

Does the power supply affect active circuitry in the signal path, or is it entirely for control? The requirement for clean analog power suggest active circuitry. **This assumption is incorrect. There is no active audio circuitry on the VCU board. However, the analog switches of the MUSES chip are referenced to the power rails and the quality of the rails' voltage is affecting the sonics. As configured on the VCU board, the MUSES72320 chip is equivalent to a dual 20K potentiometer with no DC blocking components and no capacitors in the audio paths. There are no capacitors and resistors in the VCU audio paths whatsoever.**

**Wouldn't you rather see +/- 12vdc rather than 15vdc which is close to the 16vdc limit? (See 1. Introduction) Any dual power supply voltage between +/-9V and +/-16V will do. The +/-15V refer to the labels on the connector.**

**What is the noise and THD for the entire board, not just the Muse chip? The entire circuitry on the VCU board is designed to operate the MUSES chip, which is directly connected to input and output terminals. The chip performance is not degraded, since there is nothing else in the audio path. To get the published performance of the MUSES chip, you will need a low noise power supply and a good quality buffer/amplifier at the board output.**

**Figure 5 is an excerpt from the MUSES manufacturer's datasheet that illustrates the recommended chip application. The VCU board is configured to directly take Left and Right channel inputs to Pin26 (In L), and Pin 23 (In R) of the MUSES chip with no capacitors on board. These pins are internally connected to a resistive ladder represented by the 20KOhm potentiometers on the equivalent schematic. The "wipers" of the two 20K pots are connected to Pin 3 (L+) and Pin 14(R+), which are directly connected to the corresponding VCU output terminals. (Note that the VCU board does not make use of the second pair of 10K pots available on the chip, as was suggested by Nelson Pass.) This way a serious audiophile gets complete control over the sound quality by selecting the input and output capacitors (if needed) and the buffer type. The Manual provides proven recommendations on that matter.**

**When using the VCU board with the Nelson Pass B1 Korg preamp, just connect the VCU in place of the 50K volume control potentiometer. Don't forget to connect the ground of the dual power supply used for the VCU with the preamp ground. As Mr. Pass mentioned in his article "the [preamp] circuit has a turn-on turn-off thump." To mitigate this problem, we suggest using a muting relay at the preamp output. The relay can be controlled by the MUTE control signal of the VCU, as shown at Figure 6 of the VCU Manual.**