CLAIMS

What is claimed is:

1. An audio processing system for use with a computing device, the system comprising:

an isolation block configured to receive a supply signal, the supply signal comprising a positive voltage and a first ground reference, the isolation block configured to reduce power supply noise present in the supply signal by providing an output comprising a positive output voltage and second ground reference, the second ground reference isolated from the first ground reference;

a microphone preamp circuit configured with one input receiving a microphone signal, providing a microphone preamp output signal, and wherein the microphone preamp circuit is powered by the positive output voltage from the isolation block and the second ground reference, and

a digital signal processor block configured to receive the microphone preamp output signal, convert the microphone preamp output signal to a digital format, and to transmit the digitized microphone preamp output signal to the computing device; and

a differential amplifier connected between the microphone preamp circuit and the digital signal processor block, the differential amplifier is configured to reduce common mode noise from the microphone preamp output signal,

wherein the isolation block comprises a switching circuit and a transformer, the second ground reference on the secondary side of the transformer is isolated from the first ground reference.

2. The system as recited in claim 1 wherein in use with the computing device, the computing device is one of a notebook computer or a desktop computer and the supply signal is received from a power supply connector and the digitized microphone preamp output signal is transmitted to a computer bus on the computing device.

3. The system as recited in claim 2 wherein the power supply connector is a PCIe Power Socket and the computer bus is a PCIe bus.

4. The system as recited in claim 1 wherein the switching circuit comprises a push-pull configuration.

5. A method for reducing noise in a microphone circuit, the microphone circuit provides a microphone circuit signal, comprising the steps of:

isolating a low noise power supply from a noisy power supply; and

configuring the microphone circuit to receive power from the low noise power supply,

wherein the step of isolating the low noise power supply comprises providing an isolation block configured to receive the noisy power supply, the noisy power supply comprising a positive voltage, the isolation block configured to provide an output comprising the low noise power supply and a second ground reference, and wherein the isolation block comprises a switching circuit and a transformer, the second ground reference on the secondary side of the transformer is isolated from the first ground reference, and applying the microphone circuit signal to a differential amplifier to reduce common mode noise.

6. A computer audio card for coupling to a computing device, comprising:

an auxiliary power socket configured to receive an auxiliary power connector supplying supplemental power from a computing device power supply;

a microphone preamp configured to receive a microphone signal and amplifying the microphone signal before transmission to an analog to digital converter (ADC) to provide a microphone preamp output signal;

an isolation block comprising a switching circuit and a transformer, the isolation block configured for conditioning the supplemental power by isolating the supplemental power from power delivered to the microphone preamp;

a digital signal processing block configured for receiving a digital signal from the ADC and for processing the digital signal; and

a differential amplifier configured to reduce common mode noise from the microphone preamp output signal.

7. The computer audio card recited in claim 6 wherein the digital signal processing block is configured to transmit the processed digital signal to a computer bus coupled to the computing device.

8. The computer audio card recited in claim 6 further comprising a microphone differential amplifier connected between the microphone preamp and the digital signal processing block for reducing common mode noise.

9. The computer audio card recited in claim 7 wherein the computing device is a desktop computer, the computer bus is a PCIe bus, the auxiliary power connector is an auxiliary PCIe power connector, and the auxiliary power socket is configured to receive the auxiliary PCIe power connector.

10. The computer audio card recited in claim 6 wherein the microphone preamp is connectable to a microphone via an input jack.

11. The computer audio card recited in claim 10 wherein the microphone input jack is located on an external audio control module.