



Ratio

Studio Reference Monitors



USER GUIDE

Table of Contents

About Our Speakers:	.....	3
Specifications:	.....	4
Acoustics Primer:	.....	5
Setup Guide:	.....	6-7
Amplifier Recommendations:	.....	8
Protecting your Speakers:	.....	9

About:

The Ratio Reference Monitors pay homage to the acoustic principles of the RCA sound stages and recording studios from the 1930s and 1940s. Designed to incorporate these optimal room ratios within their compact dimensions, these monitors effectively minimize cabinet resonance and enhance sound clarity. The cabinets are made from high-quality hardwood and offer aesthetic appeal and warm, natural sound characteristics.

At the core of the Ratio Reference Monitors is a high-performance, single, point-source driver that eliminates the need for crossovers, reducing phase anomalies and crossover distortion. This design ensures a pure, uncolored sound for the class's most accurate and natural listening experience. With no additional electronics or digital signal processing, the focus is on simplicity and natural sound reproduction.

Ideal for audio professionals and audiophiles who value clarity and natural sound, the Ratio Reference Monitors provide a pure, coherent listening experience. Perfect for mixing, mastering, or enjoying high-fidelity audio, these monitors blend traditional acoustic wisdom with superior craftsmanship, aligning with Teegarden Audio's philosophy.

Specifications:

Enclosure Type: Sealed

Impedance: 8 Ohms

Recommended Power Handling: 100 to 200 watts per channel

Frequency Range: 55Hz - 20KHz

Driver: 4-inch full-range paper cone (Bamboo Fiber)

Input Type: 2-Pole SpeakOn Connector.

HF Dispersion: Aluminum Phase Plug

Height: 9.75"

Width: 6.5"

Depth: 15"

Weight: 14.5 lbs (ea.)

Acoustics Primer:

Understanding a little bit about acoustics can greatly enhance your listening experience. Simply put, acoustics is the science of sound, and it plays a crucial role in how you perceive music through your speakers.

When sound waves leave your speakers, they interact with your room's surfaces, walls, floors, ceilings, and furniture. These interactions affect the clarity, depth, and sound quality you hear. For instance, hard surfaces like tile or glass can reflect sound waves, leading to reflections that smear the overall frequency response at various places inside the room. This can lead to a harsh or misleading listening experience.

Conversely, soft surfaces like curtains, carpets, and cushioned furniture can absorb sound waves, reducing echoes and creating a warmer, more balanced sound. Understanding and optimizing these interactions can significantly improve how your speakers perform in your specific listening environment.

In addition to the environment in which you listen to your speakers, the placement of your studio monitors is vital. Proper setup ensures you're hearing the most accurate audio representation.

Setup Guide:

- **Placing Studio Monitor Speakers on Isolated Speaker Stands**

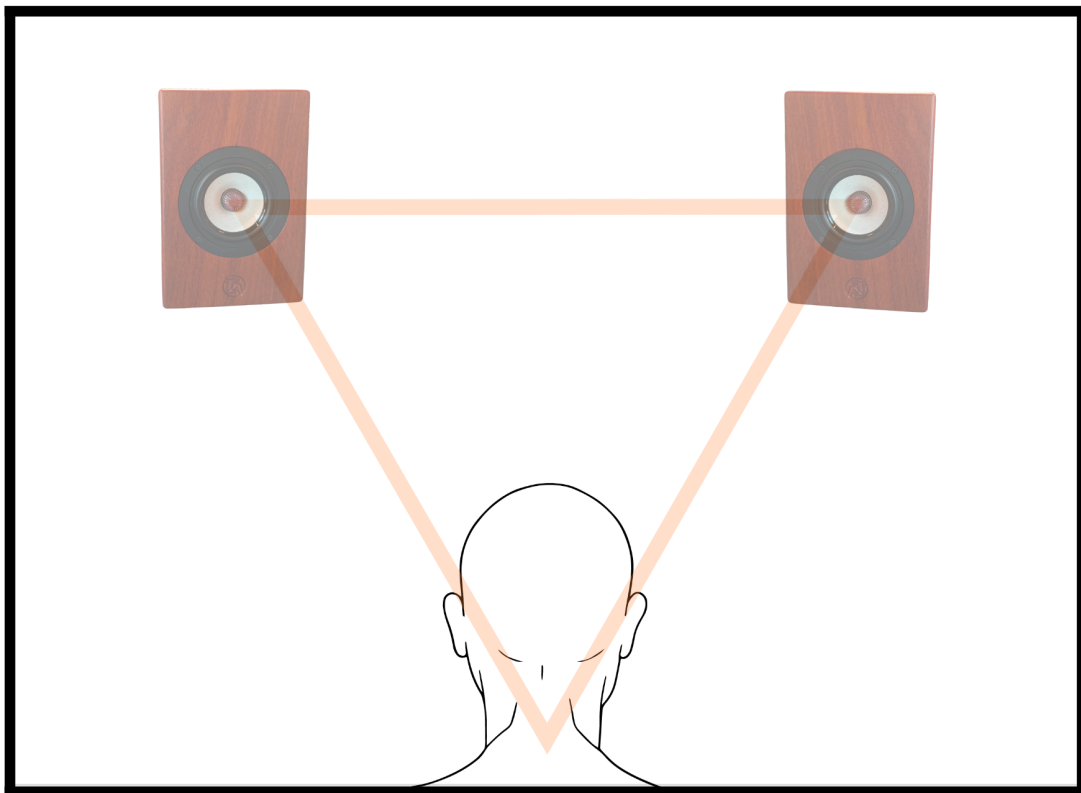
Using isolated speaker stands to decouple monitors from the desk reduces vibrations and resonance, ensuring more accurate sound reproduction. These stands also allow for precise positioning at the ideal height and angle, improving stereo imaging and frequency response by eliminating desk surface reflections.

- **Placing Studio Monitor Speakers on a Desk Surface or Shelf**

Placing studio monitor speakers directly on a desk or shelf can cause vibrations to transfer to the furniture, leading to resonance and sound coloration. This setup can also result in reflections from the desk, creating comb filtering and altering the frequency response, which compromises audio accuracy and limits optimal positioning.

Setup Guide:

Generally, positioning speakers equidistant from each other and forming an equilateral triangle with the listener's head at the apex creates a balanced sound image for accurate music perception. This setup ensures proper stereo imaging, soundstage, and the most detailed listening experience by delivering sound waves simultaneously to both ears. It aids in accurate mix representation and better judgment of audio quality in recording, mixing, and mastering.



Power Amplifier Recommendation:

We recommend a linear power amplifier that provides clean, stable power, low-noise circuitry, and thermal protection for continuous operation. (at least 100 watts per channel)

Subwoofers

Using a subwoofer with the Ratio Studio Reference Monitors offers an extended low-frequency response, allowing them to perform exceptionally. It is an exclusive monitoring system for a small studio. I chose a subwoofer that features adjustable crossover control.

Monitor Controller

Utilizing a monitor controller with your studio monitor setup allows switching between multiple input sources and speakers if your studio already contains a set of larger speakers you intend to use in conjunction with the Ratio Studio Reference monitors.

Choose a monitor controller with dedicated outputs for each set of speakers you intend to use , including one set for a subwoofer, We recommend not running the signal to the power amp through the Sub, a controller allows you to do that with a "C" Channel that always follows the input signal. Some allow users to fine-tune the subwoofer's volume to match the main speakers.

Protecting Your Speakers:

The Ratio Studio Reference Monitors are designed to perform optimally as **low- to moderate-volume** nearfield monitors for critical listening applications.

The recommended average SPL at the listening position should be approximately **83dB-85dB SPL**.

It is not recommended to exceed **87-90dB SPL**.

Disclaimer: The manufacturer's warranty does not cover damage to speaker drivers caused by excessive volume, misuse, or improper handling. Please follow the usage guidelines in the user manual to maintain warranty coverage.

Cleaning the Wooden Cabinets:

The wooden cabinets of your Ratio Reference Monitors can be carefully cleaned using a household furniture polish (*e.g., Pledge*).

Never spray the cabinet directly; do not get any liquid or spray directly onto the speaker driver.

Use a clean, soft microfiber cloth and spray the fabric before gently wiping away any dust, dirt, or grime on the outside of the speaker cabinet.