

# Audvance EQU-1 optical equalizer board (240VAC/50Hz only)

The EQU-1 optical cartridge equalizer can be used with all DS Audio cartridges to great effect.

## Safety matters:

- **The board should be installed in such a way that physical contact with the mains voltages on this board is impossible. If a metal enclosure is used it must be connected to the mains earth connection.**
- **Please allow sufficient clearance distance between the bottom of the board and a conducting bottom of the enclosure, at least 5mm.**
- **If the mains entry does not feature fuses please use connections "240V1" and "240V2" only (see picture below). These are wired to both fuse holders on the board and should contain 100mA slow blow fuses. Only if your mains entry uses 100mA slow blow fuses on both phases you can surpass the fuses on the board by using connections "240V3" and "240V4" instead. Both EARTH connections on the board are only connected to each other.**

## Connecting the inputs

Use pins named INL, INR and the two pins named GND right next to them. The pin named GND in the middle of the two inputs is intended to connect the turntable ground to.

Connect INL to the central connection of the left channel RCA connector. Connect the outer connection of the RCA connector to GND, right next to INL.

Connect INR to the central connection of the right channel RCA connector. Connect the outer connection of the RCA connector to GND, right next to INR.

## Connecting the single ended outputs

Use pins named OUTL, OUTF and the two pins named GND right next to them.

Connect OUTL to the central connection of the left channel RCA connector. Connect the outer connection of the RCA connector to GND, right next to OUTL.

Connect OUTF to the central connection of the right channel RCA connector. Connect the outer connection of the RCA connector to GND, right next to OUTF.

## Connecting the balanced ended outputs

Use pins named OUTL-, OUTL+, OUTF-, OUTF+ and the two pins named GND between them.

Connect OUTL+ to pin 2 on the left channel XLR connector. Connect OUTL- to pin 3 on the left channel XLR connector. Connect GND to pin number 1 on the XLR connector.

Connect OUTF+ to pin 2 on the right channel XLR connector. Connect OUTF- to pin 3 on the right channel XLR connector. Connect GND to pin number 1 on the XLR connector.

## Mains power

When a mains voltage is present a LED turns on to indicate this. Resistor R1 determines the brightness of the LED. Use a 6,8 kOhms resistor for a 2mA current (not too bright in the dark) or a 3,3 kOhms (much brighter) or a 1,5 kOhms resistor (very bright).

## Cartridge power

The cartridge power can be switched on and off so the mains power of the EQU-1 equalizer can be left on permanently. If the switch shorts cartridge power is on (relay controlled) and a LED turns on to indicate this. Resistor R2 determines the brightness of the LED. Use a 6,8 kOhms resistor for a 2mA current (not too bright in the dark) or a 3,3 kOhms (much brighter) or a 1,5 kOhms resistor (very bright).

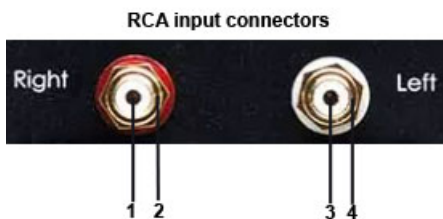
## Subsonic filter

The 15Hz second order subsonic filter can be switched on and off. If the switch shorts the subsonic filter is off (relay controlled). If the LED is wired like in the picture below a LED turns on to indicate that the subsonic filter is switched off. The LED can also be wired to indicate that the subsonic filter is switched on (wire SUBON to resistor R3 in that case). Resistor R3 determines the brightness of the LED. Use a 6,8 kOhms resistor for a 2mA current (not too bright in the dark) or a 3,3 kOhms (much brighter) or a 1,5 kOhms resistor (very bright).

## Mounting of the PCB

The PCB has 7 holes that all need to be used to support its weight. M3 screws or bolts will fit. Please use nylon washers below a metal screw or bolt head to protect the PCB surface. Damage of the PCB surface may lead to short circuits via a screw or bolt. On the last page a drilling plan is shown on scale 1:1. This can be printed on A3 or B4 paper size.

## Final check



Before you connect the cartridge you should do some checks to make sure everything is connected correctly. Any DC voltmeter can be used for this. The voltage on left channel plus (3) should be about 10V below left channel ground (4). The voltage on right channel plus (1) should also be about 10V below left channel ground (4). Right channel ground (2) should be less than 5V above left channel ground (4).

## Balance level calibration

The board will pre-calibrated to have matched levels at 1kHz for both channels. If you would like to have perfect balance of the complete system including your optical cartridge and you have a test record to produce equal levels on both channels you can adjust the trimmer to adjust this. While playing the record measure the level on OUTL. Now measure the level on OUTR and adjust the trimmer for a level that equals what you measured on OUTL.

