

GENERAL MICRO SYSTEMS, INC.

SINGLE BOARD COMPUTERS

ONE COMPANY FOR ALL YOUR SBC NEEDS



RUGGED SBC



INDUSTRIAL SBC



COMMERCIAL SBC



ALL GENERAL MICRO SYSTEMS, INC. PRODUCTS ARE PROUDLY DESIGNED AND MANUFACTURED AND ASSEMBLED IN THE U.S.A

GMS

GENERAL MICRO SYSTEMS, INC.
TRUSTED AND DEPLOYED SINCE 1979
(800) 307-4863 / GMS4SBC.COM

VPX BOARDS

Fully Rugged, Conduction Cooled/Air Cooled, SOSA™ Aligned, OpenVPX SBC



VPX500

Rugged, Ultra-High Performance, 6U OpenVPX SBC with Dual Intel® Scalable Xeon Processors and Removable Storage

- Dual Intel® Scalable Xeon up to 28 cores (Platinum/Gold)
- 2TB DDR4 ECC DRAM
- 4x 40 GigE, 2x 10 GigE
- 16x PCIe Fabric Expansion (front panel) 48x PCIe (back plane)
- 1 XMC, 2 M.2
- 2x PCIe Express Mini expansion sites

Size: 6U, 12HP OpenVPX

Weight: As low as 8 lbs.

MIL-STD: 810G, 461E, MIL-S-901D, DO-160D, IP54

Temperature: -20° C to +65° C (Optional -40° C to +85° C)



VPX400

Rugged, Ultra-High Performance, 6U OpenVPX SBC with Dual Intel® Xeon E5 v4 Processors and Removable Storage

- Dual Intel® Xeon E5 up to 22 cores
- 1TB DDR4 ECC DRAM
- 2x 40 GigE, 2x 10 Gig, 1x GigE
- 68x PCIe (backplane)
- 1 XMC, 2 M.2
- 2 PCIe Express Mini expansion sites

Size: 6U, 8HP OpenVPX

Weight: As low as 6 lbs.

MIL-STD: 810G, 461E, MIL-S-901D, DO-160D, IP54

Temperature: -20° C to +65° C (Optional -40° C to +85° C)

Developed in alignment with the SOSA™ Technical Standard



Up to 255 Gbps total bandwidth

X9 SPIDER VPX-S

Ultra-Mobile, Scalable, 3U VPX, Single Board System with USB4 (TB)

- Intel® Tiger Lake-H up to 8 cores
- 64GB DDR4 ECC DRAM
- 4x USB4 (TB) with video and 100W power delivery (front panel)
- 2x USB3, 2x 10 GigE Base-KR, 1x 1 GigE (control)
- 2x M.2 Storage, 2x SAM™ I/O Expansion sites

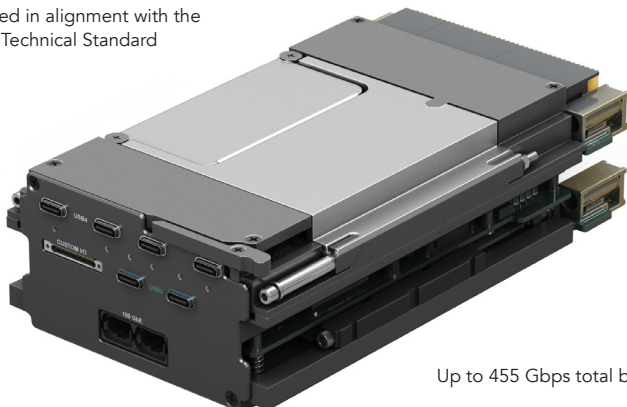
Size: 3U OpenVPX, 1 Slot at 1in. (conduction cooled)

Weight: As low as 1.26 lbs.

MIL-STD: MIL-STD-810, MIL-S-901, MIL-STD-461, DO-160

Temperature: Operates over extended temp -40° C to +85° C

Developed in alignment with the SOSA™ Technical Standard



Up to 455 Gbps total bandwidth

X9 SPIDER VPX-HS

Ultra-Mobile, Scalable, 3U VPX, Single Board System with Dual 100 GigE and Full Size MXM for GPGPU/FPGA Co-Processors

- Intel® Tiger Lake-H up to 8 cores
- 64GB DDR4 ECC DRAM
- 4x USB4 (TB) with video and 100W power delivery (front panel)
- 2x 100 GigE (fiber up to 100m)
- 1x Full size MXM for GPGPU or FPGA or PCIe extension
- 2x USB3, 2x 10 GigE Base-KR, 1x 1 GigE (control)
- 2x M.2 Storage, 2x SAM™ I/O Expansion sites

Size: 3U OpenVPX, 2 Slot at 1in. (conduction cooled)

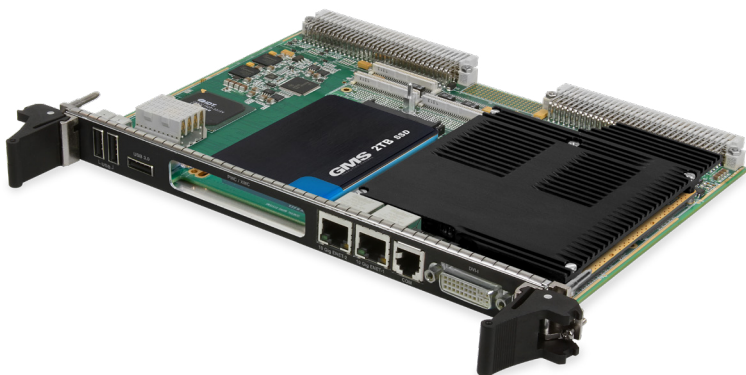
Weight: As low as 2.6 lbs.

MIL-STD: MIL-STD-810, MIL-S-901, MIL-STD-461, DO-160

Temperature: Operates over extended temp -40° C to +85° C

VME BOARDS

Rugged Air Cooled 6U VME SBC



VME120

Rugged, High Performance, 6U VME SBC with Intel® Xeon E3 Processor and PMC/XMC with Intel® and PPC VME Support

- Intel® Xeon E3 up to 4 cores (Kaby Lake)
- 64GB DDR4 ECC DRAM
- 2x 10 GigE, 2x GigE
- 1x PMC/XMC or 1x U.2 (SATA)
- 4x Buffered SATA (rear panel)
- 1 x16 PCIe expansion site (second slot), 1 PCIe Express Mini
- Byte-Swap logic for PowerPC emulation over VME Bus

Size: 6U, 4HP VME64

Weight: As low as 2 lbs.

MIL-STD: 810G, 461E, MIL-S-901D, DO-160D, IP54

Temperature: -20° C to +65° C (Optional -40° C to +85° C)

VME120-WSIO

Rugged, High Performance, 6U VME SBC with Intel® Xeon E3 Processor and Quad PMC/XMC with Intel® and PPC VME Support

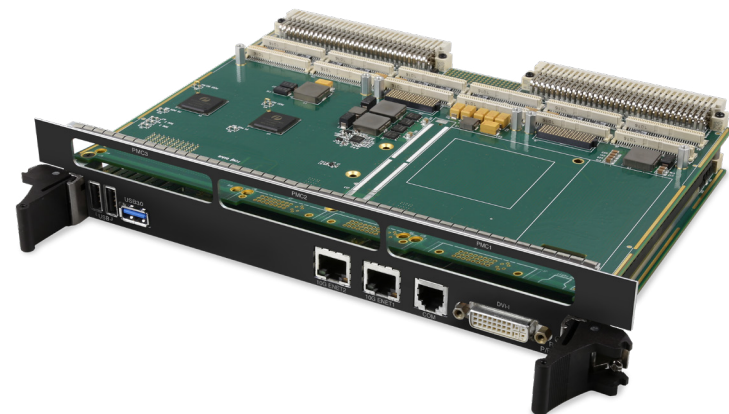
- Intel® Xeon E3 up to 4 cores (Kaby Lake)
- 64GB DDR4 ECC DRAM
- 2x 10 GigE, 2x GigE
- 4x PMC/XMC or 1x U.2 (SATA)
- 4x Buffered SATA (rear panel)
- 1 x16 PCIe expansion site (second slot), 1 Express Mini

Size: 6U, 8HP VME64

Weight: As low as 4 lbs.

MIL-STD: 810G, 461E, MIL-S-901D, DO-160D, IP54

Temperature: -20° C to +65° C (Optional -40° C to +85° C)



VME200

Rugged, Ultra-High Performance, 6U VME SBC with Intel® Xeon-D Processor and PMC/XMC with Intel® and PPC VME Support

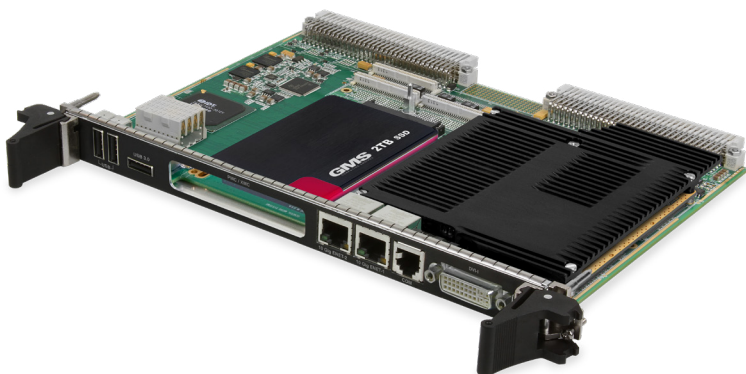
- Intel® Xeon-D up to 16 cores
- 64GB DDR4 ECC DRAM
- 2x 10 GigE (front panel), 1x GigE- 2x USB 3.0
- 2x USB 3.0, 2x USB 2.0
- 1x PMC/XMC or 1x U.2 (SATA)
- 2 PCIe Express Mini expansion sites, 1 M.2
- Byte-Swap logic for PowerPC emulation over VME Bus

Size: 3U, 4HP VME64

Weight: As low as 2 lbs.

MIL-STD: 810G, 461E, MIL-S-901D, DO-160D, IP54

Temperature: -20° C to +65° C (Optional -40° C to +85° C)



VME200-WSIO

Rugged, High Performance, 6U VME SBC with Intel® Xeon D Processor and PMC/XMC with Intel® and PPC VME Support

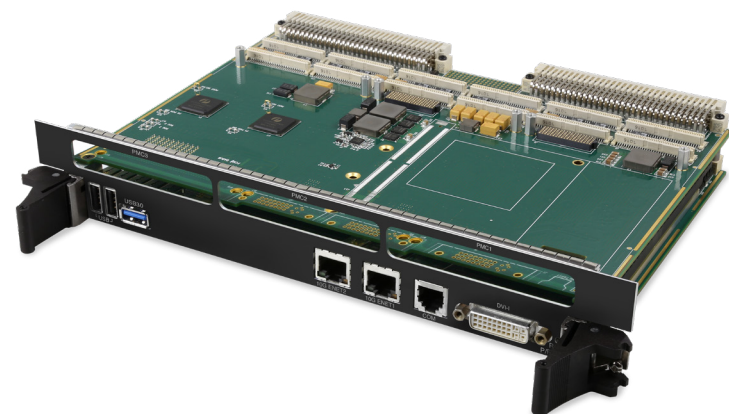
- Intel® Xeon-D up to 16 cores
- 64GB DDR4 ECC DRAM
- 2x 10 GigE (front panel), 1x GigE- 2x USB 3.0
- 2x USB 3.0, 2x USB 2.0
- 1x PMC/XMC or 1x U.2 (SATA)
- 2 PCIe Express Mini expansion sites, 1 M.2
- Byte-Swap logic for PowerPC emulation over VME Bus

Size: 6U, 8HP VME64

Weight: As low as 4 lbs.

MIL-STD: 810G, 461E, MIL-S-901D, DO-160D, IP54

Temperature: -20° C to +65° C (Optional -40° C to +85° C)



CYBER SECURITY: SYSTEMS AND PROCESS

GMS cyber security features primarily fall into three categories: System hardening, Data hardening and Supply chain control.

To prevent an attacker from physically gaining access into a system, system hardening features include mechanical anti-tamper switches and “defeat evident” labels. Hidden anti-tamper switches send an interrupt or can be programmed to work with GMS SecureDNA™ for system sanitization. Access to systems via other means—such as via LAN ports, maliciously installed viruses and rootkits—is mitigated by closing known exploit doors such as the Intel Management Engine, AMT and VPro™, and by restricting out-of-band remote ports such as a Baseboard Management Controller (BMC) and intelligent controllers.

GMS closely monitors cyber databases and routinely updates GMS-designed BIOS and other firmware. GMS licenses AMI® source code to create our own SourceSafe™ BIOS which not only adds performance features but shuts down exploits to minimize attack surfaces. Since we control the SourceSafe™ BIOS, future exploits can be mitigated as they arise.

Data hardening features in GMS systems use Opal, FIPS-140, and CSfC SSDs with our SecureDNA™. Data-at-rest security primarily relies on media selection (HDD, SSD, M.2) and GMS works closely with industry suppliers to implement COTS, DoD and specialty drive features such as Hardware Write Protect (WP) and NSA-approved Secure Erase (SE). GMS defines a standard drive pinout for keying and to assure specialty cyber features such as custom erasure algorithms, temperature or endurance.

The GMS SecureDNA™ sanitization suite relies on either a button press, digital signal (such as from an anti-tamper switch), or OS initiation. SecureDNA™ requires user authentication of intention, and then first erases all onboard media according to the chosen erasure algorithm. A second phase of SecureDNA™ erases all intelligent peripherals’ local storage buffers (such as TPM, Ethernet controller, BMC and so on). Finally, the system’s BIOS will erase itself using a GMS-copyrighted procedure entirely unique in the industry. Upon completion, the system is completely “bricked” and useless to an attacker.

Finally, cyber security also involves how the system is made starting with the entire supply chain. GMS is a US-based, AS9100 ITAR supplier that buys materials exclusively from authorized suppliers. Certificates of Conformance (C of C) and full traceability are standard, as is in-house logistics control of suppliers. GMS builds small prototype and quick-turn quantities in-house using 55,000 sq. ft. of modern facilities. For volume production, GMS-authorized manufacturers are DoD approved and GMS audited and accept contractual flow-down requirements. For DPAS and security-rated orders, GMS can segregate and/or bond our own, GFE or CFE inventory with full traceability.

SERVICES, SYSTEMS AND SUPPORT

GMS is a DoD prime contractor with the industry’s most extensive board-level and system-level design expertise. We work closely with customers to ensure that our rugged products are optimized for the system, the program, and the entire lifecycle. Our rich, long-term relationship with Intel gives us unparalleled early access to new technology, so we can create customer-specific architectures that meet the most challenging program requirements.

ADVANTAGES:

- Prime contractor status allows direct buying from GMS, via GSA schedule, or via the PEO C3T CHS catalog (through a GMS partner)
- Complete system management includes kitting, tactical cables, chassis, software, and cooling solutions
- Customer pre-installed system software image is added prior to shipment
- Program-specific chassis coatings and OEM/customer labeling are available
- Value-engineering optimizes cost and performance for volume programs
- Sales, VARs, and technical support are available in North America, Europe, Asia, and Southeast Asia



GMS

COMPUTING ENGINES

GENERAL MICRO SYSTEMS, INC.
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