

## **Bunsen – Rev 1.1**

In general, I populate my boards in the order of the BOM. I like to get the ICs out of the way while the board is empty and easier to work with.

Use flux to make the solder flow. I use a flux pen on almost every component. This can get messy so be sure to also clean the flux off with 99% isopropyl alcohol and cotton swabs. I learned from Ray Wilson that a mixture of ¾ 99% isopropyl to ¼ acetone works well for cleaning off flux.

If you make any solder joints that you are concerned about, figure out where that pad leads to and use a multimeter in continuity mode to check the joint. For example, check the integrity of the pins of an IC by following the trace to the next component (say a resistor) and meter between the pad for the component and the top of the leg at the IC. If your meter beeps, then the connection is good. On some builds, I check for this on all the IC legs. If a problem is discovered, it will save me a lot of time. It is much more difficult to discover what the problem is at the end.

Be sure to place the header on the same side of the board as the other components. Place the jacks and the rotary switches last and DO NOT solder them until you have installed the front panel and tightened all the nuts by hand. DO NOT remove the locating tab from the rotary switches. Once you are satisfied with the fit of the front panel, solder all jacks and the switches.

Before plugging the module in, check for continuity between +12 and -12, +12 and GND, and also -12 and GND. I check these at the header pins. If there are low ohms readings (less than a few hundred), you may have something ‘shorted’ on the board.

Remember Doepfer’s motto, “Red Stripe Down”, and always look for indication of where the red stripe should connect.

### **Notes about Bunsen Rev 1.1**

R31 – Text is incomplete. The ‘31’ portion fell into a hole. The letter ‘R’ is visible, and the resistor lies between IC1 and R12 on the board.

I have built this module using 1% tolerance resistors and 0.1% tolerance resistors. In my opinion, there is no reason to use the 0.1% tolerance, but if you want the best precision it is recommended to. In my testing, I have found a maximum pitch error of around 7 to 8 cents flat at +2 octaves. If you feel like your module is not performing well, send me an email and we can discuss what to check / change.