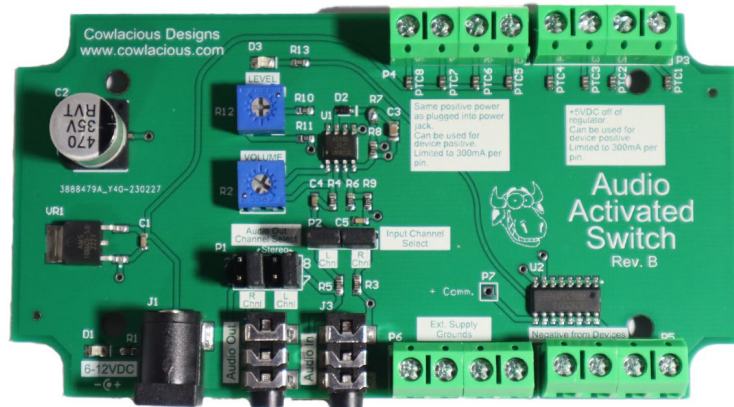


# Audio Activated Switch

## AAS Circuit Board



Cowlacious Designs™

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## Introduction:

### The Audio Activated Switch

This device allows audio to activate an electronic switch. The circuit is essentially a one channel color organ (for those that remember what those are), but with a small twist. This unit has three channels that turn on whenever the preset volume level or greater is achieved. The volume level can be adjusted by you.

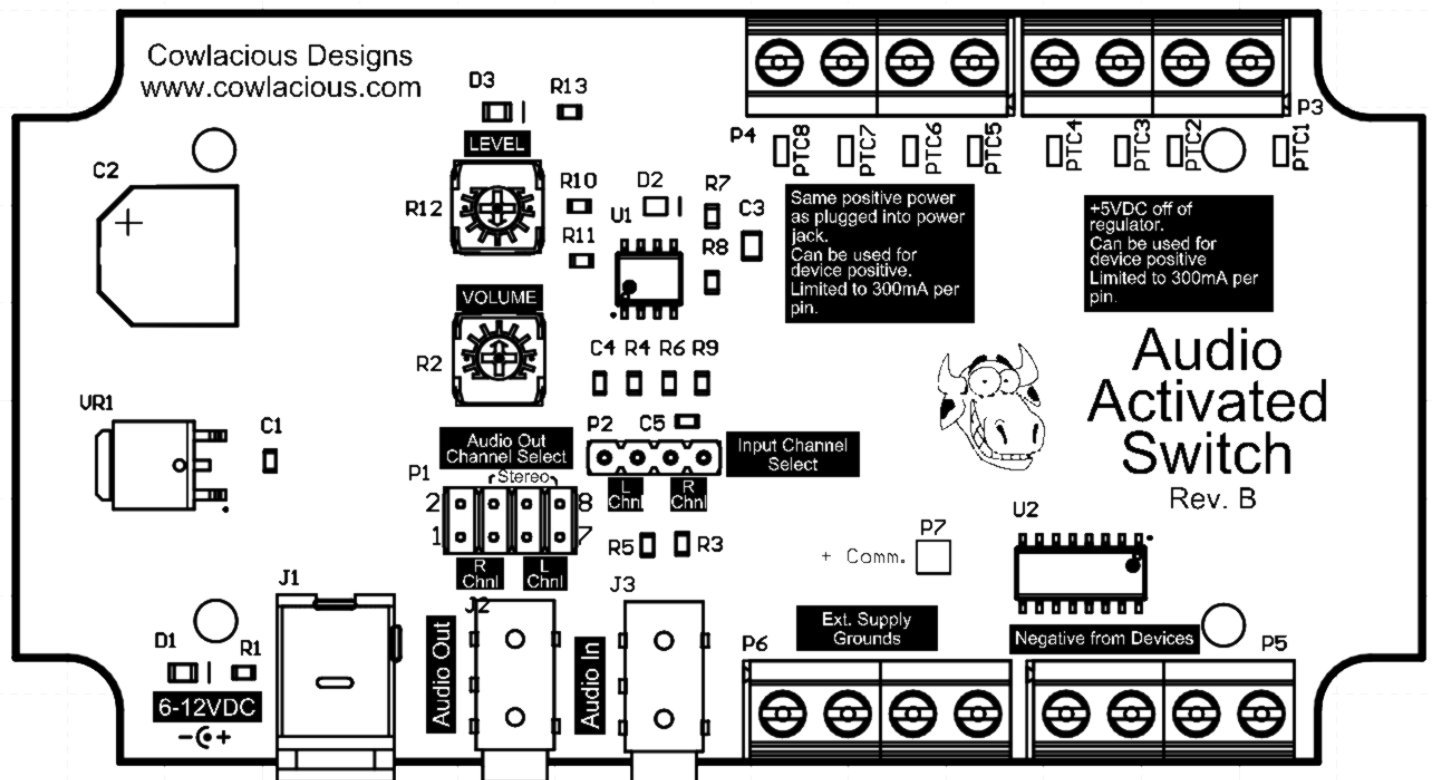
The three channels can each sink (switch on) up to 1 amp each at up to 50VDC. What the circuit essentially does is connect the negative lead of your device to ground whenever it is activated and breaks that connection whenever it is not activated. Each channel could be used for devices that require different voltage levels, for example, one channel could be used for a 5VDC light, another for a 12VDC motor, and the third for a 24VDC solenoid valve. You could also use this a seemingly random on off switch.

The unit has four terminals on the board that provide access to the plugged in power supply voltage, (whatever that is, 9VDC or 12VDC) depending on what you have powering the board. Each terminal can supply up to 300mA of current and can be ganged for devices needing more current (though you can't exceed what your supply is

capable of). It also has four terminals of 5VDC to power devices and has the same 300mA limit for each terminal. Again, you can't exceed what the supply is capable of delivering. You can also power devices off of supplies that aren't powering the board, just your device.

This could be used to operate the solenoid on a "Cat in the Box" prop or for running the lights and motors in synch with sound for an electrocution chair prop.

# AAS Circuit Board Overview



- J1** Power Jack 9VDC
- J2** Audio Line Out
- J3** Audio Line In
- P1** Audio Out channel selection header.
- P2** Audio Input channel selection
- P3** 5V Positive connections for switched device (lamp, motor, etc.)
- P4** Positive connections for switched device (lamp, motor, etc.)  
The voltage will be the same as the

- input voltage that is plugged into J1.
- P5** Negative connections for switched devices and for external power sources.
- P6** Negative connections for switched devices and for external power sources.
- P7** No connection
- R12** Trigger level pot
- R2** Volume pot

# Testing and Adjustment

(Note: Please see connection diagrams on the following pages.)

- Supply power to the board by connecting a 9 VDC (500mA or greater) power supply to the barrel connector. **Center pin is positive, sleeve is negative.** You should see the “PWR” LED light up as soon as power is applied.
- Adjust the threshold level, “LVL” (R12), counter-clockwise until the “LVL LED” turns on. Then turn it clockwise just far enough that the “LVL LED” turns off. Note: This control is used to set the sound trigger level needed to make the switch connect your device to the negative power line to will turn it on. If it is set too far from the point that the LVL LED turns on the switch will not respond to the sound at all or not as much as desired.
- Feed audio to the circuit through the 3.5mm stereo “Line In” jack. If you want both channels of sound to control the switch, then make sure that the shorting jumpers are on P2. If you want only the right channel of audio to control the switch, then remove the shorting jumper for left channel. If you want only the left channel audio to control the servo then remove the shorting jumper for the right channel.

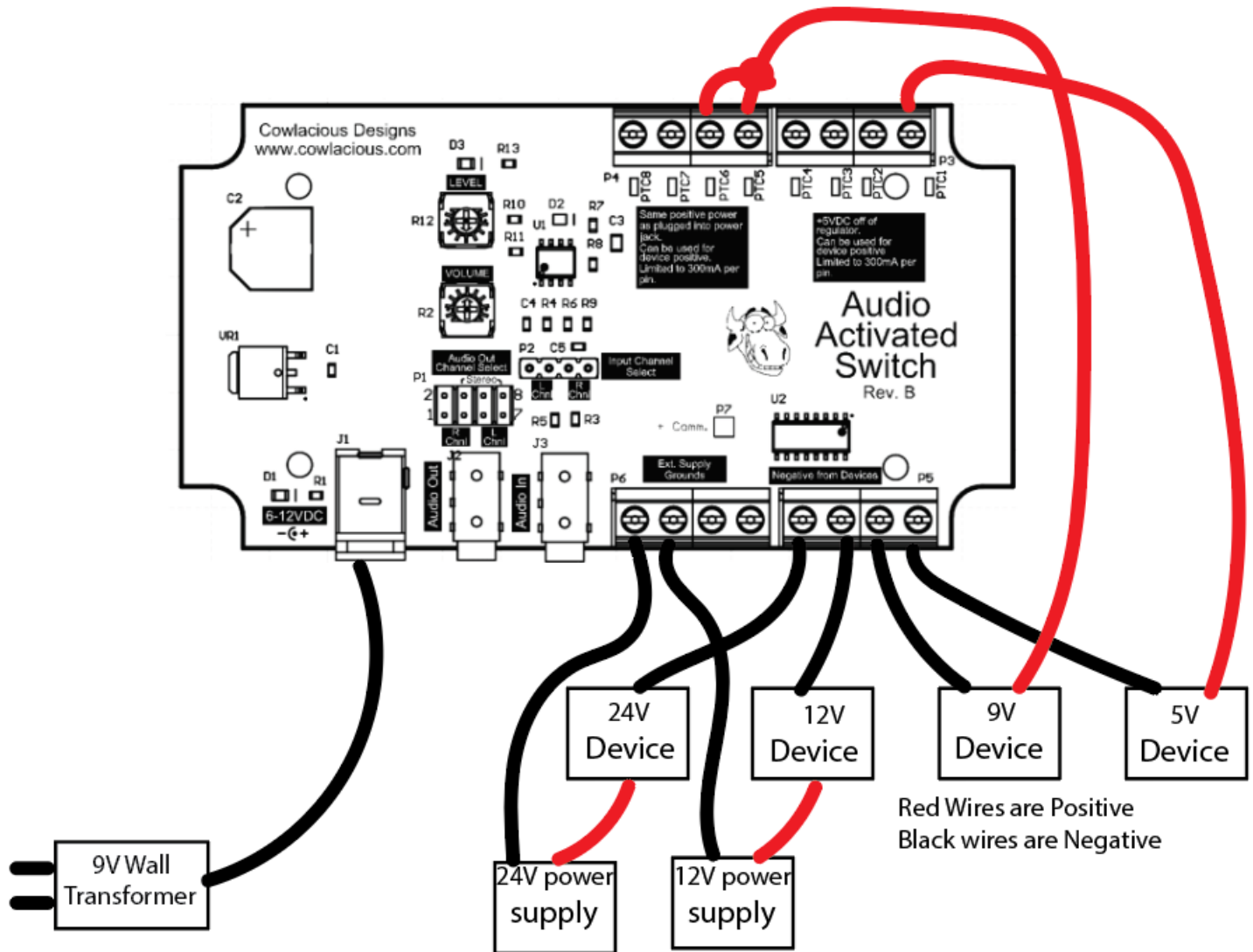
**PLEASE NOTE: Audio Out Channel Select** allows you to choose which audio channel(s) go out to the “Audio Out” jack. By placing both jumpers on the headers marked stereo, both audio channels will pass through from the input to the output. If both jumpers are on “L Chnl” then the audio “Audio Out” jack will only send the left channel audio out, and vice-versa if the jumpers are on “R Chnl”.

The “Line Out” jack can connect to an external set of powered computer speakers, powered MP3 speakers, or it can feed the Aux or Line In jack of an amplifier that has speakers connected to it.

- Adjust the “VOL” until you get the kind of response you want. Remember, this circuit is designed turn on the switch whenever the audio is loud enough to make the LVL LED light up. If the audio is too loud it will remain in its maximum position until the “Volume” is

adjusted to an appropriate audio level. If the audio source has an adjustable output, such as an MP3 player's headphone jack, you will probably need to turn the player's volume up to maximum.

## Sample Connection Diagram



In the diagram, the power for the board is a 9VDC wall transformer capable of delivering 2000mA (2A) to the circuit. Two devices will be drawing power from it, besides the board itself. The device connected to P3 requires a 5V supply that can deliver 200mA. Since each output of P3 can deliver up to 300mA, it only needs to connect to one output of P3.

The device connected to P4 requires a 9V supply that can deliver 500mA. Each output from P4 can deliver a maximum of 300mA, so it needs to double up two outputs which would supply up to 600mA (300mA + 300mA).

With those two devices the 9V wall transformer will be delivering 700mA of current, so it will need to be able to deliver at least that much current (more current capability would be even better).

The two other devices connected to the board, a 24V device and a 12V device, require their own power supplies, since the board doesn't provide those voltages. The board is capable of switches multiple devices of different voltages at the same time, as shown.

If the board is supplied from a 12VDC wall transformer, then P4 would have 12VDC coming out of it instead of the 9VDC shown in the example, since it P4 gets its power directly from the wall transformer.

**IMPORTANT !!! – Do Not Exceed 12VDC On the Input Jack (J1).**

## **OPTIONS AVAILABLE FOR PURCHASE**

**Please see our web site at [www.cowlacious.com](http://www.cowlacious.com)**

- 9VDC, 500MA, WALL TRANSFORMER THAT PLUGS INTO THE BARREL JACK.
- 3.5MM TO 3.55 STEREO CABLE (ONE IS PROVIDED)
- 3.5MM TO RCA CABLE



[www.cowlacious.com](http://www.cowlacious.com)