Input processing: The choice of input circuits for your mixer channels is a big one, and each of us will have different needs. There are specific requirements for signals going into the PGA4311. Input signals will be unbalanced, and should not exceed +- 2.5 volts at any time. If the voltage swings above 2.5 volts, or below -2.5 volts, the sound quality will be affected (clipping). If the input voltage goes above +5 or below -5 volts, the PGA chip may be damaged. Also, the impedance of the input signal should be 600 Ohms or less for best results. This becomes even more important if we are connecting one input to multiple PGA channels, as we do with a full audio mixer. So to make smart choices, you need to think about what you are connecting to your mixer. If it will be "built in" to mix a few SIDs together into a stereo feed, you may need no input processing at all. If you will be using it as a line mixer, combining a bunch of line level stereo sources from around your studio, I would suggest a simple unity gain input buffer for each channel. This will protect your inputs, and assure a low impedance for the PGAs, even if you feed weak signals. If you want to work with low level (high impedance) signals like electric guitars and microphones, or if you want to support balanced inputs, with or without phantom power, then a more advanced input buffer is for you. It is not my intent to teach audio input design. There are many references, including a few I posted earlier. What I intend is to provide the most flexible circuit board as I can, to allow you to design and experiment with yourself. The build guide for channel board describes the layout of the board, and shows how to build the unity gain input buffer. Beyond that, you are on your own. If you plan on experimenting, I suggest using right angle headers at the amp configuration space. You can then make different setups and plug them in as desired. The input amp is powered with only + and – 5 volts. This is to guarantee that the output will remain within safe limits for the PGA chip. I should also mention that you can easily add off-board input processing if you like. Two nice options that come to mind are any of these from PAIA (great for guitar work) or if you really want to carry this project to the max, the PGA2500 chip is very nice. I was tempted to design this board with the 2500, but it added more to the cost than I could justify. If there is a demand, I might be willing to reconsider. 😃

Anyway, to bypass the input handling completely, just use wire jumpers for C11, the bottom resistor beside C12, and another jumper from +1 to I1 in the amp area. DO NOT solder in a 5532. Once that is done, the + input pin should connect directly to the PGA input for channel 1.