

SQUARE ROOT

TECHNICAL SPECIFICATIONS

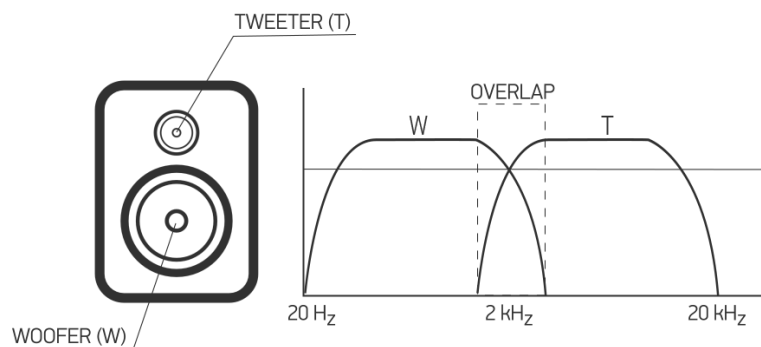


SQUARE ROOT has been designed to deliver to customers the most linear and neutral performance possible both in time and frequency domains in sufficiently wide frequency range. SQUARE ROOT is a perfect near-field active studio monitor for true musicians and recording engineers to have extended possibilities to evaluate performance quality and behavior of any music instrument, recording and sound processing gear.

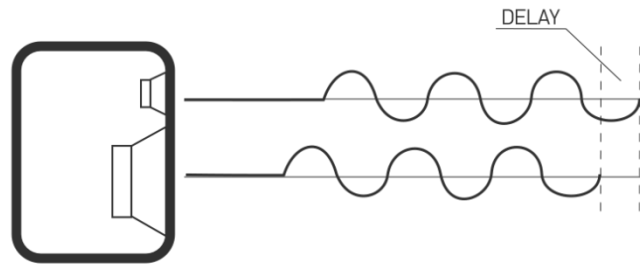
To understand the key advantages of SQUARE ROOT, conventional 2-way designs should be examined first.

CONVENTIONAL 2-WAY SPEAKER

Most common 2-way studio monitors have a woofer and tweeter on top of. Such design approach introduces several obvious problems causing performance degradation:



1. Sound is radiated by two drivers which usually are made from different materials:
 - Two driver system needs crossover filters to be applied to “glue” them together which is complicated process and extreme care is necessary to get best results. Crossover filters cause phase and frequency distortions at the crossover range
 - Two driver responses are overlapping and canceling each other out at crossover range causing loss of information and distortions in reproduction of audio signal
 - Different tweeter and woofer materials in conventional designs cause timbral distortions. Timbre is what makes sounds different from each other. More distortions, less information of original sound character can be reproduced



2. Two driver alignment introduced problems:

- Conventional 2-way speaker drivers usually are not aligned properly. This is a cause of delays – part of sounds radiated by tweeter and woofer arrives to the listener faster than other
- Sounds arriving from tweeter and woofer are out of phase with each other and cancelling each other out at the crossover range

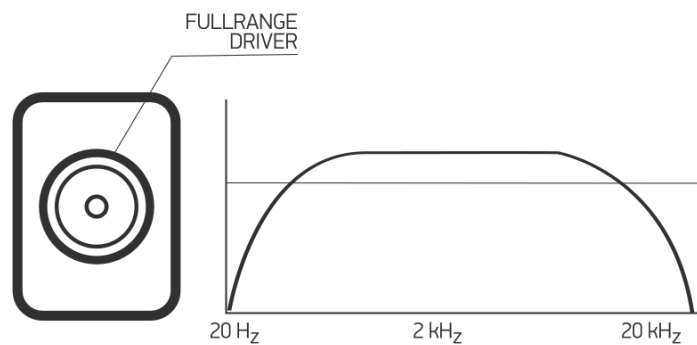
3. Conventional 2-way speakers usually has stiff suspension and insufficient excursion woofers:

- Stiff suspension woofers introduce compression causing a loss of detail, making harder to understand and work with audio processing specifically in low frequencies.
- Insufficient excursion causes inability to reproduce low end because insufficient volume of air can be displaced

With SQUARE ROOT all above mentioned problems are solved. Therefore remarkable accuracy and quality of sound reproduction can be delivered to customers.

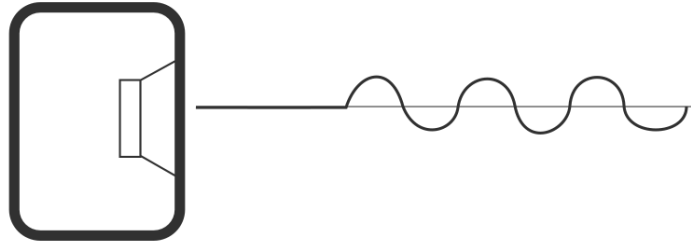
SQUARE ROOT KEY ADVANTAGES

SQUARE ROOT has been designed based on a top quality and very carefully treated single full-range driver. Therefore such design is causing much less problems in music creation process and gives more accurate information about performance of music instruments and audio editing gear.



1. SQUARE ROOT employs a very high quality single full-range driver:

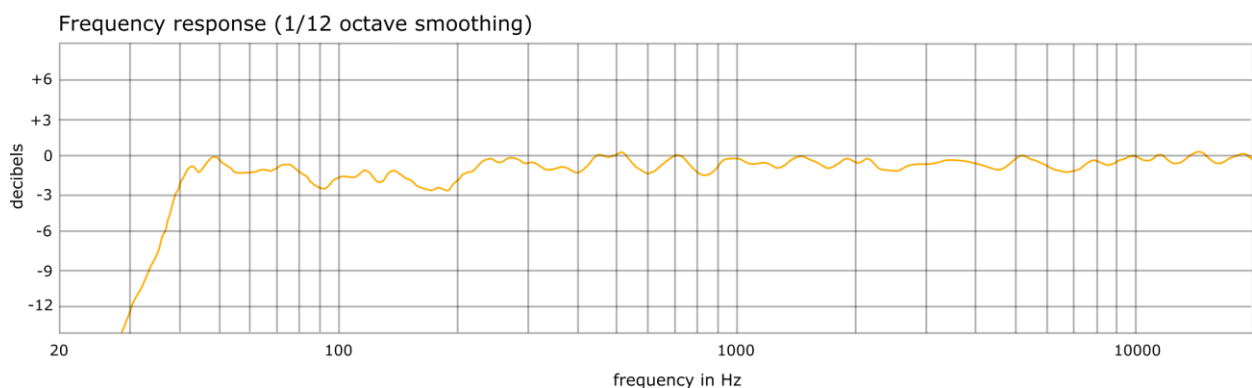
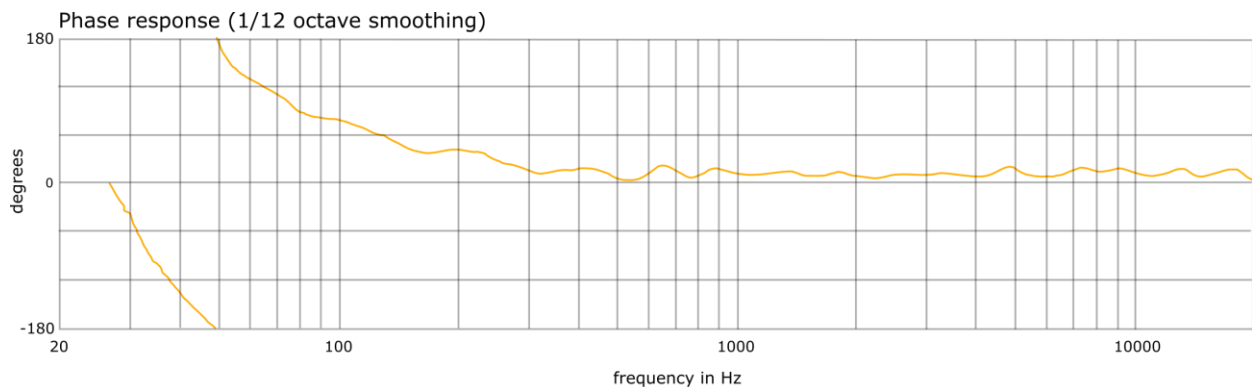
- No 2-way speaker crossover is necessary, no crossover distortions are present
- Single driver is used, no 2 driver overlapping and no loss of information in crossover range
- Single driver, one material type of driver cone, no timbral distortions caused by different driver materials



2. The sound is radiated by single driver making SQUARE ROOT most true point source speaker:
 - No two driver introduced misalignments are present, no delays introduced
 - No separate driver radiated sound caused cancelations are present
3. SQUARE ROOT has a soft suspension, low moving mass and extended excursion woofer:
 - No compression, no loss of detail is introduced. Therefore more precise reproduction in low frequencies is achieved and opportunity to better understand and work with low frequencies is ensured
 - With driver excursion of 7mm one way extended low frequency response is achieved
4. SQUARE ROOT has built in powerful DSP processing:
 - Very linear frequency response is achieved
 - Same quality parameters are achieved for every single SQUARE ROOT speaker

SQUARE ROOT TECHNICAL SPECIFICATIONS

- Full range, near-field, bass reflex system
- Frequency response: 40Hz-22kHz (+/-2.5dB)
- Phase response: +/-10 degrees (250Hz-20kHz)
- 103dB max SPL
- Class D amplification
- DSP filtering
- Dimensions: D 10" (25cm), W 8" (21cm), H 14" (35cm)
- Weight: 18.7lbs (8.5kg), each speaker



CONNECTIONS

- 1 x USB service port
- 1 x Analog In (XLR Balanced)
- 1 x AES 3 Digital In (XLR Balanced)
- 1 x Analog Link (XLR Balanced)
- 1 x AES Through Digital (XLR Balanced)
- 1 x Mains Input 115/230V



Front view



Rear view