

GENERAL MICRO SYSTEMS, INC.

ADVANCED SERVERS

ONE COMPANY FOR ALL YOUR SERVER NEEDS



RUGGED SERVERS



INDUSTRIAL SERVERS



COMMERCIAL SERVERS



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

COMMERCIAL RACKMOUNT SERVERS

Commercial connectors and high-reliability fans for cooling



VELOCITY-2U

2U Server with Quad Intel® Scalable Xeon Processors, Dual-Redundant 3000W PSUs and 20 Drives

- Quad Intel® Xeon up to 28 cores (Platinum/Gold)
- 4TB DDR4 ECC DRAM
- 20x SSD (SAS/SATA/NVMe) individual drives, 4x M.2
- 8x 40 GigE , 4x 10 GigE, 1x 1 GigE
- 11x PCIe sites, 4x Dual Slot, 2x Half Height, 2x Low Profile, 3x Express Mini

Size: 2U x 30" deep (1780 cu.inch)

Weight: As low as 50 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



VELOCITY-1U

1U Server with Dual Intel® Scalable Xeon Processors, Dual-Redundant 1000W PSUs and 12 Drives

- Dual Intel® Xeon up to 28 cores (Platinum/Gold)
- 2TB DDR4 ECC DRAM
- 12x SSD (SAS/SATA/NVMe) individual drives, 2x M.2 (E)
- 4x 40 GigE , 4x 10 GigE, 1x 1 GigE
- 6x PCIe sites, 2x Dual Slot, 1x Half Height, 1x Low Profile, 2x Express Mini

Size: 1U x 30" deep (890 cu.inch)

Weight: As low as 30 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



VORTEX-2U

2U Short Rack Server with Dual Intel® Scalable Xeon Processors, Dual-Redundant 2000W PSUs and 20 Drives

- Dual Intel® Xeon up to 28 cores (Platinum/Gold)
- 2TB DDR4 ECC DRAM
- 20x SSD (SAS/SATA/NVMe), 2x M.2
- 2x 10 GigE, 1x 1 GigE
- 6x PCIe sites, 3 x16 Low Profile, 3 x8 Low Profile or
- 5x PCIE sites 2 x16 standard height, 1x16 low profile, 2 x8 low profile

Size: 2U x 20" deep (1190 cu.inch)

Weight: As low as 36 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



VORTEX-1U

1U Short Rack Server with Dual Intel® Scalable Xeon Processors, Dual-Redundant 500W PSUs and 4 Drives

- Dual Intel® Xeon up to 28 cores (Platinum/Gold)
- 2TB DDR4 ECC DRAM
- 4x SSD (SAS/SATA/NVMe), 2x M.2 (E)
- 2x 10 GigE, 1x 1 GigE
- 2 PCIe sites, 2 Low Profile or 1 Single Slot

Size: 1U x 20" deep (595 cu.inch)

Weight: As low as 21 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)

RUGGED INDUSTRIAL RACKMOUNT SERVERS

Circular MIL connectors and fanless cooling



TITAN-2UC

2U Rugged Server with Quad Intel® Scalable Xeon Processors, Removable Storage and Dual Dual-Redundant 600W (1Ø /3Ø 60/400Hz) or 28VDC MIL-STD 1275D Power

- Quad Intel® Xeon up to 28 cores (Platinum/Gold)
- 4TB DDR4 ECC DRAM
- 8x SSD (in removable canister), 4x M.2 (E)
- 1x 100 GigE fiber, 4x 40 GigE, 4x 10 GigE, 1x 1 GigE
- 9 PCIe sites, 3 Dual Slot, 2 Half Height, 2 Low Profile, 2 Express Mini

Size: 2U x 21" deep (1310 cu.inch)

Weight: As low as 40 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP61

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



TITAN-1UC

1U Rugged Server with Dual Intel® Scalable Xeon Processors, Removable Storage and Dual-Redundant 600W (1Ø /3Ø 60/400Hz) or 28VDC MIL-STD 1275D Power

- Dual Intel® Xeon up to 28 cores (Platinum/Gold)
- 2TB DDR4 ECC DRAM
- 8x SSD (in removable canister), 4x M.2 (E)
- 4x 40 GigE, 4x 10 GigE, 1x 1 GigE
- 4 PCIe sites, 1 Dual Slot, 1 Half Height, 1 Low Profile, 1 Express Mini

Size: 1U x 21" deep (655 cu.inch)

Weight: As low as 35 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP61

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



TITAN-2U

2U Rugged Server with Quad Intel® Scalable Xeon Processors, Dual Dual-Redundant 600W (1Ø /3Ø 60/400Hz) or 28VDC MIL-STD 1275D Power

- Quad Intel® Xeon up to 28 cores (Platinum/Gold)
- 4TB DDR4 ECC DRAM
- 8x M.2 (E)
- 8x 40 GigE, 4x 10 GigE, 1x 1 GigE
- 11 PCIe sites, 4 Dual Slot, 2 Half Height, 2 Low Profile, 3 Express Mini

Size: 2U x 21" deep (1310 cu.inch)

Weight: As low as 30 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP61

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



TITAN-1U

1U Rugged Server with Dual Intel® Scalable Xeon Processors, Dual-Redundant 600W (1Ø /3Ø 60/400Hz) or 28VDC MIL-STD 1275D Power

- Dual Intel® Xeon up to 28 cores (Platinum/Gold)
- 2TB DDR4 ECC DRAM
- 4x M.2 (E)
- 4x 40 GigE, 4x 10 GigE, 1x 1 GigE
- 6 PCIe sites, 2 Dual Slot, 1 Half Height, 1 Low Profile, 2 Express Mini

Size: 1U x 21" deep (655 cu.inch)

Weight: As low as 25 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP61

Temperature: 0° C to +55° C (Optional -20° C to +75° C)

RUGGED SERVERS

Circular MIL connectors, fully-sealed box with RuggedCool™ for conduction cooling



STORM S522

Fully Sealed, Conduction Cooled Rugged Server with Dual Intel® Scalable Xeon Processors and Removable Storage

- Dual Intel® Xeon up to 28 cores (Platinum/Gold)
- 2TB DDR4 ECC DRAM
- 2x Removable SSD, 2x M.2 (E)
- 4x 40 GigE, 4x 10 GigE (Copper), 1x 1 GigE
- 6x PCIe sites, 1 x16 Low Profile, 2 MXM, 2 Express Mini, 1 XMC Site

Size: 8.5" x 14.5" x 3.5" (431 cu.inch)

Weight: As low as 35 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP67

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



THUNDER S422

Fully Sealed, Conduction Cooled Rugged Server with Built-in 10 GigE Switch, GPGPU Expansion, and Removable Storage

- Intel® Xeon® E5 up to 22 cores
- 512GB DDR4 ECC DRAM
- 2x Removable SSD, 2x M.2
- 30 Port, Low latency Intelligent Switch (28x 10 GigE, 2x 40 GigE)
- 2x 40 GigE, 4x 1 GigE, 1x Fast Enet (Mgmt)

Size: 7.75" x 11.6" x 3.6" (324 cu.inch)

Weight: As low as 20 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP67

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



TIGER S402

Fully Sealed, Conduction Cooled Rugged Server with Built-in 1 GigE Switch, GPGPU and Removable Storage

- Intel® Xeon® E5 up to 18 cores
- 128GB DDR4 ECC DRAM
- 14 Port, Low latency Intelligent Switch (2x 10 GigE, 12x 1 GigE)
- 4x 10 GigE, 1x GigE
- 1x GPGPU (MXM) or 1x XMC Site

Size: 11.6" x 7.75" x 2" (327 cu.inch)

Weight: As low as 10 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP67

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



LIGHTNING

Fully Sealed, Rugged, External, Cascadable Artificial Intelligence Co-Processor with Dual Full-size GPGPU up to 240 TFLOPS

- PCIe-over-cable bus extension for inter/intra-chassis expansion
- 2x Dual slot GPGPUs, ie. NVIDIA® Tesla V100 at 240 TFLOPS
- Accommodates specialized FPGA, ASIC co-processors
- 32x lanes PCIe Gen 3 (16x in, 16 out) w/ ability to daisy chain
- Conduction-cooled enclosure provides 600W power

Size: 12.5" x 11.5" x 2.5" (360 cu.inch)

Weight: As low as 30 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP67

Temperature: 0° C to +55° C (Optional -20° C to +75° C)

RUGGED, MICRO SERVERS

Multi-domain, SOSA™ and NSA compliant servers



GOLDEN-EYES PLUS S2002-HS

Fully Sealed, Conduction Cooled Rugged Micro-Server with Removable Storage

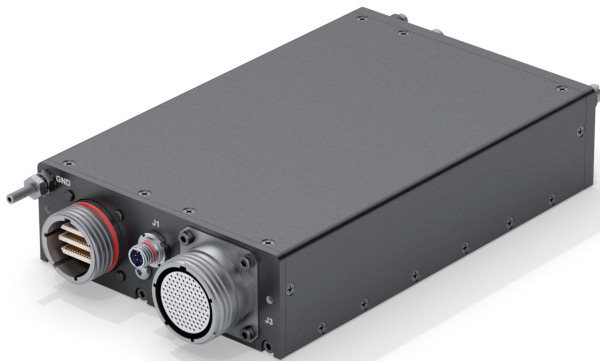
- Intel® Xeon® D up to 16 cores
- 64GB DDR4 ECC DRAM
- 1x Removable SSD, 1x M.2
- 2x 10 GigE, 3x 1 GigE
- 2 PCIe sites, 2 Express Mini

Size: 5.4" x 6.5" x 2.26" (140 cu.inch)

Weight: As low as 3 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP67

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



HUMMINGBIRD S2002-LP

Low Profile, Fully Sealed, Conduction Cooled Rugged Micro-Server, High Speed I/O and Removable Storage

- Intel® Xeon® D up to 16 cores
- 64GB DDR4 ECC DRAM
- 1x U.2 SSD (SATA/NVMe)
- 2x 10 GigE, 3x 1 GigE
- 2 PCIe sites, 1 M.2, 2 Express Mini
- Available with DZUS™ mount or Flange mount

Size: 5.4" x 6" x 2" (65 cu.inch)

Weight: As low as 5 lbs.

MIL-STD: 810G, 1275D/704F, 461E, MIL-S-901D, DO-160D, IP66

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



BLACKHAWK S2002-S

Fully Sealed, Conduction Cooled Rugged Extreme Video Micro-Server with Dual GPGPU and Removable Storage

- Intel® Xeon® D up to 16 cores
- 64GB DDR4 ECC DRAM
- 1x U.2 SSD (SATA/NVMe)
- 3x 10 GigE, 3x 1 GigE
- 5 PCIe sites, 2 MXM (GPGPU), 2 Express Mini, 1 M.2
- Universal Power 110/220 VAC (60/400Hz) or 28V DC

Size: 5.4" x 6.5" x 3.5" (123 cu.inch)

Weight: As low as 7 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP67

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



BLACKHAWK S2002-RT/SW

Fully Sealed, Conduction Cooled Rugged Micro-Server with Built-in 18 Port Switch and Removable Storage

- Intel® Xeon® D up to 16 cores
- 64GB DDR4 ECC DRAM
- 18 Port, Low latency Intelligent Switch (2x 10 GigE, 16x 1 GigE)
- 1x Removable SSD, 1x M.2
- 2 PCIe sites, 2 Express Mini

Size: 5.4" x 6.5" x 3.5" (123 cu.inch)

Weight: As low as 7 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP67

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

SPECIALTY SERVERS

Multi-domain, SOSA™ and NSA compliant servers



APEX-2U

2U Short, Total Rack Server with Dual Intel® Xeon E5 v4, Switch, NAS, GPGPU, 3 N+1 Redundant 600W PSUs and 12 Drives

- Dual Intel® Xeon E5 v4 up to 22 cores each
- 1TB DDR4 ECC DRAM
- 12x SSD (12x SAS/SATA/NVMe) in 2 hot-swappable canisters
- 6x 40 GigE, 2x 10 GigE, 22x 1 GigE
- 6 PCIe sites, 4 Single Slot, 2 Express Mini

Size: 2U x 21.7" deep (1291 cu.inch)

Weight: As low as 18 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



CYCLONE-MD

1U Short Rack Server with Two Fully-Isolated Domains (Red/Black), each with Intel® Xeon E5 v4 Processors, 600W PSU and 4 Drives

- Intel® Xeon E5 v4 up to 18 cores per domain
- 256GB DDR4 ECC DRAM per domain
- 4x Removable SSD (12x SAS/SATA/NVMe) 1x M.2 (E) per domain
- 2x 40 GigE, 12x 1 GigE per domain
- 2 PCIe sites, 2 Express Mini per domain

Size: 1U x 19" deep (565 cu.inch)

Weight: As low as 15 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



TYPHOON-SHS

1U Short Rack Server with Intel® Xeon E5 v4 Processors, 600W PSU and Dual Removable Storage

- Intel® Xeon E5 v4 up to 22 cores
- 256GB DDR4 ECC DRAM
- 8x SSD (per removable canister), 1x M.2
- 2x 40 GigE, 12x 1 GigE
- 2 PCIe sites, 2 (Express Mini)

Size: 1U x 19" deep (565 cu.inch)

Weight: As low as 15 lbs.

MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)



HURRICANE-MASS

1U Short Rack Mass Storage with Quad Removable Storage Canisters

- 8x SSD (per removable canister) for total of 32 SSD
- Hardware RAID controller per canister
- Dual USB4-TB per canister with fiber interface (over 100m)
- Daisy chainable for extended capacity
- Dual-redundant 600W (1Ø /3Ø 60/400Hz) or 28VDC

Size: 1U x 19" deep (565 cu.inch)

Weight: As low as 20 lbs.

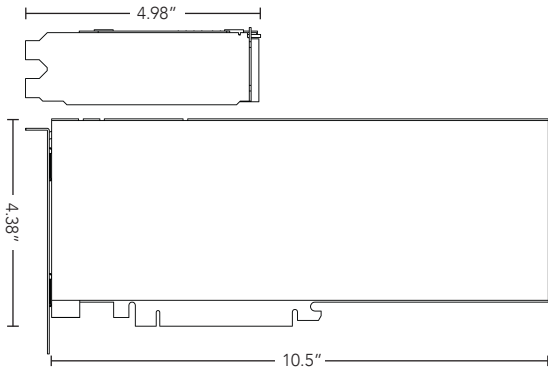
MIL-STD: 810G, 1275D, 461E, MIL-S-901D, DO-160D, IP54

Temperature: 0° C to +55° C (Optional -20° C to +75° C)

PCIe EXPANSION CARD TYPES

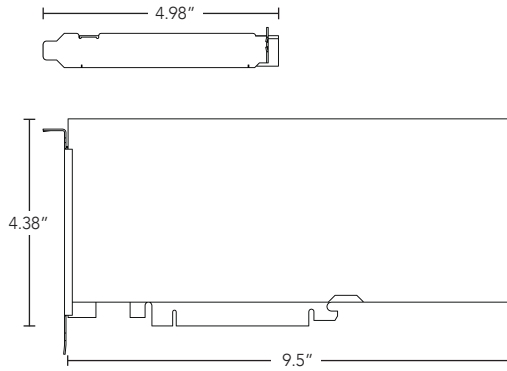
TYPE A

Full-Height, Full-Length, Dual Slot



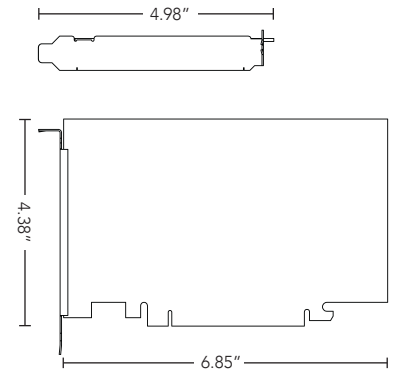
TYPE B

Full-Height, Full-Length, Single Slot



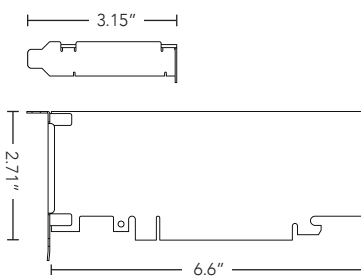
TYPE C

Full-Height, Half-Length, Single Slot



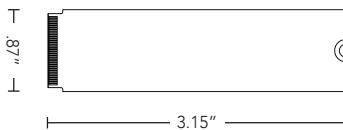
TYPE D

Low Profile, Half-Length, Single Slot



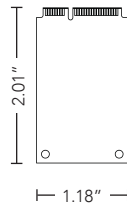
TYPE E

M.2 Version 2280



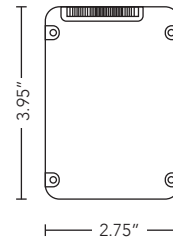
TYPE F

Full-Size Mini Card



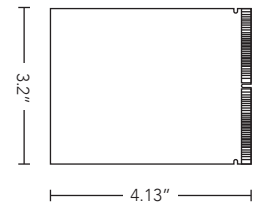
TYPE G

U.2, 7mm/15mm



TYPE H

Full-Size MXM Module



B-DRIVE™

Rugged, Sealed, Removable Conduction Cooled U.2 I/O Expansion with NVMe Interface Supporting four lanes PCIe Gen 3.

B-Drives are a direct replacement for any standard 15mm NVMe U.2 storage device.



NEO

High Definition Programmable Frame Grabber Module with HD-SDI, HDMI and NTSC Video Input Options



MATRIX

Thunderbolt™ 3 via USB-C, M.2 and SAM I/O



MORPHEUS

Dual SFP+ Sockets, Ethernet MAC, and PCIe Gen 3

FACTORY INSTALLED AND SUPPORTED I/O

These modules have been qualified and can be pre-installed to order

Function	Model No.	Type
Co-Processor/Video	Nvidia P1000 / P3000	H
	AMD E8860	H
	CM313BW (SDI Frame Grabber) PCIe-Mini	F
	Magewell (Pro Capture Mini-SDI) PCIe-Mini	F
	Dektek Video Capture (DTA-2174, x4 PCIe)	D
	Matrox Video Capture (Matrox Clarity UHD, x8 PCIe)	B
	Nvidia RTX 6000 / 4000 / GeForce 2060 Super / Tesla V100	A
	EPIX CameraLink Frame Grabber PIXCI EB1mini	F
	Nvidia RTX 4000	B
	Nvidia TITAN V	A
Nvidia GV100	A	
B-Drive	U.2-TB3	G
	U.2-SFP+	G
	U.2-FPGA	G
SAM I/O	MIL-STD-1553 (dual and dual-dual redundant)	F
	CANBus	F
	Profibus	F
	A to D Converter	F
	Dual Gigabit ENET	F
	RS-170 (8-channel)	F
	ARINC-429	F
	GPS	F
	WiFi/BT	F
	Brandywine IRIG-B (Mini PCIe Synclock32)	F
Storage	2.5" SATA SSD (120GB to 8TB) (Optional FIPS-140-2)	G
	2.5" NVMe SSD (120GB to 8TB) (Optional FIPS-140-2)	G
	Broadcom RAID Controller (MegaRAID 9460-16i / 9361-8i)	D
Other	PCIe Re-timers	H
	Mellanox 100GbE NIC (MCX555A-ECAT)	D
	Digigram Audio Capture (VX882E, x1 PCIe)	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.
TRUSTED AND DEPLOYED SINCE 1979

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