

RAAL  requisite

HSA-1b

HEADSET AND SPEAKER AMPLIFIER

USER MANUAL



www.raalrequisite.com



INTRODUCTION:

The HSA-1b Headphone & Speaker Amplifier provides Direct-Drive amplification for True-Ribbon Earfield Monitor headphones, hi-efficiency speakers, conventional dynamic and planar magnetic headphones.

Primarily, the HSA-1b amplifier was designed to drive ribbon based headphones (low impedance hence high current demand). It can drive classic type headphones with impedances in the 20 - 600 Ω range. The desirable sensitivity of the classical type headphones should be in the range of 92-100dB so that the declared sound pressure levels and acceptable s/n ratios could be achieved.

Sound quality and tonal balance, which are of highest standard, are not reduced when headphones outside of the recommended sensitivity range are used, Signal to noise ratio is at a required level and will never be compromised with any side effects which could occur when high sensitivity (100dB and above) headphones are used.

Input Options include: Single-Ended (unbalanced) RCA, True-Balanced 3-pin XLR with 3-position DIP switch providing 0dB, -6dB and -10dB input sensitivity.

The HSA-1b also includes a precision 24-step volume attenuator for rock-solid left/right balance throughout entire dial range.

We sincerely appreciate your trust in our work, as evidenced by your purchase, and hope you will benefit by a lifetime of beautiful music and joyful ownership.

Happy Listening,
Alex Radisavljevic
Danny McKinney

What's In The Box:

- (1) HSA-1a User Manual (this booklet)
- (1) HSA-1b Headset & Speaker Amplifier
- (1) Cable - Amp to Low Efficiency Headphone 4-Pin XLR
- (1) Cable - "Y" type for running two ribbon headphones
- (1) Cable - 115VAC Power (North America)
- (2) Banana to Binding Post Adaptors (left/right pairs) for Speaker Connection Flexibility

Optional Equipment:

Flight Case - Carry On with Wheels and Retractable Handle. Includes Hi-Quality Foam Lined Interior.

Power Requirements:

User Selectable Mains Voltage 115VAC & 3-Amp Fuse, IEC cable provided (North America).

User Selectable Mains Voltage 230VAC & 1.6-Amp Fuse, user provided local IEC cable.

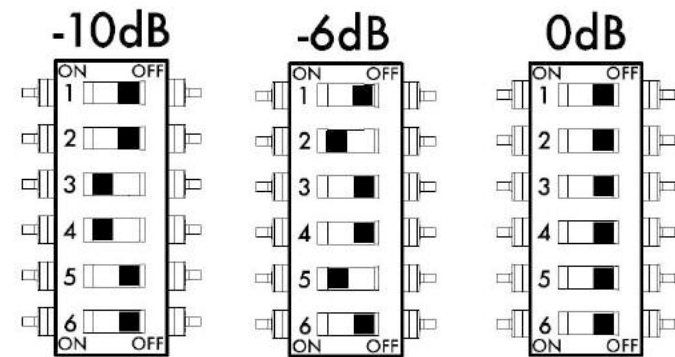
Internally Set 100VAC Mains (Japan) & 2.5-Amp Fuse, user provided local IEC cable

BEFORE TURNING ON AMP FOR THE FIRST TIME!!!

Be sure to check that the mains voltage selector switch is set to the correct voltage. The switch is located at the top, front, lefthand side. It is red colored and labeled 110/220.

Input Sensitivity Adjustment:

This amplifier features internal sensitivity adjustments of the XLR inputs. This sensitivity is adjusted via dip switches located on a small printed circuit board located vertically on the input XLR board which holds the female three way XLR connectors at the rear of the amplifier. Factory setting is -6dB.



Speaker Output Connections:

Loudspeakers are connected to the amplifier by 4mm female connectors, located at the rear of the amplifier.

The connectors are colored black, which is the negative (ground connection) and red which is positive (plus connection) for each channel respectively.

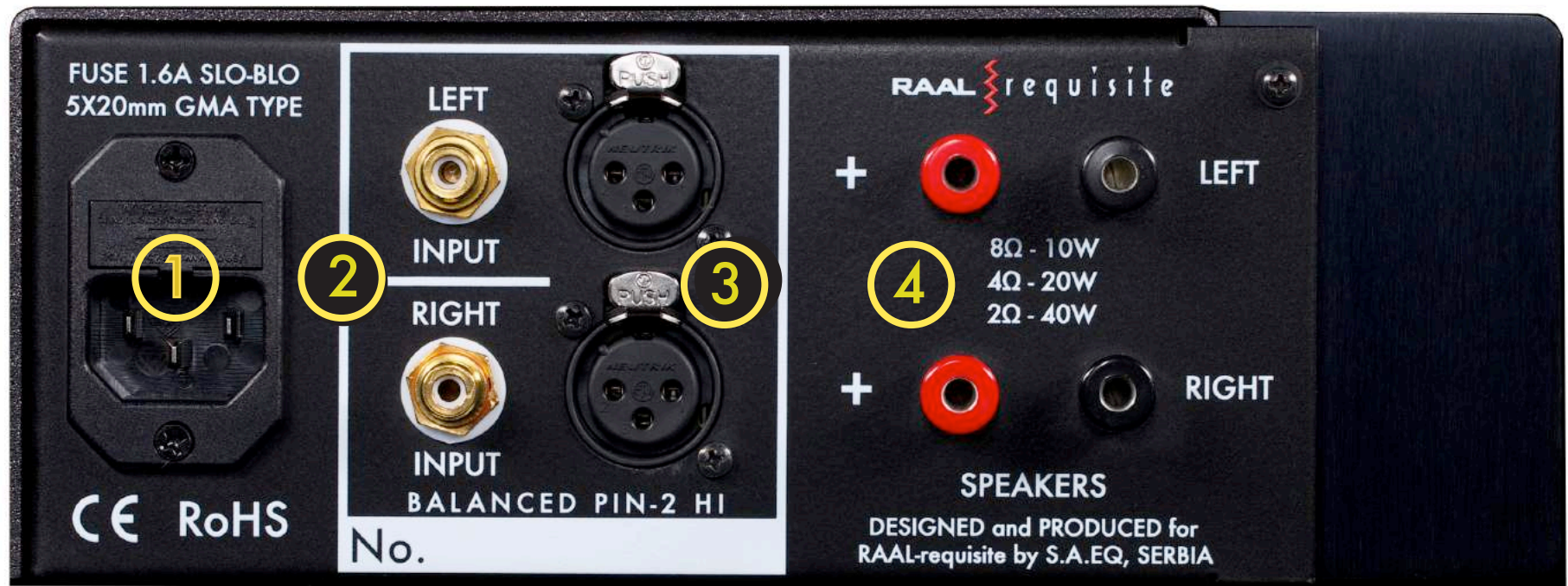
The amplifier does not have a loudspeaker short circuit protection. Wrongly connected or shorted speakers output will damage the amplifier.

Front Panel Features:



- 1) Power: On/Off
- 2) Headphone Select:
SR1 baffle-step compensation for SR1a headphones
HP select for driving conventional headphones
- 3) Output Select:
HP (Headphone) output to front panel jacks
SPK (Speaker) output to rear panel banana jacks
In this position, baffle-step compensation is disabled.
- 4) Input Select:
XLR Balanced 3-pin
RCA Single-Ended (unbalanced)
- 5) Volume:
24-step Attenuator
- 6) Ribbon Output XLR:
Female 4-pin XLR for driving Ribbon Headphones
Male to Male adaptor cable (provided) allows connection to drive low-efficiency headphones
- 7) Conventional Output XLR:
M/XLR for dynamic and planar-magnetic headphones
- 8) Conventional Output 6.3mm stereo (1/4") TRRS:
For dynamic and planar-magnetic headphones

Rear Panel Connections:



1) IEC Power Inlet:

Standard IEC connector

Fuse Holder

3A for 120V operation

1.6A for 230V operation

2.5A for 100V (Japan) operation

2) RCA audio input:

Single-Ended unbalanced analog input

3) XLR audio input:

3-pin XLR balanced analog input

Pin 1 Ground

Pin 2 Positive going phase

Pin 3 Negative going phase

4) Speaker Outputs:

Banana speaker connections (4)

Binding Post adaptors provided (4)

SPECIFICATIONS:

IMPORTANT NOTICE: The amplifier does not have loudspeaker short circuit protection. Short circuit protection degrades sound quality, hence it is not used. Wrongly connected or shorted speakers output will damage the amplifier.

Load impedance: 0.3ohm – infinity on headphone output connectors.

Output power (one channel driven): 10W/8Ω, 20W/4Ω, 40W/2Ω
55W/1Ω @ 1kHz/sine wave

Frequency Response: 100mv/ in/sin. 15Hz – 500kHz

Power bandwidth: 100kHz (-3db) at 1W

Distortion: < 0.5% at 1kHz

Signal to noise: better than 90db

Input impedance: 40k Ω

Sensitivity: 0.5V /40k Ω

Input connectors: INPUT 1- 2 RCA, INPUT 2 - 2 XLR 3pin (female)

Output connectors: 1 x XLR 4-pin male (true-ribbon headphones)

1x XLR 4pin – female and 6.3mm stereo jack (conventional headphones) 20 - 600Ω

Max power consumption: 150W, without signal 25W

Working voltage: 115V/230VAC (selector switch)
100V (requires internal connection)

Dimensions: Height 90mm, Width 218mm, Depth 320mm
Height 3.54 in, Width 8.58 in, Depth 12.60 in

Weight net: 5.3kg / 11.70 lbs.

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Limited 5-Year Warranty:

RAAL-requisite warrants its products to be free from defects in material and workmanship under normal use and service for a period of five (5) years from the date of delivery.

This warranty is only made to the original purchaser and is not transferable. In the event of failure of a product under this warranty, RAAL-requisite will repair, at no charge, the product returned to its factory. RAAL-requisite may, at its option, replace the product in lieu of repair. If the failure has been caused by misuse, neglect, accident or abnormal operating conditions, repairs will be billed at the normal shop rate. In such cases, an estimate will be submitted before work is started, if requested by the customer.

ALL OTHER WARRANTIES ARE HEREBY DISCLAIMED.

This warranty does not cover:

1. normal wear and tear or normal aging of the product;
2. cosmetic damage, including but not limited to scratches and dents;
3. damage through accident, abuse, neglect, misuse, natural events, or other external causes;
4. damage through misapplication, overloading, or improper usage;
5. damage due to improper maintenance and repair;
6. damage as a result from the shipping and handling by third parties; or
7. product alterations.

Limitation of Liability:

EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, RAAL-REQUISITE IS NOT RESPONSIBLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR INJURIES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, INCLUDING BUT NOT LIMITED TO LOSS OF USE; LOSS OF REVENUE; LOSS OF ACTUAL OR ANTICIPATED PROFITS; LOSS OF BUSINESS; LOSS OF OPPORTUNITY; LOSS OF GOODWILL; LOSS OF REPUTATION; OR ANY DIRECT OR INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE WHATSOEVER CAUSED INCLUDING THE REPLACEMENT OF EQUIPMENT AND PROPERTY.



Limited 5-year Warranty cont...

Customer Responsibilities:

Customers may be required to provide proof of purchase date, respond to questions designed to assist with diagnosing potential issues and follow RAAL-requisite's directions to make a claim on your warranty. **DO NOT OPEN THE PRODUCT. OPENING THE PRODUCT MAY VOID YOUR WARRANTY.** To make a warranty claim:

1. Contact us either through:

phone: (818) 437-0779

email: danny@raalrequisite.com

office: 2175 Goodyear Ave, STE 110. Ventura CA. 93003-7761

RAAL-requisite's Responsibilities:

1. We will try to assist you in operating or repairing your product.
2. If we determine a replacement part is necessary, we will send you a free replacement part.
3. If we determine a replacement will not resolve your problem, we may ask you to return your product to our warehouse. Upon receiving the product at our warehouse, RAAL-requisite will inspect the product.
4. If we determine that the product has a manufacturing defect we will send you a replacement part. If replacement of the part or repair of the unit is not possible, RAAL-requisite will send you a replacement product.
5. Customers who purchased the product from a third-party vendor are not eligible for a refund from RAAL-requisite.

RAAL-REQUISITE SHALL HAVE THE EXCLUSIVE RIGHT TO DETERMINE IF A UNIT IS COVERED UNDER ITS WARRANTY POLICY. Severability:

The invalidity, illegality or un-enforceability of any provision of this warranty shall not render the other provisions invalid, illegal or unenforceable.

Governing Law and Jurisdiction:

This warranty shall be governed by the laws of the State of California. The courts of California shall have the exclusive right to adjudicate any disputes arising under or in connection to this warranty.



Safety:



1. If you don't know how to install audio devices, get a qualified professional to help.
2. Never use this device near water, and clean only with a dry cloth.
3. Assure adequate ventilation, do not block any ventilation openings, or place near heat sources.
4. Use only the supplied power cord or suitable replacement. Route cords away from traffic areas and protect them from being pinched. Unplug the cord from the outlet if the apparatus is unused for a long period of time.

Safety cont...

5. To prevent electric shock, do not use the plug with an extension cord, receptacle, or outlet unless blades can be fully inserted.
6. Refer all servicing to qualified service personnel. Service is required when the device has been damaged, including cord or plug damage, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE.