



Martin Audio MLAs and WPMs at the Japan Jam 2021. Photo courtesy of Martin Audio

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Deciphering Directivity

CLAYPAKY ANNOUNCES THE LAUNCH OF SINFONYA PROFILE 600

STAR DIMENSIONS SHINES AT "BANDRA WONDERLAND"

SPOTLIGHT: KHEMMANAT RUANGTHONGMUANG (Jay), PRODUCTION MANAGER, VL SOUND & LIGHT CO.,LTD



Outline

Developed entirely in-house by their engineering team, the design of Outline's Warped Finite Impulse Response (WFIR) filters presents a crucial means to dramatically enhancing directivity and coverage derived from the brand's loudspeaker offerings. WFIR filters are one of the key features found in Outline's groundbreaking Newton FPGA processor, which boasts remarkable design and computing power in a single rackspace, networkable chassis. Outline has noted "WFIR filters offer fundamental technical improvements over traditional FIR filters in that they operate on a semi-logarithmic scale, similar to the nature of human hearing. This means that they are able to maintain high filtering resolution over the entire audio range, even in the case of increasingly high sampling frequencies. WFIR technology also allows the use of raised cosine filters which provide a greatly enhanced level of accuracy in equalization. They do require up to three times the computing power required for traditional FIR filters (not a problem with Newton's onboard processing power!), but in turn they provide up to 10 times the resolution on mid-low frequencies. They are also not subject to the latency artifacts suffered by FIR filters.

Thoughts for the Future

The need for good directivity in loudspeakers cannot be sufficiently emphasised and remains an area that speaker designers continue to pay keen attention to. The pursuit to have loudspeakers sound like the original sound has driven several brands to not just invest into clever engineering of physical loudspeaker units, but also software technologies that further enhance projection, coverage and directivity capabilities of the loudspeakers. And with a rapidly evolving research & development ecosphere which has now come to include several new facets of artificial intelligence and machine learning – the possibility of experiencing acoustic realism from loudspeakers seems to be a not-so-distant reality now.



Outline Newton FPGA processor

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