

# Academy Audio Inc.

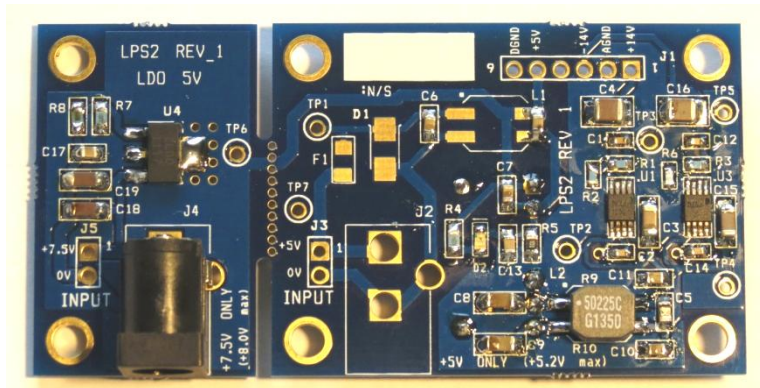
discovering the soul of music®

## LPS2 Low Noise Mini Power Supply for Hi-End MUSES® Electronic Volume Controls

Ver. 01

## User Manual

Rev. 02



MUSES® is a trademark of NJR Corporation. Other trademarks are a property of their respective owners.

## 1. Introduction

Thank you for purchasing the LPS2 Low Noise Mini Power Supply for Hi-End MUSES® Electronic Volume Control products from Academy Audio Inc.

The LPS2 Board was designed to provide a quick and efficient way to integrate the Hi-End MUSES® Electronic Volume Control board, Channel Selector & Volume Control Board, or VCM Mini Hi-End MUSES® Volume Control board into an existing or a newly built Hi- End audio system.

The LPS2 board provides all required power voltages to build a complete volume control and channel selector solution when used with any of the MUSES® Electronic Volume Control boards and a corresponding controller from Academy Audio.

Designed and built in the United States.

## 2. What's Inside the Box

The LPS2 Board package includes the following items:

- LPS2 Board.
- Plug-in power supply unit.

## 3. Specifications

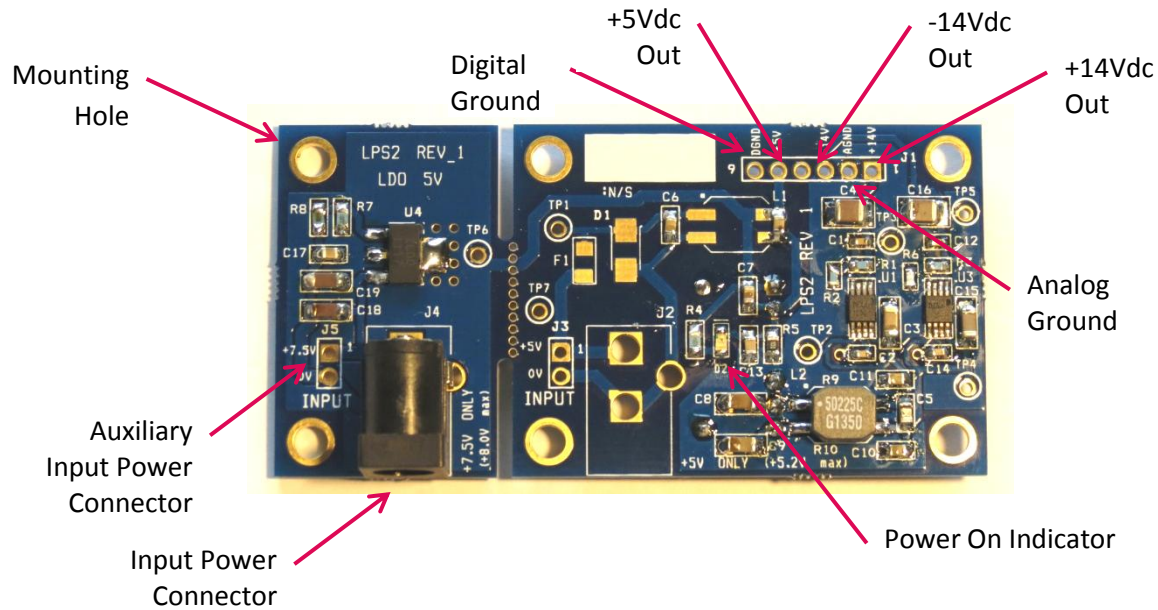
The following specifications refer to the LPS2 board connected to a provided plug-in power supply unit.

- Vin: 100V - 240V, 50-60Hz
- VDCin: +7.5V (+8.5V max)
- Vout1: +14V ± 2%, 50mA max
- Vout2: -14V ± 2%, 50mA max
- Vout3: +5V ± 6%, 200mA max
- Noise Level (Vout1, Vout2): 25uVrms max (10Hz – 20kHz)
- Dimensions: 3.00" x 1.50" x 0.50"
- Weight: 4.0 Oz (including wall wart)
- Protection:
  - Short circuit
  - Undervoltage
  - Overheating

**CAUTION:** Exceeding maximum values listed in the Specifications may severely degrade the performance of the LPS2 board, and cause intermittent operation. Prolonged operation of the LPS2 board under these conditions may substantially reduce the board reliability.

## 4. Description

Referring to Figure 1, the LPS2 board features an input power connector for connection of the provided plug-in power supply, a Power On LED indicator, and an output connector for 3 stable voltages and separate grounds for analog and digital circuits. An auxiliary input power connector is provided for a permanent connection of the primary DC power source.



**Figure 1.** LPS2 Low Noise Mini power supply.

The LPS2 board uses a dual stage voltage regulation for improved ripple rejection. The first stage employs an LDO to convert the DC input voltage received from a primary DC power source into a stable +5Vnom. This voltage is used to power external digital circuits, and also to power a low noise DC/DC converter that generates +18Vdc and -18Vdc, which are further regulated by two ultra low noise LDOs to provide clean analog rails of +14Vdc and -14Vdc. A sophisticated filtering system placed before the LDOs removes all switching artifacts. A very high switching frequency of 400kHz of the DC/DC converter ensures that residual noises, if any, will show up way above the audio band.

## 5. Mechanical

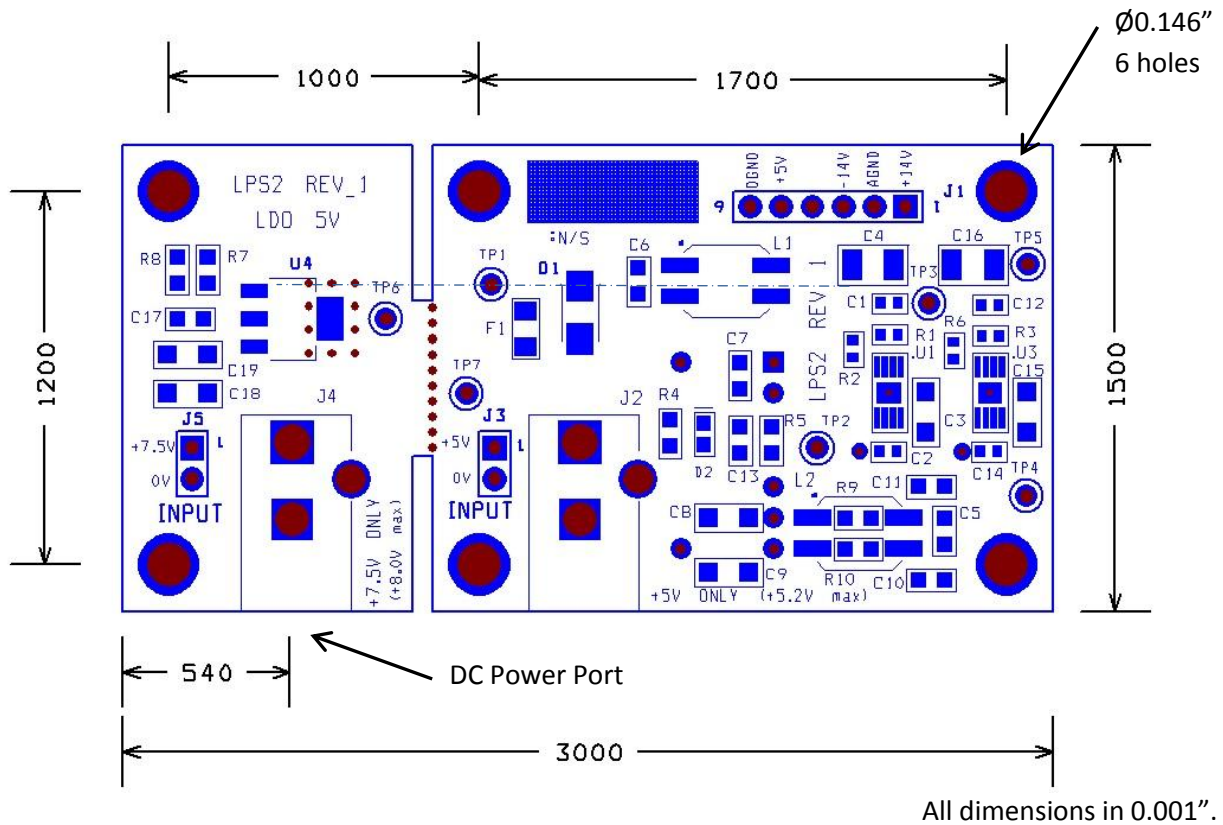


Figure 2. LPS2 Board Dimensions.

Refer to Figure 2 for mechanical dimensions and mounting holes location. The LPS2 board may be installed either horizontally or vertically. Use at least 0.250" long stand-offs for installation.

## 6. Power Supply

A plug-in power supply provided with the LPS2 board has been carefully selected and tested for continuous low noise operation. When used in the same enclosure next to sensitive audio circuitry, thorough shielding of the plug-in power supply is recommended.

If any other power source is used, it has to be capable of sourcing no less than 500mA, and keep an output voltage between 7.5Vdc and 8.5Vdc. The ripple voltage should not exceed 200mV.

## **7. LPS2 Board Operation**

The LPS2 board is designed for a continuous operation. Total power consumption does not exceed 4 watts. When fully loaded the LPS board may get warm, but not hot to touch.

## **8. Technical Support**

For any questions regarding operation of the LPS2 board and for the latest documentation please visit us at [www.academyaudio.com](http://www.academyaudio.com).

Happy listening!