

## End-user Agreement

This a legal agreement between Avisoft Bioacoustics and the buyer. By operating this device and the accompanying software, the buyer accepts the terms of this agreement.

- 1.The Device is warranted to perform substantially in accordance with the operating manual for a period of 24 months from the date of shipment.
- 2.EXCEPT AS SET FORTH IN THE EXPRESS WARRANTY ABOVE, THE DEVICE IS PROVIDED WITH NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE VENDOR EXCLUDES ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- 3.The Vendor's entire liability and the Buyer's exclusive remedy shall be, at the Vendor's SOLE DISCRETION, either (1) return of the device and refund of purchase price or (2) repair or replacement of the device.
4. THE VENDOR WILL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES HEREUNDER, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA OR INFORMATION OF ANY KIND, ARISING OUT OF THE USE OF OR INABILITY TO USE THE DEVICE IN NO EVENT SHALL THE VENDOR BE LIABLE FOR ANY AMOUNT IN EXCESS OF THE PURCHASE PRICE.
5. This agreement is the complete and exclusive agreement between the Vendor and the Buyer concerning the device.

## Specifications

Number of channels	1
Output power	1.5 W (USB powered) or 10 W (with external 36V power supply)
DC bias voltage for electrostatic speakers	n/a
Frequency range	1 ... 180 kHz
Slew rate	8 V / $\mu$ sec
Overload indicator (red LED)	yes
Volume adjustment potentiometer	yes
Speaker output connector	4-pole Speakon connector
Physical power connectors	B-type USB socket (5V) or 2.1 mm coaxial power socket (12...36V)
Supply current	max 500 mA (drawn from USB) or up to 1A from an external 12...36 V
Housing	aluminium enclosure
Physical dimensions (W/H/D)	85 x 35 x 190 mm
Weight	320 g

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part #70103



**Portable Ultrasonic  
Power Amplifier (Model B)**

User's Guide



**Avisoft ULTRASOUNDGATE**

## Introduction

Thank you for purchasing the Portable Ultrasonic Power Amplifier.

This device is intended for playback through third-party D/A converter products such as National Instruments DAQ devices or USB audio interfaces (suited for setups that require custom software for controlling the playback procedure). The amplifier can be powered either from a computer via USB (5 VDC) or from a separate AC/DC adapter (12...36 VDC).

## Operating Instructions

The enclosed standard USB cable can be used to operate the amplifier from the +5V power supply of a USB port of a computer or a USB AC/charge adapter. Connect that cable to the USB power socket labelled **5VDC**. In such a set-up, the amplifier is switched on by turning the **POWER** switch to the **5V USB** position (down).

For higher playback volumes, this kind of power supply might be insufficient and an external voltage of 12...36 V DC should be used instead. This could be any DC power adapter providing 12 or 24 V DC at 0.5A (2.1 mm coaxial connector). For portable applications, appropriate lead acid batteries could be used (e.g. two or three Panasonic Rechargeable Sealed Lead-Acid Batteries LC-R12/R2PG, 12V, 7.2Ah). In this set-up, the amplifier is switched on by turning the **POWER** switch to the **12...36V** position (up). The 12...36 V power supply input is protected against wrong polarity.

If the power supply is arranged properly, the **green** LED (**PWR**) on the amplifier should light. The **red** over-modulation LED (**OVER**) indicates clipping. Clipping occurs when the power supply voltage is not high enough to reproduce the input signal at a given volume precisely. So, if the red LED lights, the signal will be distorted. In this case, the playback volume should be reduced or the power supply voltage could be increased (up to 36V).

## Components of the Power Amplifier



### 1 Speaker Output Connector

The 4-pole Speakon connector provides the analog speaker output and a 200V bias voltage for driving electrostatic speakers. The connector scheme is as follows:

- 1- Speaker ground
- 1+ Speaker output signal
- 2- Unconnected
- 2+ Unconnected

### 2 Playback volume adjustment knob

This control knob adjusts the analog output level of the power amplifier.

### 3 OVERload indicator

The red OVERload LED indicates clipping. Clipping occurs when the power supply voltage for the power amplifier section is not high enough to reproduce the input signal at the current playback volume setting without distortion. If this happens, the playback volume (2) should be reduced or the external power supply voltage (connected to 6) should be increased.

### 4 POWER indicator

This green LED indicates the presence of the power supply voltage for the power amplifier section of the unit.

### 5 LINE IN

The LINE OUT cinch socket provides the analog output signal directly from the D/A converter output (level: 4Vpp).

### 6 External power supply socket (+12...36V)

This 2.1 mm coaxial power supply socket allows to connect an external supply voltage in order to increase the playback power capabilities. The voltage should be between 12 and 36V DC. At 12V, the available power is about 1W, at 36V it is about 10W.

### 7 POWER source selector

This switch allows to select the power supply source for the power amplifier section of the device. If the switch is at the **5V USB** position (down), the amplifier will be powered from the USB socket (8). Due to certain power constraints, the maximum playback power will be limited in this case to about 1.5 W. At the **12...36V** position (up), the amplifier is powered from an externally attached supply voltage (6).

### 8 USB type B power supply socket (5VDC)

