

ANTHEM® ROOM CORRECTION SYSTEM (ARC™)

ANTHEM®
STATEMENT

Now available as an add-on for existing Anthem® Statement D1's and D2's ... ask your Dealer about the ARC-1™ kit

Anthem® Room Correction, three years in development, is the first real implementation of research conducted over 20 years ago by the National Research Council (NRC). The NRC's goal was to identify the correct in-room target response for a loudspeaker and then develop a system to achieve this response from multiple speakers in *any* listening room. As an add-on accessory kit for existing Anthem® Statement D1's and D2's, ARC™ offers a way to achieve these results in your listening room.



Even when the world's finest speakers are perfectly spaced and positioned, the room can still have a dramatic impact on performance. Room dimensions, dead spots, archways, furniture placement, and countless other factors can turn a room into an additional instrument, playing alongside musicians or movie scores with unwanted contributions of coloration and resonance.

While equalizing frequency response in a room to achieve some generic (i.e. flat) response is a common approach to solving the problem, it will result in an unnatural spectral balance since it does not take into account the human hearing system. Anthem's approach is a true audiophile solution: the ultra-high resolution Anthem® Room Correction (ARC™) system actually adjusts for the room's effects on each speaker in a way that mimics our hearing to achieve the optimal in-room sound. ARC™ differs from other systems in that it uses proprietary processing to compute each speaker's in-room frequency response and then computes a target frequency response for each to yield the optimal in-room sound.

What makes the ARC™ system better ...

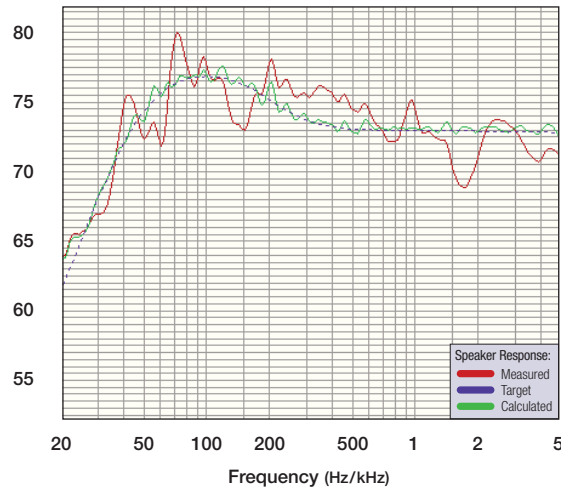
- **ARC™ is a State-of-the-Art Room Correction System that analyzes each speaker in the room independently**, then sets output levels, crossover frequencies and room correction parameters for each speaker. The ARC™ system includes Anthem® Room Correction software with files for the individually calibrated microphone and the specific Anthem® Statement a/v processor.
- **ARC™ applies Correction for up to 7 Channels plus the Subwoofer**, operating on all analog and digital sources at 44.1 kHz, 48 kHz, 88.2 kHz and 96 kHz without reducing the bit rate.
- **ARC™ applies Super-Efficient Infinite Impulse Response (IIR) Filters** in addition to **Anthem's Custom Filter Topology** to minimize delay and reduce processing gain noise. The combination of limiting the widths of our IIR filters and applying our topology means that any artifacts that might have resulted from the filtering process are so small as to be inaudible.
- **ARC™ allows for Multiple Microphone Measurements:** Most 'Room EQ' methods work from a single point source, taking one measurement at the primary listening position. ARC™ provides for *multiple user-selected* measurement points (we suggest a minimum of five), beginning with a measure-

ment at the primary listening position and then moving across the listening area. This process is critical in properly dealing with standing waves and ensures optimal sound throughout the listening area.

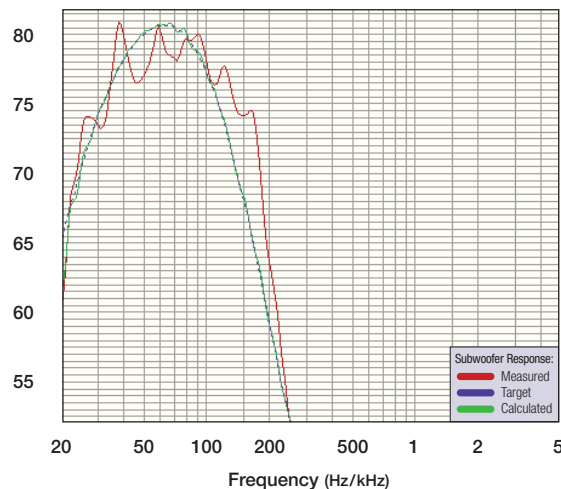
- **Multiple Measurements and Ultra-High Resolution require Enormous Processing Power of an Anthem Statement Processor.** The Statement processor's Digital Signal Processing design uses twin DSP engines (each rated at 150 million instructions per second!), enough power to handle the ARC™ system's rigorous processing demands.
- **Unlike many 'Room EQ' systems, ARC™ applies Correction to Peaks (modes) and Dips (anti-modes).** Tackling both allows us to achieve a far more accurate and natural room response. And to limit the demands on the amplifier, as well as maximize signal-to-noise ratio, ARC™ applies appropriate limits to this correction.
- **ARC™ is Ultra Accurate!** The connected PC's 64-bit floating-point processor does the hard work of calculating the correction curves, which greatly minimizes rounding errors of a less sophisticated calculator.
- **ARC™ provides the ability to set Separate Music and Movie Configurations.** This allows for choosing different speaker configurations, setting different crossover points, and allowing separate measurements and correction curves to optimize both music and movie listening experiences.
- **ARC™ allows a Simple, Fully-Automated Procedure as well as a Manual Mode** with Advanced User functions, allowing the user to manually set:
 - Crossover frequencies;
 - Level of room gain;
 - Maximum 'Room EQ' frequency.
- **ARC™ and the Surround Experience.** Surround and rear speakers are often at a great disadvantage in the quest for good sound due to the variety of less-than-ideal placement options available. Not any more! ARC™ ensures surround/rear speakers match perfectly with the main speakers for a seamless surround experience.

ARC™ in action ...

Left Front Speaker – ARC™ measures, calculates and corrects for sound anomalies caused by room boundaries and reflective surfaces.



Subwoofer – ARC™ measures, calculates and corrects for the room's standing waves.

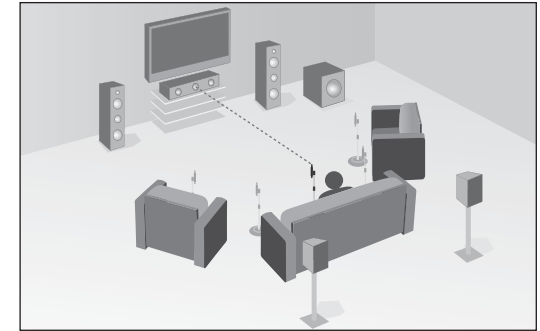


"Taking measurements is the easy part. Knowing what to do with those measurements (and having the processing power to do it!) is what sets the ARC™ system apart from other 'room eq' systems."

– Anthem® Design Team

How does the Anthem® Room Correction System work?

The process starts when a test signal is sent from the Statement D2 processor to each connected speaker and the signal is picked up by the individually calibrated microphone. The system puts each speaker through a full frequency sweep to highlight problem areas and determine the necessary adjustments. Configurations are saved on a connected PC, allowing the user to optimize the system for multiple configurations for music and movies. The optimized solutions are then uploaded to the processor and all levels, crossovers and room corrections are put in place. ARC™ can then be turned on and off by source as well. Truly an audiophile solution to the problem of the room!



ARC™ microphone is positioned at seated ear level, pointed at the ceiling.

ARC™ was **'THE'** hot topic at this year's CES ...

Roger Kanno (SoundStage! Network) commented that he had never heard such a large system play so loud and sound so good in such a small room ... bass was very tight ... he could actually hear it change in pitch rather than turn into the one-note boom that you usually experience in the small hotel rooms typically used for demos.

– SoundStage! Network

"... ARC did a great job taming the room ... it is simple to use and really solid in performance ... The D2 processor is such a great unit and so flexible, the addition of Room Correction makes it an even bigger deal."

– AudioVideo Revolution

"... one of the best surround-sound demos we heard ... further supported these brands' [Paradigm and Anthem] selection as Product of the Year winners!"

– SoundStage! Network

"No exaggeration ... the ARC demo may have been THE BEST multi-channel demo I've ever heard at a trade show."

– Residential Systems Magazine

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