

UAV – Ultimate Atari Video Install – A5200

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 focus on the install for the Atari 5200 and the process is essentially the same for both 4-port and 2-port model systems.

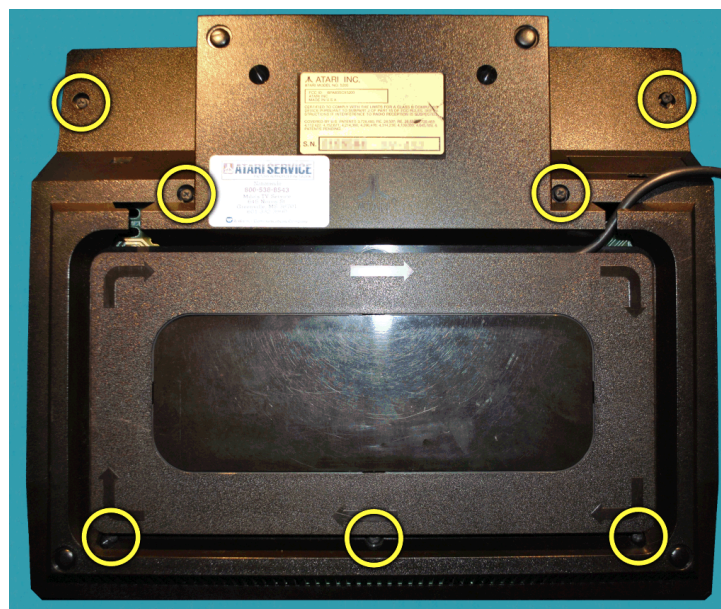
NOTE: – This guide requires experience using a soldering iron and understanding the basics of where what needs to be connected to what in regards to wires onto the AV out connections as that won't be detailed here. I take no responsibility if you follow these instructions to modify your system as you do so at your own risk!

Tools Needed –

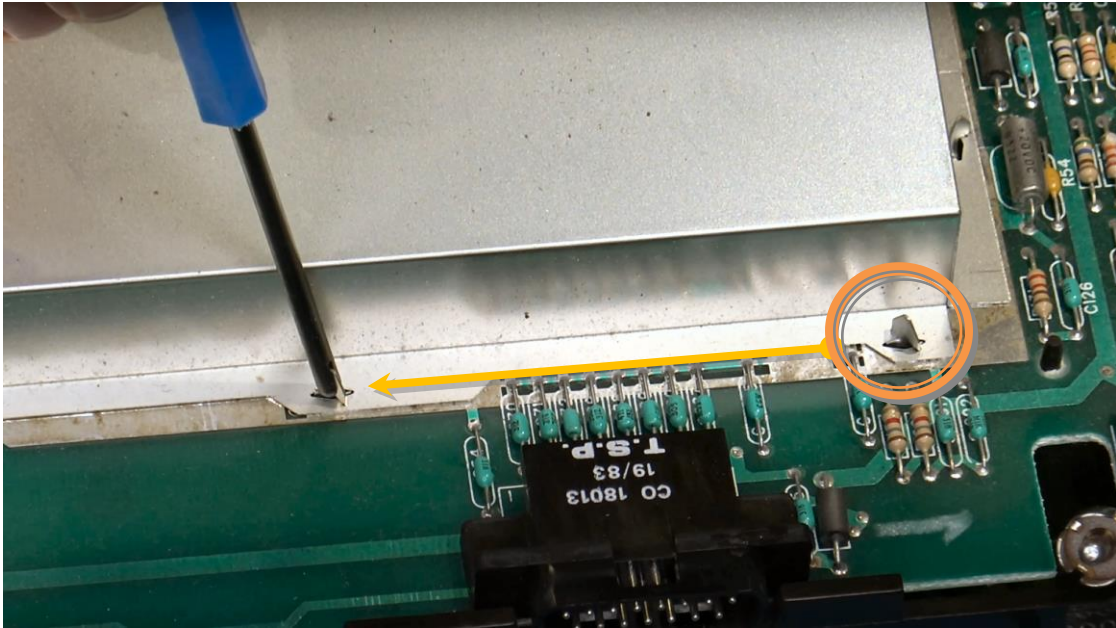
- UAV board (Kit version advised)
- #2 Phillips screwdriver – For taking the 5200 case apart
- Needle nose pliers – to assist with bending up the RF shield tabs & grabbing stuff
- Soldering iron – cause that solder isn't going to attach itself
- Solder – the 'glue' of electronics
- De-solder braid/wick or de-soldering iron – might have to remove some stuff
- Lengths of small gauge wire – different colors and about 12" in length each
- 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
- 2K +/- ¼ watt resistor – Audio use
- (Optional) Heat shrink tubing – for that slightly more professional look
- Multi-meter – to verify continuity of connections and check for shorts

Disassembling the 5200 –

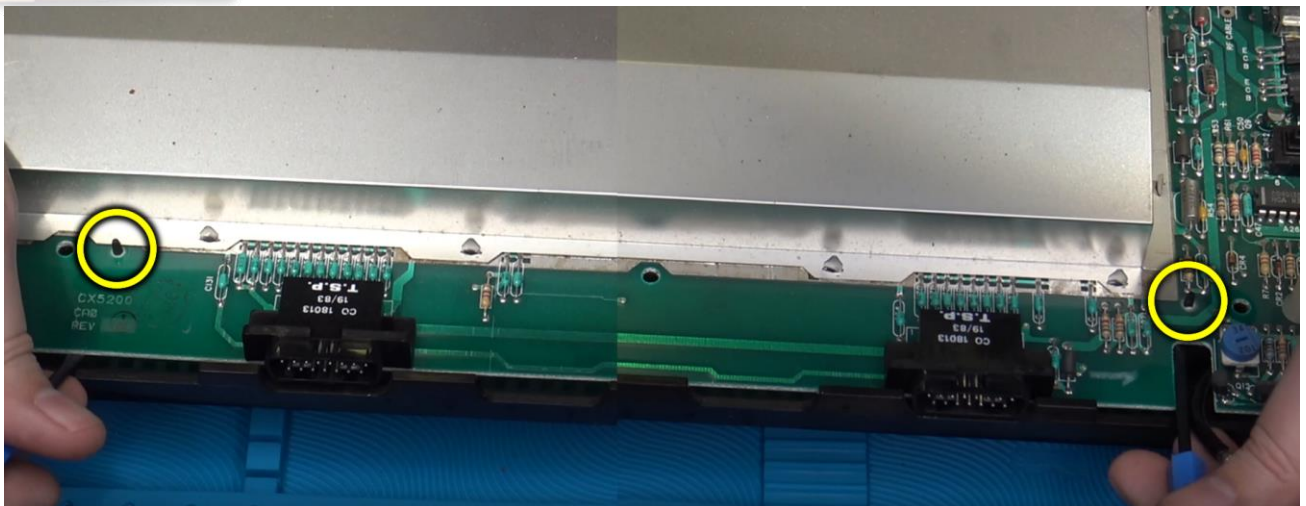
1. Start by removing the top cover from the 5200 by removing the 7 screws along the bottom of the case. Refer to the yellow circles in the picture below for screw locations.



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



3. Use a screwdriver or other tool to wedge under the front section of the main board to lift it off the alignment pegs like shown below



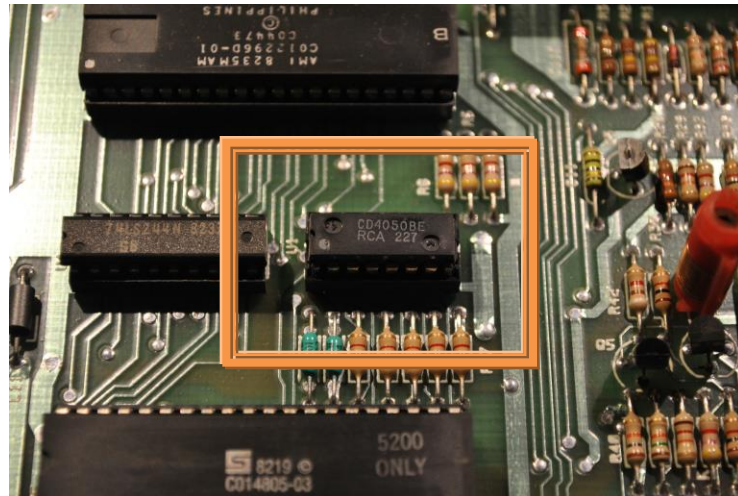
4. Carefully separate the two sections of the RF shielding from the top and bottom of the main board. Set them aside if you plan to reuse them. **Please Recycle the RF shield if you do not plan to reinstall it afterwards.**

Main board preparations -

4050 Removal: - No RF video out

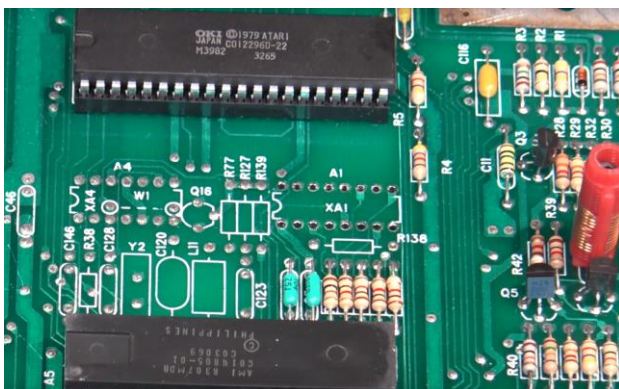
NOTE: If you do not plan to use the original RF modulator from your 5200 any longer then continue on, otherwise skip to the section for [‘Keeping the 4050’ IC chip in circuit for RF modulator use:](#)

1. The UAV is usually installed in place of where the original 4050 IC chip is located on the 5200 main board shown below between the large ANTIC and GTIA ICs.

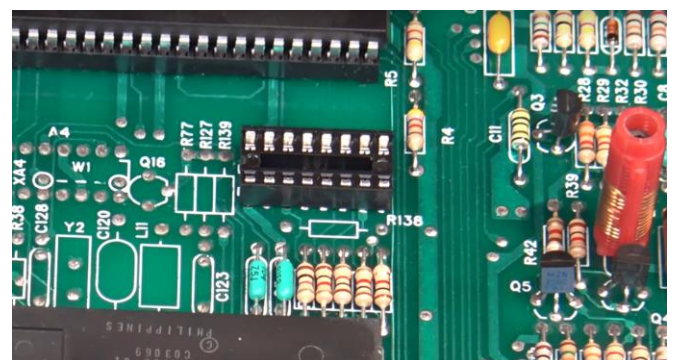


IVORY TOWER COLLECTIONS

2. The 4050 will need to be removed from the main board. Depending on your 5200, this IC chip may be in a socket in which case you only need to use a small screwdriver on the bottom sides of the chip to remove it from the socket it sits in. If yours isn't in a socket, then you will need to de-solder the chip from under the main board and a socket installed in place of where the 4050 IC was located. The kit includes one 16pin IC socket. Refer to the pictures below for an example.

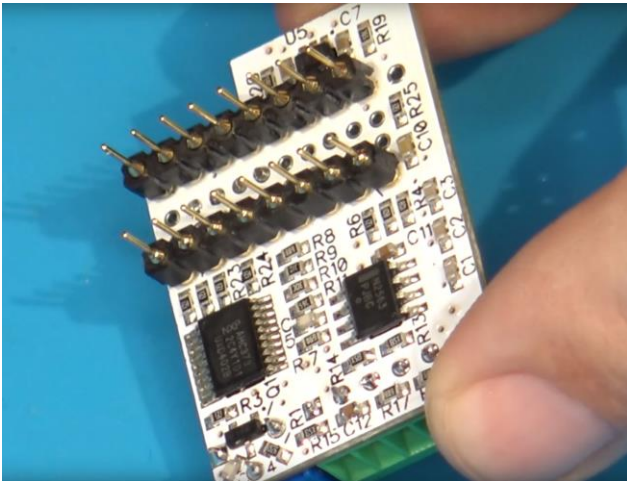


4050 removed

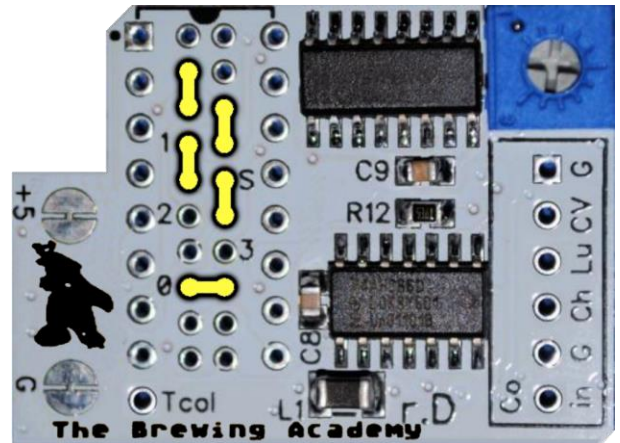


Socket installed

- The UAV kit will require some possible assembly to use it. Be sure to solder the inline header pins to the bottom side of the UAV and set the jumpers as required for use in the 5200. Note the jumpers on the sample below.

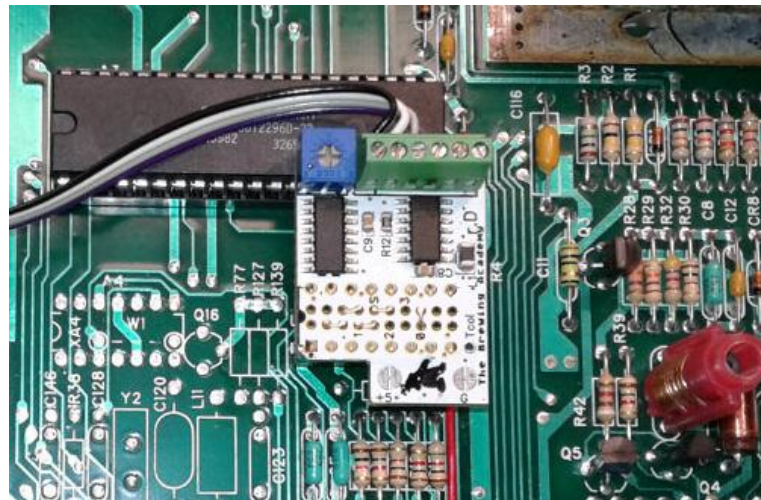
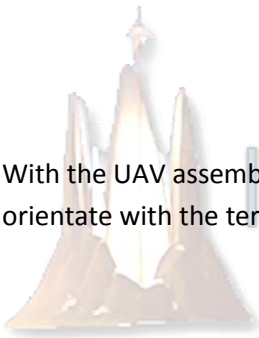


Inline pins installed on bottom of UAV

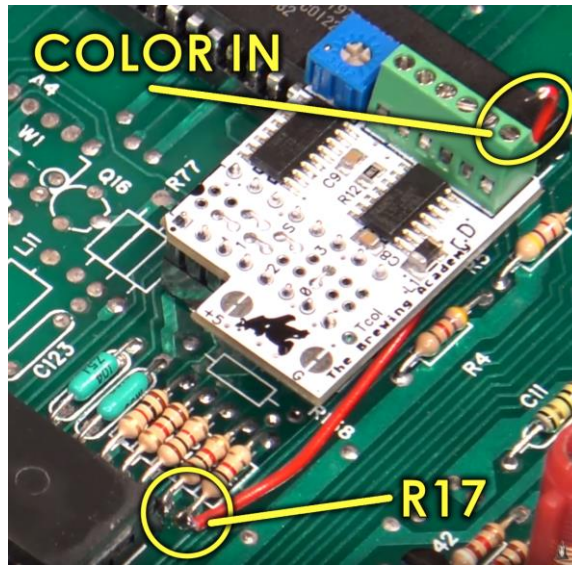


UAV jumper configuration for 5200

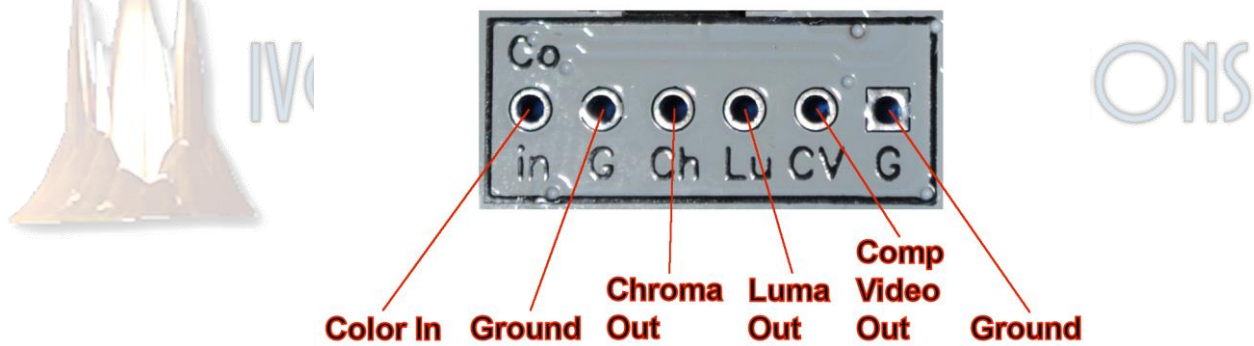
- With the UAV assembled, you only need to install it by inserting it into the socket as discussed from step 2 above orientate with the terminal block/output side facing towards the rear of the main board as shown below.



5. Attach a piece of wire from the bottom leg of R17 located below and to the right of where you plugged in the UAV. The other end of your wire will go into the Color In on the rightmost output on the terminal block.



6. Attach or solder your wires from the UAV Video out section that will connect to your AV out connections: (Chroma & Luma are for S-Video, Comp Video is Composite). Use the picture below as a guide on where to connect your output wires to your AV out jacks.



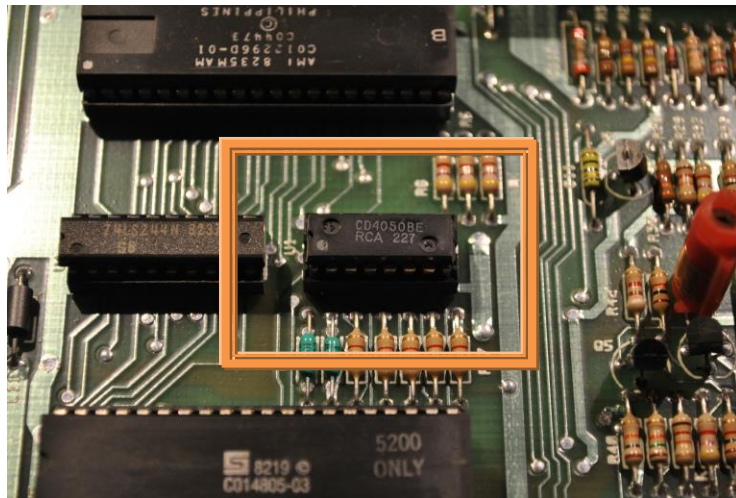
7. Now would be a good time to double check your work and possibly test your video out to ensure the UAV is installed and working correctly.

Continue to the ['Audio Wiring'](#) section to prepare the components for getting audio out working...

Keeping the 4050: - RF video Intact & most 4-port models

NOTE: To keep the RF intact and working, the 4050 IC chip has to remain in the circuit alongside the UAV. The following steps should be the easiest way to do this but there are several ways to accomplish this.

1. The UAV is usually installed in place of where the original 4050 IC chip is located on the 5200 main board shown below between the large ANTIC and GTIA ICs.

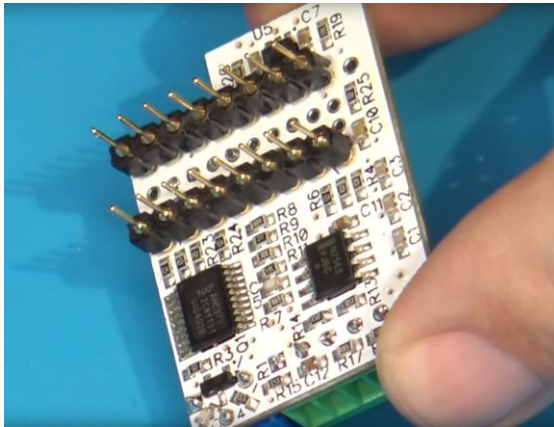


2. Solder the 16pin IC socket that came in the kit to the top of the 4050 chip in a piggyback method. Take your time with this process making sure the notch on the socket points to the left. While not all the pins are required to be soldered I recommend doing so to add stability to the whole assembly.

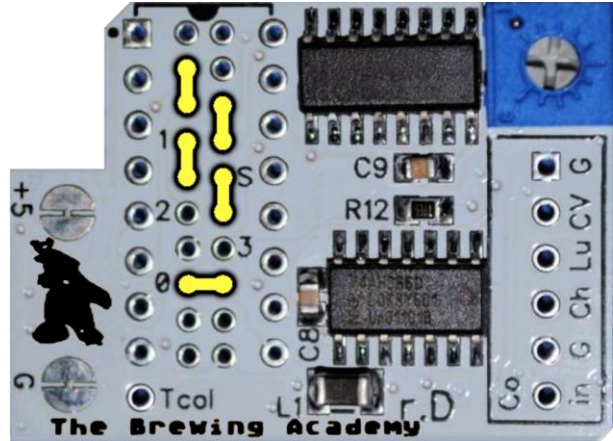


Socket attached on top of 4050

- The UAV kit will require some possible assembly to use it. Be sure to solder the inline header pins to the bottom side of the UAV and set the jumpers as required for use in the 5200. Note the jumpers on the sample below.

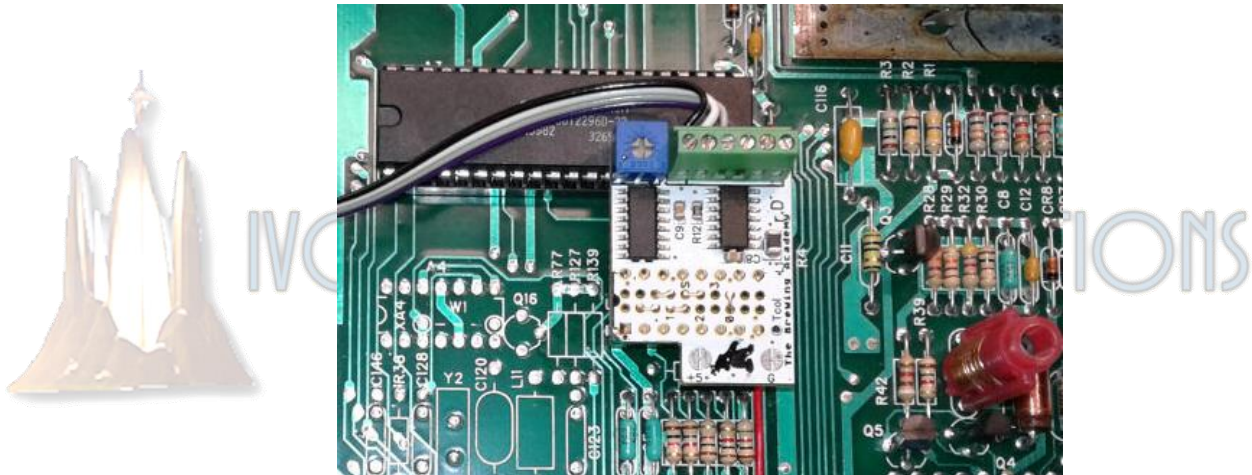


Inline pins installed on bottom of UAV

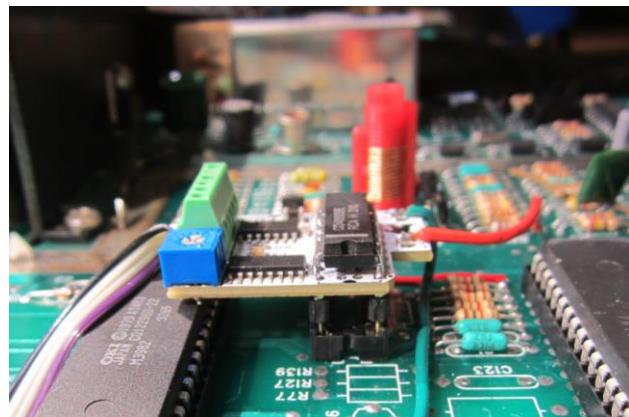
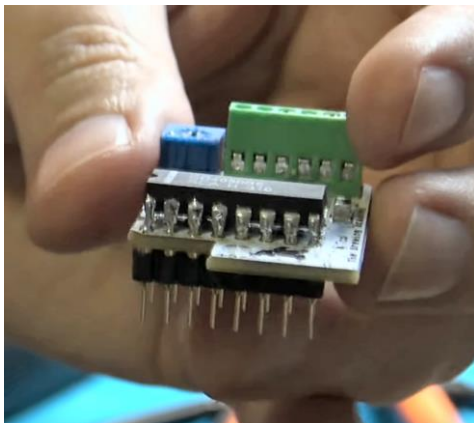


UAV jumper configuration for 5200

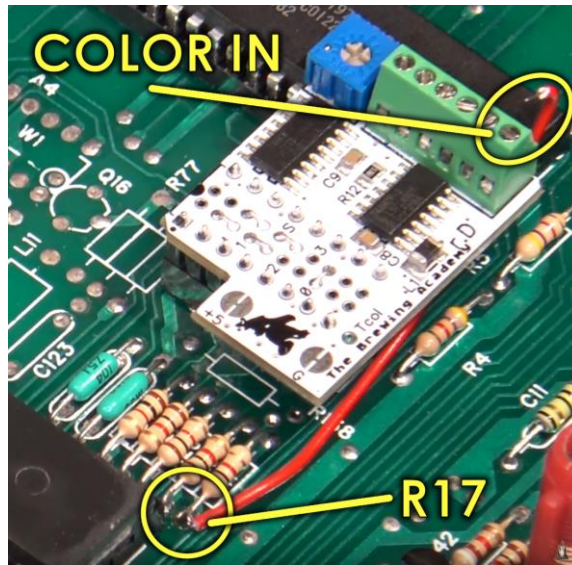
- With the UAV assembled, you only need to install it by inserting it into the socket as discussed from step 2 above with the terminal block or output side facing towards the rear of the main board as shown below.



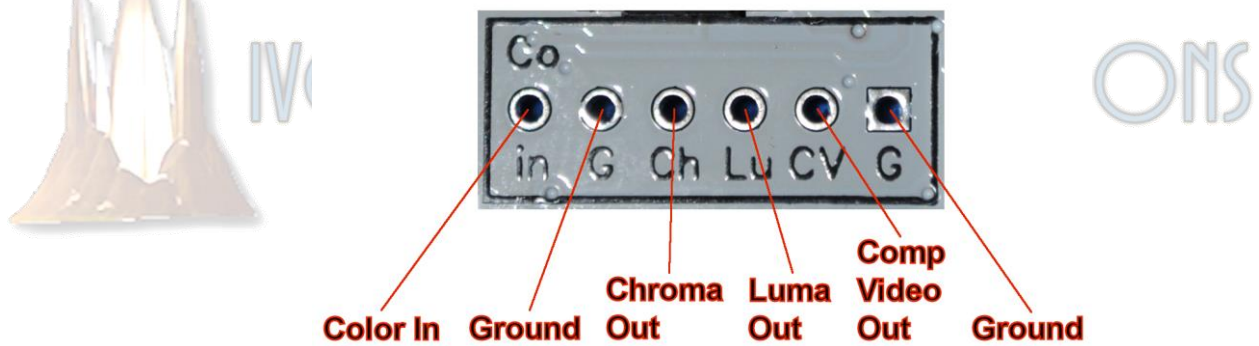
Another option is to remove the 4050, install the socket to the main board and then solder the 4050 onto the top of the UAV's through side header pins. Like shown below. This has the advantage of keeping the entire installation as low profile as possible.



5. Attach a piece of wire from the bottom leg of R17 located below and to the right of where you plugged in the UAV. The other end of your wire will go into the Color In on the rightmost output of the terminal block.



6. Attach or solder your wires from the UAV Video out section that will connect to your AV out connections: (Chroma & Luma are for S-Video, Comp Video is Composite). Use the picture below as a guide on where to connect your output wires to your AV out jacks.



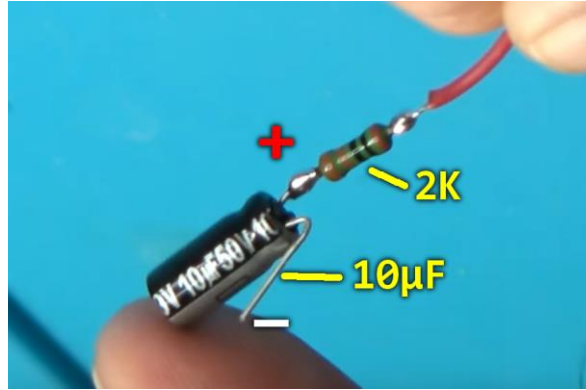
7. Now would be a good time to double check your work and possibly test your video out to ensure the UAV is installed and working correctly.

Continue to the ['Audio Wiring'](#) section to prepare the components for getting audio out working...

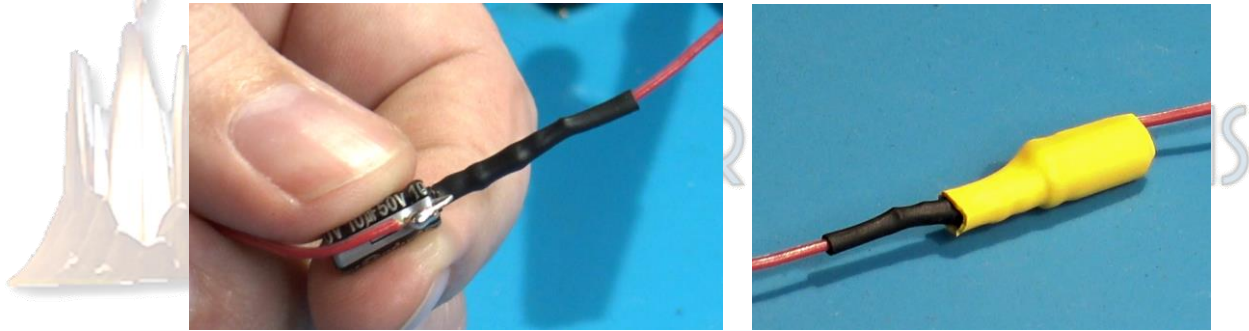
Audio Wiring: - The mighty POKEY

NOTE: The UAV does not include connections for audio output so that has to be done separately as detailed here:

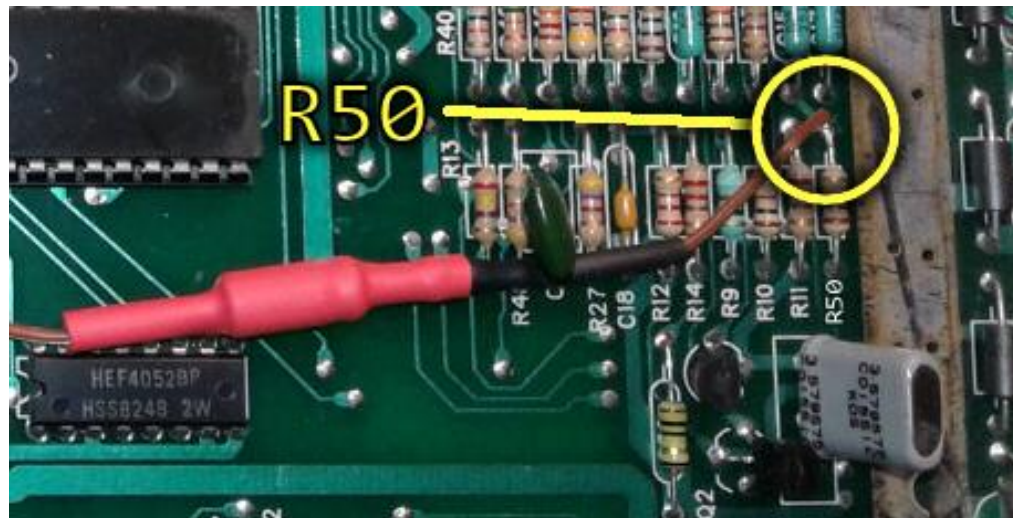
1. Solder one leg of your 2K resistor to the + lead of your 10 μ F capacitor. Solder a small section of wire (about 2 inches) to the other leg of your resistor. Solder another section of wire (about 10 – 12 inches) to the – lead of the capacitor to look similar to the below.



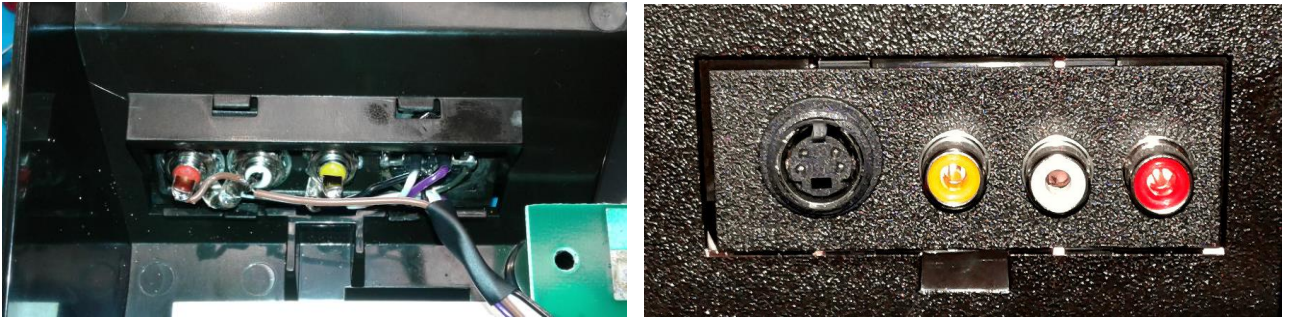
2. Be sure to insulate and isolate the capacitor/resistor combo from the – lead of the capacitor and other components in the system.



3. The small section of wire you soldered to the resistor needs to be soldered to the top leg of R50 located center/right of the main board next to the large ground plane.



4. Solder the longer piece of wire from the – lead of your capacitor to your audio output jacks.
5. Double check all your work again and verify all connections are where they need to be along with any initial testing you can do before modifying your case shell for your AV jack connections. You can place your AV jacks wherever you wish. One excellent location is on the expansion port cover plate as that part of the 5200 was never used and provides a nice area with plenty of room for your connections.



Now you should be ready to enjoy your 5200 with much improved video and audio clarity. The new composite, s-video, and audio connections will allow for easier connections to more modern televisions. Test everything before re-assembling your Atari 5200.

