

EQUATOR AUDIO D5 STUDIO REFERENCE MONITORS CENTRAL TO SPATIAL SOUND QUALITY DEVELOPMENT

Tight bass response and aligned drivers offer ideal performance attributes

Control click [here](#) for a hi-res image screenshot of Gavin Kearney in their studio at the University of York.

(http://www.mountaincrest.net/Equator_Images/GKearney_Hi.jpg)

University of York, North Yorkshire, United Kingdom... With the ever-increasing popularity and sophistication of home entertainment systems, there is a never-ending desire to improve the capabilities and performance of the listening environment. The effort to improve spatial sound quality in the home involves both acoustics research and perceptual listening evaluation. This is work at the cutting edge of audio development and, central to the effort at the University of York, there is an impressive listening lab setup utilizing D5 studio reference monitors from Chula Vista, CA-based Equator Audio.

Gavin Kearney is a spatial audio expert who is driving this new research at the University of York. His background encompasses stage tech and live sound engineering experience with a diverse range of artists such as Glen Campbell and Shane McGowan and he earned his MSc and PhD degrees in audio signal processing from Trinity College, Dublin (Ireland). Kearney now works as a lecturer in sound design for film, television, and interactive media at the University of York, as well as being a post-production engineer for Heslington Studios. With a pedigree like this, he certainly knows what to look for in a quality studio reference monitor. Kearney discussed his preference for the Equator Audio D5's and his work in spatial sound quality.

"The Interactive Media Lab at the University of York's Department of Theatre, Film and Television is where we conduct our research," Kearney explained. "There is a trend in the cinema industry to significantly increase the number of loudspeakers in theatres for an enhanced spatial audio experience. Conversely, in the home, technology is shrinking, and consumers are investing in soundbar technologies, which tend to have significant compromises in terms of sound quality and spatial performance. We're looking to give viewers in the home the same sonic experience they would have in the cinema, but using a limited number of transducers located in the living room, preferably at the TV."

"In order to do this," he continued, "we need to develop signal processing that models how real-world sources (and loudspeaker systems) impart their soundfields onto a listener's ears. The challenge is that everyone's ears are as unique as their fingerprints and finding a general solution that gives immersive sound for all listeners in this context is difficult. So our work requires lots of soundfield measurement, algorithmic development, and perceptual listening tests. For this purpose we need accurate and focused loudspeakers we can control. That's where the Equator D5's come in."

For their research, the setup involves placing the D5's on a sphere in three layers. There are eight D5 loudspeakers at ear height arranged in an octagon—with four above and four below, forming a cube within the sphere. This setup enables Kearney and his associates to spatially reproduce soundfields at sixteen points around the listener. Further, there are plans to extend this setup to 32- and 64-loudspeaker configurations.

When queried about those D5 attributes that make them ideal for this type of research, Kearney offered the following, "Our work requires that we perform a lot of subjective listening tests—both measuring how sound transmits to the ears as well as a listener's impression of the rendered

soundfield. We therefore need accurate monitors that will reproduce—particularly in the mid-range—with a very well defined image. We chose the D5's for this purpose due to the coincident woofer and tweeters, but we were really taken aback by their sound quality. In particular, the bass response for such a small speaker is very tight while the high end is smooth and doesn't sound harsh like a lot of competing monitor systems in their price range."

Through his work with spatial sound, Kearney has developed efficient signal processing strategies that provide listeners with the impression that they are listening to a large loudspeaker array, but with delivery via headphones. Now, he's doing the same for soundbar technology—with the Equator Audio D5's at the core of the endeavor. Kearney offered these parting thoughts, "We're extremely impressed with the performance of the D5's, in particular, their mid-range detail," he says. "The surprisingly large bandwidth of such a compact speaker means we don't have to resort to implementing bass management as readily as we would with other systems. We also get really good precision in our spatial imaging which is down to the alignment of the drivers. I'm confident we'll be using more of these great loudspeakers around our studios and labs in the future. We're very impressed by their quality."

To learn more about the activities at the Department of Theatre, Film and Television at the University of York, visit <http://www.york.ac.uk/tftv/>.

About Equator Audio

Equator Audio is committed to delivering studio reference monitor solutions that overcome the myriad of challenges faced in today's audio production. Whether the challenge is on the production line or in the studio control room, Equator is dedicated to identifying and addressing it. Our products are used daily in mission-critical applications at many of the world's finest recording studios. For additional information on all Equator Audio products, visit the company online at www.equatoraudio.com.

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