TRINNOV AUDIO

WAVEFORMING

REDEFINING LOW-FREQUENCY REPRODUCTION

WAVEFORMING ***REQUIREMENTS***

Trinnov released **Subwoofer Placement Guidelines for WaveForming.**

These guidelines define the number and placement of subwoofers required to get the best out of WaveForming, with three different levels of performance and associated requirements.

TRINNOV ***WAVEFORMING™***

WaveForming delivers a solution to the most challenging aspect of home cinema: eliminating the effect of room modes that makes accurate low-frequency reproduction difficult if not impossible. The product of more than 6 years of Trinnov extensive research, WaveForming combines a new algorithm and new home theater design guidelines to effectively reduce the low-frequency problems inherent to small rooms: the muddy sound produced by long reverberation times and the large variation heard among multiple seats. WaveForming resolves these challenges to produce unprecedented impact, clarity, and level of detail in the bass.

AN UNPRECEDENTED APPROACH

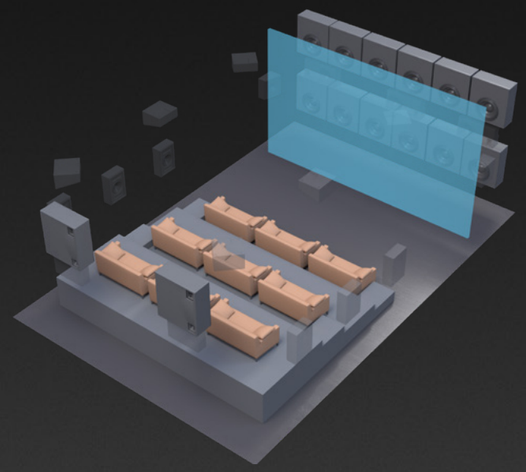
Current home cinema practice attempts to resolve these challenges with a brute-force approach that ultimately falls short due to the intractable laws of physics.

Trinnov realized that a comprehensive solution required forging a new path that addresses the cause, not the symptoms:

WaveForming limits the creation of room modes in the first place.

HOW DOES WAVEFORMING WORK?

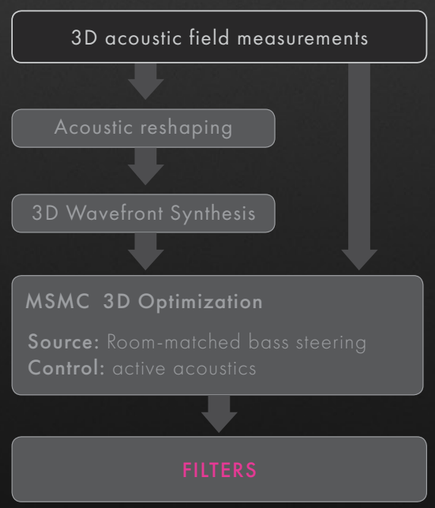
WaveForming requires the use of multiple subwoofers on both the front and back walls of the room. The specific locations are determined by room dimensions and the desired bandwidth coverage.



FOUR MAJOR INNOVATIONS ENABLE THE BENEFITS OF WAVEFORMING:

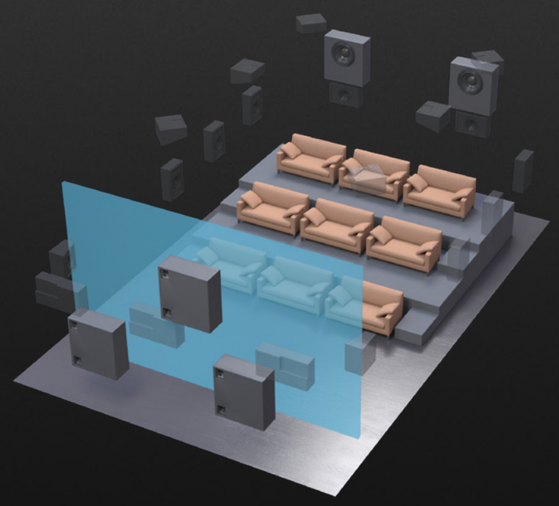
3D ACOUSTIC FIELD MEASUREMENT

In calibration, each subwoofer is measured at multiple points in the listening area to map the 3D acoustic soundfield with 100% accuracy.



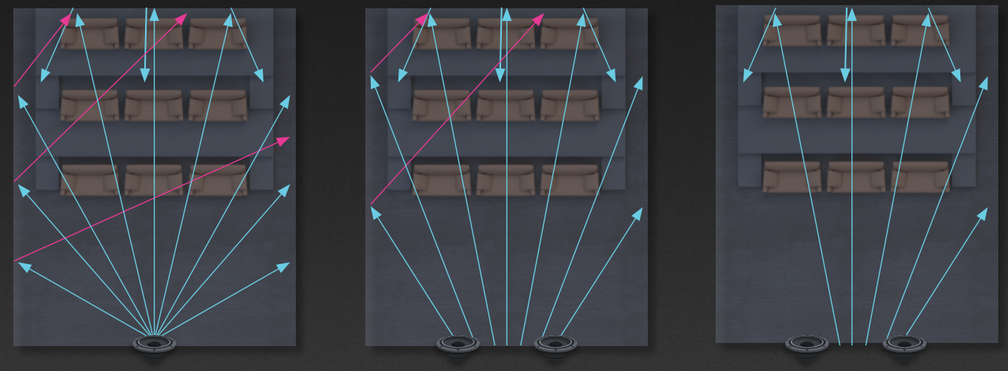
3D WAVEFRONT SYNTHESIS

uses multiple subwoofers to create a single coherent wavefront, steering the bass towards the listening area while avoiding unwanted reflections from the side walls, floor, and ceiling.



ACOUSTIC RESHAPING

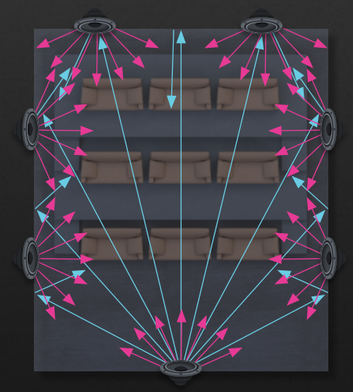
uses the 3D map to remove long delay times and to identify and use helpful aspects of the room's acoustic qualities while rejecting unwanted aspects.



MULTIPLE SOURCES, MULTIPLE CONTROLLERS (MSMC).

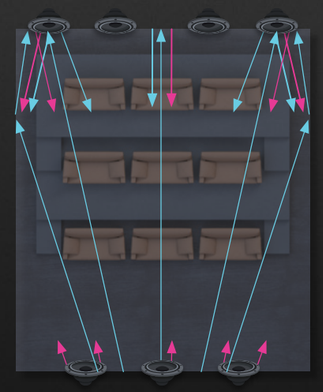
The key to WaveForming. Each speaker may be used as both a source and an absorber of sound. Remaining undesirable sound energy is captured.

SSMC
Single Source Multiple Controllers



OMNIDIRECTIONAL BASS

MSMC
Multiple Source Multiple Controllers

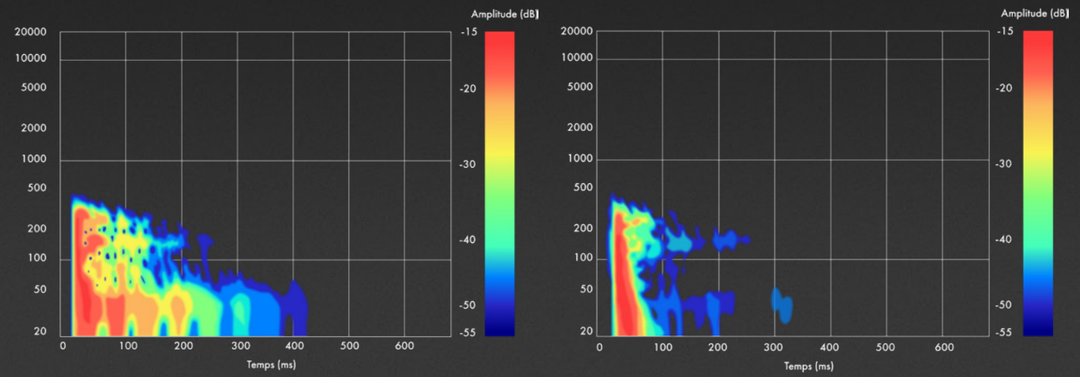


STEERED BASS

WHAT ARE THE BENEFITS?

LOW DECAY TIMES

Historically, the time domain aspect of bass performance has been ignored in favor of frequency response only. By addressing the time domain, WaveForming effectively eliminates room modes and achieves a dramatic reduction in the reverberation time at low frequencies. Bass is profoundly transformed, with unprecedented clarity, impact, and definition.



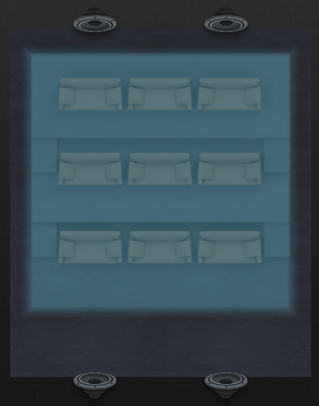
DECAY TIME - BEFORE

DECAY TIME - AFTER

SEAT-TO-SEAT CONSISTENCY

Equally dramatic, WaveForming enables extreme consistency of both frequency and amplitude across the entire listening area. The seat-to-seat variation that is inevitable in small rooms disappears. This greatly exceeds the new CEDIA RP22 Level 4 requirement by potentially qualifying every seat, not just two primary ones.

INCONSISTENT LISTENING AREA



CONSISTENT LISTENING AREA

PREDICTABLE RESULTS

Integrators will find a major benefit of WaveForming is that it enables predictable and repeatable results. WaveForming is not just an algorithm. It is a holistic approach that involves design guidelines, proper installation, acoustic measurement, and optimization of the ultimate solution. Expert guidance is required for each step.

MULTIPLE LEVELS OF PERFORMANCE

WaveForming technology is in its infancy, with today's implementation defining a new uncompromised reference in low-frequency reproduction. Continuous refinement over the next decade will further improve performance and offer new features, unlocking the technology for a wider diversity of system configurations in terms of number of acoustic sources and placement.

TESTIMONIALS

"Watching movie scenes that we have seen 100's of times left us with shivers and mouths open. Frequencies that traveled right through my body created sensations I had never felt.

Not just the sheer impact, what we experienced was balanced over multiple rows of listening and subtle frequencies that only enhanced the overall cinematic soundscape."

Mick Stillone - Sydney HiFi Mona Vale

"It is not often I use the term Game Changer... but, after experiencing the new Trinnov technology at Krix Headquarters recently, that was precisely the term I used.

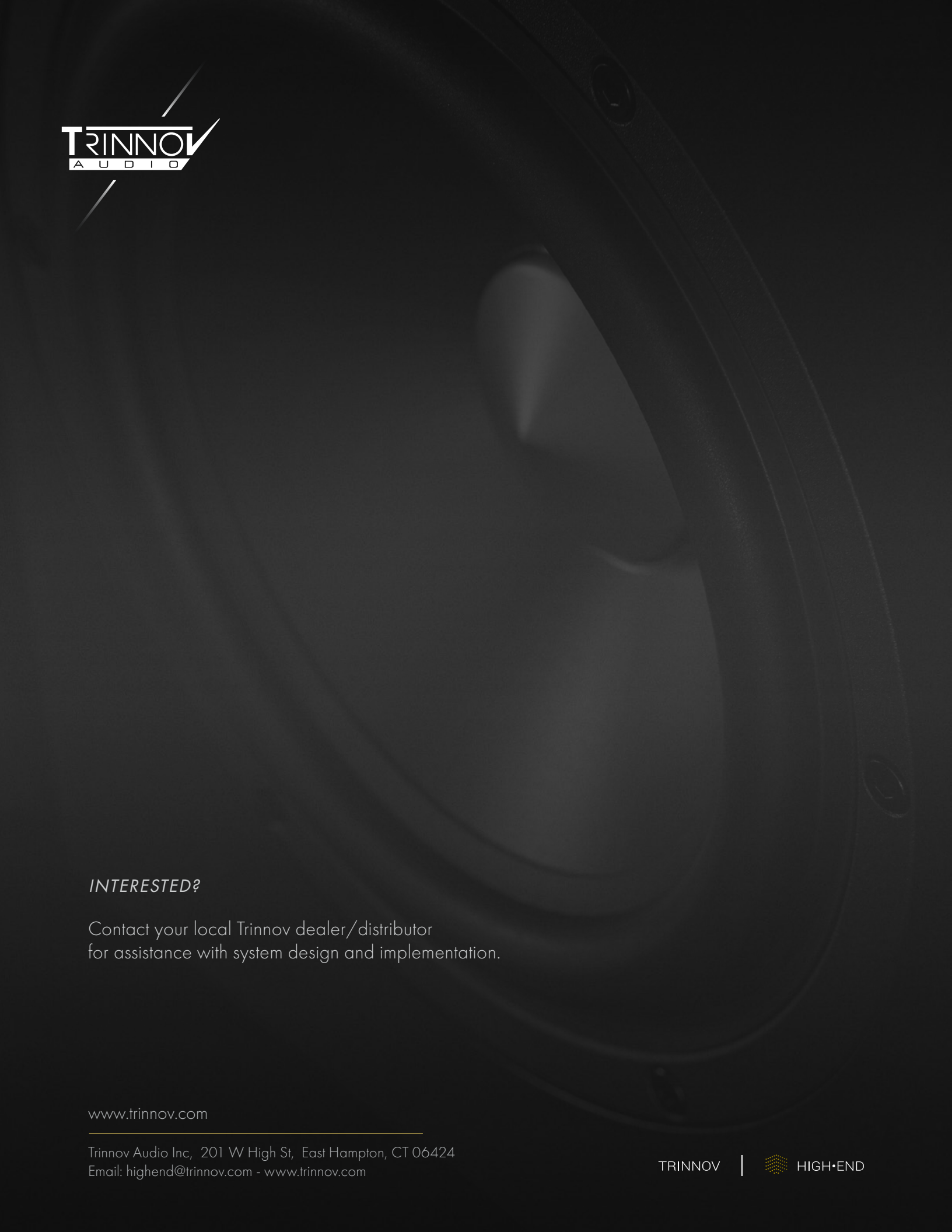
Considering I audition an incredible Trinnov Altitude 16 - Krix MX40 system nearly every day of the week, for something to blow me away this much says it all..."

Scott Stay - West Coast

"We just completed a major rebuild of the Procella demo theater in Amsterdam to showcase WaveForming. The result is very impressive, making it clear that WaveForming is a huge step forward in low frequency definition and impact.

It raises to a new level the tactile experience of powerful low frequencies, and the sound is the same regardless of where you sit. We encourage our customers to look at WaveForming for the ultimate low frequency experience."

Anders Uggelberg, co-founder - Procella Audio



INTERESTED?

Contact your local Trinnov dealer/distributor
for assistance with system design and implementation.

www.trinnov.com

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