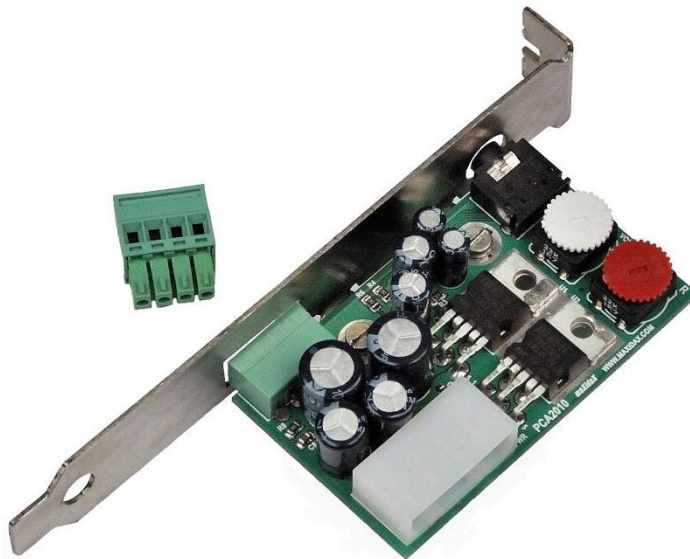


PCA2010

PC Internal (PC-Bracket) Power Amplifier

User's manual



1. INTRODUCTION

Thank you for choosing the PCA2010 PC Power Amplifier – a cost-effective yet flexible solution for your PC sound.

1.1. OVERVIEW

Back in old times sound cards had power amplifiers. Although this was allowing use of non-powered speakers, it had a serious drawback – output power was in the milliwatt range. Nowadays every PC-intended speaker is powered, but unfortunately most cheap solutions offer remarkably bad sound quality.

Here comes the PC-bracket power amplifier allowing those old and forgotten, but hi-quality speakers to be brought back to life and connected directly to any PC. Nor it is tiny and cost-effective, it also saves from yet another powered box near the PC. Amplifier's output power is more than adequate for any desktop, and for most small to mid-sized rooms as well. Sound quality is very good thanks to low harmonic and cross-over distortions (provided that high quality speakers are used).

The PCA2010 PC-amp is very robust and flexible allowing connection of practically any (non-powered) speaker down to 1.6Ω . It also offers a completely safe operation providing automatic overheat protection, protection against any type of short circuit, open ground protection, load dump voltage surges protection.

The PC-amp simply fits in one of any standard PC case back-plate full-height extension card opening, no matter what slots is inside – it simply doesn't use them. Optional low-profile PC-bracket is available. Power big enough for adequate sound levels and dynamics is drawn directly from PC's power supply via standard Molex connector.

One thing the user must know and understand: In order to be more affordable the PCA2010 PC-amp doesn't have its own cooling system. Heat generated during operation is dissipated via the back PC bracket and PC case assisted by PC's cooling system. Depending on factors like ambient temperature, PC cooling efficiency, and how loud the sound is, amp temperature may reach unacceptable levels causing the built-in thermal protection automatic kick-in. This will cut the sound off, but it will be automatically restored as soon as the temperature lowers to acceptable level. Such behavior is not a malfunction. Tests show that with normal sound levels and normal PC cooling this practically doesn't happen.

1.2. FEATURES AND SPECIFICATIONS

- Maximum output power⁽¹⁾2 × 8 W at 1.6 Ω, 2 × 4.2 W at 4 Ω;
- Minimum speaker impedance 1.6 Ω;
- Maximum harmonic distortion⁽²⁾0.15% at 1 kHz;
- Input impedance.....22 kΩ;
- Maximum input sensitivity55 mV at 6 W at 4 Ω;
- Automatic thermal protection, even with permanent overheat;
- Automatic load short circuit protection, even if permanent;
- Automatic open ground protection;
- Automatic load dump voltage surge protection;
- Individual left and right volume controls with mute option;
- Standard 3.5 mm stereo jack input;
- Speaker connection via secure, detachable terminal block;
- Power connection via standard Molex PC connector 12 V;
- Easy installation – fits any standard full-height PC case slot opening (optional low-profile bracket available);
- Dimensions (excluding PC bracket).....39 x 66 x 15 mm (1.5 x 2.6 x 0.6 in);
- Weight 45.9 g.

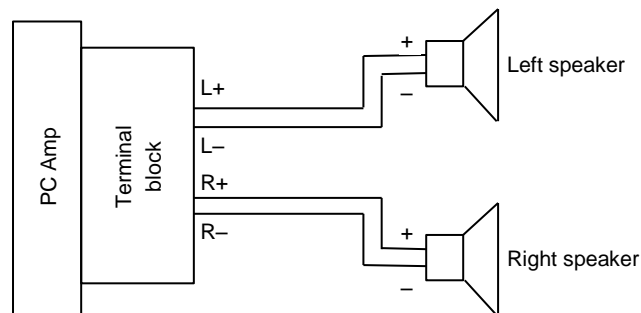
Notes: 1. Maximum output power depends on speaker impedance, ambient temperature and PC cooling efficiency. Maximum values are valid for a well cooled PC, otherwise may be limited by automatic thermal protection kick-in. Maximum output power specified is pure electric power (sine), not 'P.M.P.O.', 'Music power', etc.;

2. Maximum harmonic distortion is valid if maximum output power is not exceeded.

2. INSTALLATION

Please follow next steps in order to install the product safely and enjoy its maximum performance:

1. Shut down your PC;
2. Disconnect the PC from AC mains and open PC case;
3. Locate free PC slot opening and remove the back plate. If there is a case fan installed, use a slot opening which is close in order to **ensure maximum air flow around the amp thus providing best possible cooling**. If your PC doesn't have case fan, use slot opening closer to the CPU;
4. Unplug the terminal block used for connecting speakers;
5. Install the PCA2010 in the free opening and tighten the screw well. **IMPORTANT: Tightening the screw is essential for letting the heat from the amp to the PC case thus ensuring that maximum output power can be used!**
6. Connect the power using any free Molex connector – these are usually used for powering optical and hard drives (parallel ATA);
7. Connect your speakers to the terminal block as per diagram below. **Observe same polarity for both speakers** and use proper gauge wire. Plug the terminal block back into the amp;



8. Connect amp's 3.5 mm stereo input jack to your favorite source – in most cases this should be your sound card's green 3.5 mm stereo output jack;
9. Connect AC mains and start your PC. Adjust amp's left (white) and right (red) volume controls in order to use full power range corresponding to your sound level control maximum setting, i.e. when your PC volume control is at max adjust PC amp's volume controls to set highest acceptable volume. In order to achieve proper balance left and right volume controls may be set to different positions. Sound can be muted by turning volume controls to most left/anticlockwise position. These controls are provided for initial setting of the volume – your main volume control is still the PC software-operated volume control. **NOTE: The PC amp has a big input sensitivity allowing the use of various signal sources. Standard PC sound card output signal level is relatively high so PC amp's volume controls should be set to a position close to most left;**
10. Close PC case and enjoy the sound.

3. TRUBLESHOOTING Q&A

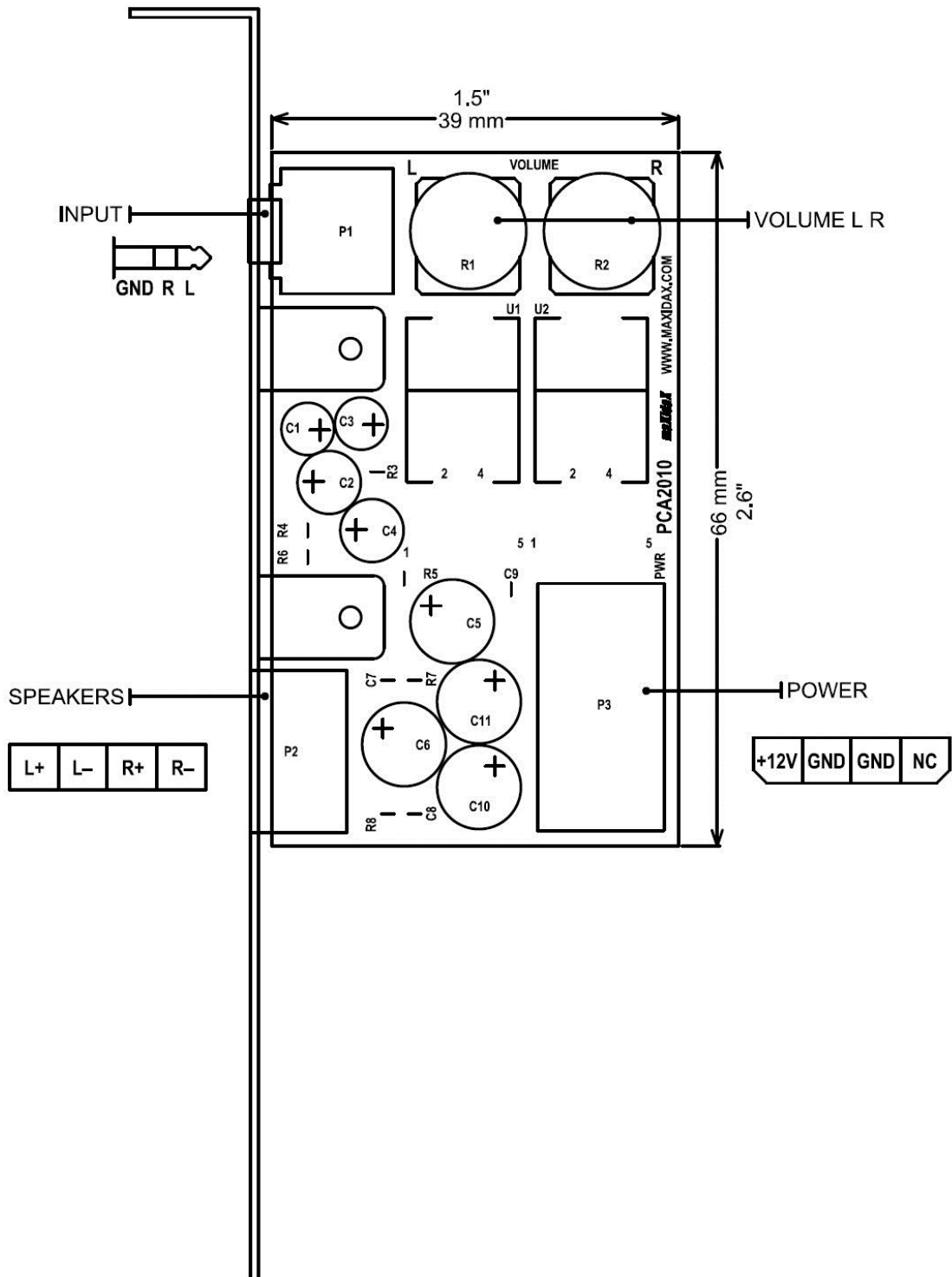
PROBLEM: No sound from speakers at all.

SOLUTION: Is the PC-amp installed properly and all connections are correct? Are amp's volume controls far from most left/counterclockwise position? Is the sound muted or the level set too low from the PC control?

PROBLEM: The sound suddenly stopped, but later resumed by itself.

SOLUTION: If not caused by other reason, this means that PC-amp's thermal protection kicked-in and **is not a malfunction**. Reduce volume level. Make sure PC bracket screw isn't loose. Is your PC cooled well?

4. DEVICE LAYOUT AND DIMENSIONS



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