



# HB-1 MK2 Bookshelf Owner's Manual



## Features

### **High Definition**

The HB-1 MK2 utilizes a controlled-directivity horn that gives excellent micro dynamics and imaging under real world conditions that few other transducers can match without the typical horn sound.

### **Wide Dynamic Range**

The HB-1 MK2 is both efficient and high power handling. It provides effortless dynamics to handle high-definition audio programs and home theater.

### **Works Perfectly with Subwoofers**

The HB-1 MK2 was designed specifically to work best in systems using a subwoofer or mid-bass module plus low-bass subwoofer.

***High-Definition Audio Speakers by HSU Research.  
Designed and engineered in the U.S.A.***

## A. UNPACKING

Carefully remove your new HSU speaker from its box, avoiding staples which can cause damage to the cabinet. If you discover damage, contact us and the shipper immediately.

Save your cartons – they are the best possible protection for your speakers should you ever need to move them.

## B. PLACEMENT

**Note: For optimum bass performance, the addition of a subwoofer, or a mid bass module plus a low bass subwoofer is highly recommended.**

### Positioning Your Subwoofer

See the subwoofer owner's manual.

### Positioning Your Satellites

For best imaging, the HB-1 MK2 should be placed such that the tweeter is at ear level when seated, woofer closer to the floor, aimed directly at the primary listener. The distances to the three nearest solid surface should be in the ratio 1:1.26:1.60. When you have the distance to the floor the greatest, for a typical ear height of 40" (i.e., woofer 34" off the floor), this translates into 21 and 27" from the two nearest walls (Figure 1).

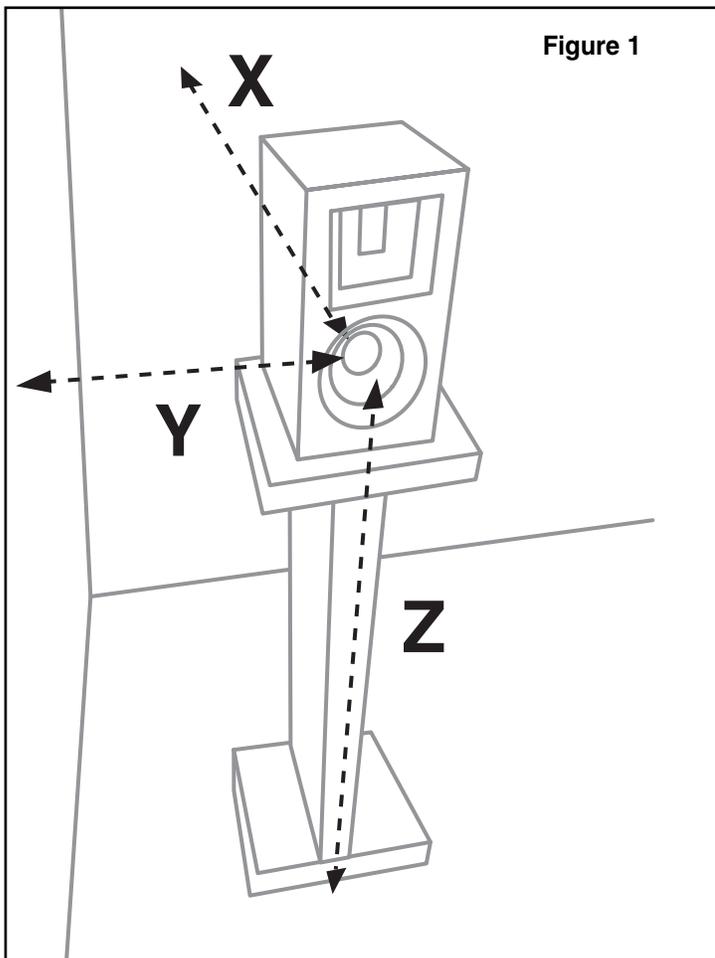


Figure 1

If the HB-1 MK2 is used as a center channel, it's best to use it in the normal upright position just like the left and right speakers. You can also lay it on its side at the expense of horizontal polar response.

Note that the HB-1 MK2 is NOT magnetically shielded and should not be placed on top of a direct view TV. It is perfectly fine to place it on top of a Rear Projection TV or near an LCD or plasma TV.

We have in-wall versions of the HB-1 MK2 if you prefer not to use speaker stands.

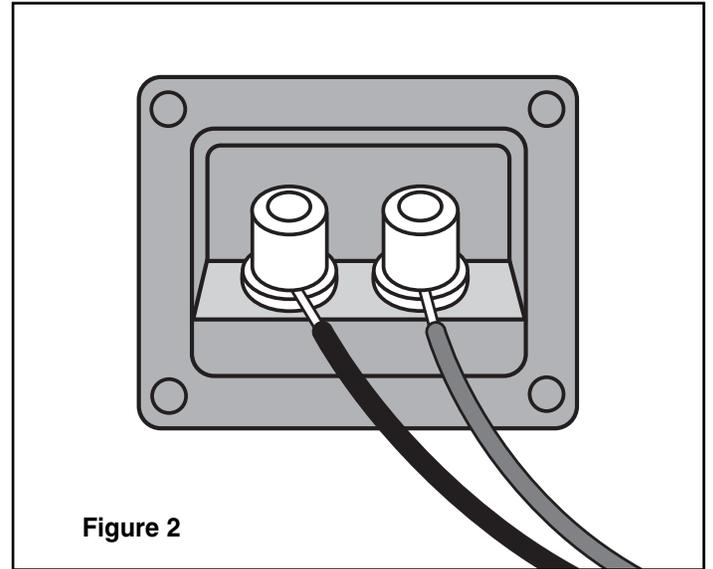


Figure 2

## C. WIRING

The HB-1 MK2s do not come with wires. We suggest getting 16 AWG for runs under 10 feet, 14 AWG for runs of 10 - 25 feet, and 12 AWG for runs of 26 - 50 feet.

Strip  $\frac{1}{2}$ " of insulation from each end of the wire to expose the bare metal. Insert this into the 5-way gold plated binding posts on the back of the HB-1 MK2 (Figure 2). Alternatively, you can use banana plugs.

If you are connecting using bare wires, make sure the binding posts are tight, and no stray wires strands are causing a short.

## D. SETTING UP

Purchase as many HB-1 MK2s as needed – seven for a 7.1 system, five for a 5.1 system, etc. Connect one HB-1 MK2 to each speaker output. Make sure you observe the polarity.

Most speaker wire is polarity coded. This means that each conductor is labeled either (+) positive or (-) negative. The (+) positive side may be a different color or texture than the (-) negative side. On the back of your amplifier, each channel is probably labeled (+) and (-) as well as color coded red for (+) positive and black for (-) negative. HSU speaker terminals are color coded red for (+) positive and black for (-) negative. Be sure to hook (+) to (+), (red to red), and (-) to (-), (black to black).

## E. TROUBLESHOOTING AND SERVICE

We use components and designs of the highest caliber as a means of ensuring a long and trouble free life for your speaker. However, no amount of protection will prevent damage caused by defective associated equipment or extreme abuse.

If you have a problem, first try to determine if it is indeed a speaker problem. Determine whether the problem exists in more than one speaker. If it does, the problem likely originates in some other component in the system. If the problem is in one speaker only, reverse your speaker connections (left to right, right to left). If the problem moves to the other channel, your problem is not in the speakers. Once you have determined that you have a speaker problem, contact us at the location shown below for service. Please describe the problem in detail. We will decide on the most appropriate course of action.

## F. SPECIFICATIONS

**Woofers:** 6 $\frac{1}{2}$ " treated paper cone woofer with treated cloth surround, flat polycotton spider and high temperature aluminum voice coil

**Tweeter:** Very high efficiency controlled directivity horn with neodymium magnet and ferro-fluid cooled voice coil.

**Crossover:** Computer aided, final voicing by Dr. Hsu (i.e., fine tuning by Dr. Hsu to sound good to his ears)

**Frequency Response:** 60 - 20 kHz +/- 2 dB

**Recommended crossover to subwoofer/mid bass module:** 80 Hz

**Sensitivity:** 92 dB/1m/2.83V rms, half space

**Nominal impedance:** 6 ohms

**Minimum impedance:** 4 ohms

**Enclosure type:** Vented

**Enclosure material:**  $\frac{3}{4}$ " MDF

**Dimensions:** 15" H x 8" W x 8" D

**Net Weight:** 12.2 pounds, **Shipping Weight:** 14.5 pounds

**Recommended Amplifier Power:** 10 - 250 W rms

## G. HSU SPEAKER SYSTEM SEVEN YEAR LIMITED WARRANTY

If the speaker system proves to be defective in materials or workmanship within seven years from the date of the original customer's purchase, we will, at our option, repair or replace the defective product. If for any reason, we are unable to repair or replace a defective product within a reasonable time, we will refund your purchase price.

## **\*DISCLAIMER**

THE WARRANTY STATED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE AND ALL OTHER LIABILITIES AND OBLIGATIONS OF HSU, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. HSU HAS NOT MADE AND DOES NOT HEREBY MAKE ANY OTHER REPRESENTATION, WARRANTY OR COVENANT WITH RESPECT TO THE CONDITION, QUALITY, DURABILITY, DESIGN, OPERATION, CAPACITY, FITNESS FOR USE OR SUITABILITY OF THE SPEAKER SYSTEMS.

## **Exclusion of Certain Damages**

HSU's liability for any defective product is limited to repair or replacement of the product at our option. HSU shall not be liable for incidental or consequential damages of any kind or character because of product defects. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply.

## **This Warranty Does Not Cover:**

- Damage caused by abuse, accident, misuse, negligence, or improper operation.
- Products that have been altered or modified.
- Any product whose serial number has been altered, defaced, or removed.
- Normal wear and maintenance.
- Damages caused by shipping. (All claims for shipping damage must be made with the carrier.)

## **Warranty Service**

Warranty repairs can only be performed by HSU Research. As soon as the problem is found, contact us for instructions and information.

All warranty repairs must be accompanied by the original bill of sales. No other document is acceptable or is required. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Due to our continual efforts to improve product quality as new technology and techniques become available, HSU reserves the right to revise its Speaker Systems specifications without notice.



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