

Intel Core i7-Based OpenVPX Solutions for ISR Applications



Mercury Computer Systems, Inc.

(www.mc.com [1]) launched the Ensemble 6000 Series 6U OpenVPX Intel Core i7 LDS6520 Module, the first embedded computing product combining Intel's Core i7 processor family with the POET fabric interconnect, at AUVSI's Unmanned Systems North America 2010 conference today. Together with POET (Protocol Offload Engine Technology), the module enables new levels of subsystem application performance for ISR applications.

ISR subsystems utilizing multiple Mercury LDS6520 modules benefit from extremely fast and low latency data communications between Intel Core i7 devices.

Empowered by POET, Mercury's recently announced protocol offload technology, the LDS6520 enables a serial RapidIO or low latency 10 Gigabit Ethernet data plane to connect a number of Intel Core i7 processors and FPGAs. This embedded POET capability on the LDS6520 module facilitates very high speed data connections and system scaling for Intel devices in defense applications, thereby delivering best-of-breed levels of ISR subsystem performance.

In addition to providing high speed data plane connectivity, the LDS6520 is one of the first OpenVPX Intel products to provide high speed communication links to general purpose GPU modules (GPGPU), providing a typical 10x gain in system performance for many ISR applications compared to previous generation designs. The linkage to the GPGPUs is enabled by the PCI Express expansion plane, a component of the 6U OpenVPX multiplane architecture. The additional physically independent expansion planes, which carry traffic between the GPU and Intel processors, greatly increase overall system throughput, creating a well balanced ISR subsystem.

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The Intel Core i7 based LDS6520 module is designed to simplify ISR subsystem architectures and accelerate development utilizing fully validated and tested XMC products such as 10 Gigabit Ethernet sensor interfaces for radar and the Echotek Series of FPGA-based digital receivers and transceivers for signals intelligence/electronic warfare applications. The new module also operates in validated configurations with other 6U OpenVPX boards, such as the Mercury's GSC6200 GPU module for EO/IR applications.

"The Intel Core i7-based LDS6520 has been selected by customers in EW and EO/IR programs based on its advanced IO and architectural capabilities," said Steve Patterson, Vice President of Defense Product Line Management at Mercury Computer Systems, Inc. "In addition to the improvements in subsystem performance, GPU modules, digital receivers, and 10 Gigabit Ethernet sensor interfaces have all been validated with the LDS6520, and together, are available to support our customers' quick reaction capabilities."

The LDS6520 supports 2 XMCs and a dual-core Intel Core i7 Processor. It is available in air-cooled and conduction-cooled rugged versions. The initial configurations of the LDS6520 support both serial RapidIO 1.3 and serial RapidIO 2.1 to the backplane. Mercury's POET technology enables future configurations with 10 Gigabit Ethernet.

Mercury is making a significant investment with POET technology in the LDS6520 Intel Core i7 6U OpenVPX module to provide low latency streaming fabric interfaces for rugged embedded defense applications. This is one example of Mercury's innovation to deliver best-of-breed solutions for supporting the demanding radar, EW, and EO/IR applications via product based on industry open standards.

For more information on Ensemble 6000 Series OpenVPX Intel Core i7 Dual-Core LDS6520 Module, visit www.mc.com/LDS6520 [2]

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