Martin Audio for Swedish House Mafia



Electronic supergroup Swedish House Mafia recently made a historic debut appearance in Estonia. At the famous Tallinn Song Festival Grounds, fans enjoyed their first live experience of the legendary band anywhere in the Baltic region. The concert was powered by a Martin Audio Wavefront Precision WPL sound system - also marking the first time the flagship line array has been deployed in Estonia.

The Tallinn Song Festival Grounds (Tallinna Lauluväljak) is one of Estonia's most iconic outdoor event spaces. Completed in 1960 and considered a masterpiece of post-war architecture, it features a unique concrete arch designed by Henno Sepmann to create powerful natural acoustics for thousands of choir singers. However, as sound system supplier and Martin Audio distributor Audiosky knows from multiple deployments at the venue, what works for natural acoustic choirs can create an immense challenge for high-power amplified concerts. "This acoustic screen was designed so that the voices of 10,000 singers would reflect beautifully to the audience, and it certainly looks magnificent," explains Audiosky's COO, Tiit Terask. "But if you place a high-output amplified sound system in front of it, the reflections off that screen are extremely challenging - a highly uncomfortable delay time."

For this landmark event, Martin Audio's Wavefront Precision physical design and electronic optimisation software proved to be a revelation. "To overcome this acoustic obstacle, we took a dual approach," Tiit continues. "First, we moved the stage further out from the concrete screen. Second, this first-ever deployment of

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Martin Audio WPL in Estonia delivered the best acoustic results we have ever achieved at this venue.”





Adding to the complexity, the gig was performed in a 270-degree configuration - yet another first in the venue - necessitating a complex, carefully designed and configured system. The main left/right hangs each comprised 18 Martin Audio WPL line array enclosures. Due to the unique stage design, the outhangs - consisting of 14 WPL cabinets per side - were positioned further upstage than the mains. The delay system comprised 12 WPC elements per side, with nine Martin Audio W8VDQ point source cabinets acting as front fills.

Providing the legendary, physical low-end required for Swedish House Mafia's performance was a massive sub-bass configuration comprising over 100 subwoofers. This included 16 SXHF218 subwoofers (eight per side) flown directly behind the main hangs, and 16 W8LS subs flown behind the outhangs (eight per side). On the ground, 72 SX218 subwoofers were stacked in three blocks of 24 in a cardioid configuration.

For Ben Tucker, Martin Audio Product Specialist, who was on-site to assist the Audiosky team with the design and deployment, the physical geometry of the venue presented a tricky coverage task. “The raked seating area had a huge, prominent

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VIP section right in the centre," Ben explains. "To cover this strange geometry, we decided to have the main PA system cover the entire area, allowing the delays to gently blend in rather than acting as a completely distinct delay system."

Using Martin Audio's DISPLAY software, Tucker was able to optimise the array coverage. "We pointed the top box of the main PA at the absolute furthest listener, and then used the software processing to transition into a 'Hard Avoid' area straight up the rear wall and on the entire concrete canopy roof," he says. "And I gave the audience coverage and the ceiling area equal DSP weighting - a technique we use frequently at major UK festivals to control noise limits and stop sound propagating beyond the audience." The specific subwoofer configuration was also a crucial element of the design. "I went back and forth for a couple of weeks to find the best configuration," Tucker explains. "As soon as you add more than one subwoofer source to a venue, you introduce comb filtering and cancellations. In this case, we were working with seven distinct subwoofer sources. [...] We knew we wanted to get some subwoofers in the air because we had a 105m throw to cover, and Swedish House Mafia's show is exceptionally low-end heavy," he continues. "I applied a bit of delay-gain steering to pull the flown energy down into the audience area."

The stage shape heavily influenced the design of the ground sub array. "We ended up with three arrays of 24 ground subs in three-high blocks, with the centre cabinet in each stack reversed to create a cardioid pattern. It was an overwhelming amount of low-end - the largest subwoofer array I have ever deployed in my career!" For Tiit the real-world performance exceeded all expectations. "I was incredibly surprised by how smooth and even the total coverage was. Typically, I am sceptical of marketing drawings, but in this case, the predictions matched the real-world results perfectly. One of the biggest difficulties at this venue is ensuring consistent coverage. On this show, whether you stood between the main left/right or shifted over between a main hang and an outhang, the audio profile was absolutely identical. Covering such a wide area with identical, seamless sound is a massive achievement."

Tiit credits the extensive weeks of planning for the event's technical success. "It was a major undertaking, but the team's preparation was flawless. I am incredibly proud of my crew; everyone executed their roles to perfection." Ben Tucker agrees: "As a systems engineer and part of the Martin Audio product support team, it was a pleasure to work alongside such a highly competent, professional crew. I have complete confidence in Tiit and his team moving forward. They will deploy this system excellently on any show they take on."

The ultimate success of the event was reflected in the immediate feedback from the tour production team and local promoters. "We received maximum points from the Swedish House Mafia production team - they told us the sound was a perfect 10 out of 10," Tiit concludes. "The positive impact was instant. This project represented next-level performance and marks a brand-new benchmark for event audio in Estonia."

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