

Cool Homes

14 Speakers, 2 Subwoofers Double This Theater's Audio Pleasure

With a pair of Krell speakers for every channel, this 7.1 theater rocks harder than most

March 14, 2013 | by Arlen Schweiger

The owner of this home theater made his name in the car alarm business, so perhaps he's just used to really loud sounds. But unlike the screeching of an alarm, his theater delivers high decibels with utter clarity, definition and impact for an audio experience that would make Spinal Tap envious.

Yes, Georgia homeowner Ken Flick's room goes to 11 and beyond. It wasn't enough that he had a 7.1-channel system implemented for the audio muscle—Ken had it configured so each channel consisted of not one, but a pair of loudspeakers (and yes, two subwoofers, too).



Extensive acoustical treatment processes and products were used in this theater to ensure that it maximized the 16 speakers and subwoofers and that the rest of the house wouldn't rattle during movies and concerts

And these aren't your run-of-the-mill front & surround speakers. They're pairs of the Modulari Reference Duo and Primo speakers from [Krell](#); the Primo is actually a two-way mini speaker that combines with a Duo subwoofer tower to form the full Reference Duo. The Duo weighs in at 260 pounds, while the Primo is a mere 85, and Krell notes that both are made from solid aluminum slabs.

"Using a pair of Modulari Duo speakers for each channel, the voice and action sound so real you think you are at that location," Ken says. "No distortion at all and no squeaks in the room when the two Krell subwoofers are pounding your body. It makes the explosions real."

This Ceiling's Covered Acoustic cloth panels over Acoustical Solutions diffuser panels cover the ceiling, which also has four layers of the company's 4-inch thick EcoSorb panels. This way, the sound won't rattle the rest of the house.



The main speaker channels—the front left, center and right—are formed by the dual Reference Duos and powered by Krell's Evolution 900e amplifiers, while left and right side and rear surrounds each consist of Primo pairs with Evolution 402e amps doing the driving. Two of the Connecticut-based audio company's Master Reference subwoofers serve up some extra thump, and an Evolution 707 processor pieces everything together.



A unique, almost Egyptian-like design hides the \$800,000 worth of A/V components and acoustical treatments of this dream theater, about half of which is comprised of Krell gear.

In all, Krell gear comprises about half of the \$800,000 in A/V components and acoustical treatments of this dream theater. The three 900e monoblock amps and the 707 processor are all on their own dedicated electrical circuits, and Ken actually designed and manufactured his own speaker cabling out of 56 strands of 99.9 percent silver equal to 8-gauge, and each piece cut to the same length for optimal coherence.

The three-tiered seating decks are full of sand, and below them the concrete floor is covered with Acoustical Solutions ISOStep floor underlayment.



The homeowner did most of the work himself or coordinated with the manufacturers involved on the design and installation. He supervised two carpenters for the 18-month-long project, after gutting his previous theater in the 15-by-25-foot room, in the custom fabrication of the entire space so there would be no unwanted vibrations, standing waves or any sound leakage.

Ken had assistance from David Ripp, a professional audio engineer who is the president of Ripp Records and in the past has worked for vaunted record label Telarc. Ripp worked with Ken on his previous home theater, and they used that experience to get this one just right. “His system was installed, and when I got there he was having issues, like he’d blown up a bunch of tweeters and midrange drivers,” Ripp says of Ken’s original theater effort. “I told him, someday in future, if you ever decide to redo this, here’s some things you need to redo—like making sure you have all power you needed but also that everything is on its own dedicated panel, and that the panel is isolated. Also, back then his room acoustics had some strange anomalies in it, like it was real boomy corners and other areas that were too dead; it wasn’t a super balanced room. His room right now I’d have to say as a home theater is probably one of top 10 in world from what I’ve seen.”

Ripp shared suggestions down to just about every little detail on the audio system to ensure everything was in sync. “We made sure the cables were exactly the same length so the timing of the audio to each speaker was the same,” he says, for instance. “By doing all the things he’d done to the room on the electronics side, it was just as good as the acoustical

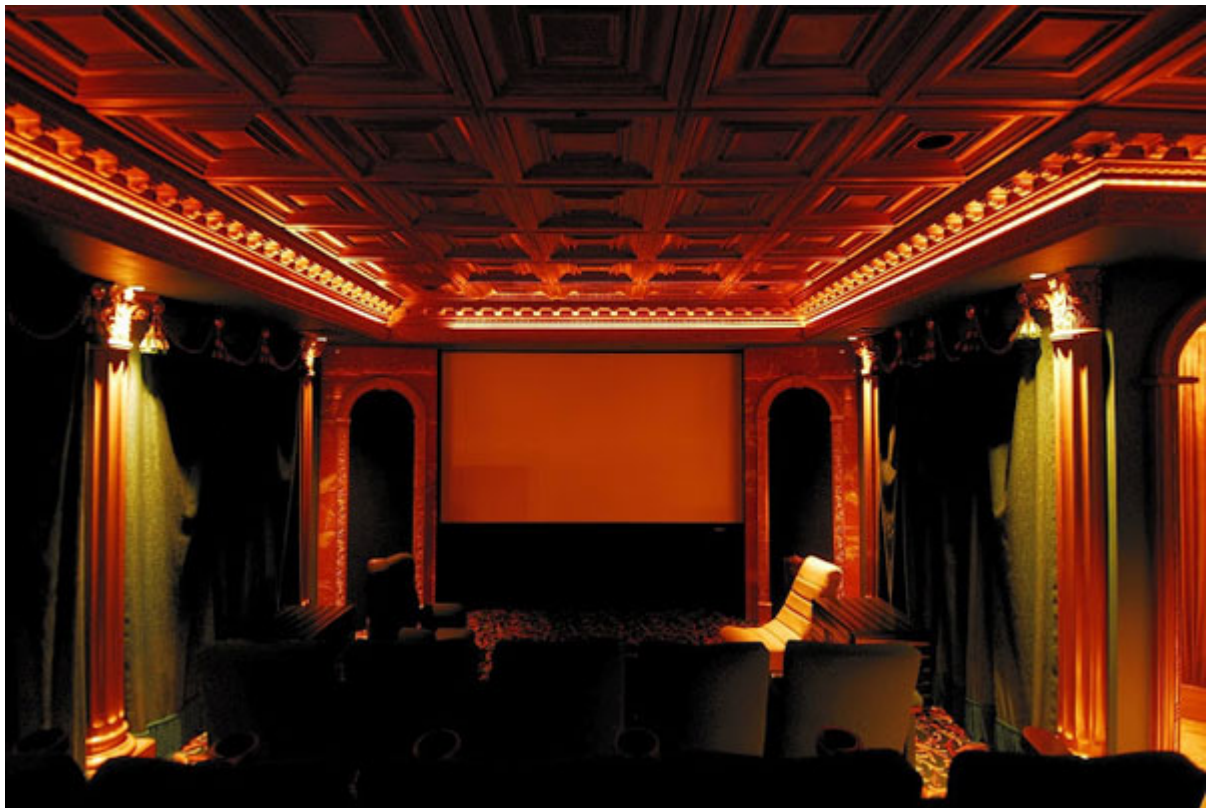


Ken supervised two carpenters in the custom fabrication of the entire space so there would be no unwanted vibrations, standing waves or any sound leakage.

side of it – all the power, making the cables same length, doubling up and using loudspeaker pairs ... by doing that it gives the system a huge amount of overhead, and having amplifiers right there at speakers almost made system to where it's so clean and so powerful it can rock you really well.”

Movie Time

When the lights dim and the curtains are drawn, the room has a whole different ambience.



How do you contain the sound of a \$400,000 audio system within a dedicated theater room? Here are some of the techniques owner Ken Flick implemented to eliminate leakage and vibrations:

- The speakers don't touch any other structures; they're mounted on steel substructures bolted to the poured concrete walls.
- The three-tiered seating decks are full of sand, and below them the concrete floor is covered with Acoustical Solutions ISOStep floor underlayment.
- Acoustic cloth panels over Acoustical Solutions diffuser panels (more than 400 square feet worth blanket the room) cover the ceiling, which also has four layers of the company's 4-inch thick EcoSorb panels.
- AudioSeal Sound Barrier (rubber, at 2 pounds per square foot) by Acoustical Solutions lines and seals the room, with Sound Sealant Acoustical Caulk on every seam.



In-Wall Acoustics

Ken can choose to either hide or display his bounty of speakers.

Although the focus was on audio, Ken didn't neglect the video. He worked with JVC on the professional calibration of his RLA-RS65 projector, which fires onto a Stewart Filmscreen StudioTek 100 screen (and in 3D, typically when his grandson visits). But sound was taken into account there, too, as he mounted the projector onto a custom-welded metal frame that's bolted to a foot-thick concrete wall at the back of the theater. This prevents the projector from shaking when the speakers do.