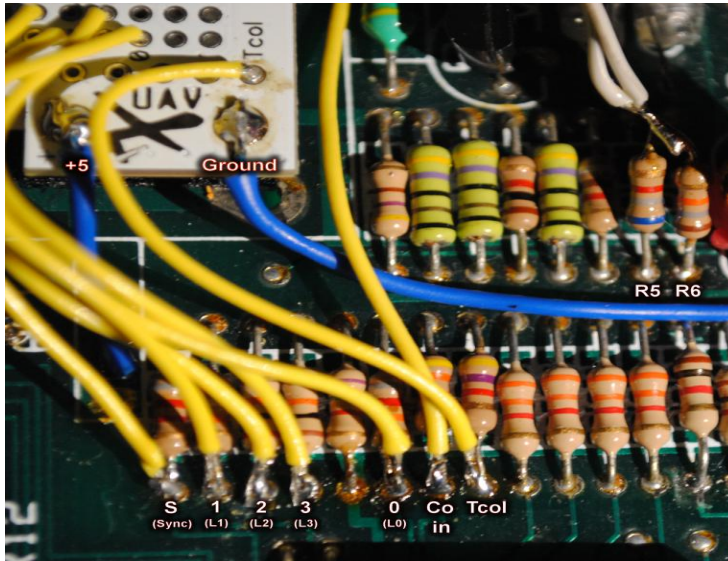


10. Now prepare the 7800 case and drill the needed holes for your AV jack connections. Most panel mount jacks require a $\frac{1}{4}$ " hole for RCA and usually a $\frac{1}{2}$ " hole for an S-Video jack. Be careful when drilling holes into plastic of this age as it will crack easily. Start with smaller drill bits for pilot holes and work your way up. I use $\frac{1}{8}$ " bits to make the pilots and then use forstner bits of the right final size from there. Forstner bits are designed to drill into soft materials slowly and carefully and are recommended if you will be doing these kinds of mods often. Placement of the AV jacks is personal preference, but most will install them along the lower sides under the main board as that is where the most room is. I installed mine a bit differently as can be seen here:

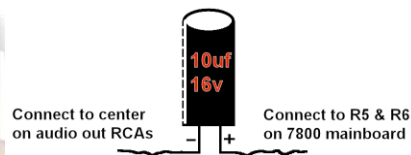


11. **NOTE: The UAV doesn't include connections for audio output so that has to be done separately.**

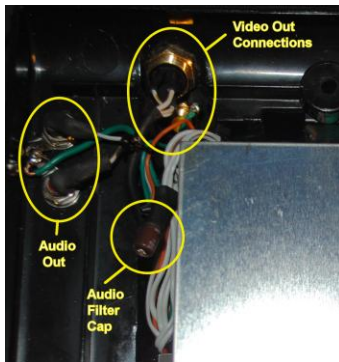
Locate the resistors for the audio out. They are R5 and R6 located in the center right in the picture below:



12. Cut the North legs of these two resistors and solder the ends together. Solder the '+' leg of a 10uf/16v capacitor off the North leg connections or attach using a length of wire if that is easier. The '-' leg of the capacitor will attach to the centers of your audio out RCA jacks.



13. Finish up by soldering all video out connections from the UAV to the appropriate AV jacks you installed earlier.



Now you should be ready to enjoy your new composite, s-video, and audio connections that allow to connect to more modern televisions for improved picture clarity and sound. Test everything before re-assembling your Atari 7800. Make sure to double check all your connections for proper placement and verify you do not have any shorts due to solder bridges; easy to do on the UAV given the small size.