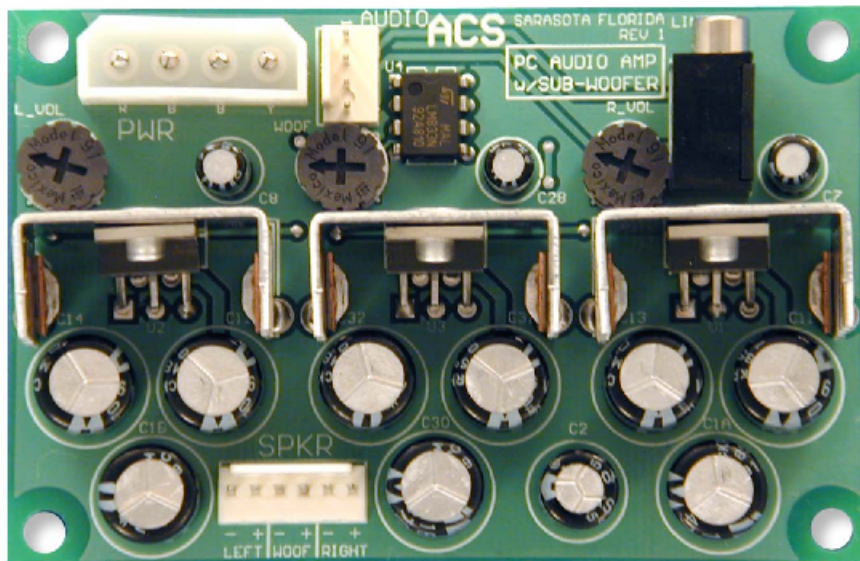


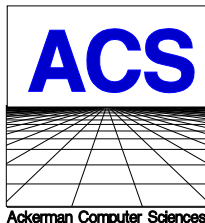
# PC Audio Amplifier With Sub Woofer

## User's Manual



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*On The Cutting Edge of Technological Evolution*

6233 E. Sawgrass Rd • Sarasota, FL. 34240 • (941)377-5775 FAX(941)378-4226  
www.acscontrol.com



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## Overview:

Thank you for purchasing the **ACS PC Audio Amp w/Sub Woofer Module**; be assured that it will provide you with thousands of hours of trouble free, solid-state operation.

The **ACS PC Audio Amp w/Sub Woofer Module** is designed to provide a cost effective speaker drive system for embedded PC applications. Although it can be used with any line level audio signal, its 5-1/4" disk drive power & 1/8" stereo input connectors allow direct connection to most PC motherboards. The 4 pin .1" pitch header and individual volume controls, allows direct audio connection to CD & DVD ROM drives. Features:

The **ACS PC Audio Amp w/Sub Woofer Module** incorporates the following features:

- Disk Drive style connector for external 12V DC power input
- 1/8" phone plug stereo input connector.
- 4 position 0.1" header for stereo input.
- Individual volume controls.
- 6 position 0.1" header for speaker outputs.

## Connections

The **ACS PC Audio Amp w/Sub Woofer Module** receives its power from the disk drive style connector **PWR**.

Two different input connector styles are provided: a 1/8" stereo phone jack **LINE\_IN** and a 4 position 0.1" pin header **AUDIO**.

The speaker outputs are available on a 6 position 0.1" pin header **SPKR**.

See the Mechanical section for connector locations. Pin number 1 is denoted by the silkscreen markings and/or the use of a square copper pad for the pin.

## Power

The **ACS PC Audio Amp w/Sub Woofer Module** uses an external power supply. The required supply is 12 volts direct current provided via the **PWR** input connector. The connector style is the mating connector for the PC power supply disk drive connections.

Pin #	DC Signal
1	+12VDC
2	GROUND
3	GROUND
4	+5VDC

## Outputs

The **ACS PC Audio Amp w/Sub Woofer Module** provides three speaker outputs. The **RIGHT** and **LEFT** channels are amplified versions of the **RIGHT** and **LEFT** inputs respectively. The **WOOF** channel is a composite signal from both the **RIGHT** and **LEFT** inputs that is low pass filtered at 160Hz.

The **SPKR** connector is a 6 position, 0.1” pin header. The pinout is shown in the following table:

Pin #	Signal
1	RIGHT +
2	RIGHT -
3	WOOF +
4	WOOF -
5	LEFT +
6	LEFT -

### Inputs

The **ACS PC Audio Amp w/Sub Woofer Module** provides left and right stereo inputs.

The **LINE\_INPUT** connector is a 1/8” miniature stereo phone jack. The pinout is shown in the following table:

Pin #	Signal
TIP	LEFT
RING	RIGHT
SLEEVE	GROUND

The **AUDIO** connector is a 4 position, 0.1” pin header. The pinout is shown in the following table:

Pin #	Signal
1	GROUND
2	RIGHT
3	GROUND
4	LEFT

### Amplifier

The **ACS PC Audio Amp w/Sub Woofer Module** uses the National Semiconductor LM1875T amplifier IC. There are three amplifiers, one each for **RIGHT** and **LEFT** channels, and a third for the **WOOF** channel. The LM1875T can deliver up to 20W into a 4 or 8 ohm load with a larger power supply. When using the PC's 12V power supply, the LM1875T can deliver about 8 watts per channel to an 8 ohm speaker. Louder volumes can be achieved using 4 ohm speakers. An electronic crossover is used to mirror any frequencies below 160Hz from both the **RIGHT** and **LEFT** channels to the additional **WOOF** channel. Power filtering and conditioning is performed on the PC's 12V, to reduce background noise levels.

**Mechanical**

