

## Super-1 RGB bypass for 1-Chip SNES/SFC

V2.00 Final

### JR installation guide

#### Sync/ Cable Options:

Remove to use pure C-Sync or TTL C-Sync down the composite line (pure C-Sync on a sync over composite cable)

**R38** - (series resistor for composite output)

**C54** – (coupling cap for composite output)

**J2**: Allows the use of a Sync-Over-Composite cable (all the cheap ones) for pure C-sync, TTL or 75r, though, you must remove the components mentioned above. **THIS WILL KILL COMPOSITE VIDEO OUTPUT.**

*In my case, I added the sync attenuation resistor in the SCART head on a Sync-Over-Composite cable to bring TTL level down within 75r C-Sync spec, hence, have bypassed this component/footprint with the bottom board jumper; **J1**.*

*I've also left the 470r resistor off the board (Because it's in the SCART head, anywhere from 330r to 470r will bring TTL to a suitable level). J1 and J2 are both closed on the picture.*

#### To use a TTL C-Sync RGB Cable BUT send 75r C-Sync (no resistor in the SCART head on pin 20)

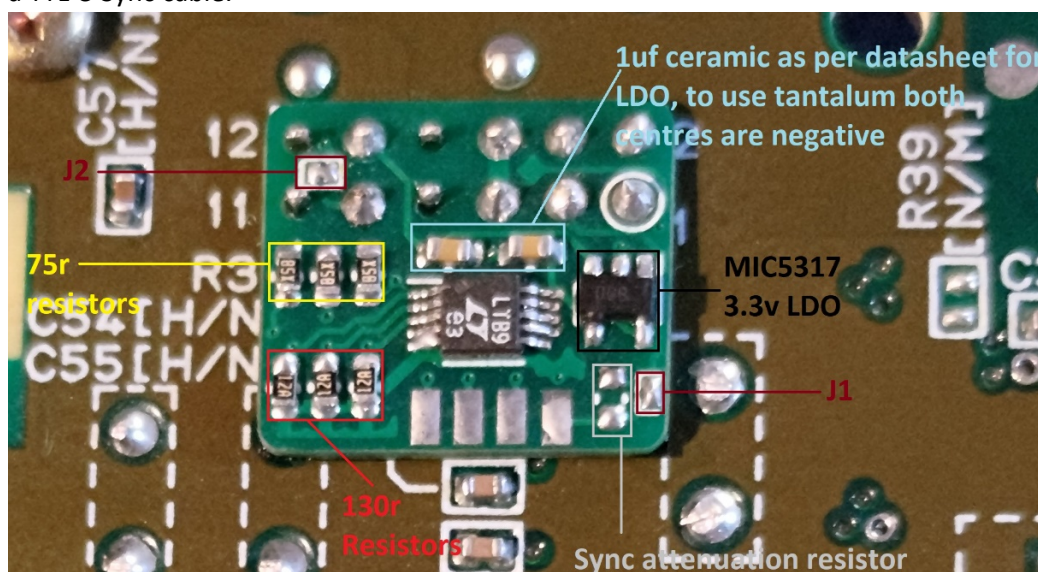
Install the sync attenuating resistor on the blank footprint, leave J2 open, leave J1 open.

**You could close J2, giving you both options.** That's if you've removed the above components. Now a Sync-Over-Composite cable or TTL C-Sync cable will give you 75r C-Sync.

#### To use a 75r (Pre-TTL attenuated) C-Sync RGB Cable (attenuating resistor in the SCART head on pin 20)

You can leave the blank footprint as pictured... blank. Close J1.

You **could** close J2, giving you both options ...TTL down a Sync-Over-Composite cable, and TTL down a TTL C-Sync cable.



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### Board Installation

Factory attenuating resistors need to be removed as they are still active in circuit, even though Nintendo didn't patch through an RGBs connection to the AV header.

**Remove R6, R7 & R8**

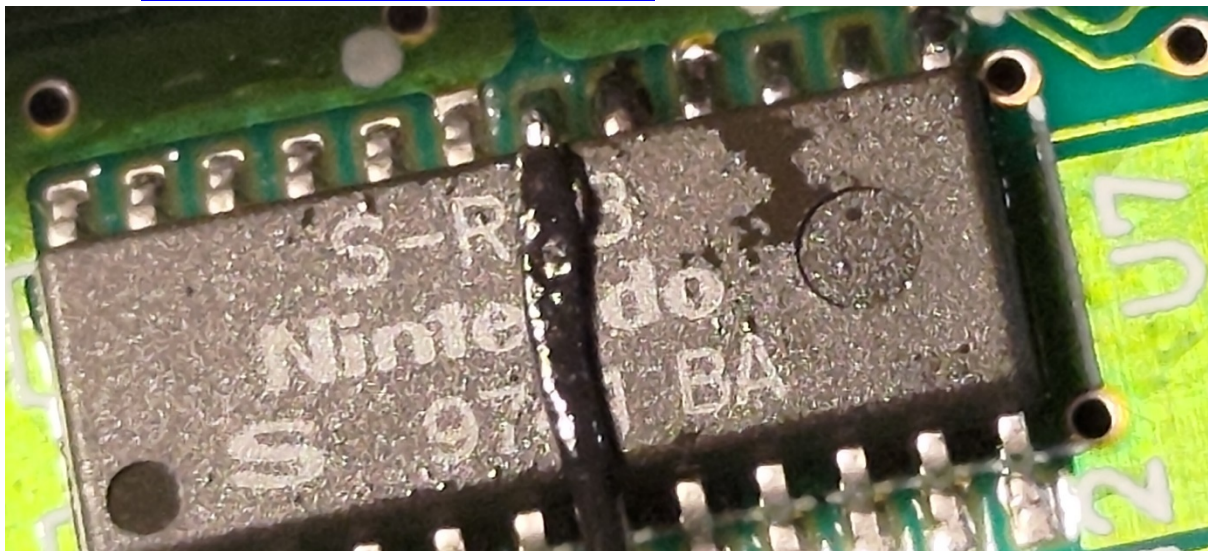
**Remove C6, C7 & C8**

This gives us extra pads to run our RGB connections to. These connections are closer to the mod-board, so we don't need to use the tiny via's. You can still use the via's if you wish (from other bypass installation guides).

#### C-Sync jumper to mod-board

You can use the 'traditional' via, or the via between the '3' and the '7' on the R37 text (just above it). This is closer to the modboard. I've chosen to use the C-Sync out on the S-RGB chip in this installation. Nintendo ran it through this IC (well, it has to be spliced with composite) - I don't want to chance it that there's ever additional noise on the sync line by grabbing it straight from the S-CPUN-A ('1-chip') / S-RGB C-Sync input. You need to remove the screw in the regulator, and the 2 heatsink screws, then remove the heatsink to get to this IC.

Reference: <https://www.retrorgb.com/snescsync.html>

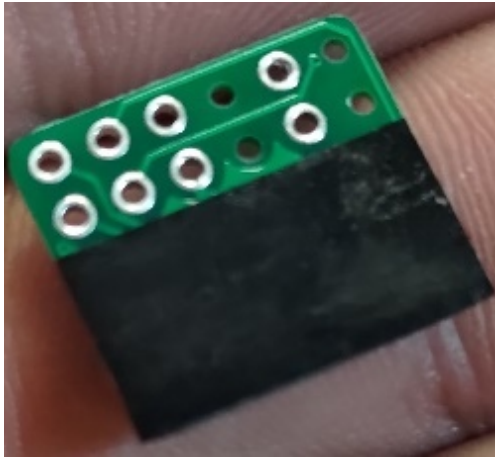


This is also your chance to add heatsink paste between regulator/heatsink if you wish.

When assembling these boards, **lay the LDO down quickly**. They die easily with heat and you won't get a 3.3v output.

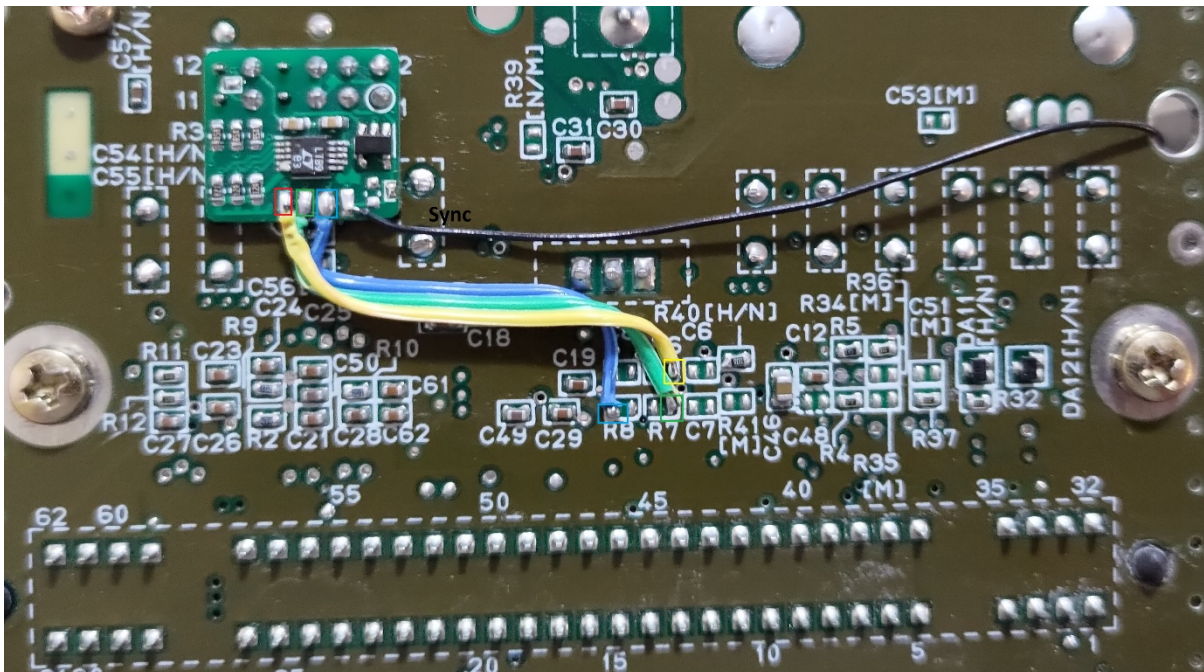
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Insulate the rear with electrical tape or similar. This probably isn't required, but just to play it safe.

**I like to go through all the pins hanging out on the bottom of the board and flush cut them. There are quite a few. These systems hold a lot of charge, and you're working near the main supply capacitors. Discharge the system by keeping it turned on after disconnecting it from the mains.**



Sit the mod-board over the AV header, use your thumb nails on the left and right side to push them down hard over the pins. The bottom of the board should come up a little. Flux and solder away.

Red: R/H side of R6 footprint  
Green: R/H side of R7 footprint  
Blue: L/H side of R6 footprint

I recommend all 0.1% tolerance components.