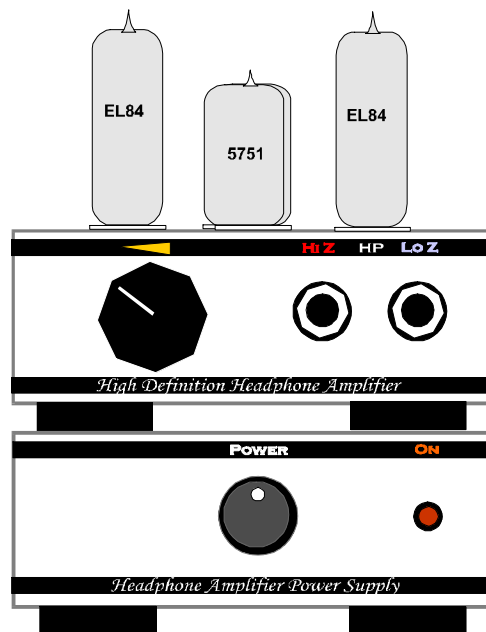




Ear+ HD Super II
High Definition Stereo Headphone Amplifier



Users' Manual

Rev Feb. 25/13

Mapletree Audio Design
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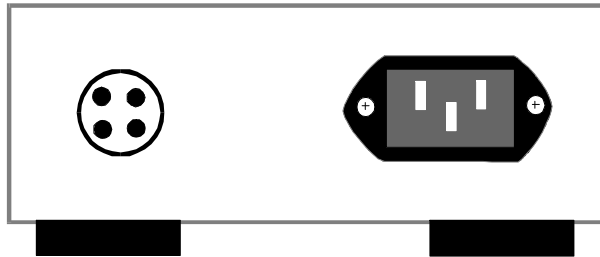
Introduction

The Mapletree Audio Design *Ear+ HD Super II* Stereo Headphone Amplifier represents a high performance development of the *Ear+* family. The use of a high capacity power supply provides increased power output and lower driving impedance employing widely available EL84 output tubes and 12AX7/5751 drivers. The separate power supply chassis allows flexibility in positioning each unit and reduces the heat seen by components in the main amplifier chassis. Premium components include Tantalum film resistors in the SRPP driver stage and an Alps volume control.

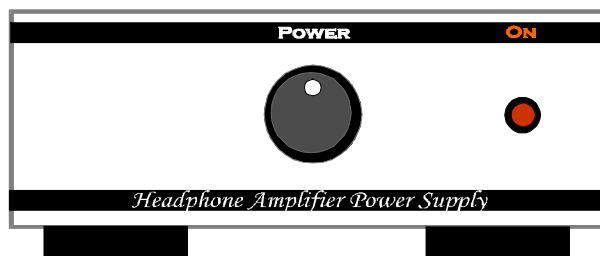
Input/Output Connections

The standard IEC line cord is attached to the receptacle on the rear panel of the *Ear+ HD Super II* power supply. It is compatible with a 115-125 VAC line with a frequency of 50–60 Hz. The third pin is connected to the power supply chassis. A 1A/250 V fuse provides primary protection for the power supply. It is located under the chassis and can be accessed by removing the bottom cover of the power supply *with the unit unplugged and waiting 1 minute after powering off*. Under normal conditions, it should not be necessary to replace the fuse. If power fails to come on, you can check the fuse and replace with a spare if necessary. If the fuse blows a second time, you should not try to operate the unit. Contact Mapletree Audio Design for information regarding service.

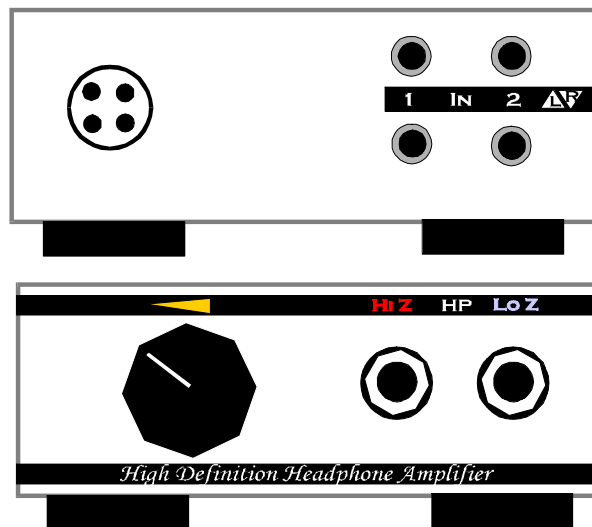
The power supply is connected to the amplifier chassis with the supplied power interconnect cord. *Never power on the power supply without making this connection*. The two chassis may be stacked or separated as permitted by the power interconnect cord.



The power switch is located on the front panel of the power supply. The LED pilot light indicates the power on condition. It is powered by the heater supply voltage so is an indication that power is being supplied to the tube filaments. It takes about 30 seconds for the tubes to reach operating temperature ready for use.

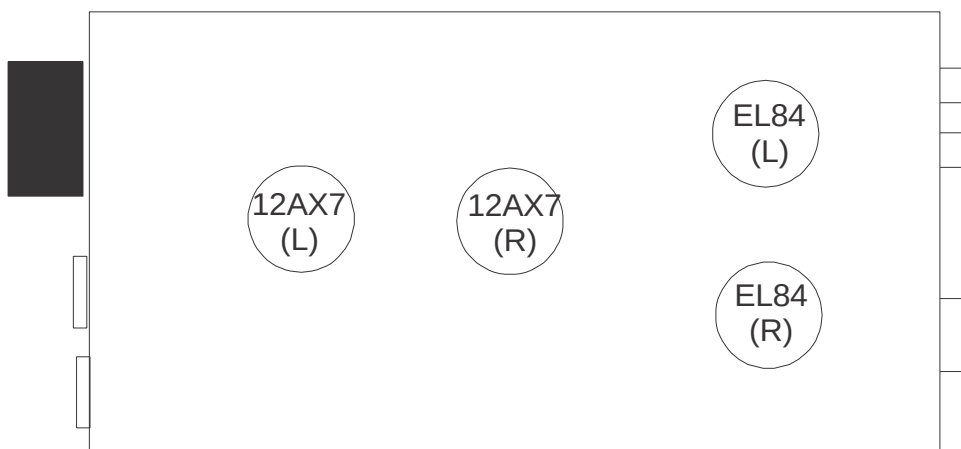


The RCA input jacks (IN 1– IN 2) are wired in parallel to permit patching the source signal to a preamp or integrated amp without the need for Y-adaptors. Left channel jacks are at the top. The input impedance is 50 k Ω .



The headphone output jacks are standard 1/4" stereo phones jacks with the left channel connected to the tip contact. If your headphones are terminated in a 1/8" plug, an adaptor is required (usually supplied with your headphones). Headphone impedances from 30 to 300 Ω are suitable for use with either the high impedance (Hi Z) or low impedance (Lo Z) output jacks. The low impedance output provides a slightly reduced gain for low impedance phones such as the Grado Prestige series, which may be desirable depending on your preferred listening levels. *Any impedance headphones can be used in either jack without sonic penalty.* The enhanced power output of the *HD Super II* permits two sets of headphones to be driven at the same time.

Tubes



Tube socket locations are shown above. When inserting tubes, take care to align the pins before pushing firmly into the socket. Removal is easier if a slight rocking motion is used at the same time as the tube is pulled from the socket.

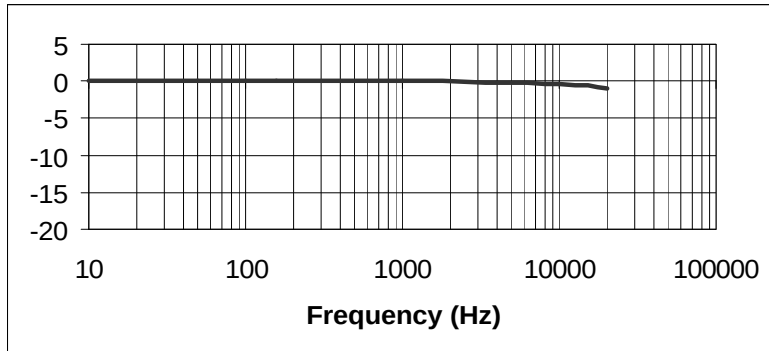
A tube burn-in period of several hours may be needed to achieve the best sonic performance. Tube life should be thousands of hours. Aging tubes may result in a reduced gain in one or both channels or an increase in noise levels. Infrequently, a heater may burn out which is indicated by total loss of sound. The *Ear+ HD Super II* is supplied with 2 – 5751/12AX7 (driver), 2 – EL84/6BQ5 (output) tubes. Matched pairs are not required. Replacement tubes can be obtained from several suppliers in the U. S. and Canada. Both types are currently manufactured and are also available as new old stock (NOS). Some listeners enjoy trying different brands and variants of tubes. The greatest sonic variation will occur with different driver tubes. Any 12AX7 equivalent (e.g. 7025A or ECC83) may be used as long as the heater current does not exceed 0.3 A at 6.3 VAC. Consult a substitution guide or tube manual.

Warranty

Factory assembled MAD components are warranted for 2 years to the original purchaser for failure of all parts (excluding tubes). Tubes are warranted for 90 days exclusive of shipping cost. Service, including parts and labor (but excluding shipping), is free within the warranty period.

MAD Ear+ HD Super II Specifications

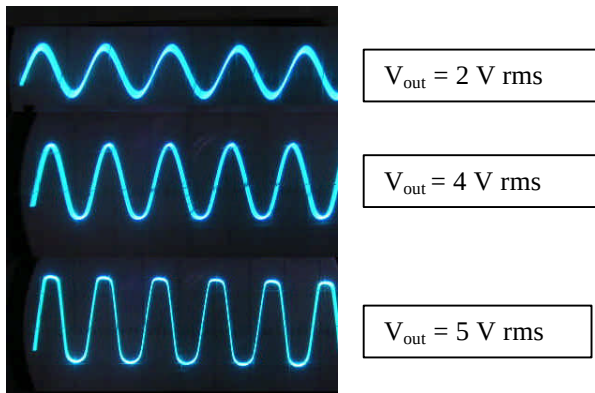
Frequency response at 1 V rms (20 mW) output into 50 Ohms:



Maximum undistorted output at 1 kHz: 4 V rms with 50 Ohm load connected to Hi Z output (= 0.32 W).

$P_{o(max)}$	R_{load}
680 mW	25 ?
500 mW	32 ?
160 mW	100 ?
57 mW	300 ?
28 mW	600 ?

Overload characteristic (1 kHz, 50 Ohm load, Hi Z output)



Output impedance at 1 kHz: Hi Z: < 2.6 ? ? , Lo Z: < 1.3 ? ?

Input impedance: 50 k? ?

Gain: Hi Z: 11 dB, Lo Z : 8 dB

Hum and noise at output (max volume, Hi Z): less than 0.4 mV rms (80 dB below max. output)

Recommended load impedance: 20–600 ?

Phase: non-inverting

Power consumption: 65 W, 120 VAC 50-60 Hz

Mapletree Audio Design

Ear+ HD Super II Headphone Amplifier

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