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Broadcast Devices, Inc.

Technical Reference Manual

HSA-100C Stereo Headphone Amplifier

Broadcast Devices, Inc.
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Rev C. 12/00

I. INTRODUCTION

The HSA-100 Headphone Amplifier was designed to meet the exacting needs of the most demanding applications. Each unit is supplied with a rugged steel front panel, two headphone jacks and a high quality, long lasting plastic conductive fader. Designed to fit under most countertops or in a larger panel, the HSA-100 will be a welcome addition to any talent station.

A. Unpacking and Inspection

Carefully unpack the unit and it's companion power supply and inspect for any possible damage that may have occurred during shipment. If damage is noted, contact the shipper immediately and file a damage claim. The contents of the package are insured to cover the total replacement cost. Make certain that the package contents are the same as noted on the packing slip. If not, contact Broadcast Devices, Inc. Check to make sure that all mechanical parts are tight and secure before installation and application of power.

B. General Description

The HSA-100 Headphone Amplifier is a balanced input, stereo headphone amplifier capable of very high performance with most modern headsets from the newer 32 ohm types to high impedance types. Two headset jacks are available at the front panel along with a volume control. In addition, a screw connector is available at the left side of the unit for remote connection of additional headphone jacks. If your facility uses 600 ohm type headsets, up to 36 of this type can be accommodated simultaneously.

The HSA-100 is designed to fit under most counter tops. It can also be installed in a panel. The choice is up to you. Connections are made at the rear with simple screw clamp connections. No soldering required.

II. SPECIFICATIONS

Input Impedance:	> 20K ohm Balanced
Input Sensitivity:	-10, 0, +4, +8dBm Jumper Selectable
Output Impedance:	16 ohms ore greater recommended
Frequency Response:	+/- 0.25 dB 20 Hz - 20 Khz -3 dB at 80 Khz
Total Harmonic Distortion:	Less than .03% at 6.5 VRMS into 16 ohms at 100Hz
Dynamic Range:	Greater than 80 dB with volume control full open
Channel Separation:	Greater than 75 dB from 20 Hz to 20 Khz
Power Requirements:	+/- 15-18 VDC @ 300mA. Max.
Input Connectors:	Screw Clamp
Output Connectors:	Two Front Panel ¼" Stereo Phone Plugs One Screw Clamp type for Remote Headsets

III. INSTALLATION

A. Configuration

Before mounting the unit it is a good idea to configure the input sensitivity, set balanced or unbalanced configuration and test for proper operation . The input sensitivity should be chosen by placement of the provided jumpers. Input sensitivities of -10, 0, +4, and +8 dBm are available. As supplied from the factory, the HSA-100 is configured for balanced operation. If unbalanced operation is desired, it will be necessary to solder jumpers across R1 and R21. The signals should then be applied to LH and RH with LL and RL connected to common. For normal balanced operation, place the signal between LL(RL) and LH (RH). Connect the shield to the ground connection.

B. Power Pack Connection

The Model 13847 power pack should be connected as follows: **RED to +V, BLACK to -V, WHITE and GREEN to ground.** WHITE is the power supply common and GREEN is connected to the ground pin on the AC receptacle. **ALWAYS CONNECT THE GREEN WIRE TO THE GROUND TERMINAL OF THE HSA-100!** If a ground loop causes hum, it is recommended that you lift the shield from the incoming signal wires to break the loop. Make all power connections to the unit before plugging in the power pack. Failure to do so may damage the pack or the HSA-100. Inspect your connections before applying power as an incorrect connection can result in failure of the pack and/or the HSA-100. Once the final inspection is made, turn the volume control completely counter clockwise and plug in the pack observing the on board L.E.D.s. Proper operation is indicated by their illumination. It is a good idea to connect a signal to the unit temporarily and to plug in a set of headphones. Carefully turn the volume control clockwise until the signal is heard at a comfortable level. The control should be in the middle of its range for comfortable listening levels. If it is not, adjust the input sensitivity up or down until a comfortable range is determined . It may also be necessary to adjust the source level accordingly.

A NOTE ABOUT ELEVATED SOUND PRESSURE LEVELS AND HEARING LOSS:

It is never a good idea to listen to music or speech with headphones at elevated levels for prolonged periods of time. Damage to the human auditory system will occur if it is exposed to elevated sound pressure levels for long periods of time on a regular basis. Hearing loss and tinnitus (ringing of the ears) can develop if care is not taken to protect your ears from excessive levels. This type of hearing trouble does not happen overnight. It can take many years for the symptoms to occur. Unfortunately, once they do , the damage done is irreversible. A general rule of thumb to determine the maximum level that you should expose your hearing system to is as follows: If you cannot hear a normal conversation in the room which you are in while listening to music or speech with headphones, **THE LEVEL IS TOO LOUD!** We at Broadcast Devices, Inc. urge you and your operators to observe caution when listening to any kind of music or speech reproduction through headphones or loud speakers .

C. Mounting Considerations

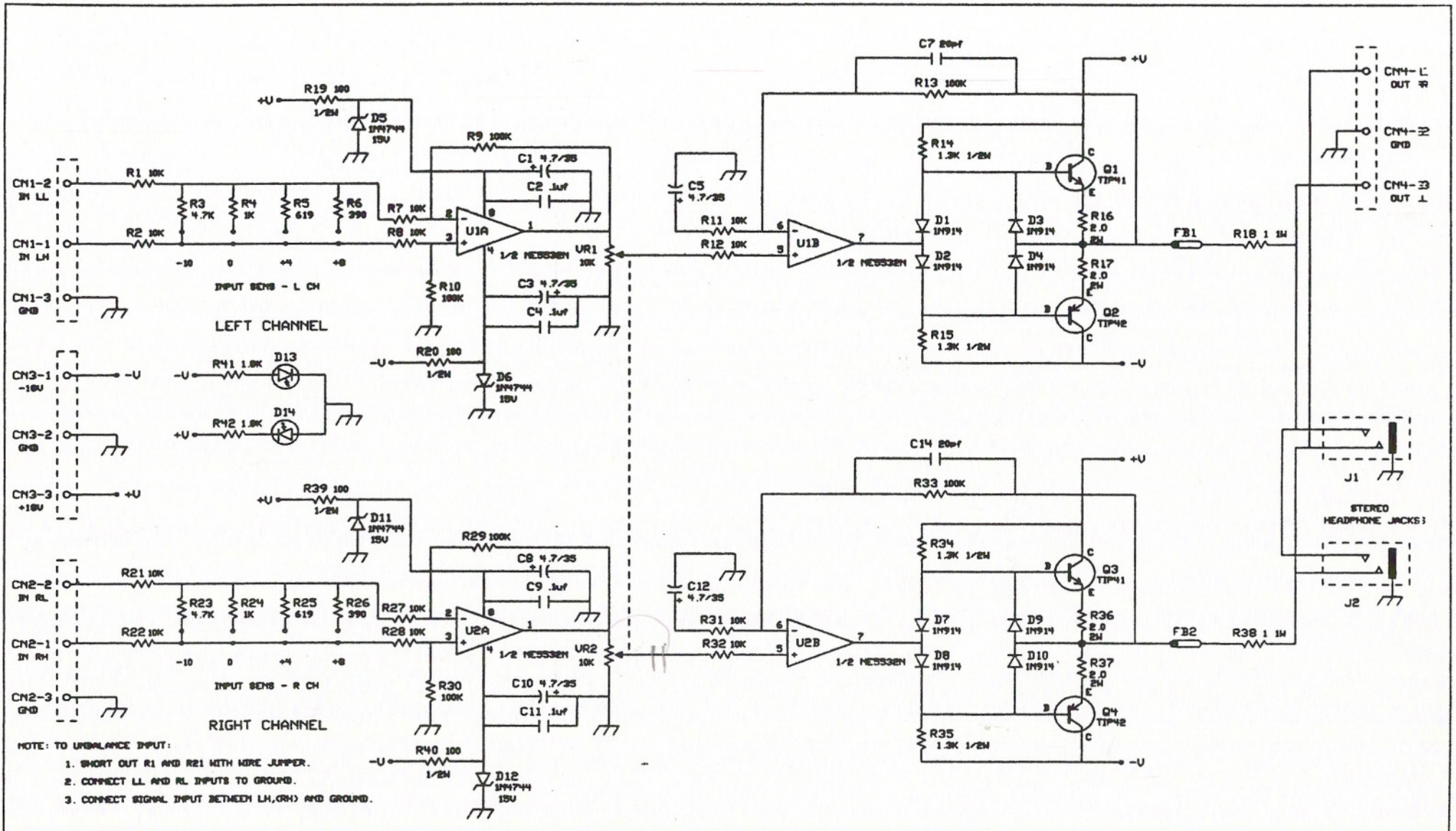
Select a suitable location for the HSA-100 such as under a counter top. A suitable wooden escutcheon can be made utilizing the enclosed front panel template. The placement of the unit should be such that it will not be struck by the arms of chairs or accidentally kicked by an operator. Careful consideration of these factors will result in many trouble-free years of operation of the unit.

IV. DIAGRAMS

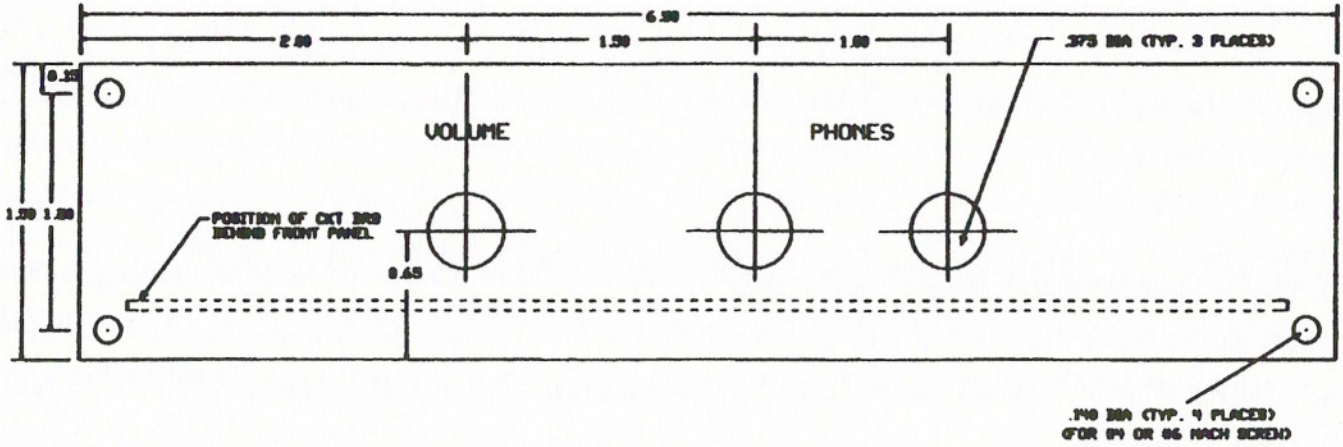
SCHEMATIC

COMPONENT LOCATOR

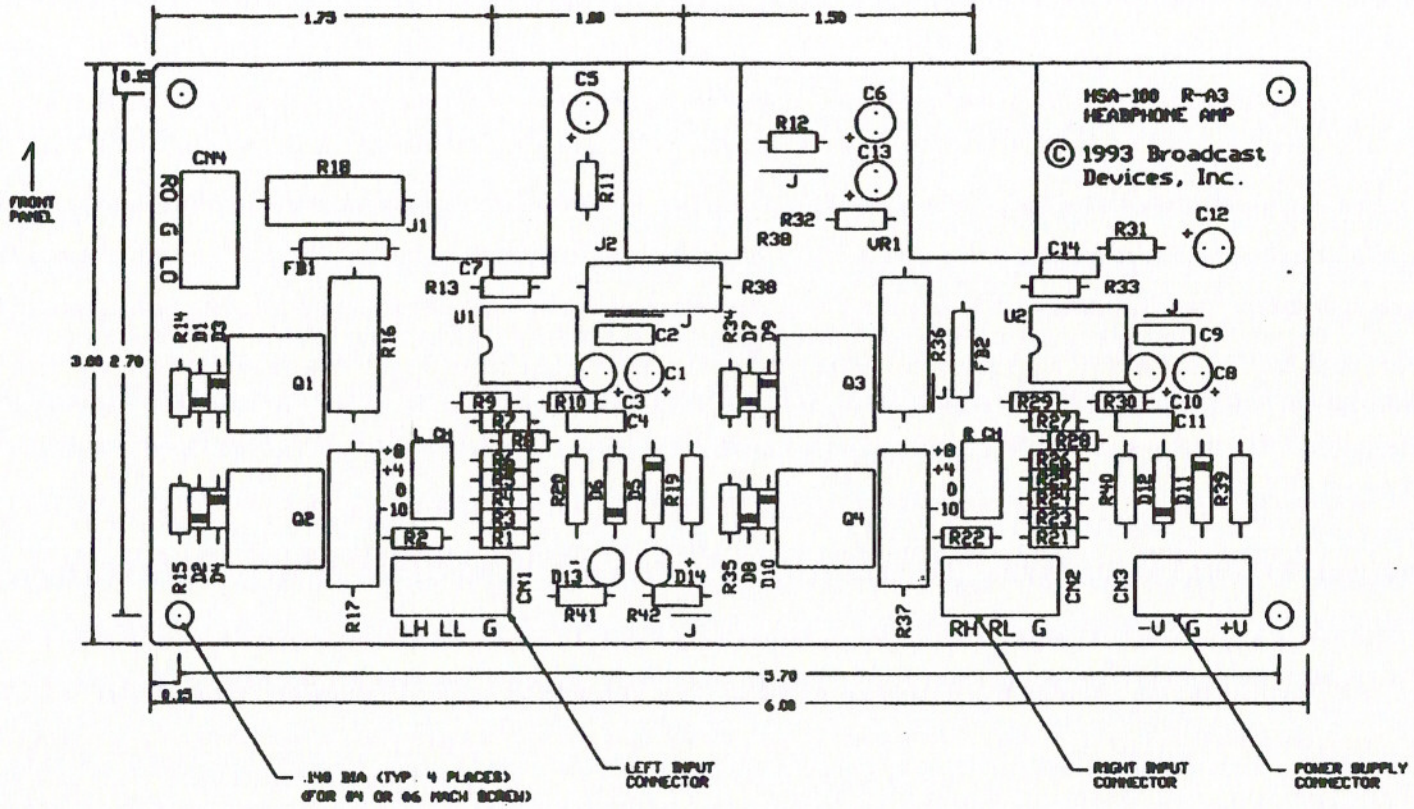
FRONT PANEL TEMPLATE



HSA-100 STEREO HEADPHONE AMPLIFIER PANEL	DWG NO	REV	APPROVALS		DATE	Broadcast Devices, Inc. PEEKSKILL, NY
	BDI-2015S	E	Drawn	FB	05/23/93	
			Checked	RT	09/25/93	
			Revised	RT	10/27/94	



FRONT PANEL TEMPLATE



COMPONENT LOCATOR

V. Warranty

Broadcast Devices, Inc. products are warranted against failure due to faulty materials or workmanship for a period of one year from the date of shipment to the ultimate user. The warranty covers repair or replacement of defective parts at the factory, provided the unit has been returned prepaid by the user. All shipments to the factory shall have affixed to the outside of the container a return authorization number obtained from the factory. The above warranty is void if the unit has been modified by the user outside of any recommendations from the factory or if the unit has been abused or operated outside of its electrical or environmental specifications. If customer conducted field tests suggest that the unit may be faulty, whether or not the unit is in warranty, a full report of the difficulty should be sent to Broadcast Devices, Inc. factory at Cortlandt Manor, New York. The office may suggest further tests or authorize return for factory evaluation.

Units sent to the factory should be well packed and shipped to Broadcast Devices, Inc. 2066 E. Main Street, Cortlandt Manor, NY 10567. Remember to affix the R. M. A. number to the outside of the carton. Any packages received without such R.M.A. number will be refused. Note: freight collect shipments will also be refused. When the unit has been received, inspected and tested, the customer will receive a report of the findings along with a quotation for recommended repairs, which are found falling outside of the standard warranty. Units returned for in-warranty repairs, which are found not to be defective will be subject to an evaluation and handling charge. In-warranty units will be repaired at no charge and returned via prepaid freight.

Out-of-warranty units needing repair require a purchase order and will be invoiced for parts, labor, and shipping charges.

When ordering replacement part, always specify A) Part Description, and Quantity; B) Date of Purchase, Where Purchased; C) Any Special Shipping Instructions. Always specify a street address, as shipping companies cannot deliver to a postal box.

Broadcast Devices, Inc. is not responsible for any other manufacturer's warranty on original equipment. Nor are we responsible for any failure, damage, or loss of property that may occur due to the installation or operation of our equipment outside of recommended specifications.

Broadcast Devices, Inc. reserves the right to change materials, specifications, and features from time to time.