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News Release

General Micro Systems Launches Dual Xeon® OpenVPX Blade with Highest Compute Density of Any Server Available Today

Shrinks Entire Server to Dual Xeon® Processor Single 6U OpenVPX Blade for Rugged, Deployed Installations

RANCHO CUCAMONGA, Calif., April 25, 2018 –Rackmount servers have their place, yet already-deployed defense platforms and the world’s militaries often prefer tried-and-true OpenVPX-style systems for legacy card- and system interoperability. Until now, upgrading those systems with the best “rack style” server compute engine wasn’t possible using OpenVPX. General Micro Systems (GMS) today changed this entirely with the launch of a 6U, dual-CPU OpenVPX server blade with *two* of Intel’s best Xeon® processors – plus the *rest* of the server including storage – all on one blade.

Key Benefits of VPX450 Single-Blade OpenVPX Server

- Dual-server performance is now available on OpenVPX, no longer forcing military systems to choose unreliable, short-life commercial servers
- An *entire* server comes on one 6U blade saving incredible size, weight and power
- Two CPUs of Intel’s fastest 2.2 GHz, 22 core server Xeon E5’s reduces two rackmount servers to 1/12 size
- Rugged reliability, designed ground-up for high-rel military applications means higher MTBF and trusted open standards
- 80 Gen 3 PCI Express lanes provide excess I/O bandwidth to all cards in the OpenVPX backplane, assuring system-wide low latency and high throughput
- Onboard 1 and 40 Gb Ethernet alleviates the need for separate Ethernet card
- Designed for VITA 46 and VITA 65 compliant chassis, and VPX 48 (REDI) convection environmental specifications.

With the “Phoenix” VPX450 OpenVPX “motherboard” installed in a deployed and rugged air-cooled chassis, server-room performance is available to airborne, shipboard, vetronics, and battlefield installations where rackmount servers don’t fit or are inappropriate due to size, ruggedness or foreign sourcing. Phoenix offers the raw server performance, onboard I/O, and data transfer to the rest of the OpenVPX system.

The single blade server includes 44 cores and 88 virtual machines, 1 TB of the fastest ECC DRAM in the world, 80 lanes of PCIe Gen 3 serial interconnect, dual 40 Gig Ethernet— plus storage and I/O.

“The VPX450 outclasses all other options, packing more compute and communications power than has ever been available in 6U,” said Ben Sharfi, CEO and chief architect, GMS. “You cannot top these specs and performance. There’s no way.”

The VPX450 “Phoenix” boasts:

1. Server Engine – Dual socket 2.2 GHz Intel® Xeon® E5 v4 with 22 cores adds to 44 total cores and 88 virtual machines on one blade, plus 1 TB DDR4 with ECC (industry’s fastest 2,133 MT/s). The CPUs are reliably cooled using GMS patented RuggedCool™ specialty heatsinks and CPU retainers for maximum thermal transfer without CPU throttling.
2. Interconnect Fabric – 80 PCIe Gen 3 lanes at 8 Gbps move data between on-card subsystems 68 PCIe Gen 3 lanes to the OpenVPX backplane. The industry’s fastest, they assure 544 Gbps bandwidth between the Phoenix server and OpenVPX backplane switch matrix or compute nodes. Eight native SATA III lanes to connect across the backplane to mass storage card(s).
3. Networking – dual front panel QSFP+ sockets accept Ethernet inserts for 10 and 40 Gb, in either copper or fiber. There is no IEEE networking standard in the commercial market faster than 40 Gb Ethernet, and it’s available in this single-blade server. In the typical use case, dual 40 Gb Ethernet fiber connections provide long-haul communication to distant sensors or intelligent nodes. Two local Ethernet ports (1 GbE and 100Base-T) provide service connections for “low speed” networking.
4. Flexible Add-in Storage and I/O—The unique VPX450 can add up to *four different* types of plug-on modules. There are dual SAM I/O PCIe-Mini sites, usually used for MIL-STD-1553 and legacy military I/O. These sites also accept mSATA SSDs for server data storage. An XMC front panel module provides plug-in I/O such as for a video frame grabber or software-defined radio. Lastly, GMS provides an XMC carrier equipped with an M.2 site, used for either storage (OS boot, for example) or more add-in I/O.

Besides acting as a traditional OpenVPX “slot 1 controller,” the VPX450 server blade can be used as part of a compute cluster system, with each Phoenix blade providing [34,330 PassMark](#) performance (Feb 2018). Inter-card communication via the 68 PCIe connections can be used to create a high-performance cluster computing (HPCC) system via symmetric multiprocessing (SMP) for data mining, augmented/virtual reality, or block chain computation.

- For more information regarding GMS products, please visit: <http://www.gms4sbc.com>
- Additional VPX450 press materials can be found at: <http://www.gms4sbc.com/press/VPX450/datasheet>
- High resolution product photos available at: <http://www.gms4sbc.com/press/VPX450>

About General Micro Systems:

General Micro Systems (GMS) is the industry expert in highest-density, modular, compute-intensive, and rugged small form-factor embedded computing systems, servers, and switches. These powerful systems are ideal for demanding C4ISR defense, aerospace, medical, industrial, and energy exploration applications. GMS is an IEC, AS9100, NIST-800-171, and MIL-SPEC supplier with infrastructure and operations for long-life, spec-controlled, and configuration-managed programs. Designed from the ground up to provide the highest performance and functionality in the harshest environments on the planet, the company’s highly customizable products include GMS RuggedDNA™ with patented RuggedCool™ cooling technology, plus the SecureDNA™ security suite for zeroizing data with Source-Safe™ BIOS control. GMS is also the leader in deployable high-end Intel® processors and a proud Intel® partner since 1986. For more information, visit www.gms4sbc.com