Sonexos Unveils Plasmapanel AirFlow Platform for Next-Generation Ventilation, HVAC, and Appliance Noise Reduction

A solid-state acoustic platform delivering wide-band low-frequency absorption for airflow-driven systems across ventilation, HVAC, and appliance cooling

Plasmapanel showing side and front profile of the ultra-thin, solid-state module.

LAUSANNE, SWITZERLAND, December 2, 2025 /EINPresswire.com/ -- Sonexos, a leader in solid-state, plasma-based active noise control, today announced a major advance in applying its patented Plasmacoustic™ technology to ventilation, HVAC, and appliance cooling systems. Building on the proven Plasmapanel® architecture, the company has developed the Plasmapanel AirFlow Platform™, a dedicated solution that replaces bulky passive attenuators with compact, electronically controlled acoustic performance.

> By extending our Plasmacoustic technology into the Plasmapanel AirFlow Platform, we give manufacturers a scalable way to deliver quieter products without sacrificing airflow or adding bulk."
>
> *Mark Donaldson*

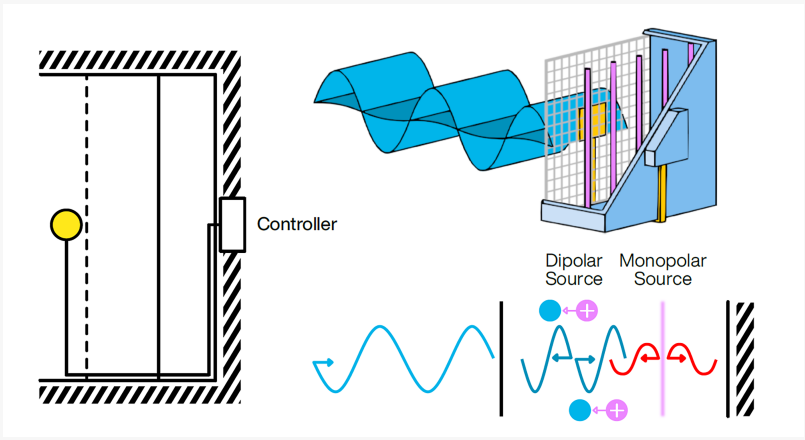
Low-frequency noise from fans, compressors, and ducts remains one of the toughest acoustic challenges, particularly below ~300 Hz where conventional silencers provide limited absorption. OEMs increasingly require solutions that deliver real low-frequency performance without the size, airflow loss, or energy penalties of bulky passive materials and devices.

The new Plasmapanel AirFlow Platform™, built on the proven Plasmapanel architecture, delivers true low-frequency reduction by absorbing acoustic pressure at its surface, preventing both reflection and transmission through ducts or appliance structures. As an active acoustic metalayer driven by a low-power

plasma interface within a sealed solid-state design, it provides wide-band absorption from 30 Hz to 1500 Hz, with performance shaped by installation geometry. Embedded DSP and AI-enabled algorithms adapt dynamically to airflow conditions to maintain stable performance across varying operating states.

Early deployments using Plasmapanel-based AirFlow Platform in prototype form have demonstrated:
- Up to 90% noise reduction in ventilation ducts
- Up to 75% noise reduction in domestic appliances
- Over 80% reduction in size and weight compared with passive silencers

“Low-frequency noise remains one of the most stubborn engineering challenges in airflow systems,” said Mark Donaldson, Founder and CEO of Sonexos. “By extending our Plasmacoustic technology into the Plasmapanel AirFlow Platform, built on our proven Plasmapanel architecture, manufacturers can deliver quieter products without sacrificing airflow or adding bulk.”



Schematic illustration of the Plasmacoustic Metalayer™ showing how plasma-based acoustic emitters operate to cancel incident sound, achieving true absorption.

Three-panel Plasmapanel module for integration into high-efficiency ventilation and ducted airflow systems.

The AirFlow Platform is designed for seamless integration into modern ventilation and cooling systems. Its thin, lightweight, modular construction can be installed inside appliances or along external ducting, enabling meaningful low-frequency attenuation in locations where silencers or heavy foams cannot be accommodated. The solid-state design is engineered for long-life operation in continuous-duty ventilation and cooling environments.

The AirFlow Platform scales naturally across a wide range of airflow-system geometries, from compact domestic appliances and small-form ventilation units through to large-scale ducting and HVAC installations. Sonexos is developing various configurations of the platform for release in 2026.

Implementations of the AirFlow Platform operate at only a few watts, ensuring minimal electrical impact. In many installations, the additional fan power required to overcome the impedance of passive silencers approaches or exceeds this operating power, allowing OEMs to maintain airflow performance while improving overall energy efficiency and acoustic comfort.

Total system cost aligns with typical performance-oriented acoustic components used in modern appliances and HVAC equipment, enabling deployment in both high-volume and premium systems without cost or manufacturing barriers.

From a sustainability and hygiene standpoint, the AirFlow Platform eliminates the need for petrochemical foams or fibrous acoustic fillers, which can degrade or shed particles over time. Its solid-state, maintenance-free design supports long-life reliability and ESG objectives across ventilation and appliance applications.

Sonexos is now advancing integration programmes with leading appliance, ventilation, and silencer manufacturers and is opening additional collaboration slots for OEMs evaluating next-generation airflow designs. These efforts are supported by tier-one industrial partners and global technology leaders including STMicroelectronics through its ST for Startups program.

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