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A Method for Reducing the Sound Radiated by a Fan Mounted to an Enclosure

A novel fan noise reduction scheme significantly decreases the sound power radiated by axial fans when mounted to equipment enclosures, improving cooling efficiency without unwanted noise.

Axial fans are widely used for electronic cooling, but their use often results in unwanted noise. An axial fan is mounted to an enclosure, the sound radiation pattern becomes monopole-like since only one side of the fan is exposed to the exterior space; thus it radiates more efficiently than the same fan in free space.

Purdue University researchers have developed a novel scheme that significantly reduces the sound power radiated by an axial fan mounted to a surface of an enclosure.

Advantages:

-Significantly reduces noise

Potential Applications:

-Electronics cooling

TRL: 6

Intellectual Property:

Provisional-Patent, 2005-05-25, United States

Utility Patent, 2006-05-09, United States

NATL-Patent, 2006-05-17, Republic of Korea

NATL-Patent, 2006-05-17, China

NATL-Patent, 2006-05-17, Japan

PCT-Patent, 2006-05-17, WO

Technology ID

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Category

Aerospace & Defense/Thermal Management & Combustion Optimization

Semiconductors/Thermal Management & Cooling Technologies

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