

Inneos Introduces 'Cheetah,' a Ruggedized OptoBGA™ Optical Interconnect Platform for EMI-Challenged In-Vehicle Networks

PLEASANTON, CA, UNITED STATES, February 10, 2026 /EINPresswire.com/ -- Inneos today announced Cheetah, a ruggedized optical interconnect platform based on Inneos' OptoBGA™ technology, developed specifically for in-vehicle networks (IVN) and other harsh, EMI-intensive environments where copper interconnects become a limiting factor. As automotive, aerospace, defense, and industrial systems push toward higher-bandwidth architectures, traditional copper interconnects struggle with electromagnetic interference (EMI), weight, routing complexity, and reliability—particularly in electrically noisy vehicle and platform environments. Cheetah addresses these challenges by enabling lightweight, EMI-immune optical connectivity that is ruggedized for operation across wide temperature ranges, high vibration, and electrically harsh conditions.

Cheetah is designed to support 25G data rates within in-vehicle and platform-level networks, where increasing bandwidth demands must be met without the cost, weight, and shielding complexity required by copper-based solutions. The result is a ruggedized optical interconnect platform intended to deliver predictable, reliable performance in IVN and other harsh operating environments.

Targeted for In-Vehicle and Harsh-Environment Applications

Cheetah was developed with advanced system architectures in mind, including:

- Automotive: zonal architectures, ADAS, and in-vehicle networks
- Aerospace & Defense: avionics, rugged computing, and mission-critical systems
- Industrial: automation, robotics, power electronics, and critical infrastructure

Recognizing that each application presents unique electrical, mechanical, thermal, and reliability requirements, Inneos is actively engaging with OEMs and system architects to gather input on application-specific interface expectations, diagnostics and monitoring needs, qualification requirements, and real-world integration challenges prior to locking in the final design.

OptoBGA™: A Ruggedized Optical Platform Differentiated at the Board Level

At the core of the Cheetah platform is OptoBGA™, a ruggedized optoelectronic subsystem technology that integrates optical connectivity directly at the PCB level. This board-level approach is designed to support robust assembly, mechanical stability, and long-term reliability in demanding vehicle and platform environments.

By integrating optical functionality into a BGA-based package, OptoBGA enables system designers to take advantage of fiber's inherent immunity to EMI and reduced cabling weight, while maintaining compatibility with standard PCB manufacturing and assembly flows. The platform supports a wide range of optical connectors and cable options, allowing integration with qualified fiber solutions already deployed within existing system architectures.

Cheetah Platform Architecture

Key architectural elements of the Cheetah platform include:

- A ruggedized opto-electronic interface integrated into a BGA package for board-level assembly
- Support for 25G electrical interfaces optimized for wide-temperature operation
- A compact mechanical footprint suitable for space-constrained IVN systems
- Optical interconnects decoupled from EMI sources at the system level
- Compatibility with a broad range of fiber cables and optical connectors

Cheetah is in the final design phase and is currently available through a limited technical preview program that includes demonstrations and technical discussions prior to final design freeze. System architects and engineering teams evaluating 25G optical connectivity for IVN or other harsh, EMI-sensitive environments are invited to engage with Inneos during this limited technical preview to provide input and schedule a demonstration.

About Inneos

Inneos is a US-based designer and manufacturer of optical subsystems and vertical-cavity surface-emitting lasers (VCSELs) focused on mission-critical applications including medical, aerospace, automotive, defense and industrial markets. The company specializes in optical interconnects, VCSEL-based technologies, and integrated optical platforms designed to perform in harsh, electrically noisy, and high-reliability environments.

Inneos combines deep engineering expertise with in-house design, manufacturing, and test capabilities to deliver rugged, manufacturable solutions with long lifecycle support. By working closely with customers early in the design process, Inneos helps enable system architectures that demand predictable performance, reliability, and scalability. For more information, visit

www.inneos.com.

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