



## IK Multimedia ARC

Here's something unique and interesting: software to correct control room monitoring problems. **GEORGE SHILLING** says as more large commercial music studios close and increasing numbers of hours are clocked up in less than ideal environments, it is perhaps a timely release aimed at remedying monitoring problems.

IK Multimedia's ARC package comprises a measuring microphone along with analysis software, plus a plug-in (RTAS, VST and AU) that loads the derived settings acquired from the measurements taken. The system uses a technology developed by Audyssey called MultEQ. This was apparently developed over five years with \$6 million of University-based research. It provides an automatic system designed to correct audible sound distortion caused by room acoustics over the whole listening area and not just the sweet spot. Along with the IK ARC (Advanced Room Correction) package, Audyssey has provided the technology to other third-party companies. For example, Denon has incorporated the system into a range of home theatre products. The ARC package is stereo-only, but it seems likely that a surround version will become available in the future.

The instructions for taking measurements essentially tell you to point the (omni) measurement microphone towards the ceiling at ear level. The software takes you through the steps of setting the inputs and outputs of the audio interface and setting a rough level. Then each measurement sends a series of 10 frequency sweeps through each speaker (separately). It is required to take no fewer than 12 measurements in different spots, and 16 to 20 for better results. This is done by moving the microphone around the listening area between each set of sweeps, the main proviso being that you take even numbers of measurements at each deviation left or right of centre. When you think you have enough measurements, the calculation is computed quickly and you can store the settings. Multiple settings can be saved.

Loading up the plug-in in your DAW then enables recall of the measured settings.

My first attempt at this seemed to add a rather odd delay between the left and right speaker; I'm not sure



why, but going into the preferences it was possible to disable time delay functions, and the result was rather better. However, I subsequently took a number of further measurement sets without such an obvious delay-related problem, and it may well have been that I made a mistake somewhere during the measuring procedure.

The plug-in window displays the left and right frequency graphs with an ideal 'target' response curve that is flat from 20Hz to 20kHz, along with before and after curves, showing roughly the effectiveness of the correction. Along with the Flat target curve, it is also possible to select a preset high frequency roll-off, which can reduce excessive brightness. There is also a midrange compensated response that puts a dip in the middle to provide a more natural sounding response for horn-loaded speakers or those with crossover circuitry that adds some harshness here. And there is also a response combining high and mid reductions.

It is interesting to note that the system doesn't simply average the frequency response measurements to apply correction, as this would achieve nothing if there was, say, a boost at 200Hz in one position and a dip at another: the average would be to leave the response unadjusted. Instead, MultEQ looks at patterns in the time domain responses and classifies them into clusters, based upon the similarities in those patterns. Some complicated processing is then applied

including some complex maths and fuzzy logic. However, fuzziness does seem remarkably reduced by the resulting EQ curve.

I have encountered a number of music producers who work from what are obviously less than perfect rooms, and having built my own room (with minimal consultation from expert acousticians), I would assert that my mixes have steadily improved since the studio was set up, purely from my becoming used to the monitoring environment in relation to how mixes translate elsewhere, and getting to know how great records sound in there. Using ARC, the stereo imaging was certainly improved in my room, but the frequency response adjustments to my powered monitors took some getting used to. Although the imaging was clearer, high and mid frequency adjustments did tend to make things a trifle harsh, and this was emphasised by a reduction in the low frequencies.

I grew up in a commercial studio where the low frequency response was slightly exaggerated, and have always preferred hearing an 'enhanced' low end — as do many musicians and artists, in my experience — it's simply more fun. Having spent two years becoming more and more used to my current situation, I found the short period of the review was not really enough time to adjust to working with a corrected response. I suspect that over time this could prove worthwhile, but I'd personally have liked an 'enhanced low frequency' preset to be added to the list of target curves, or a 'custom' curve.

With large powered monitoring systems, becoming used to a flatter, more accurate response is probably a very worthwhile pursuit. With smaller 'real-world' monitors such as Auratones and NS-10s, it was interesting to hear their corrected responses, but this perhaps rather defeated their purpose. Making things sound good despite less than ideal systems is part of the skill set developed over many years! Corrected responses seemed to make the powered monitors and NS-10s sound even harsher and more fatiguing, even with the compensated curves. Conversely, the Auratones sounded rather more pleasant, but that's not necessarily helpful!

A small drawback is the latency introduced into the monitoring chain. With a hardware buffer of 128 samples, the plug-in delay was 6.7ms, and of course at 256 this doubles to 12.5 and so on. I'd be reluctant to record musicians with this kind of delay in their monitoring chain, so you might not want this plug-in inserted during overdubs, although it depends how your monitoring chains are routed. And switching presets when flicking between different sets of monitors could prove a nuisance.

ARC (Euro 539) works extremely well; it is probably not for everyone, and perhaps money spent on room acoustics might sensibly be a priority, but it is a novel approach to the problem of imperfect monitoring. I'm sure this technology has an assured future. I haven't yet decided whether I want to start learning the sound of my room all over again, but ARC is certainly an eye-opener and functions beautifully. ■

### PROS

Quick fix that ensures a fairly flat response in most circumstances; improved stereo imaging; microphone also useful for recording.

### CONS

Large latency; limited selection of target curves.

### Contact

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