

POW2

Installation Manual



Introduction

Matrix Power Amplifier Kit

The POW2 is a sixteen channel power amplifier kit which is an optional device to be installed inside the R2 Multi-Zone Digital Audio Matrix and M2 Multi-Media Digital Audio Mixer devices.

In their standard configuration, these matrix systems are equipped with 8 line level output channels where to the appropriate amplifiers for your application can be connected.

In combination with the POW2 Power amplifier kit, they can be turned into a powered matrix system, delivering an amplified output signal in the same single housing. This can be very useful for applications where no large power capacities are required and the available rackspace is limited.

The POW2 consists of a 16 Channel (8 Stereo Channel) Class-D amplifier, delivering a power of 60 Watt to every channel. In bridge mode an output power of 8 x 120 Watt can be obtained.

The input signal is internal linked from the DSP output and the output connections are provided on the rear panel of the matrix system and are performed by using 4-pin Terminal block connectors allowing connections for separate or bridged output channels.

It features an advanced protection circuit which protects against DC malfunctioning, short circuit, overheating and overload while a large heatsink and speed controlled ventilation fan ensure a proper operation temperature is continuously maintained.

The POW2 Power amplifier kit includes the power amplifier module, a switching power supply and all necessary connection and installation accessories to properly install the kit inside the Matrix's housing.

Installation precautions !



The installation of the Power Amplifier Kit unit may only be performed by qualified technicians.

Incorrect installation can lead to permanent damage or incorrect functioning of the equipment.

Package contents

- Power amplifier module
- Power supply unit with PFC
- Loudspeaker output cables 200 mm (8 pcs)
- Stereo shielded signal cable 420 mm (2 pcs)
- Stereo shielded signal cable 460 mm (2 pcs)
- Stereo shielded signal cable 500 mm (2 pcs)
- Stereo shielded signal cable 540 mm (2 pcs)
- Mute cable 400 mm
- Power cable set Red / Black / Yellow
- 2 x T4AL/250V Slow blow fuse
- 2 Large Ferrite core for SD/MMC connection flatcable (one might be mounted on the Power supply already)
- 8 x 4–Pin Terminal block output connectors (5.08 mm)
- POW 2 Option Sticker

Installing Mounting and connecting

Please note this manual is for both M2 and R2 Assembly.
Picture used in this documentation are for M2 and may differ from R2.

Step 1:



Make sure the Matrix system is powered off and the power inlet is disconnected from the mains power.

Step 2:

Open the device housing by carefully removing the screws from the top panel of the device.

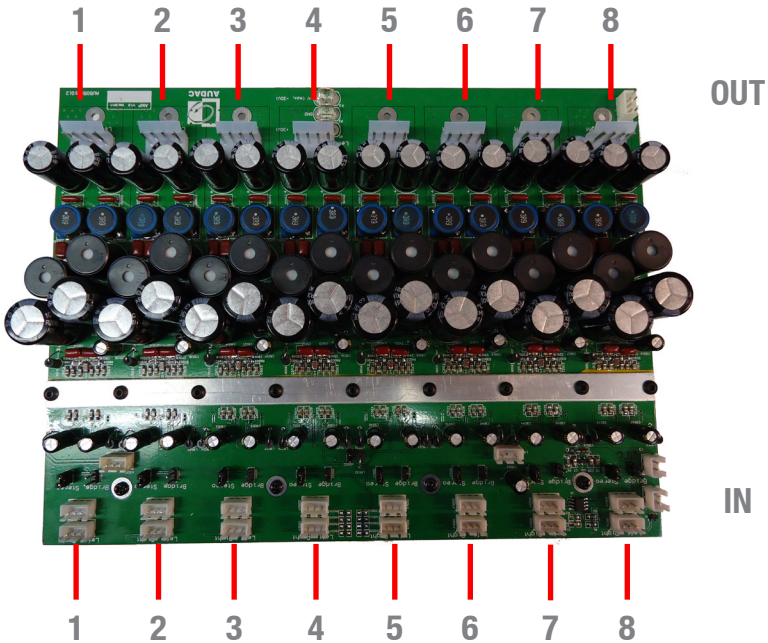
Step 3:

For M2: Place one of the supplied ferrite cores around the flatcables coming from the USB and SD/MMC board on the front panel of the device.

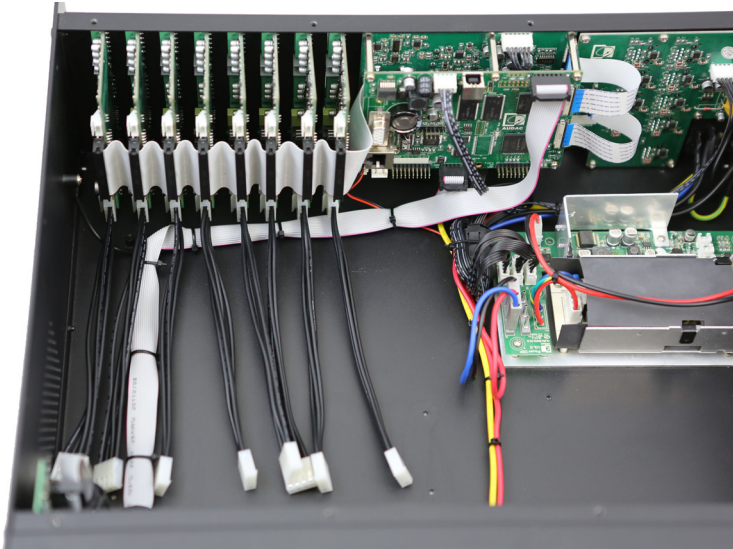


Step 4:

Amplifier channel layout



Attach the 8 loudspeaker output cables to the I/O board(s) of the system. Depending of the kind of system (R2 or M2) the output board will be different. The loudspeaker output cables should be connected to the large 4-pin connectors on the bottom side of the I/O board(s).

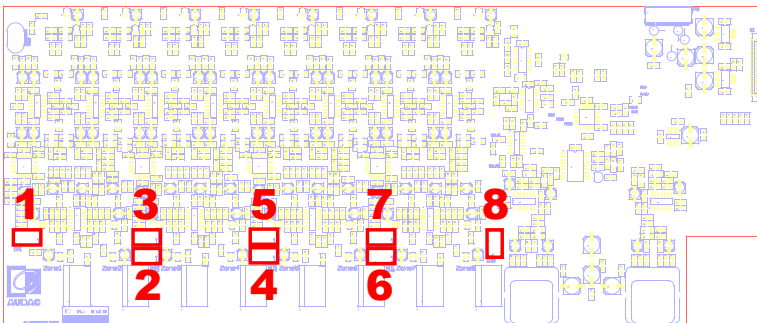


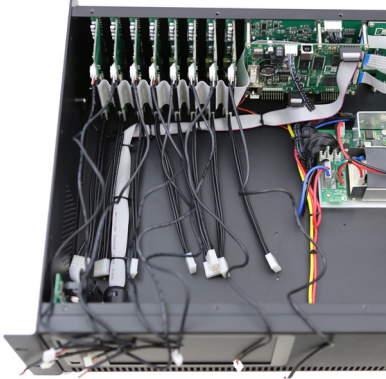
Step 5:

Attach the 8 stereo shielded signal cables to the amplifier module. **Mark the cables to keep a clear overview of which cable is connected to which channel.** The corresponding cable length for each channel is described in the table below:

| | | |
|----------------|------------------------|------------------------|
| Cable lengths: | 420 mm: Channels 4 & 5 | 500 mm: Channels 2 & 7 |
| | 460 mm: Channels 3 & 6 | 540 mm: Channels 1 & 8 |

R2 IO board signal connections





Align the cables to facilitate the placing of the amplifier module.
Use cable ties to hold the signal cables together.
Signal cables will go under the amplifier module whereas the output cables remain at the back of the unit.

Step 6:

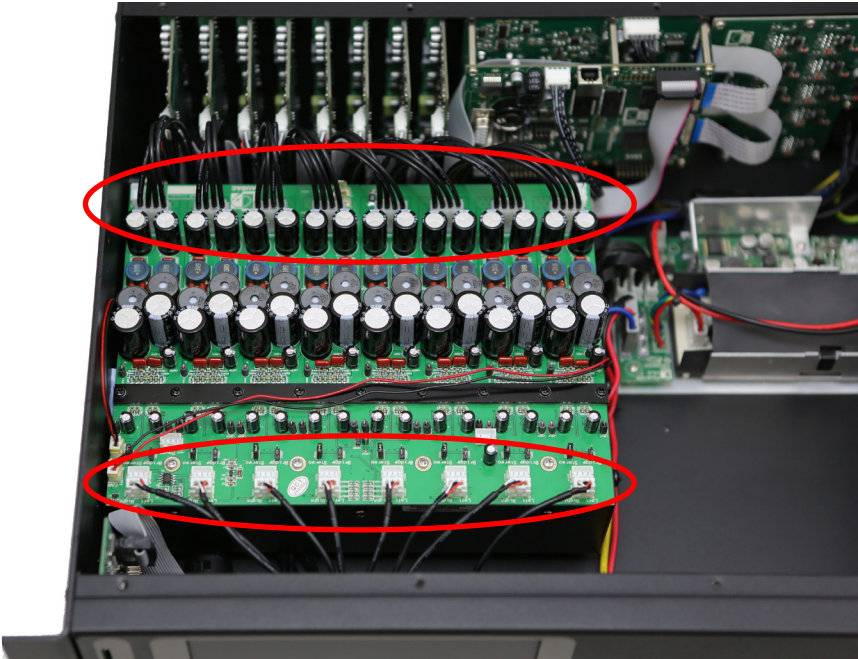
Then place the amplifier inside the matrix housing and fix it by inserting and tightening four screws from the housings bottom side.



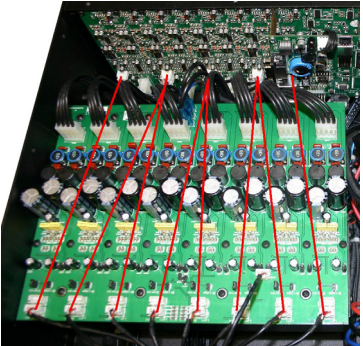
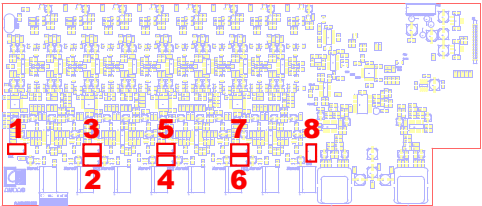
Connect the loudspeaker cables coming from the I/O board to the provided connectors on the amplifier module. Make sure each connector on the I/O board is connected in sequential order to the corresponding connector on the amplifier module.

Connect the stereo shielded signal cables coming from the I/O board to the corresponding connectors on the amplifier module.

Make sure the right amplifier channel is connected to the corresponding connector on the I/O board. The connectors on the I/O board of the R2 are marked with the number of the corresponding channel.

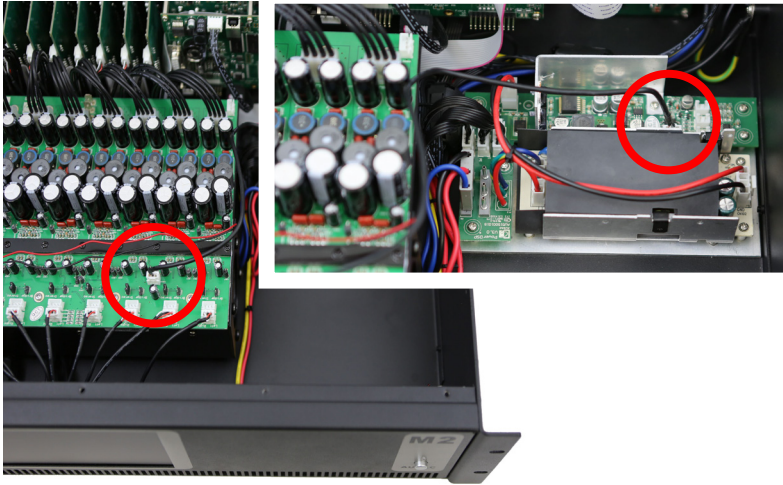


Note: Remember for R2 the I/O board is different, so please make sure you connect the right channels to each other:



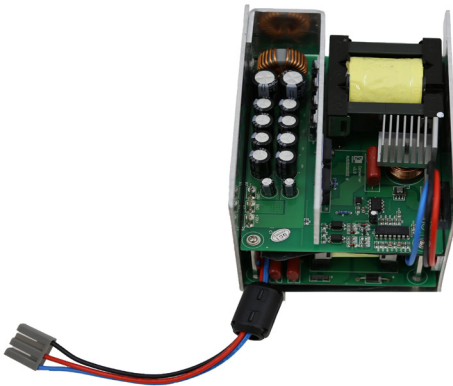
Step 8:

Connect the mute (Anti plop) cable to the provided connector on the amplifier module and the small power supply (PowerDSP).

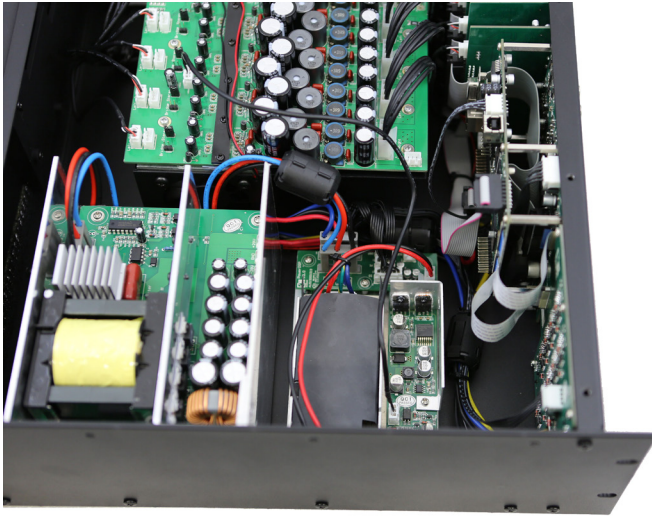


**Step 9:
Power Supply unit**

Please check if the suppression coil is attached to the power cable.
If it isn't, please attach the supplied suppression coil first.

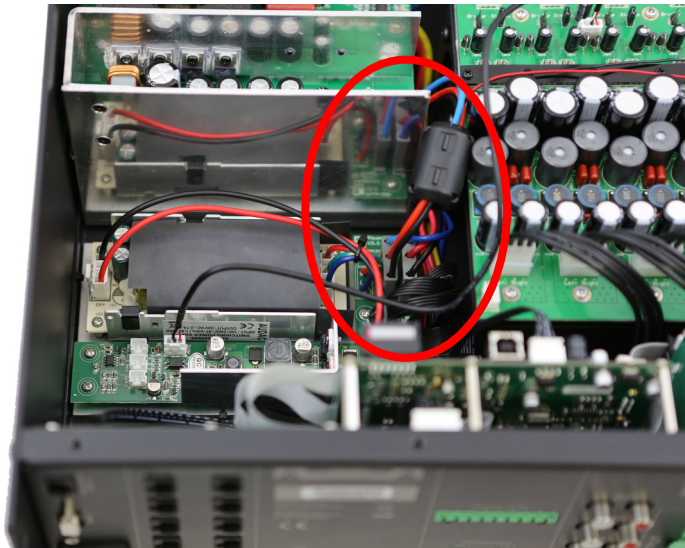


Place the power supply unit with PFC inside the matrix housing and fix it by inserting and tightening four screws from the housings bottom side.



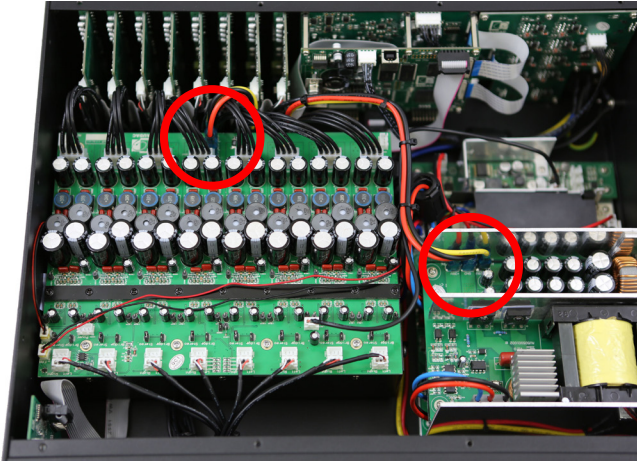
Step 10:

Connect the mains (110V AC ~ 240 V AC) cable from the big power supply (Power supply unit with PFC) to the provided connector on the small power supply (PowerDSP). Make sure the included ferrite core is placed around these cables.

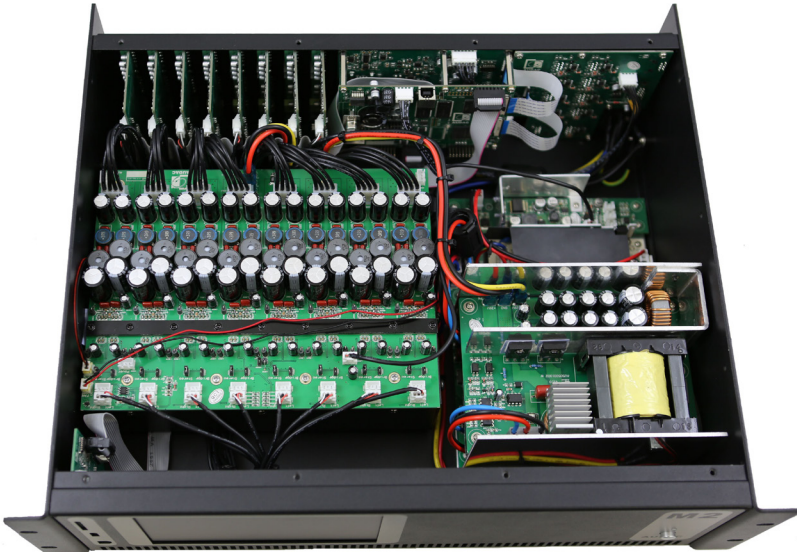


Step 11:

Connect the 28 Volts output (+28V, GND, -28V) of the big power supply to the amplifier module.



Align the connected cables nicely and fasten them with Cable ties. Ensure the airflow of the fan is not blocked by cables.



Step 12:



The last step before powering the M2/R2 is to remove the fuse holder on the bottom left side at the back of the device, replace both of the fuses (the active one and the spare one) by the T4AL/250V fuse and place the fuse holder back into the device.



Finally, attach POW2 option sticker at the back of the device.



Ready:

The power amplifier kit is now fully installed and ready to be used. There is no need for any software adjustments to the matrix system.

Verify if all connections are done correctly and power on the Matrix system. Test all the loudspeaker outputs separately with a loudspeaker to check if every channel is working correctly.

Keep the matrix system running for about 1 hour, and check if the cooling fan is working correctly. The cooling fan is temperature controlled which means that it won't rotate once the system is powered ON, but will start working once the temperature inside the device is increasing.