Tiido's Crystal Clear Audio Mod for Sega Mega Drive and Genesis

(suitable for VA7 model 1 and VA0, VA1 and VA1.8 model 2)

Some Genesis / MegaDrive models have a really bad audio circuitry which leads to a muffled and hissing sound output.

This mod fixes this issue by replacing the original audio cirtcuitry.
The audio output will be at least the same or better than the original model 1 systems and the later model 2 systems.

In case you're not sure which Genesis / MegaDrive model you have, please check out this awesome thread at the Sega16-boards:

http://www.sega-16.com/forum/showthread.php?7796-GUIDE-Telling-apart-good-Genesis-1s-and-Genesis-2s-from-bad-ones

The mod has a few minor drawbacks though:

- This mod will disable the mono outputs. This means you will need to have stereo cables (does anyone use Mono sound anyways?)

- The volume level after this mod will be slightly lower than before. This is normal.

- With the model 1 VA7 systems you will have to tap your audio Left and right out directly from the CCAM and use RCA jacks. This model does not output stereo from the A/V connection. You will also loose the headphone functionality.

If you have one of the systems which has the bad audio circuitry, you will certainly love the mod!

What's needed?

To to the modification, you will need the following tools:

- The CCAM PCB (included in this package)
- A screwdriver to open the MegaDrive / Genesis
- A sharp scalpel to cut a trace
- Two RCA sockets (only if you do the mod on the VA7 model 1)
- A solder iron with some solder
- A couple of wires
- Something to fix the PCB somewhere inside the case (tape, hot glue, etc.)

The modification is not hard to do. You need to desolder some capacitors, cut some traces and solder some cables from the PCB to the CCAM mod.

Then you need to affix the PCB somewhere inside the case (there's more than enough space) and make sure it doesn't short circuit anything.
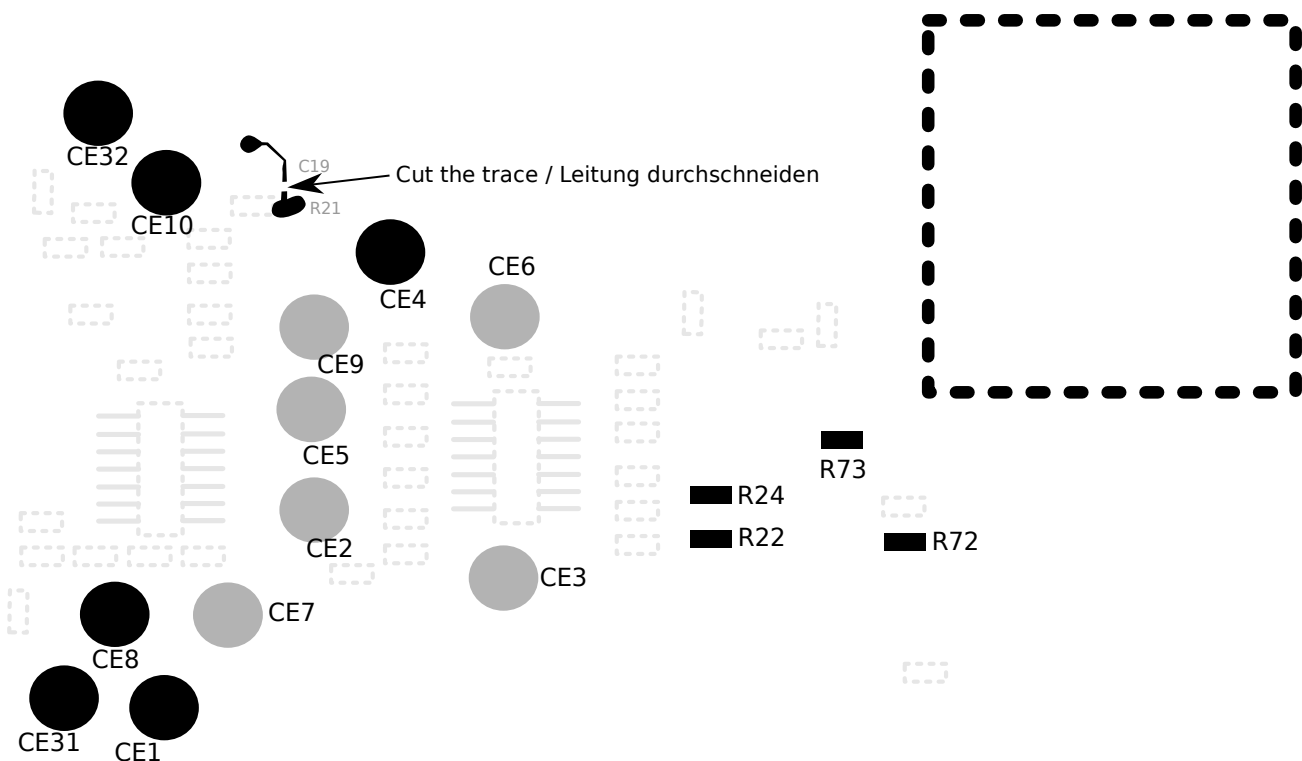
And in case you're doing the mod on the MegaDrive / Genesis Model 1 VA7, you need to install some RCA connectors in the system as well.

PLEASE NOTE: We can't take ANY responsibility in case you damage your Genesis / MegaDrive or the CCAM board by doing the modification improperly.
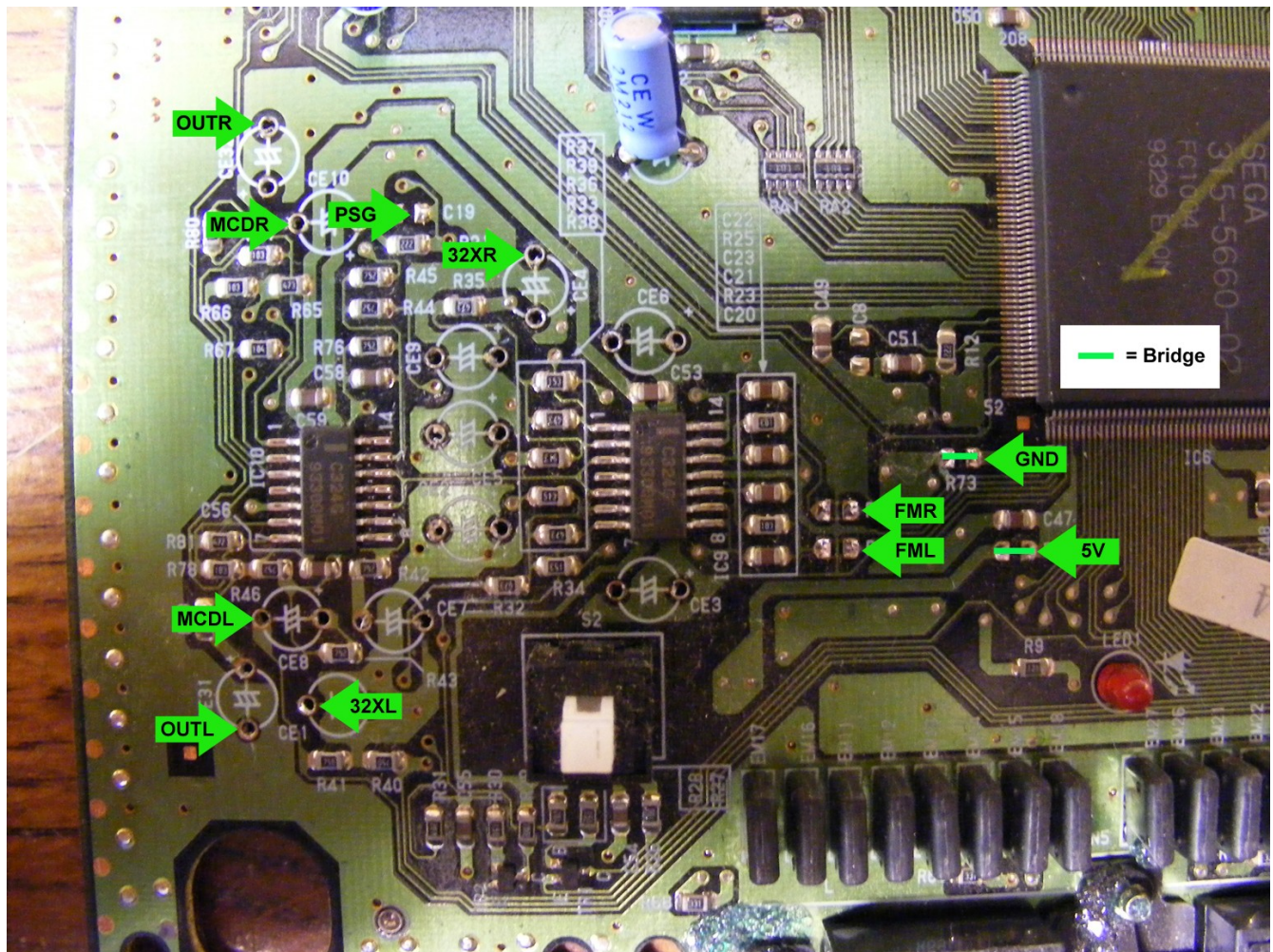
Installation
(Model 2 VA0, VA1, VA1.8)

After opening the MegaDrive / Genesis, desolder the capacitors and resistors as seen in the schematics:

You MUST remove the ones which are marked black (CE1, CE4, CE8, CE10, CE31, CE32, R22, R24, R72, R73), the grey ones (CE2, CE3, CE5, CE6, CE7, CE9) are optional, though we suggest removing them as well (to prevent leaking capacitors). The barely visible parts are just for orientation, leave them as they are. Use the scalpel to cut the shown trace (near C19 and R21).

After that, solder wires to the marked positions on the PCB. Bridge R72 and R73.

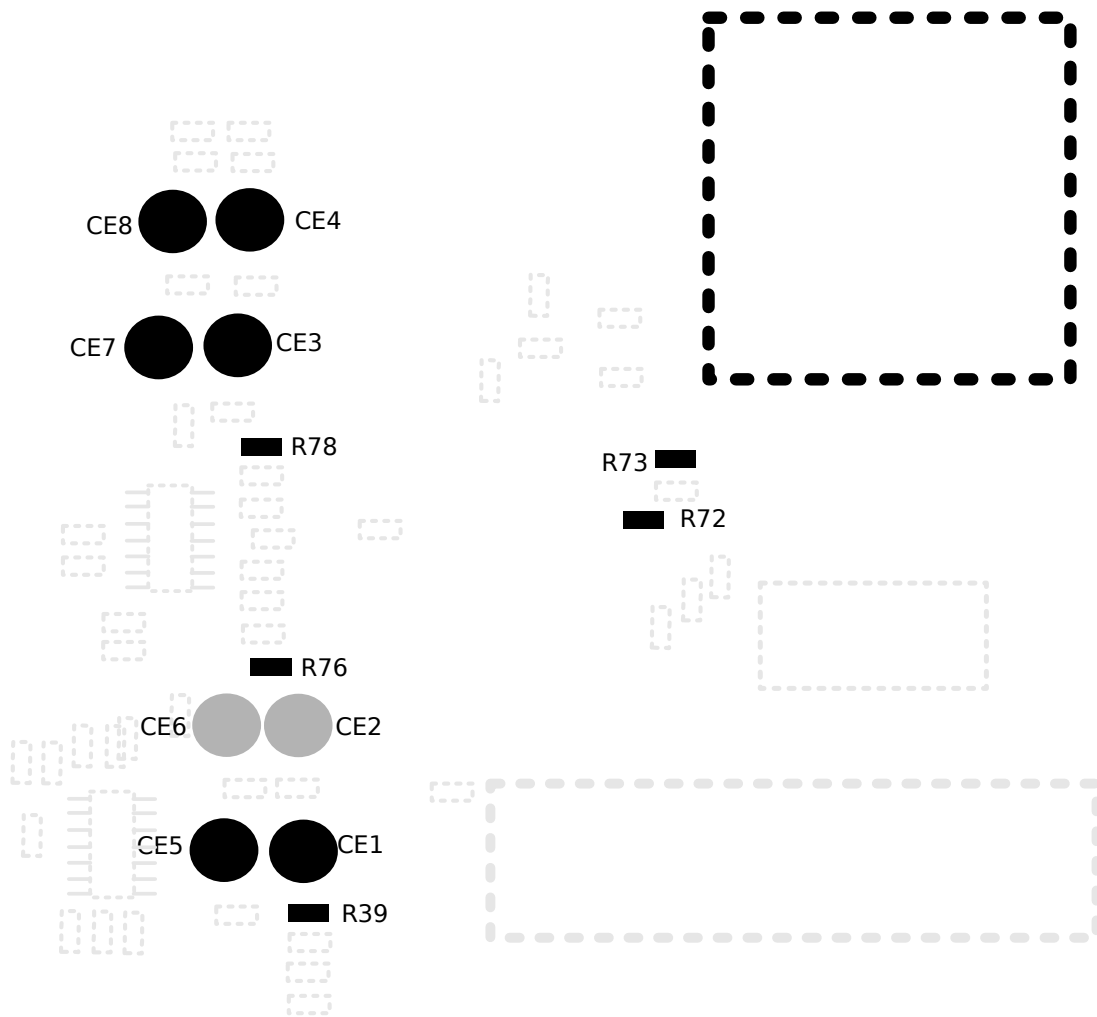Finally, connect the wires to the corresponding pads on the CCAM-Board.

Double check that all wires are connected correctly.

Fix the board somewhere inside the case (make sure it doesn't shortcircuit something), reassemble the device – and enjoy a crystal clear sound! :)
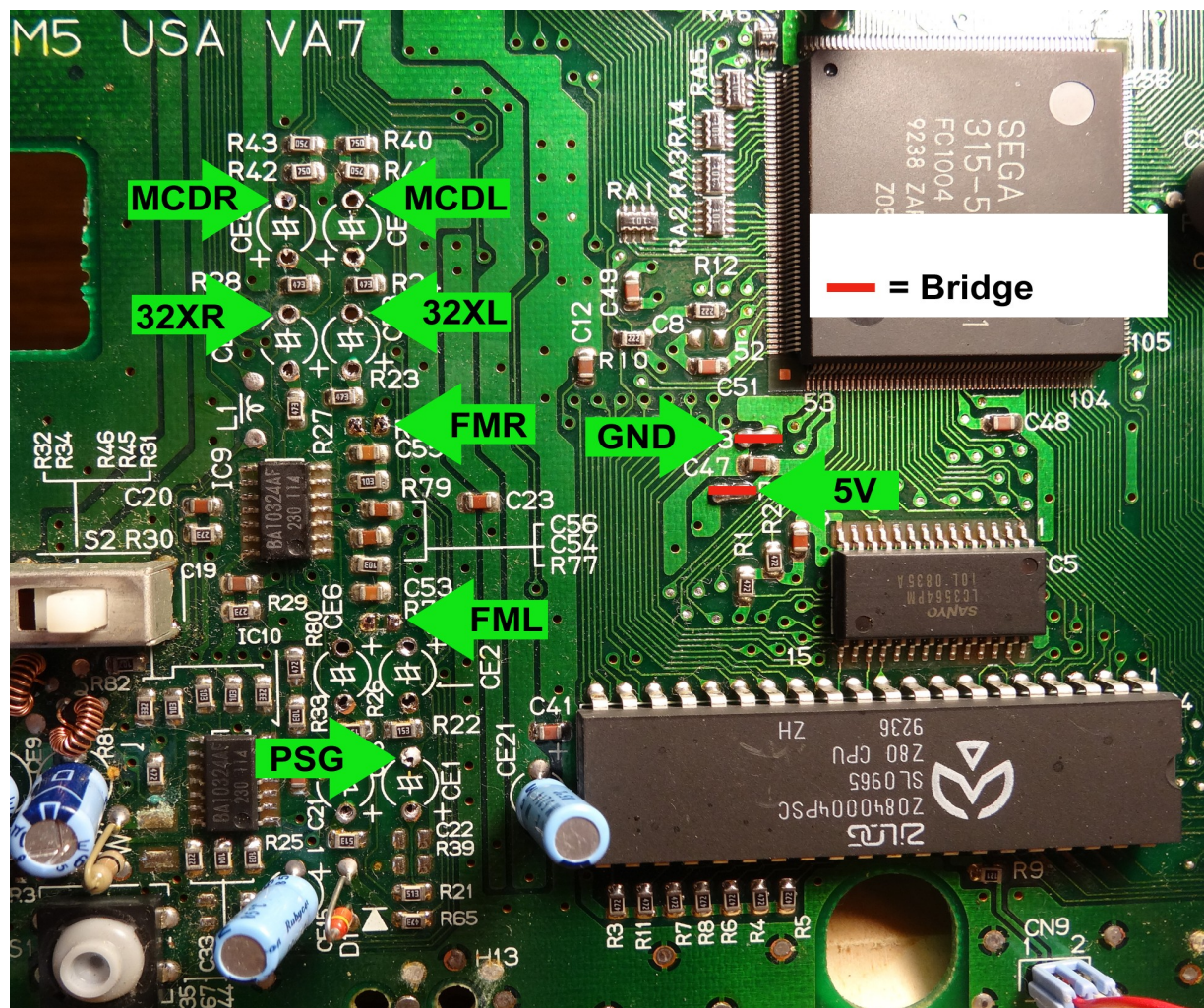
Installation
(Model 1 VA7)

After opening the MegaDrive / Genesis, desolder the capacitors and resistors as seen in the schematics:

CE8 ⬤ ⬤ CE4

CE7 ⬤ ⬤ CE3

▬ R78

R73 ▬

▬ R72

▬ R76

CE6 ⬤ ⬤ CE2

CE5 ⬤ ⬤ CE1

▬ R39

You MUST remove the ones which are marked black (CE1, CE3, CE4, CE5, CE7, CE8, R39, R72, R73, R76, R78), the grey ones (CE2, CE6) are optional, though we suggest removing them as well (to prevent leaking capacitors). The barely visible parts are just for orientation, leave them as they are.

After that, solder wires to the marked positions on the PCB. Bridge R72 and R73.

Finally, connect the wires to the corresponding pads on the CCAM-Board.
Solder the RCA connectors to OUTL, OUTR and GND on the CCAM-Board.

Double check that all wires are connected correctly.

Fix the board somewhere inside the case (make sure it doesn't shortcircuit
something), reassemble the device – and enjoy a crystal clear sound! :)