

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

V2.00 Final

JR installation guide

Sync/ Cable Options:

Remove to use pure 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, though, you must remove the components mentioned above. ***THIS WILL KILL COMPOSITE VIDEO OUTPUT.***

In my case, I added the resistor in the SCART head 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 just left the 470r resistor off the board (Anywhere from 330r to 470r will bring TTL to a suitable level).

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

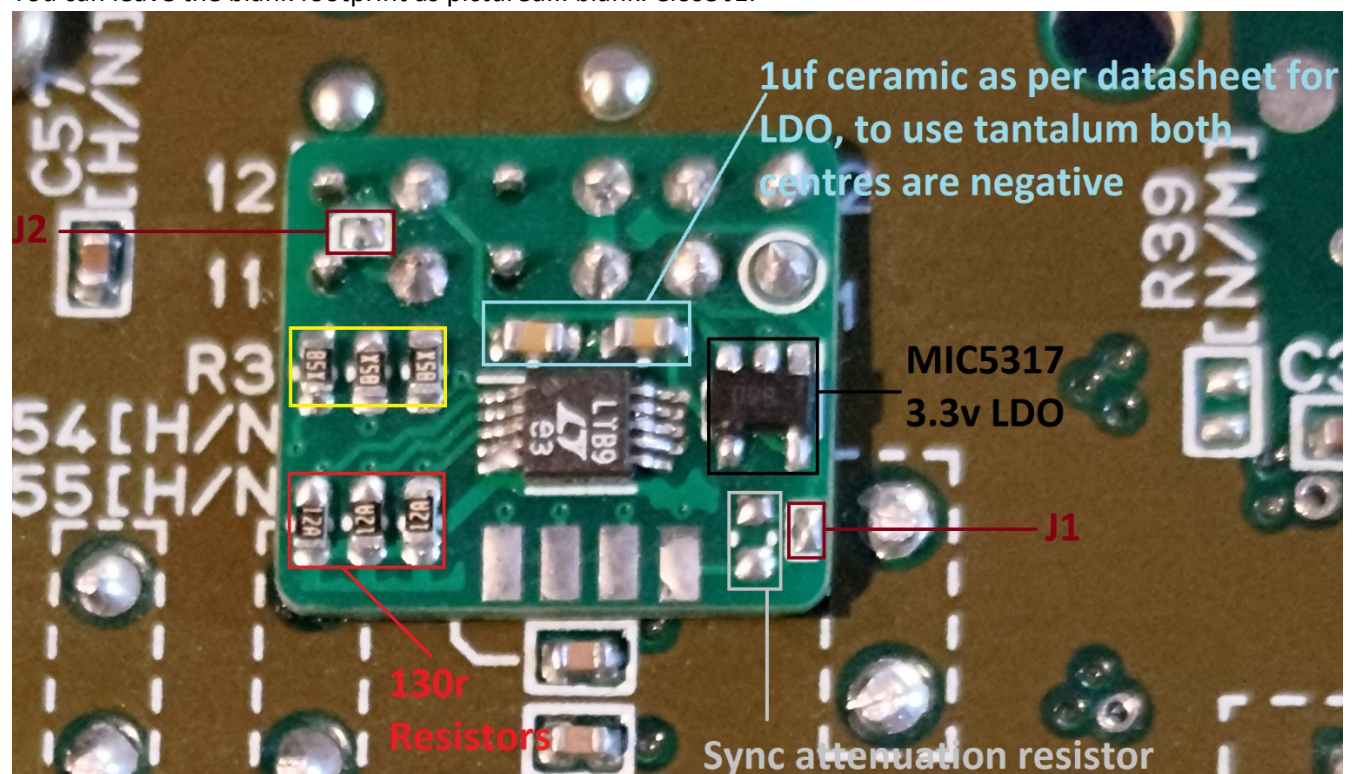
Install the sync attenuating resistor on the blank footprint, leave J2 open, leave J1 open.

To send TTL C sync down a sync over composite cable

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

To use a 75r (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.



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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.

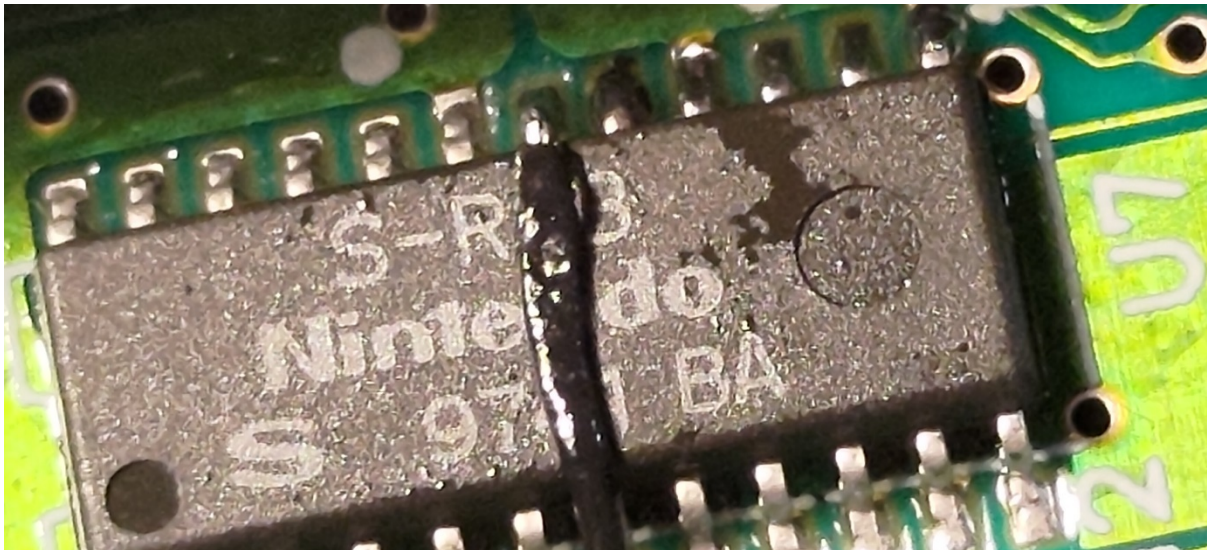
Remove R6, R7 & R8

Remove C6, C7 & C8

This gives us extra pads to run our RGB connections to. These connections are closer to the modboard, 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 modboard - 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 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>

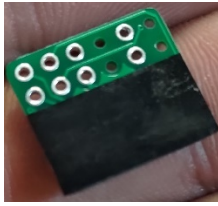


This is also your chance to add heatsink paste between regulator/heatsink if you wish.

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

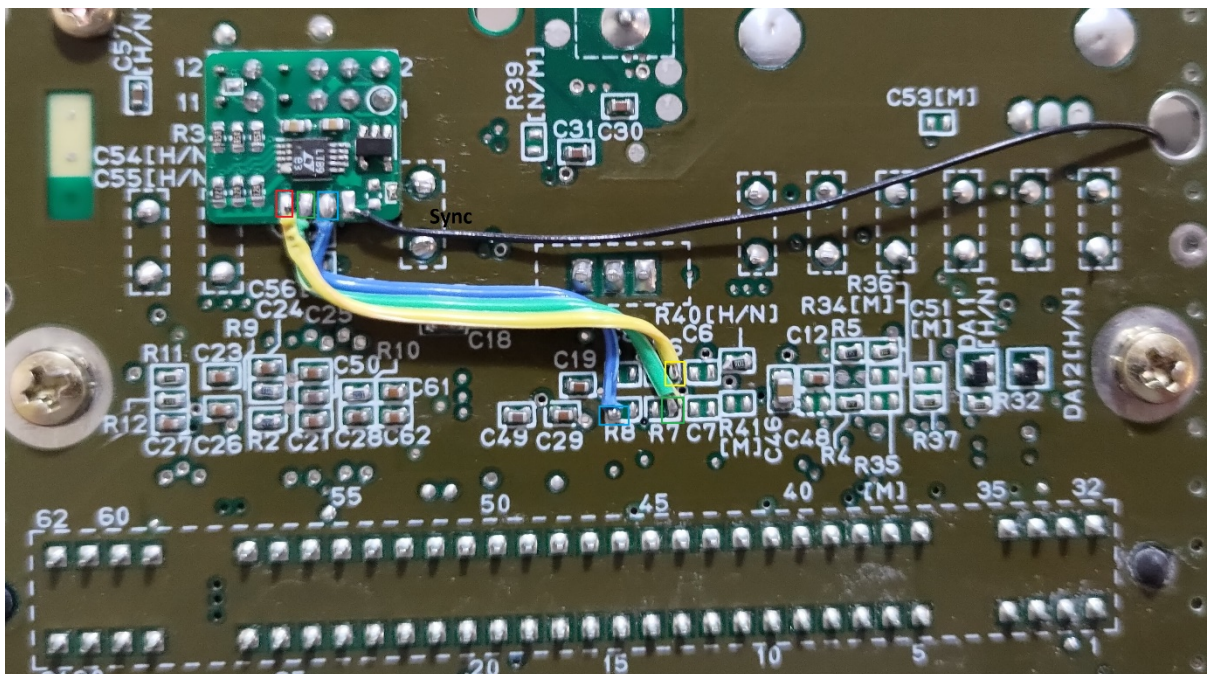
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Insulate the rear with electrical tape or similar. This probably isn't required, but just to play it safe.

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 powering it off.



Sit the modboard 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.