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Installation and Operation Manual



AHR-1 Plus Headphone Amplifier

Manual update: Manual Revised 6/28/2021
If you need a firmware upgrade, contact Broadcast Tools[®]

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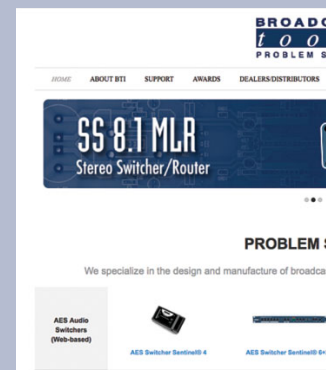
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WEBSITE:

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product updates and
additional information.*



SAFETY INFORMATION

Only qualified personnel should install Broadcast Tools® products. Incorrect or inappropriate use and/or installation could result in a hazardous condition.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment. If you would like more information about BROADCAST TOOLS® products, you may reach us at:

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Designed, Assembled and Supported in WA State, USA



CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.

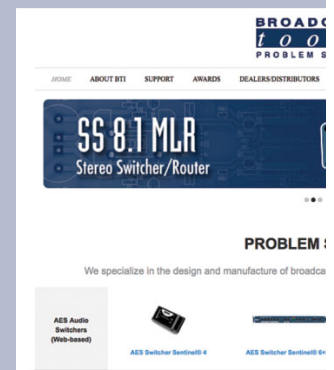


NOTE:

This manual should be read thoroughly before installation and operation.

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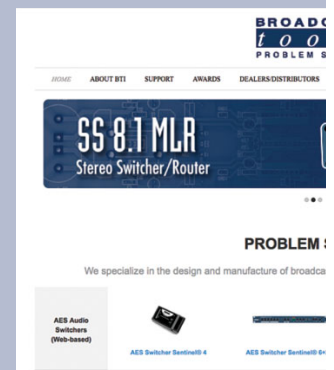
Product Overview

The Active Headphone Remote 1 Plus (AHR-1 Plus) contains a balanced stereo line-level input and stereo headphone amplifier output designed to work with any combination of high efficiency headphones with impedances between 24 and 600 ohms.

The AHR-1 Plus can be used as a standalone headphone listening station or within a distributed headphone system. The AHR-1 Plus is equipped with 3.5mm (1/8") and 1/4" headphone jacks; front panel level control and LED power indicator. Two rear panel RJ45 jacks are provided for connection via CAT5/6 cable conforming to the standard RJ45 audio wiring format. For standalone applications, 1/4" T/R/S input jacks are provided to accept balanced or unbalanced stereo input audio. Power is provided by an included +/-15 VDC universal power supply with IEC inlet. The AHR-1 Plus may be desktop mounted, under counter mounted with the optional "MP-S Under" bracket, or turret/counter-top mounted with the optional "MP-S" or "MP-S-XLR" mounting plates.

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Introduction

Thank you for your purchase of the AHR-1 Plus, active headphone remote, which we will refer to throughout the manual as the AHR-1 Plus. We are confident this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the product.

Inspection

Please examine your AHR-1 Plus carefully for any damage that may have been sustained during shipping. If any is noted, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package contains the AHR-1 Plus and +/- 15-volt DC @ 500 mA desktop universal switching (PS-1515/IEC) power supply with IEC AC inlet. Manuals may be downloaded from our web site.

Installation/Operation

POWER: +/- 15 VDC power connector

Connect the 3-pin AMP-style latching power connector to the unit and the +/-15 VDC switching power supply with domestic connector into a 120 Vac 50-60 Hz power source. Never use any type of power supply other than the specified/supplied (PS-1515/IEC) power supply. Alternatively, the AHR-1 Plus can be powered via its RJ45 jacks. See the "RJ45 Jacks" section of this manual for more information.

Balanced Stereo Audio Input (1/4" TRS)

Connect a balanced stereo audio source to the 1/4" TRS jacks on the back of the AHR-1 Plus, labelled "Left" and "Right" respectively. When connecting unbalanced sources, tie the ring and sleeve together for ground and the tip is the high signal side.

1/4" TRS pin-out

Tip = Positive,

Ring = Negative

Sleeve = Ground.

Note: When plugged in the 1/4" TRS connections will disconnect the RJ45 audio connectors from the headphone amplifier section of the AHR-1 Plus.



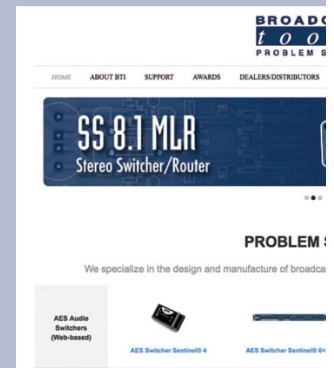
CAUTION!

RFI and surge suppression suggestions

Installation of the AHR-1 Plus in high RF environments should be performed with care. It is recommended that all cables connected to the AHR-1 Plus be looped through ferrite cores to suppress RF. Surge protection with RF filtering is also suggested. For lightning protection devices, check out www.polyphaser.com and www.itwlinx.com.

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RJ45 Jacks (Audio and Power IN/OUT)

The AHR-1 Plus has two RJ45 jacks that follow standard for audio and power over Cat5/6 cabling. This allows the AHR-1 Plus to be connected to and powered from legacy Broadcast Tools FlexPhones Master systems as well as for custom installations using RJ-45 connectors for audio and/or power. The jacks are connected in parallel so that two units can be daisy-chained together.

Stereo RJ45 Audio Pinout:

Function:	Wire Pair:	RJ45 Pins:
Left+/AES+	White/Orange	1
Left-/AES-	Orange/White	2
Right+	White/Green	3
Right -	Green/White	6
n/c	White/Blue	5
DC GND	Blue/White	4
-15 VDC	White/Brown	7
+15 VDC	Brown/White	8
Sig. Shield	Cable Shield	Connector Shield

Please use shielded twisted pair Cat5e or Cat6 cables and connectors (STP) with the input and output RJ45 audio jacks.

Mounting Options

The AHR-1 Plus may be desktop mounted using the included adhesive Velcro feet. Under counter mounting is possible using the optional “MP-S Under” bracket. Turret or inset counter-top mounting is possible using the optional “MP-S” or “MP-S-XLR” mounting plates.

Headphone Level Control

Use this to adjust the volume of the headphone audio.

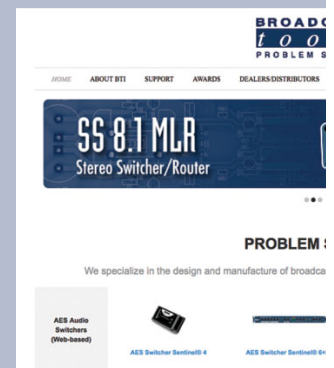
Headphone Connections

The AHR-1 Plus provides front-panel two headphone jack connections, one for headphones that use 3.5mm (1/8”) stereo connectors and one for headphones that use 1/4” stereo connectors. Only one set of headphones should be connected to the AHR-1 Plus at a time. Only use stereo headphones with impedances between 24 and 600 ohms

NOTE: 8 ohm and/or monaural headphones should not be used with this product.

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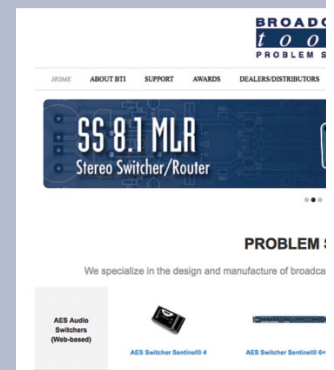


Specifications

Input Level	-15 to +4 dBu nominal. MIL+21dBu, balanced, bridging 10k Φ .
Frequency Response	20Hz to 20 kHz; +/- .0.25dB
Signal/Noise Ratio	>85 dB nominal, weighted 10 to 22Khz.
Distortion	0.005% THD, nominal.
IMD (250/7kHz)	0.005% IMD, nominal.
Headphone Output	24 to 600 Φ headphones. 200 mW nominal.
Operation/Control	Front panel - Headphone level control.
Status	Front Panel – Power LED indicator driven by both power supply rails.
Interfacing	Balanced stereo audio input via 1/4" TRS jacks or RJ45 connectors. Headphone output: 3.5mm (1/8") and 1/4" stereo headphone jacks.
Power	Standalone: PS-1515/IEC desktop universal switching power supply with IEC inlet included. +/-15 VDC 500mA output with 3-pin AMP-style latching power connector. RJ45: User provided power via CAT5/6 cabling, bi-polar +/-15 to 24 VDC @100ma.
Mechanical	5.00 x 3.80 x 1.50 in. (L x W x H), Weight: 1.0 lbs.
Options	Under-table mounting bracket: "MP-S Under" Counter/turret mounting plate: "MP-S" Counter/turret mounting plate w/XLR jack cutout: "MP-S XLR"

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The term "Buyer" as used in this document refers to and includes both (but only) (a) any person or entity who acquires such an item for the purpose of resale to others (i.e., a dealer or distributor of an item), and (b) the first person or entity who acquires such an item for such person's or entity's own use.

Broadcast Tools warrants to each Buyer of any item manufactured by Broadcast Tools that the item will be free from defects in materials and workmanship at the time it is shipped by Broadcast Tools if the item is properly installed, used and maintained.

EXCLUSIVE REMEDIES

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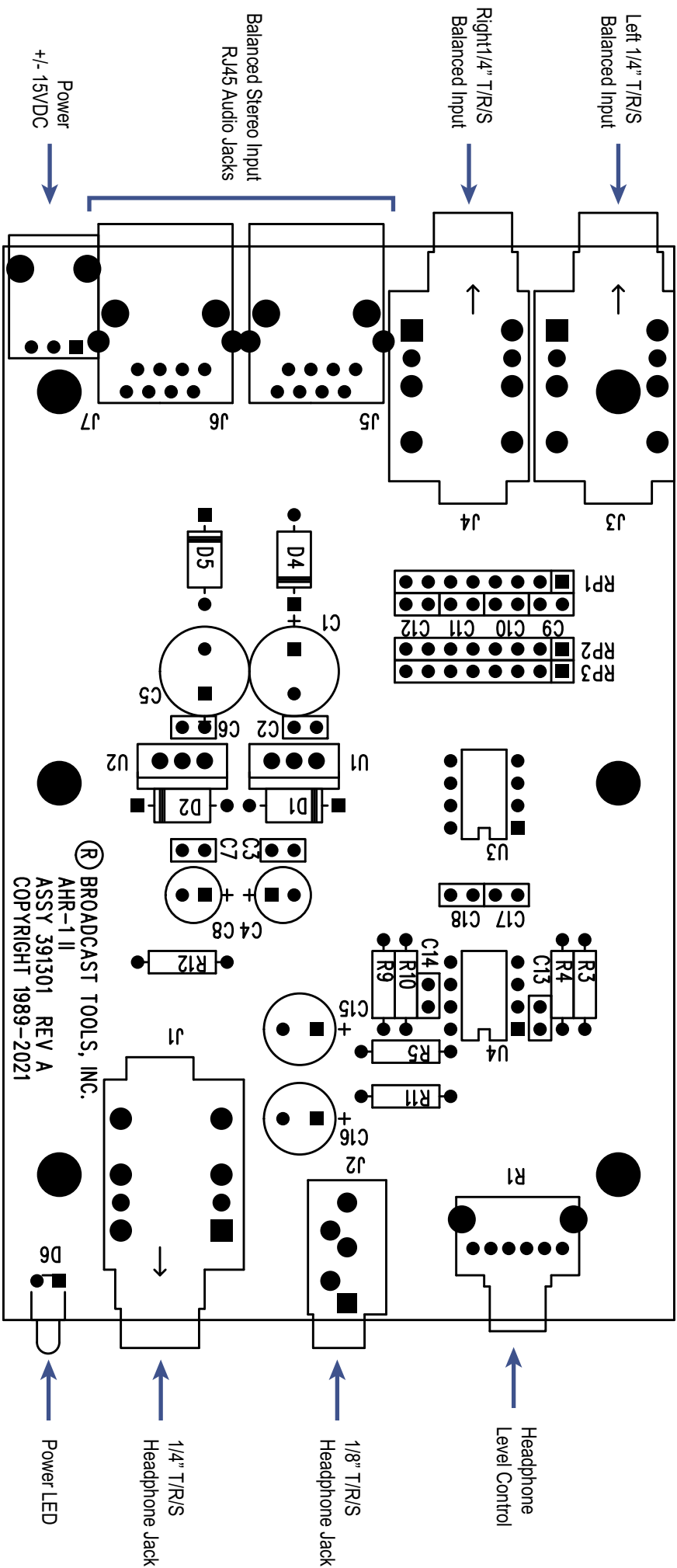
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Component Layout



Functional Diagram

