pure acourate sound ™

ULTRA-LOW DISTORTION IN ROOM SOUND REPRODUCTION

You may have listened to many different systems. None of these does everything right. **What if they do?**

Imagine you would take today's best-in-class technology and improve the sonic quality of all components including the room and its deficiencies to produce ultra-low distortion sound without bass boom. **Anything is possible!** This is the
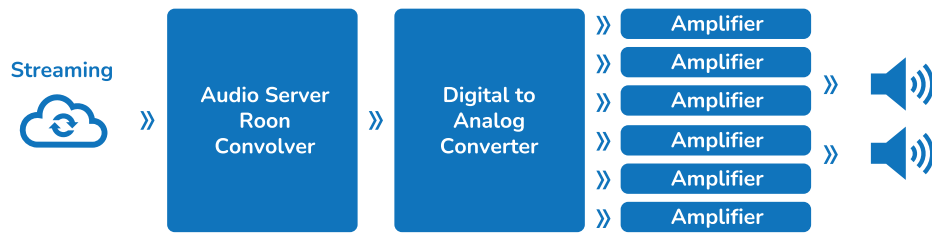
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The idea has been to combine the best in class

- loudspeaker drivers and class-D amplifiers (**PURIFI**),
- digital-to-analog converter (**OKTO Research**),
- room acoustic treatment (**GIK Acoustics**),
- measurement technology (**KLIPPEL**),
- software engineering (**AUDIOVERO**),
- professional woodworks (**ROSE Handwerk**),
- experience in speaker building (**Joachim Gerhard**).

All this is applied to a generic speaker in an imperfect room and can achieve outstanding performance!

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HOW THE PURE ACOURATE SOUND WORKS

In this setup music is streamed via **Roon** and routed via **AcourateConvolver**, running on an optimized **audio server**. The two-channel input is split into six channels. The speaker and room correction are applied together with a digital linear phase crossover via convolution. The output channels are fed to a **DAC** and then into the **power amps**, one for each chassis.

It all sums up in perfect low distortion sound reproduction.

At the beginning of the process, each chassis is individually **measured**. Based on its characteristics the phase is **corrected** in particular for being in-phase at transition frequency. Next, each chassis' magnitude response is linearized and gain variations are corrected. A **six-channel linear-phase digital crossover** is generated. All corrections are convolved into the crossover, individually for each driver.

The resulting total performance combines into an almost perfect speaker. Taken to the **KLIPPEL measurement system**, all system parameters have been validated and partly refined, optimizing radiation pattern and minimizing distortion.

Measurement of the entire speaker (installed in the room) allows us to derive the necessary **room corrections**. Sonic degradations of room modes (magnitude and phase) are reduced within useful acoustic boundaries without over-correction. Additionally, mid and high-frequency performance improves delivering a **balanced and holographic soundstage**.

The **digital processing** is performed with non-compromise 64-bit floating point accuracy throughout the entire processing chain. The **FIR filters** employed work with 64-128k filter tabs (maximum 524k), giving unprecedented low-frequency resolution and correction possibilities.

VISIBLE PERFORMANCE IMPROVEMENT OF MAGNITUDES AND IN-ROOM STEP RESPONSE