The Voice: Adamson's Design Philosophy

Lee Stevens underscores the company's core principle of engineering excellence, a philosophy that has driven its progress for over four decades. This ethos originates from Founder, **Brock Adamson**, whose passion has always been to replicate the human voice with absolute clarity and transparency, a challenge that remains the ultimate benchmark for any loudspeaker manufacturer. Human speech spans a wide frequency range, with male voices typically between 100 Hz and 8 kHz, female voices from 200 Hz to 8 kHz, and children's voices around 250 Hz to 8 kHz. Accurate reproduction of these frequencies forms the foundation of Adamson's design philosophy, as Stevens explains: "If you can replicate the voice perfectly, the rest becomes much easier."

High Output, Low Footprint: Touring Efficiency Redefined

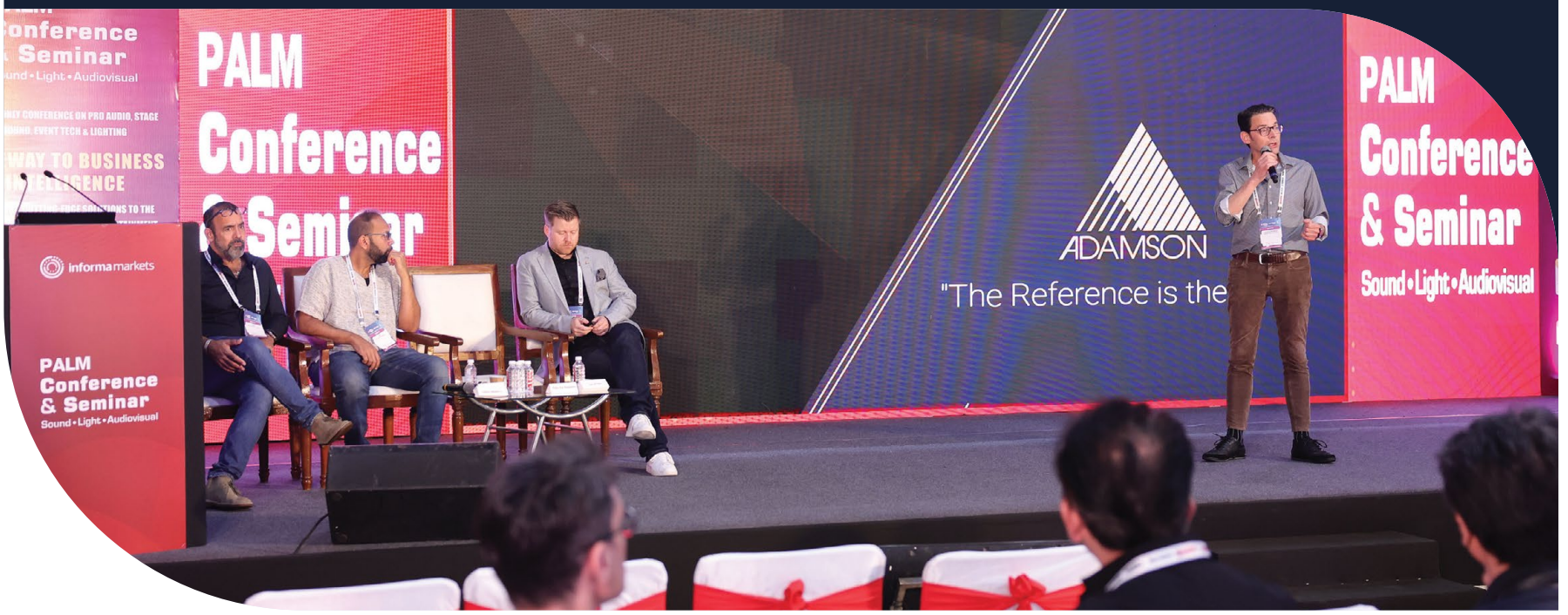
The **VGT** is a dual 13-inch system delivering full-range coverage from 50 Hz to 20 kHz, with a 90° horizontal dispersion and a 6 dB vertical taper. Despite its compact form factor of just 84 kg, it achieves an impressive 151 dB SPL and is fully powered for ease of deployment. **Carlos Sallaberry** explains: "The design incorporates a multi-mode cardioid configuration, with two 13-inch drivers at the front and two 10-inch drivers at the rear, powered by a purpose-built five-channel, 12 kW amplifier. Integrated DSP and AI-based control allow users to switch between cardioid and omni patterns via software."

This adaptability was driven by market feedback, as Stevens notes: touring engineers need systems that can handle acoustically challenging arenas or outdoor venues, and some artists prefer low-end warmth on

*At the recent **PALM Expo Conference 2025, Adamson Systems Engineering** commanded attention with a session showcasing their engineer-first approach, commitment to indigenous manufacturing, and innovative product philosophy. Below is an exclusive excerpt brought to you by the **PALM Expo Magazine** team on the discussion by an expert panel comprising **Carlos Sallaberry** (Head of Education & Applications, APAC), **Kiran Tauro** (Applications Engineer, EMEA), **Lee Stevens** (Sales Director, APAC) and **Pieter Van Hoogdalem** (Business Development Strategist).*
Read on to discover insights from this discussion.

Adamson's Engineer-First Approach to Next-Gen Touring Systems

An excerpt from "The Reference is the Voice" Session at PALM Conference 2025



stage, making omni mode essential. Future updates will introduce additional patterns such as hyper-cardioid, all software-driven for seamless refinement.

The VGT's engineering delivers efficiency and reliability at scale: horizontal dispersion in omni mode is wide and even, while cardioid mode significantly reduces rear output; the amplifier is custom-built in-house for maximum efficiency; each box features 1,024 FIR taps for precise optimisation; and power consumption is remarkably low—at full output of 151 dB, the VGT draws only 3.6 amps per box on a 12 kW amplifier. This translates into real-world savings, as 18 VGTs can run on a single three-phase 32A supply, reducing truck space and costs—critical in today's touring economy. Rack space is minimal too: while 18 E15s typically require two racks, the same number of VGTs needs just 4RU for networking and power, with full redundancy built in.

Software at the Heart of Adamson's VG Series

Adamson's global rollout of the VGT reflects a meticulous development process. "When we announced the VGT over a year ago, we worked closely with key partners during prototyping and testing, including **CLA Global**, **DV2** (France), and **PA Shop** (Canada)," says **Pieter van Hoogdalem**. "We presented the system to front-of-house engineers, conducted demos, gathered feedback, and made refinements before market release. Today, the VGT is touring globally with acts like **Imagine Dragons** and **Linkin Park**, and rigs have been deployed across Europe, North America, Japan, China, and now India."

At the heart of this evolution lies software intelligence. Stevens explains: "At the heart of everything we do is software. Our flagship platform, **ArrayIntelligence**, is a comprehensive design, simulation, and control tool. It enables system design, acoustic modelling, and real-time monitoring—all from a single interface." The workflow is intuitive, allowing engineers to design systems in **Blueprint**, configure routing, control gain, delay, EQ, and grouping, and monitor every component in real time. ArrayIntelligence provides two-way communication with every box, tracking AVB streams, drivers, and network health, while delivering instant feedback on issues such as network drops or power anomalies. The interface flows naturally from left to right for ease of navigation. Evolving from **Shooter** to Blueprint and now ArrayIntelligence, the platform incorporates market feedback at every stage. It offers SPL and time-based simulations, inclinometer calibration, and advanced diagnostics, giving engineers complete confidence and control.

Optimisation Without Compromise

Adamson's advanced DSP architecture underpins its approach to precision tuning and optimisation. "Allowing full access to all of them would be impractical, so we limit this to around 25 per box—which is still substantial. For an array of 10 boxes, that gives you 250 FIR filters to work with," explains Stevens. One of the most powerful tools introduced in Adamson's powered systems, including the CS and VG families, is Array Optimisation. "Some other manufacturers offer similar solutions, but our approach is unique because of the level of control we provide. With 1,024 FIR filters per box, we can achieve extremely fine adjustments that few others in the market can match," Lee adds.

Optimisation can be applied across the full broadband spectrum or constrained to specific frequencies causing issues in the room—for example, targeting 2 kHz upwards to correct high-frequency loss. The best part? No additional latency. "Competing systems often introduce latency as soon as optimisation is enabled. Our advanced DSP architecture ensures zero added latency beyond the initial system processing," Stevens confirms.

This algorithm addresses real-world challenges such as low-mid build-up in line arrays and high-frequency loss at the far end of a venue. "If these issues don't exist, you can choose any frequency range outside the standard 100 Hz–20 kHz window. This flexibility allows engineers to tailor optimisation precisely to the venue," says **Kiran Tauro**. The results are measurable: pre-optimisation, system response can vary by as much as 9 dB in the low-mid range, while post-optimisation reduces this variance to around 6 dB—a significant improvement.

Subwoofer Control and Real-World Flexibility

Adamson's **Subwoofer Calculator** further enhances system flexibility, offering two major configuration options—**Omni** and **Ellipsoidal**. "The ellipsoidal option provides a much wider coverage pattern. Engineers can preview results before pushing data to the boxes, thanks to onboard DSP. Multiple optimisation trials and designs can be tested to determine the best configuration for the venue. Once deployed, you can switch modes live and hear the difference instantly," explains Stevens.

This adaptability allows engineers to manage challenges such as reducing noise spill to neighbouring areas or tailoring low-frequency response for specific acts. "You can also select the opening angle of the subwoofer array—wide or narrow—based on venue requirements. Additionally, you can define the maximum on-axis SPL loss you are willing to accept. These options simplify subwoofer spacing and delay calculations, as the software handles all the complex maths for you," adds Tauro.

The Benchmark: Consistency Across the Venue

Adamson's predictive accuracy is based on Y-weighting, which focuses on vocal intelligibility across a multiband spectrum rather than single-frequency maps. "Single-frequency maps may look impressive at 8 kHz, but shift slightly and the results can deteriorate. Predicting across a wider spectrum delivers a more reliable outcome," Lee explains. The goal is a 6 dB front-to-back variance in **Y-weighted** response—anything beyond that is considered suboptimal. Engineers can also view A-weighting, C-weighting, or flat weighting via drop-down menus, ensuring flexibility for different applications.

"For us, India is a very important market, and we shall continue investing here," says Hoogdalem. Post-COVID, the company has witnessed rapid growth in the region, driven by its flagship line array systems—products that Hoogdalem describes as "a technological package at the forefront of live sound technology today." Adamson's commitment to quality begins at its Canadian headquarters, where every component is manufactured in-house. "We outsource nothing," Hoogdalem emphasises. "This independence allows us to experiment during the R&D phase with materials and composites, giving us complete control and shielding us from supply chain disruptions." A high-speed assembly line further ensures precision and consistency, reinforcing Adamson's reputation for engineering-driven innovation.

To view the full conference session, visit the link – https://www.youtube.com/watch?v=lHTswPU7tRI