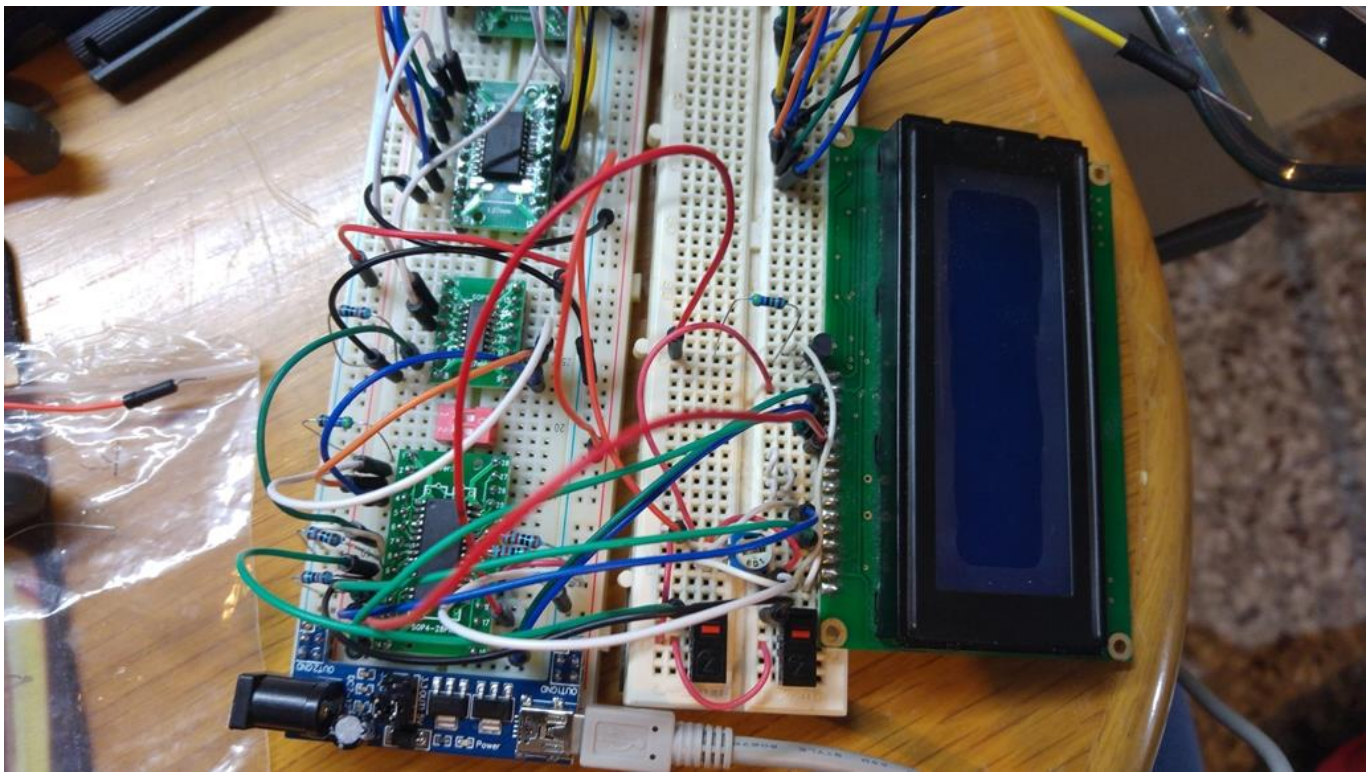
JACKSOFT LABS

DIGITAL VIDEO SWITCH (FOR RETRO DEVICES!)

What if you have many retro consoles/devices and just one SCART on the back of your TV? You need a switch, of course! But nowdays it's hard to find a good one… So why not build one!?
Since me and a friend of mine have 20-30 retroconsoles, which sometimes we likes to power on and play a bit, we need a solution to have a sort of "plug & play" system.

I found on YouTube and web that some people that built one by themself with some digital switches and a microcontroller and, with my partner in science, Dom, just drafted a sort of circuit to test if the project could be possible and it gave us good results.



Here we go!

Since I never handled this kind of signals I've done some research on how to draw the right traces on the PCB to avoid any serious interference as best as possible for me. Fortunately it was pretty easy.

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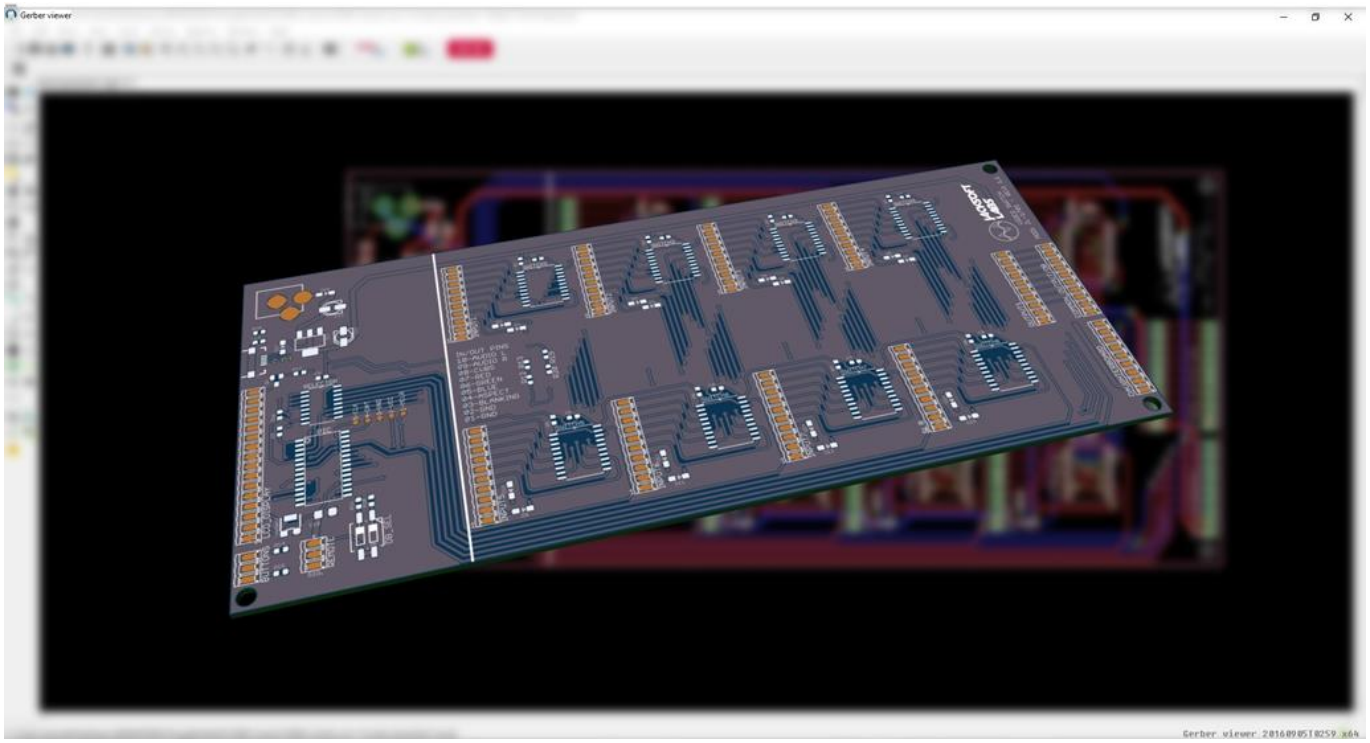

The project is based on a mainboard composed by a PIC microcontroller, a main switch/selector and eight multiplexer, and a daughterboard (to be designed) to add eight more ports (up to two for a total of 24 inputs, not guaranteed until I'll produce a prototype for the right tests).

On the mainboard can be connected an 8×2 LCD character display (or bigger by modifying the firmware), two buttons for the input port selection and an IR receiver (not implemented yet firmware side, need to write the NEC IR library). The board can be powered by USB or by external 9-12V (adjusted to 5V by a stepdown IC)

The firmware is in MikroBASIC (yes, I'm lazy and this language isn't the best for microcontrollers, I know).

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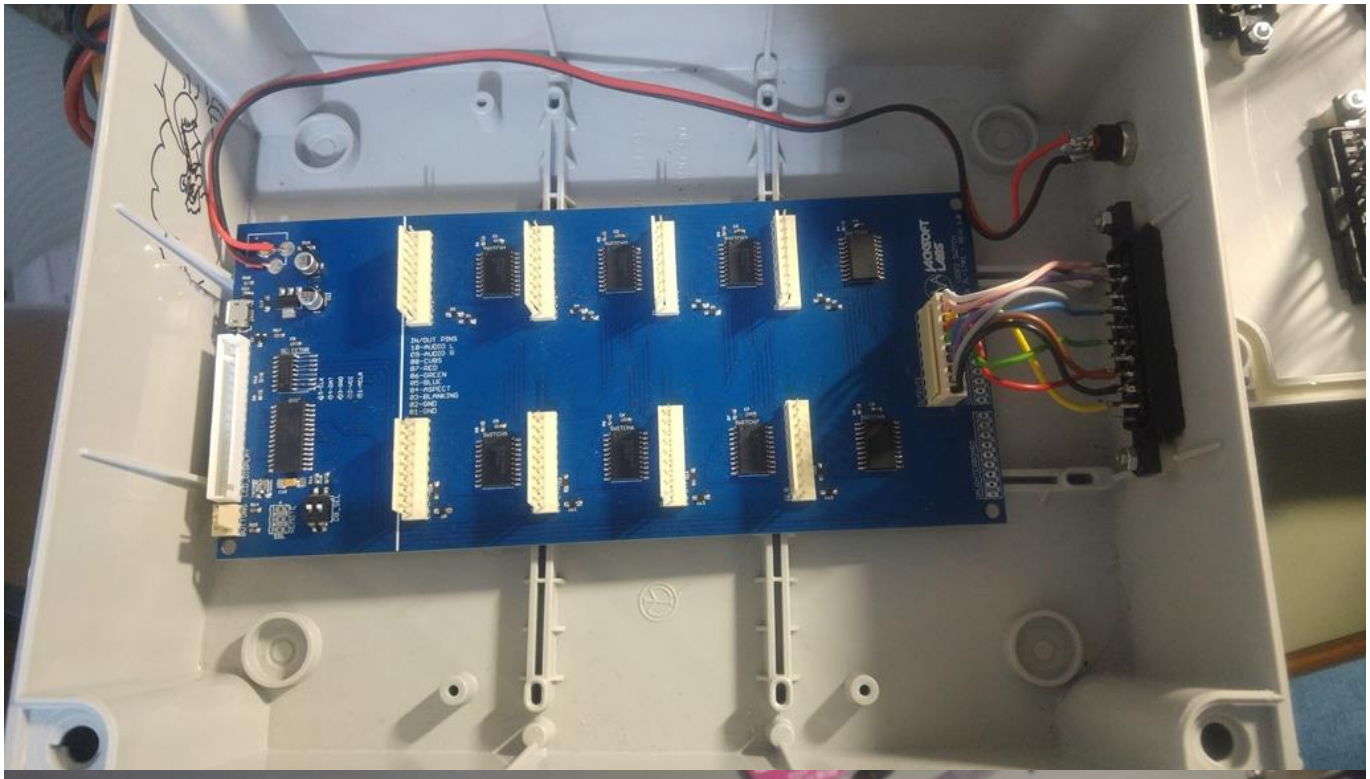

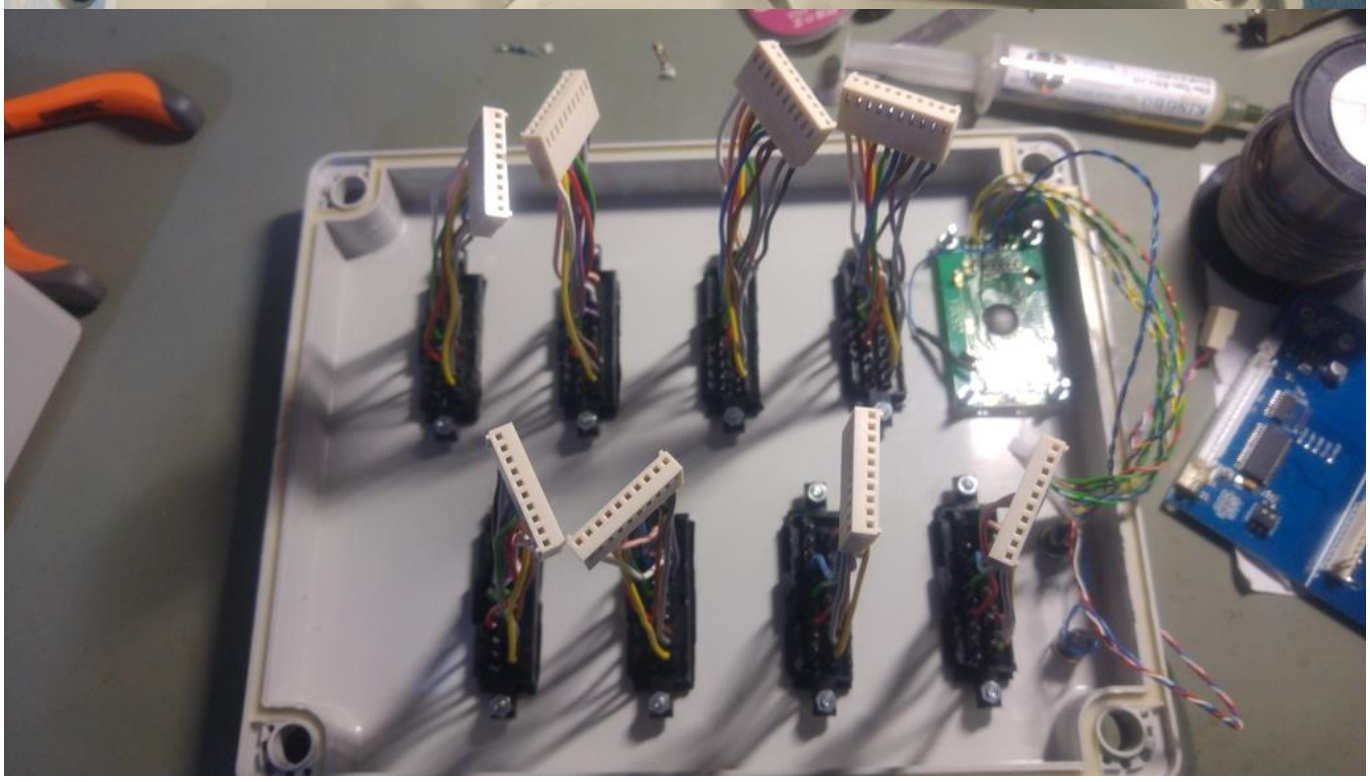

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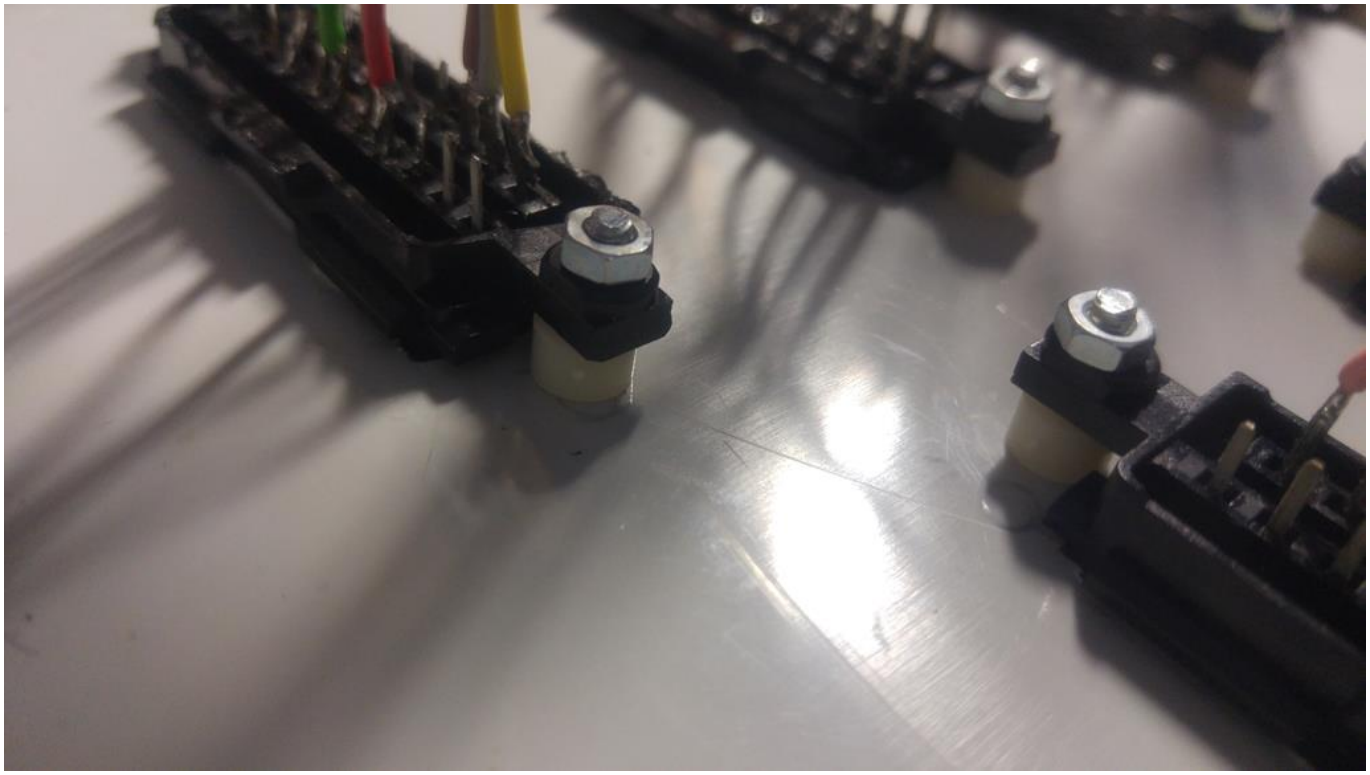

(The board in pics is the prototype/rev 1.0)

The box works successfully! Except for some little problems that I'll try to fix in a future revision.
– Initially a device with just A/V RCA had problem with another RGB SCART device connected. It should be fixed in this revision but need more tests.
– Two pin of muxes are not used yet, I'll try to add other two pins to make them available for extras (es SCART + S-Video) for the next revision.
– Blanking and Aspect Ratio does not have any switch, they just use two diodes per port, so they are really not disabled. I'm thinking for a solution that I'll test on a simulator before putting it on the next revision.

You can find PIC sources and EAGLE project on GitHub! (https://github.com/Jacksoft/VideoSwitch/)

NOTE: I'm planning, for the next revision, as said, two more pin in/out to support also S-Video, and (probably, but not sure) a better management of blanking and aspect ratio pinout. If you're planning to build one by using my schematic please try to wait a bit. :)

Unfortunately I cannot give you a release date, because I'm busy in real life, but I'll do my best to fill that.

DISCLAIMER
This project is "as is". I'll NOT assume any responsability on how you use this project and on any damage it can cause to any device of yours, people or things. Use it at your own risk!

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