Machinator FW Modification

This small release note will explain the function of the MFWM (Machinator FW Modification) and also provide some guidance building it into you FW-1884.

Please note you really need basic mechanical and (de)soldering skills since you have to remove the NJM4580 from the board and place the new pcb kit back!.

This sounds logical but hé,,…just in case of.

Problem statement:

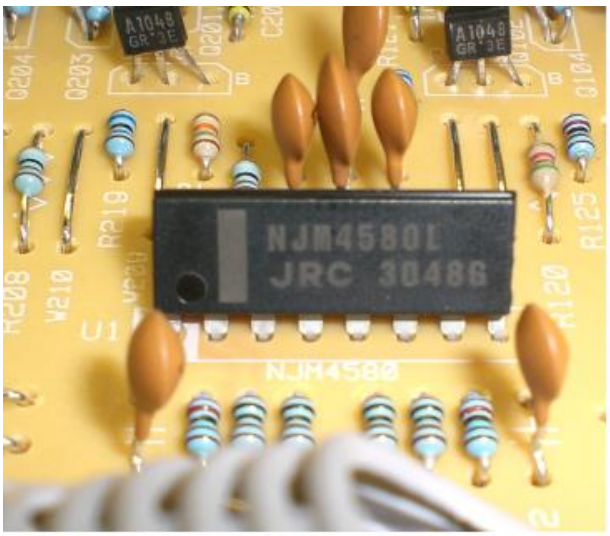
All Tascam FW1884 until serial number 0120001 suffer from a quite dramatic design flaw around the Microphone inputs. As a direct result of this flaw it's possible that when you plug / unplug a phantom powered microphone it's possible to blow out the first opamp port behind the input circuitry. (opamp type NJM4580)

Solution:

Tascam did acknowledge this fault and come up with a solution. This solution consist out of placing two diodes over the inputs of the first opamp. However, this is not part of the Tascam warranty philosophy so you have to pay big time if you want it to get fixed.

We developed a small PCB that will give the opamp 100% protection against over voltage on the input cause by plugging in/out phantom powered microphones. But the other advantage is that it will give you the freedom to start experimenting with the normal standard 8 pin DIL IC's. (The used NJM4580 is a SIP case type, i.e. all 8 pins on one side of the opamp. See picture) Please note that the standard PCB equipped with the NE5532 does **NOT** have a socket! **Please let me know upfront if you want to experiment with it and therefore want it equipped with a socket! (Note, if you NOT going to experiment with it it's better NOT to use a socket)**

Original situation:



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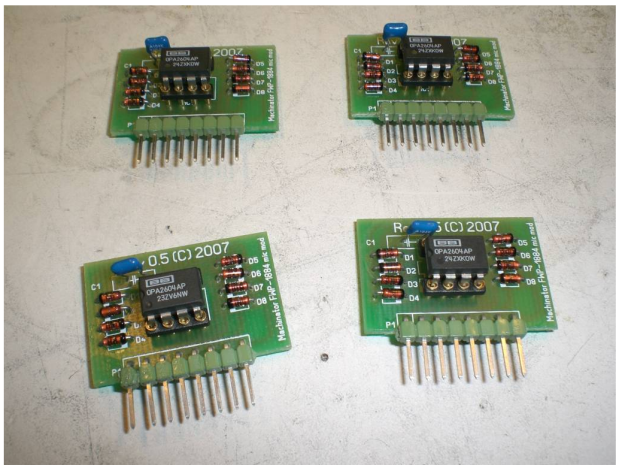
Now, the new solution is this:



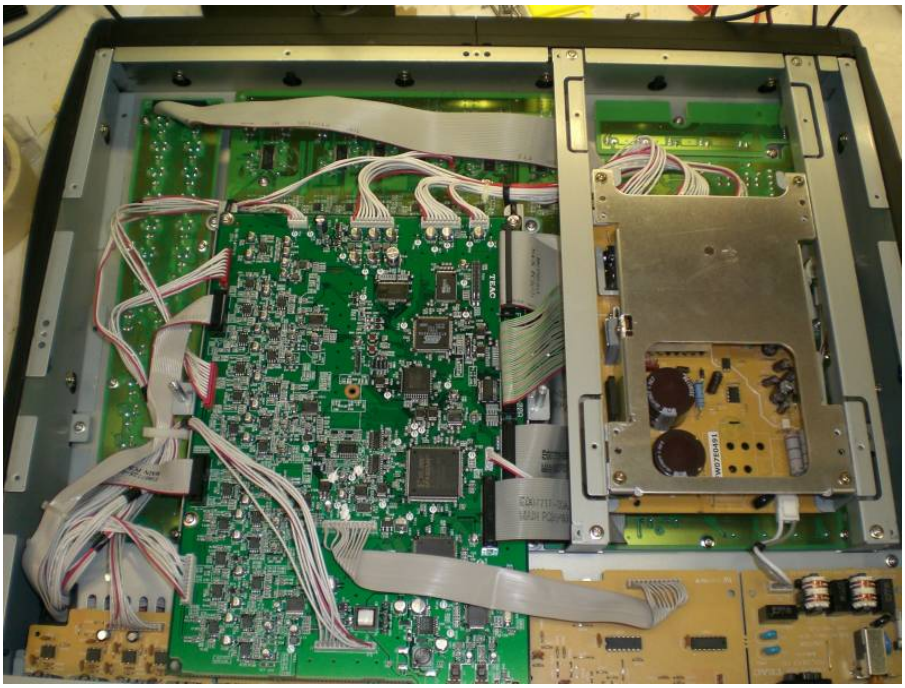
Here you see the pcb with the, in this case, OPA2604 and the 8 protection diodes.
Please note that re rev numbers can differ since we always try to improve our products so every time a change to the design / pcb is made we go up a level.

Mounting the new kit into the FW 1884.

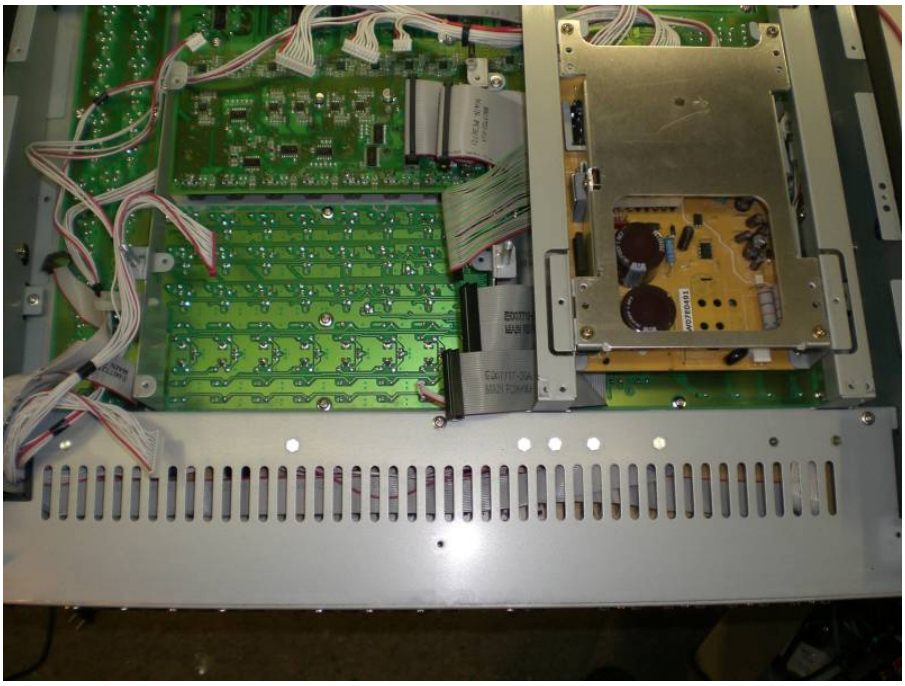
To mount the new pcb into your FW 1884 you really need some basic knowledge of mechanical and soldering stuff! The kit consist of a pre fabricated pcb (all components are already soldered onto the pcb) and one 1u capacitor. The pcb is to replace the existing opamp and the capacitor is to be mounted over an existing resistor, this simple mod will help, with the new opamp, to improve noise reduction.

To give you an idea what you will encounter, here some pictures:

Bottom plate removed:



Main pcb removed:



Analogue back removed:

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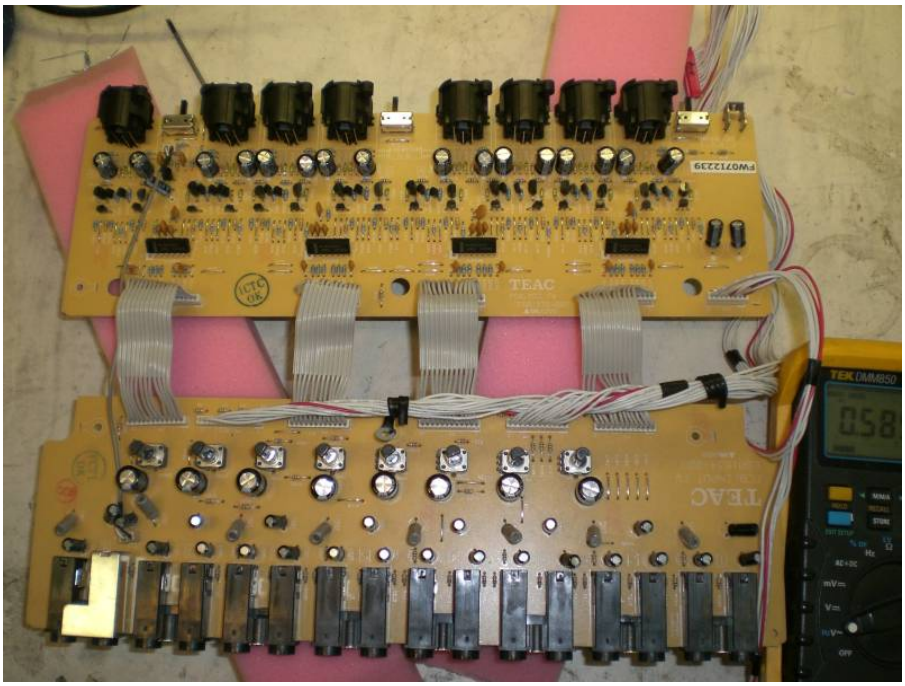
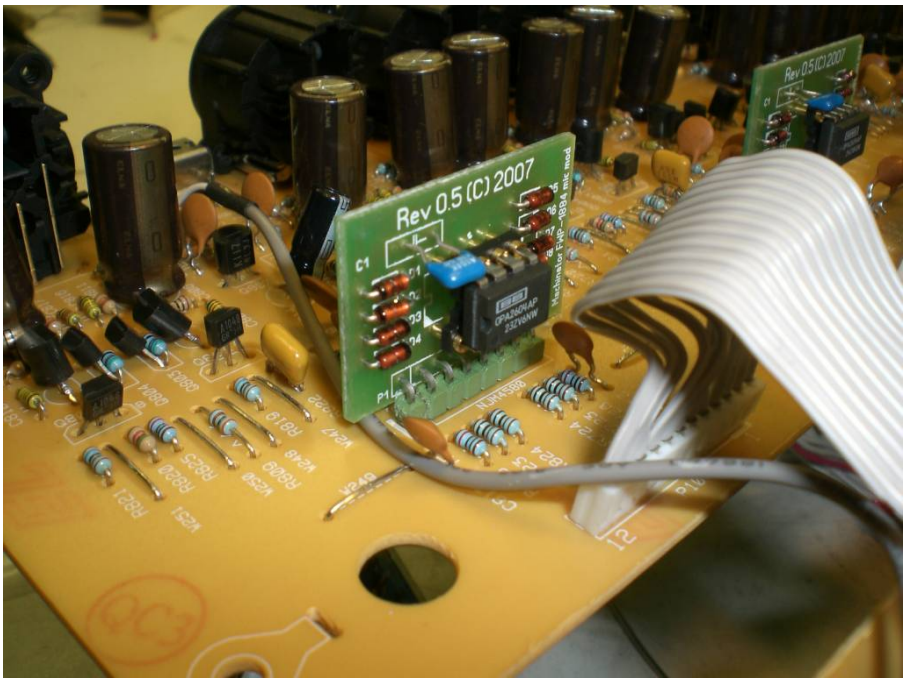
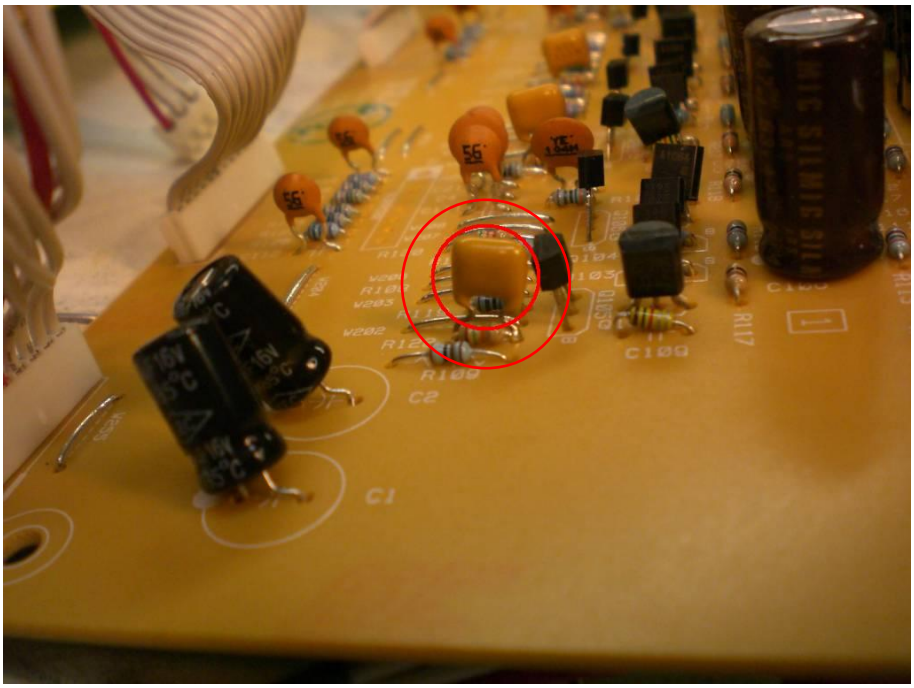
Analogue part folded out:



With the new pcb:



The extra capacitor soldered over R122-822 into the same holes of R122-822 in the LTP section on the analogue board:



To scare you of,….this is what you have to remove,…☺:

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The kit:

The basic kit will contain:

- Pre assembled pcb
- Pcb will be delivered with and NE5532 opamp. This is a good low noise opamp. You can knock yourself out by experimenting with other pin compatible dual opamp types. (ADxxxx, OPAxxxx) Please ask me what the possibilities of a other opamp are if you're interested**. Please note again that if you do not let me know / do not want to use other opamps there is NO socket on the PCB!**
- Two capacitors. (To be mounted over existing resistors on the analogue pcb, resistors R122, 222, 322, 422, 522, 622, 722, 822)
- One kit is for two inputs. (1-2, 3-4, 5-6, 7-8 are pairs)

Result:

- Noise floor will lowered so far that with all gain stages open there is no noticeable noise to be heard.
- Dynamics will improve
- Voices will be more detailed and less "crispy" (especially with the OPAxxxx series ss opamp)
- Your inputs are safe!

Pricing:

Please check out my site: www.machinator.nl

Of course you can send us the whole unit and we do it for you. The cost for this service will be around $235,-. This regardless of the amount of channels to be done. Please inform with regards to shipping / handling costs. We can apply some other good modifications to you FW-1884, please inform if interested.