# MBHP_OPL3 module modifications, the 5V option

The OPL3 module originally has three TL074 op-amps, and a circuit that needs +/-12V bipolar power supply.

In Wilba and nILS sammichFM, they use two OPA4348 rail-to-rail op-amps, that can be powered by 5V.

Sauraen suggested another 5V rail-to rail op-amp, the MCP6004, which is pin compatible with the TL074, and a way to modify the OPL3 module to use these.

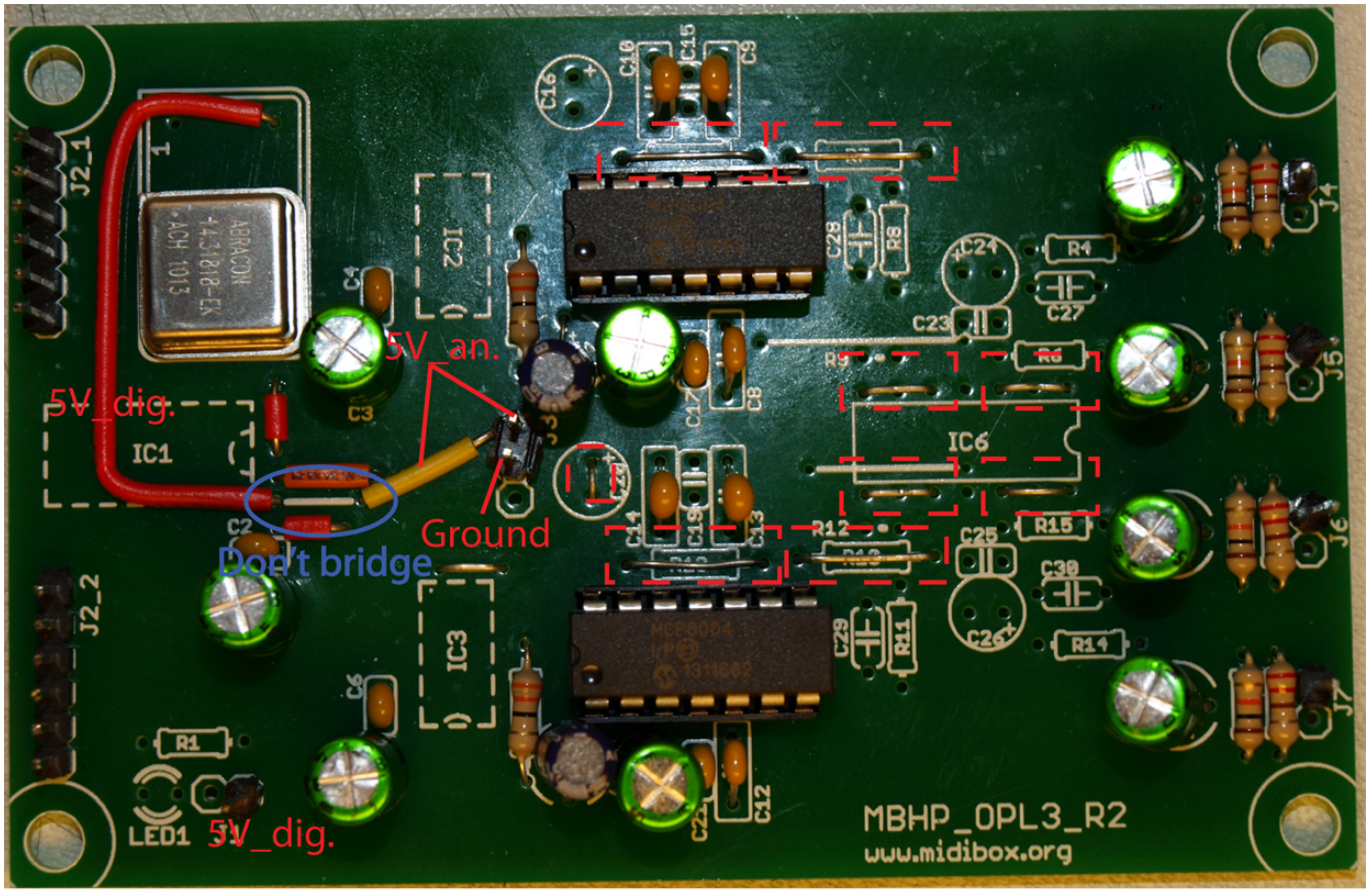
- Replace R5,R7,R10 and R13 with jumpers
- Bridge IC6 pads 1&3, 5&7, 8&10 and 12&14
- Leave out:
IC6
R4, R6, R8, R9, R11, R12, R14, R15
C15, C16, C19, C20, C23-C30
- Bridge C20 pads (to supply Ground for the op-amps)
- Leave out bridges to IC6
- Use MCP6004 for IC3 and IC5
- Supply 5V to the +12V pin, and Ground to Ground

This way the second buffering stage is left out.

In the sammichFM, nILS designed a separate dedicated 5V supply for the DACs (YAC512) and the op-amps.
To modify the OPL3 module for this approach:

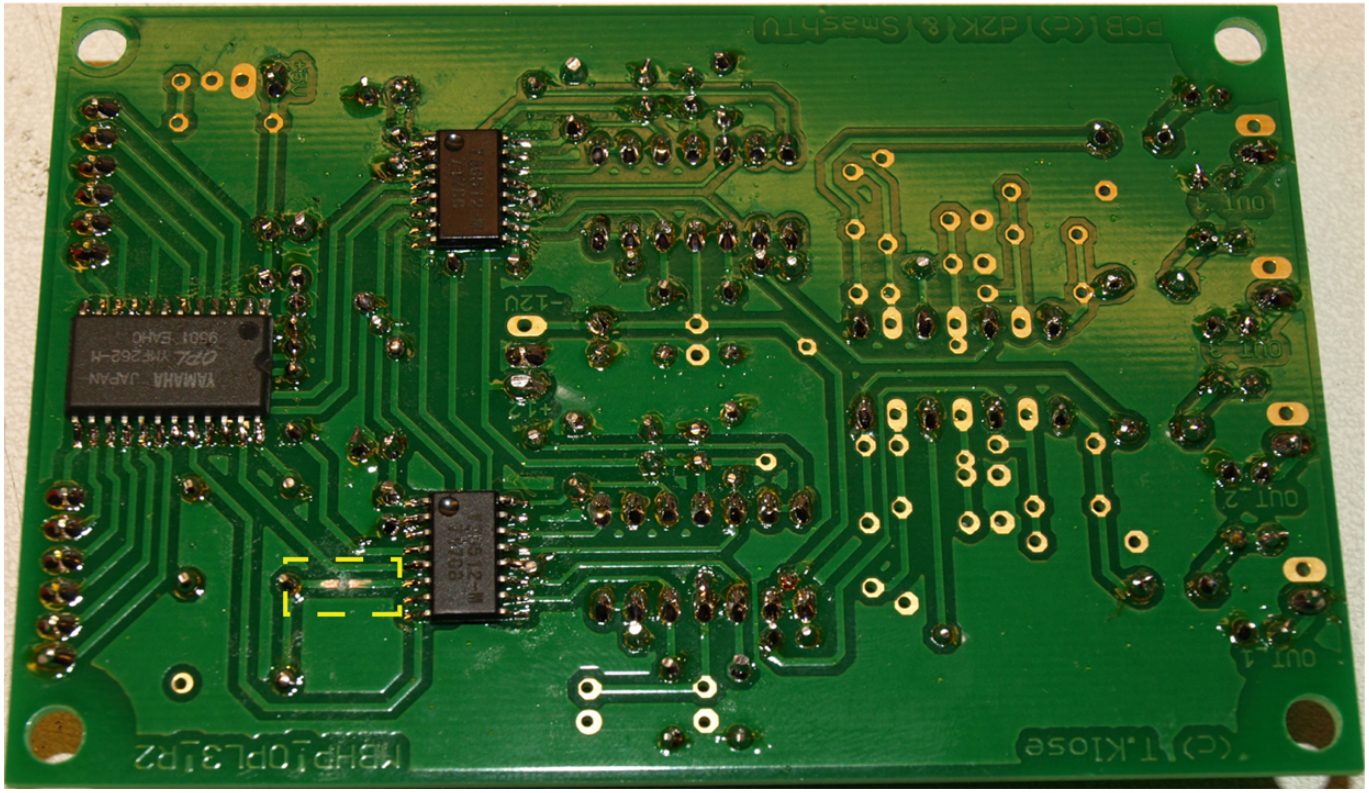
- Cut the trace between the 5V pin of the Oscillator and the DAC
- Leave out the middle horizontal bridge from IC1
- Connect the right pad of this bridge to the 5V pin in the middle of the board with a jumper
- Connect the left pad of this bridge to the 5V pin of the Oscillator with a jumper

**See illustration**




Bridge

Cut trace



From:
https://wiki.midibox.org/ - **MIDIbox**

Permanent link:
**https://wiki.midibox.org/doku.php?id=opl3_module_modified&rev=1390904177**

Last update: **2014/01/28 10:16**