



DualCoherent™

The crossover coherent in both time AND frequency domains



An established objective of loudspeaker design is to convey music with proper tonality. This is achieved through a flat frequency response – the flatter it is, the less a loudspeaker alters the timbre of musical instruments and voices.

Another key objective is to preserve transients and spatial cues, which convey the impact of a musical event. This is achieved through good relative phase between drivers, i.e. they must all radiate in unison – the better the phase-match, the more a loudspeaker preserves musical excitement.

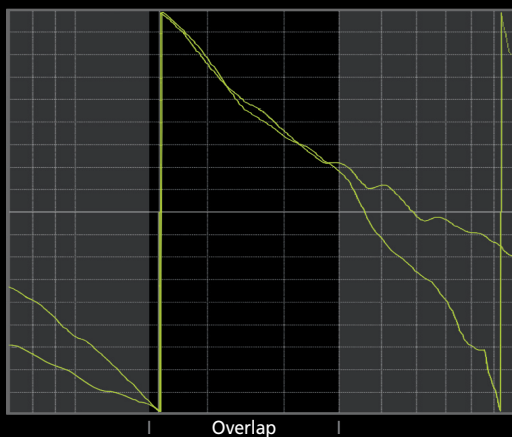
YG Acoustics™ DualCoherent™ crossovers, designed using software developed entirely in-house, are unique in delivering both a ruler-flat frequency response and near-zero relative phase. Virtually all other manufacturers use a single off-the-shelf software tool, which can only optimize either the frequency response or phase, but not both. They are forced to choose one and compromise the other.

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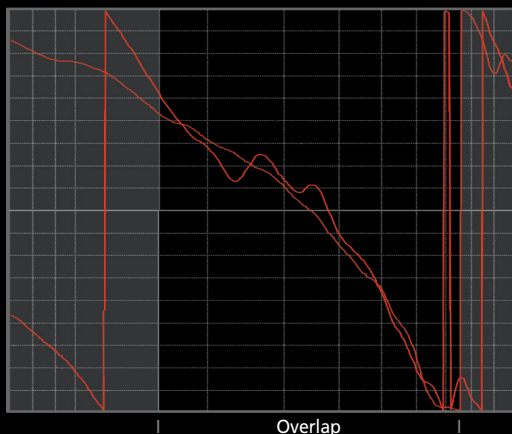
Phase

Below is the phase response of the mid-woofers and tweeter of a YG Acoustics™ speaker, as well as that of the leading competitor. The closer the phase-match throughout the range where the drivers overlap, the better the preservation of transients and spatial cues. Both YG Acoustics™ and the competitor exhibit excellent phase: YG Acoustics™ offers $\pm 5^\circ$; the competitor offers $\pm 20^\circ$, and counters with a wider frequency-range within that tolerance. Both speakers were clearly well-optimized for phase.

YG Acoustics™ Phase
700~10k Hz. 20° div.
 $\pm 5^\circ$ throughout overlap.



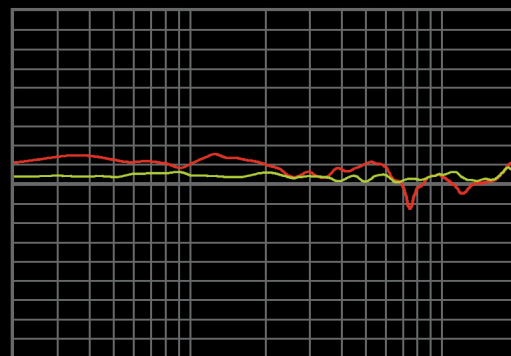
Competitor's Phase
 $\pm 20^\circ$ throughout overlap



Frequency Response

Below is the frequency response of both speakers. YG Acoustics™' response is extraordinarily flat – no compromise was necessary to achieve its perfect phase. The competitor's frequency response is good, but obviously compromised.

YG Acoustics™ on-axis. 200~20k Hz. 5 dB div.
Competitor on-axis.



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