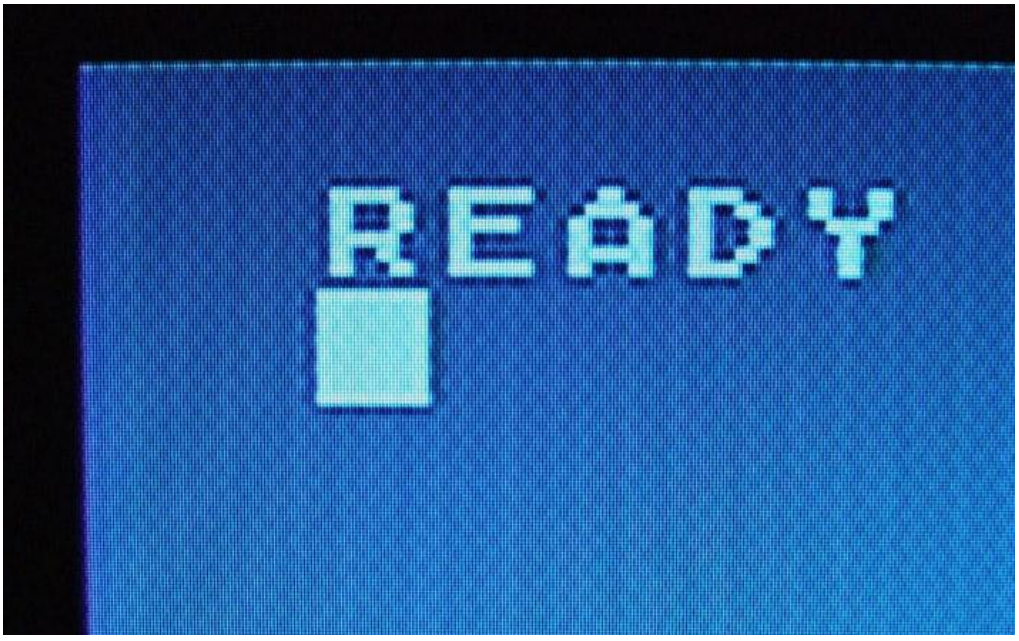
UltraVideo 1.0 for the Atari 800XL

Although the s-video output on my Atari XEs always left a lot to be desired, when I finally got hold of an 800XL I was appalled by the quality of the display. Even after performing both of Ben Poehland's SuperVideo Mods, I was still left with zigzag vertical stripes down the screen, grain, noise, and poor vertical definition. The fact I was still experiencing artifacting meant the luma and chroma signals still weren't isolated, so more drastic action was required.

Disclaimer: Before proceeding, be aware that this mod *completely disables composite and RF output on your 800XL.* It's intended for those who use s-video exclusively *using a plain cable with no noise-reducing diode inside*, and would like the best possible s-video signal. *Note that artifacting will no longer work after this modification is performed*. I also take no responsibility for damage caused by poor soldering/de-soldering or disassembly of the machine. Work is performed entirely at your own risk and I can't guarantee that the results will look the same on another computer/monitor combination as they do on mine. I've ended up with a display comparable to that of the RGB output from a VBXE board, but I have no way of knowing if others will enjoy the same results. I would refer readers to the SuperVideo page above for detailed discussions of the problems related to the stock 800XL video circuit.

The Old Display

After performing the SuperVideo Mod on my new 800XL, the s-video signal still produced this on my LG Flatron M227WD TFT monitor:



The zigzag lines absolutely ruined the picture, and background noise not visible in the photograph made matters worse. These are the problems the "UltraVideo" mod addresses.

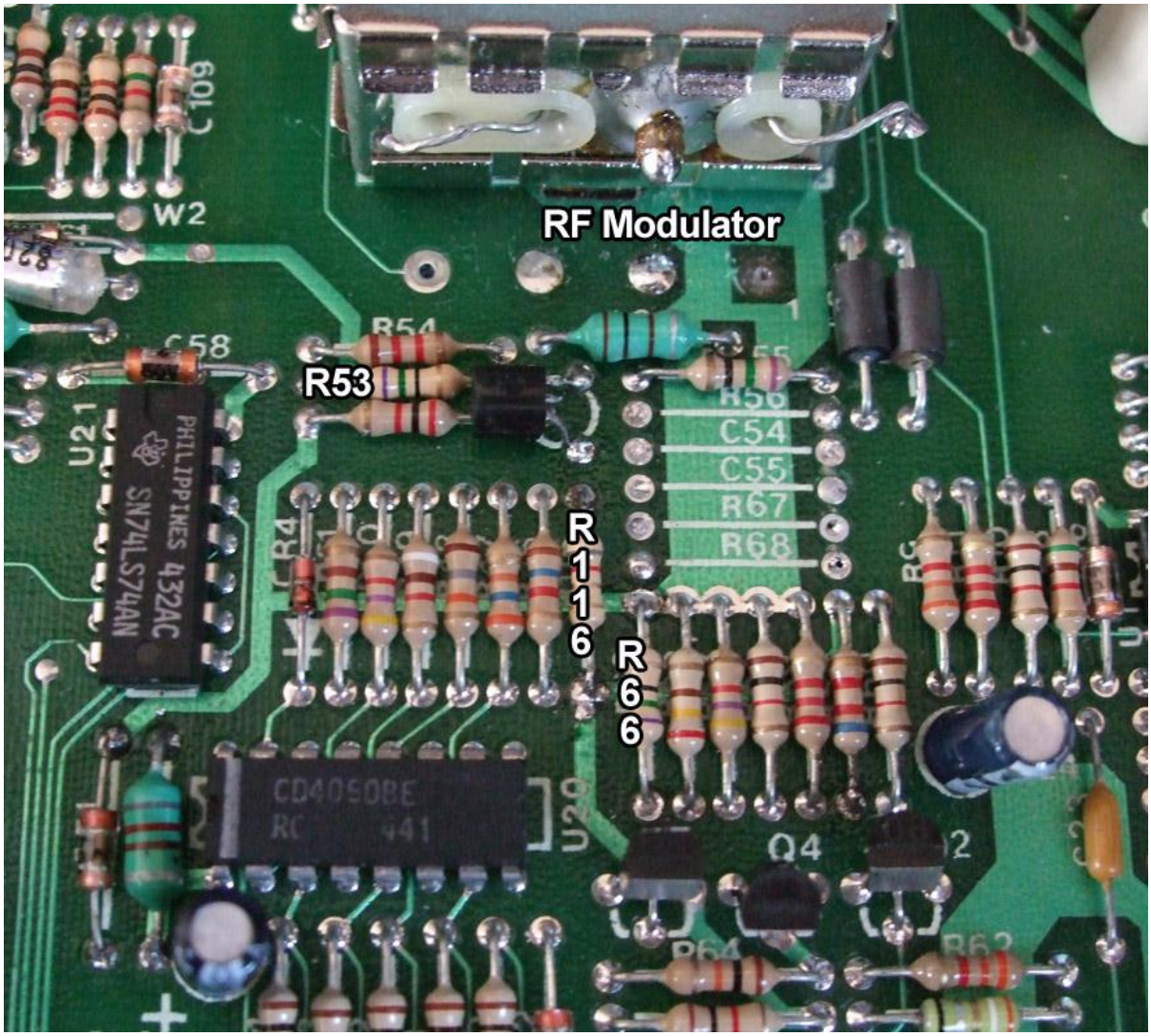
UltraVideo

The UltraVideo mod is a mix-and-match version of the SuperVideo mod, and I have left out and included modifications according to personal preference. I just went with what gave the best picture. If you want to slavishly follow my design, you will need:

- 1 x 8.2ohm resistor
- 2 x 75ohm resistor

However, you can opt to simply de-solder components and disconnect the RF, which should give excellent results on their own.

1. The first thing we'll do is totally disconnect the RF modulator by de-soldering the three wires which connect it to the Atari mainboard, as shown at the top of the picture below:

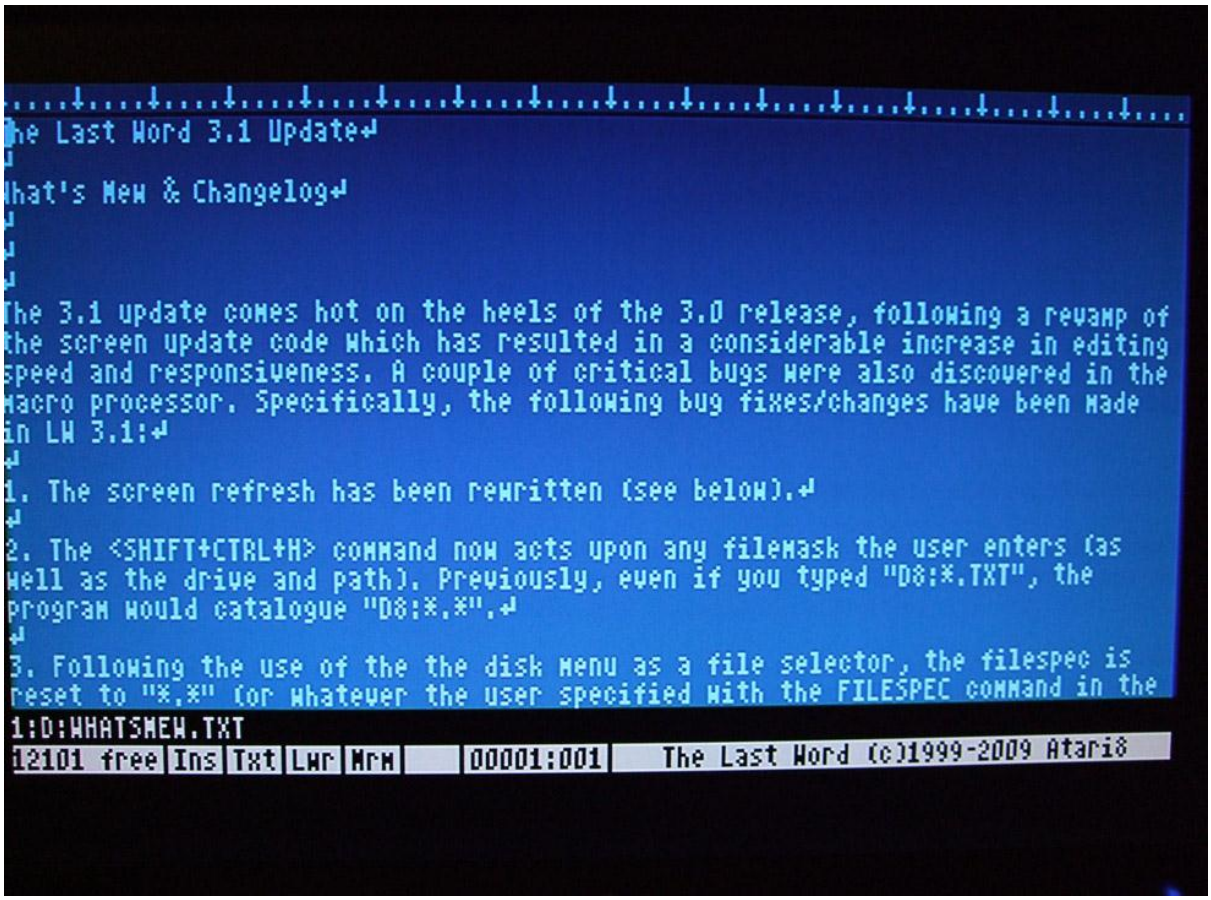


You can accomplish this by heating the pads with a soldering iron and prising the wires off the board with pliers. If you have the tools to remove the RF box entirely, I would recommend it.

2. Next, we're going to remove all components linking the luma and chroma signals. I took no chances and whipped out R56, C54, C55, R67 and R68 and shown in the picture.

3. Lastly – and this part is optional – I left in three parts of the original SuperVideo mod: R53 (100ohm or 390ohm) and R66 (100ohm) are replaced by 75ohm (violet-green-black-gold) resistors as shown in the picture, and R116 (51ohm) is replaced by a 8.2ohm resistor (grey-red-gold-gold). Note the 8.2ohm resistor is a 2.2ohm (red-red-gold-gold) in the SuperVideo instructions, but 8.2ohm was all I had at the time and since the picture looks perfect I'm quite happy with it!

In reality, you should feel free to perform other parts of the SuperVideo mod as you see fit. Since the basic quality of the s-video signal is so dramatically improved, other modifications can be made to tailor hue and saturation to taste. The improvement is so dramatic on my set-up, it rivals my VBXE equipped 65XE in all but colour saturation and vibrancy:



Lingering noise and artifacting on the display turned out to be caused by the s-video cable I was using. Switching to a plain, home-made cable yields the best possible display and really has to be seen to be believed. The next task is to accomplish the same thing on the XE.

Good luck.

Jon Halliday, January 2010