



Northrop Grumman Licenses Patented Technology to Improve Cooling of Electronic Modules for Commercial, Military Applications

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LINTHICUM, Md., March 5, 2015 /PRNewswire/ -- Northrop Grumman Corporation (NYSE: NOC) has licensed its air-flow-through (AFT) cooling technology, used to improve the cooling of high-power electronics, to GE Intelligent Platforms.

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AFT technology improves the air cooling of advanced electronic modules by incorporating a novel heat exchanger design that helps protect the modules. AFT is capable of 175 watts of cooling per module and meets the electronic industry's VMEbus International Trade Association (VITA) 48.5 standard. The VITA standards organization is accredited by the American National Standards Institute (ANSI).

"This innovation opens the door to developing more powerful, rugged electronic systems across the military and commercial electronics fields," said Tom Jones, vice president and general manager, Advanced Concepts and Technologies, Northrop Grumman Electronic Systems. "This improvement is a key method of cooling electronic modules that can serve a wide variety of applications."

Advanced electronic devices generate heat, which can lead to damage or failure if not managed properly. AFT utilizes a central channel with heat fins to isolate electronic components from the cooling air. Air is forced past the heat fins to remove heat without the risk of exposing the electronics to contaminants in the air, a potential problem in other systems.

The efficient flow of cooling air is aided by the use of Northrop Grumman's [patented](#) ruggedized, self-aligning, sliding air seals at the inlet and outlet of the modules. The removable electronic modules and seals are easily replaced in the field.

Traditionally, electronic devices such as personal computers, have been cooled by a process known as direct forced air (DFA), in which a fan blows air directly over the circuit board and the electronic devices. AFT technology transfers heat into the cooling air more efficiently than the DFA approach, which enables much higher power densities and improved product reliability. Northrop Grumman expects this technology to benefit a broad set of military and commercial products that conform to the VITA 48.5 standard.

Northrop Grumman is a leading global security company providing innovative systems, products and solutions in unmanned systems, cyber, C4ISR, and logistics and modernization to government and commercial customers worldwide. Please visit www.northropgrumman.com for more information.

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