# G242-Z11

## HPC System - 2U UP 4 x GPU Gen4 Server











#### **Features**

- Up to 4 x NVIDIA Tesla® PCle Gen4 GPU cards
- Single AMD EPYC<sup>™</sup> 7002 series processor family
- 8-Channel RDIMM/LRDIMM DDR4, 8 x DIMMs
- 1 x dedicated management port
- 4 x SATA 3.5" hot-swap HDD/SSD bays in front side
- 2 x NVMe/SATA 2.5" hot-swap SSD bays in rear side
- 2 x FHHL PCIe Gen4 expansion slots
- 1 x OCP 3.0 Gen4 x16 mezzanine slot
- Aspeed® AST2500 remote management controller
- 2 x 80 PLUS Platinum 1600W redundant PSU

#### AMD EPYC™ 7002 Series Processor (Rome)

The next generation of AMD EPYC has arrived, providing incredible compute, IO and bandwidth capability – designed to meet the huge demand for more compute in big data analytics, HPC and cloud computing.

- Built on 7nm advanced process technology, allowing for denser compute capabilities with lower power consumption
- Up to 64 core per CPU, built using Zen 2 high performance cores and AMD's innovative chiplet architecture
- Supporting PCIe Gen 4.0 with a bandwidth of up to 64GB/s, twice of PCIe Gen 3.0
- Sembedded security protection to help defend your CPU, applications, and data





#### AMD Radeon Instinct™ MI50 Support

This GIGABYTE server features support for AMD's Radeon Instinct™ MI50 compute card, designed to deliver high levels of performance for deep learning, high performance computing (HPC), cloud computing, and rendering systems.



#### **NVIDIA® Tesla® V100 Support**

GIGABYTE's AMD EPYC server systems and motherboards are fully compatible and qualified to use with NVIDIA's Tesla® V100 GPU, an advanced data center GPU built to accelerate AI, HPC, and graphics. Powered by NVIDIA's Volta™ architecture and with 640 Tensor Cores, the Tesla® V100 has broken the 100 teraflops (TFLOPS) barrier of deep learning performance — enabling data scientists, researchers, and engineers to tackle challenges that were once impossible.

#### **GIGABYTE Management Console (AMI MegaRAC SP-X)**

This GIGABYTE server product utilizes a AMI MegaRAC SP-X platform for BMC server management, with a feature rich and easy to use browser-based graphical user interface. Notable features include:

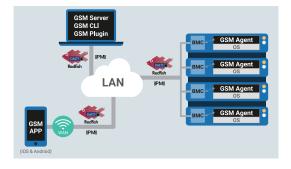
- RESTful API support (including the latest DMTF standards of Redfish) allows the administrator to integrate with 3rd party applications for server management
- HTML5-based iKVM remote management client included as a standard feature, no additional add-on license required to purchase
- Detailed FRU information from SMBIOS
- Pre-event automatic video recording feature from 10 to 30 seconds
- . SAS / RAID controller monitoring feature

#### **GIGABYTE Server Management (GSM)**

GIGABYTE Server Management (GSM) is GIGABYTE's proprietary multiple server remote management software platform, available as a free download from each GIGABYTE server product page. GSM is compatible with either IPMI or Redfish (RESTful API) connection interfaces, and comprises the following sub-programs:

• GSM Server • GSM CLI • GSM Agent • GSM Mobile • GSM Plugin





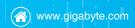
### **Specification**

Motherboard   M212-HD3	Dimensions (WxHxD)	2U 438 x 87.5 x 820 mm	Power Supply	- 100-120V~/ 12A, 50-60Hz
AMD EPYCM 7002 series processor family Single processor, 7mm schnology Up to 64-ore, 128 threads per processor Top up to 226W CFD up to 260W Fully support 280W Fully support 280W Fully support 280W Compatible with AMD EPYCM 7001 series processor	,			
Chipset System on Chip  Memory  8 x DIMM slots DDRA memory supported only 3 x Channel memory architecture RDIMM modules up to 128GB supported LRDIMM modules up to 128GB supported Memory speed: Up to 3200 MHz  LAN 1 x 10/100/1000 management LAN  Video Integrated in Aspeed* AST2500 2D Video Graphic Adapter with PCle bus interface 1920x120x6960Hz 32bpp, DDR4 SDRAM  Storage  Front side: 4 x 3.5° SATA hot-swap HDD/SSD bays 2.5° HDD/SSD supported SATA devices supported only Rear side: 2 x 2.5° NVMe/SAS/SATA hybrid hot-swap HDD/SSD bays 3AS card is required for SAS devices support  SAS Depend on SAS Card  RAID	CPU	Single processor, 7nm technology Up to 64-core, 128 threads per processor TDP up to 225W, cTDP up to 240W Fully support 280W		DC Output: - Max 1000W/ 100-120V~ +12V/ 81.5A +12Vsb/ 2.5A - Max 1600W/ 200-240V or 240Vdc Input +12V/ 133A
Memory  8 x DIMM slots DDR4 memory supported only Bc-Channel memory architecture RDIMM modules up to 12868 supported LRIDIMM modules up to 12868 supported Memory speed: Up to 3200 MHz  LAN 1 x 101'00'1000 management LAN  Video Integrated in Aspeed* AST2500 ZD Video Graphic Adapter with PCle bus interface 1920x1200@60Hz 32bpp, DDR4 SDRAM  Storage Front side: 4 x 3.5' SATA hot-swap HDD/SSD bays 2.5' HDD/SSD supported SATA devices supported only Rear side: 2 x 2.2 in VMe/SAS/SATA hybrid hot-swap HDD/SSD bays SAC card is required for SAS devices support  SATA  Supported  A x PCle x16 slots (Gen4 x16) for GPUs Riser Card CRSG120: -1 x PCle x 8 slots (Gen4 x16 or x8), FHHL 1 x OCP 3.0 mezzanine slot with PCle Gen4 x16 bandwidth - System is validated for population with LED, 1 x ID button with LED, 1 x Reset button, 1 x Nill button, 1 x System slated GPU population  Internal I/O  1 x TPM header, 1 x Front panel header  Front I/O  2 x USB 3.0, 1 x VGA, 1 x MLAN, 1 x ID LED  Backplane I/O  Backplane I/O  Backplane I/O  Front side, CSPG041: 4 x SATA/SAS ports Rear side C-GP2021: 2 x NVMe/SATA/SAS ports Speed and bandwidth: SATA 66b/s, SAS 126b/s or PCle x4 per port  Memory Server State String Sax Data Morte String Population Server I/O Sax Data Morte String Sax Data Morte String Sax Substance Su	Socket	Socet SP3	System	Aspeed® AST2500 management controller
Memory B X DIMM slots DDR4 memory supported only B-Channel memory architecture RDIMM modules up to 128GB supported LRDIMM modules up to 128GB supported LRDIMM modules up to 128GB supported LRDIMM modules up to 128GB supported Memory speed: Up to 3200 Mfz  LAN 1 x 10/100/1000 management LAN  Video Integrated in Aspeed* AST2500 2D Video Graphic Adapter with PCle bus interface 1920x1200 e60Hz 32bpp, DDR4 SDRAM  Storage Front side: 4 x 3.5* SATA hot-swap HDD/SSD bays 25* HDD/SSD supported SATA devices supported only Rear side: 2 x 2.5* NVMe/SAS/SATA hybrid hot-swap HDD/SSD bays SAS card is required for SAS devices support  SATA  Supported  SAS  Depend on SAS Card  RAID	Chipset	System on Chip	Management	JAVA Based Serial Over LAN HTML5 KVM Sensor Monitor (Voltage, RPM, Temperature, CPU Statusetc.) Sensor Reading History Data FRU Information SEL Log in Linear Storage / Circular Storage Policy Hardware Inventory Fan Profile System Firewall Power Consumption Power Consumption Power Control LDAP / AD / RADIUS Support Backup & Restore Configuration Remote BIOS/BMC/CPLD Update Event Log Filter User Management Media Redirection Settings PAM Order Settings SSL Settings
Video Integrated in Aspeed* AST2500 2D Video Graphic Adapter with PCIe bus interface 1920x1200@60th 23cbpc, DDR4 SDRAM  Storage Front side: 4 x 3.5* SATA hot-swap HDD/SSD bays 2.5* HDD/SSD supported SATA devices supported only Rear side: 2 x 2.5* NVMe/SAS/SATA hybrid hot-swap HDD/SSD bays SAS card is required for SAS devices support  SATA Supported  SATA Supported  SATA Supported  SAS Depend on SAS Card  A x PCIe x16 slots (Gen4 x16) for GPUs Slots  Silots  Riser Card CRSG120: - 1 x PCIe x16 slots (Gen4 x16 or x8), FHHL - 1 x PCIe x16 slots (Ge	Memory	DDR4 memory supported only 8-Channel memory architecture RDIMM modules up to 128GB supported LRDIMM modules up to 128GB supported		
Storage Front side: 4 x 3.5° SATA hot-swap HDD/SSD bays 2.5° HDD/SSD supported SATA devices supported only Rear side: 2 x 2.5° NVMe/SAS/SATA hybrid hot-swap HDD/SSD bays SAS card is required for SAS devices support  SATA  Supported  SATA  Supported  SAS  Depend on SAS Card  Expansion Slots  A x PCle x16 slots (Gen4 x16) for GPUs Riser Card CRSG120:  - 1 x PCle x16 slots (Gen4 x0 or x8), FHHL - 1 x PCle x8 slots (Gen4 x0 or x8), FHHL - 1 x PCle x8 slots (Gen4 x0 or x8), FHHL - 1 x PCle x8 slots (Gen4 x0 or x8) propulations  Internal I/O  Internal I/O  Ix TPM header, 1 x Front panel header  Front I/O  2 x USB 3.0, 1 x VGA, 1 x MLAN, 1 x ID LED  Backplane I/O  Rear I/O  2 x USB 3.0, 1 x VGA, 1 x MLAN, 1 x ID LED  Backplane I/O  Front side_CBP2021: 2 x NVMe/SATA/SAS ports Speed and bandwidth: SATA 6Gb/s, SAS 12Gb/s or PCle x4 per port  Power Constrol LDAP / AD / RADIUS Support Backup & Restore Configuration Remote BloS/BMC/PCPL Update Event Log Filter User Management Media Redirection Settings SMTP	LAN	1 x 10/100/1000 management LAN		
Storage Front side: 4 x 3.5" SATA hot-swap HDD/SSD bays 2.5" HDD/SSD supported SATA devices supported only Rear side: 2 x 2.5" NVMe/SAS/SATA hybrid hot-swap HDD/SSD bays SAS card is required for SAS devices support  SATA Supported  SATA Supported  SAS Depend on SAS Card  Compatibility  Final Pole x 16 slots (Gen4 x 16) for GPUs Riser Card CRSG120: - 1 x PCle x 16 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 8 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 8 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 8 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 8 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 8 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 8 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 16 slots (Gen4 x 16 or x 8), FHHL - 1 x PCle x 16 slot (Gen4 x 16 or x 8	Video	2D Video Graphic Adapter with PCIe bus interface		
Rear side: 2 x 2.5" NVMe/SAS/SATA hybrid hot-swap HDD/SSD bays SAS card is required for SAS devices support  SATA Supported  SAS Depend on SAS Card  Depend on SAS Card  SAS Depend on SAS Card  Compatibility  Expansion Slots  A x PCle x16 slots (Gen4 x16) for GPUs Silvar CRS	Storage	2.5" HDD/SSD supported		
SAS Depend on SAS Card  RAID -  Expansion Slots    A x PCle x16 slots (Gen4 x16) for GPUs		HDD/SSD bays		
RAID  Expansion Slots  Riser Card CRSG120: -1 x PCle x16 slots (Gen4 x16) r SPHHL -1 x PCle x16 slots (Gen4 x16 or x8), FHHL -1 x PCle x16 slots (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x0 or x8), FHHL -1 x PCle x16 slot (Gen4 x16 bandwidth - System is validated for population with a uniform GPU model - Support is not provided for mixed GPU populations  Internal I/O  1 x TPM header, 1 x Front panel header  Front I/O 1 x TPM header, 1 x Front panel header  Front I/O 1 x USB 3.0, 1 x Power button with LED, 1 x ID button with LED, 1 x Reset button, 1 x NMI button, 1 x System status LED, 1 x HDD activity LED, 2 x LAN activity LEDs  Poperating Properties  Operating temperature: 10°C to 35°C Operating humidity: 20%-95% (non-condensing) Non-operating humidity: 20%-95% (non-condensing)  Non-operating temperature: -40°C to 60°C Non-operating humidity: 20%-95% (non-condensing)  1 x G242-Z11, 1 x CPU heatsink, 1 x Rail kit  Part Numbers  Barebone with rail kit: 6NG242Z11MR-00 - Motherboard: 9MZ12HD3NR-00 - Rail kit: 25HB2-3A0202-K0R - CPIL heatsink, 25TH2-3A0202-K0R - CPIL heatsink, 25TH2-3A0202-K0R - CPIL heatsink, 25TH2-3A0202-K0R - CPIL heatsink, 25TH2-3A0202-K0R	SATA	Supported		SMTP Settings
Expansion Slots  4 x PCle x16 slots (Gen4 x16) for GPUs  Riser Card CRSG120: - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x0 or x8), FHHL - 1 x PCle x16 slot (Gen4 x16 bandwidth - 2 xystem is validated for population with a uniform GPU model - Support is not provided for mixed GPU populations  Internal I/O  1 x TPM header, 1 x Front panel header  Front I/O  1 x USB 3.0, 1 x Power button with LED, 1 x ID button with LED, 1 x Reset button, 1 x NMI button, 1 x System status LED, 1 x HDD activity LED, 2 x LAN activity LEDs  Packaging Content  Part Numbers  Barebone with rail kit: 6NG242Z11MR-00 - Motherboard: 9MZ12HD3NR-00 - Rail kit: 25HB2-3A020E-11B	SAS	Depend on SAS Card		Windows Server 2019 Red Hat Enterprise Linux 7.6 ( x64) or later Red Hat Enterprise Linux 8.0 ( x64) or later SUSE Linux Enterprise Server 12 SP4 ( x64) or later SUSE Linux Enterprise Server 15 SP1 ( x64) or later SUSE Linux Enterprise Server 15 SP1 ( x64) or later Ubuntu 16.04.6 LTS (x64) or later Ubuntu 18.04.3 LTS (x64) or later Ubuntu 20.04 LTS (x64) or later VMware ESXi 6.5 EP15 or later VMware ESXi 6.7 Update3 or later VMware ESXi 7.0 or later
Riser Card CRSG120: -1 x PCle x16 slot (Gen4 x16 or x8), FHHL -1 x PCle x6 slots (Gen4 x0 or x8), FHHL -1 x OCP 3.0 mezzanine slot with PCle Gen4 x16 bandwidth - System is validated for population with a uniform GPU model - Support is not provided for mixed GPU populations  Internal I/O  I x TPM header, 1 x Front panel header  Front I/O  1 x USB 3.0, 1 x Power button with LED, 1 x ID button with LED, 1 x Reset button, 1 x NMI button, 1 x System status LED, 1 x HDD activity LED, 2 x LAN activity LEDs  Rear I/O  Backplane I/O  Front side_CBPG041: 4 x SATA/SAS ports Rear side_CBP2021: 2 x NVMe/SATA/SAS ports Speed and bandwidth: SATA 6Gb/s, SAS 12Gb/s or PCle x4 per port  SUSE Linux Enterprise Server 15 SP1 (x64) or later Ubuntu 16.04.6 LTS (x64) or later Ubuntu 18.04.3 LTS (x64) or later Ubuntu 18.04.6 LTS (x64)	RAID			
Front I/O  1 x USB 3.0, 1 x Power button with LED, 1 x ID button with LED, 1 x Reset button, 1 x NMI button, 1 x System status LED, 1 x HDD activity LED, 2 x LAN activity LEDs  Rear I/O  2 x USB 3.0, 1 x VGA, 1 x MLAN, 1 x ID LED  Backplane I/O  Front side_CBPG041: 4 x SATA/SAS ports Rear side_CBP2021: 2 x NVMe/SATA/SAS ports Speed and bandwidth: SATA 6Gb/s, SAS 12Gb/s or PCIe x4 per port  Operating Properties  Operating temperature: 10°C to 35°C Operating humidity: 8%-80% (non-condensing) Non-operating temperature: -40°C to 60°C Non-operating humidity: 20%-95% (non-condensing)  1 x G242-Z11, 1 x CPU heatsink, 1 x Rail kit Content  Part Numbers  Barebone with rail kit: 6NG242Z11MR-00 - Motherboard: 9MZ12HD3NR-00 - Rail kit: 25HB2-3A0202-K0R - CPU heatsink: 25ST1.15320E-11B	•	Riser Card CRSG120: - 1 x PCle x16 slot (Gen4 x16 or x8 ), FHHL - 1 x PCle x8 slots (Gen4 x0 or x8), FHHL 1 x OCP 3.0 mezzanine slot with PCle Gen4 x16 bandwidth - System is validated for population with a uniform GPU model		
1 x Reset button, 1 x NMI button, 1 x System status LED, 1 x HDD activity LED, 2 x LAN activity LEDs  Rear I/O  2 x USB 3.0, 1 x VGA, 1 x MLAN, 1 x ID LED  Backplane I/O  Front side_CBPG041: 4 x SATA/SAS ports Rear side_CBP2021: 2 x NVMe/SATA/SAS ports Speed and bandwidth: SATA 6Gb/s, SAS 12Gb/s or PCIe x4 per port  Properties  Operating humidity: 8%-80% (non-condensing) Non-operating temperature: -40°C to 60°C Non-operating humidity: 20%-95% (non-condensing)  1 x G242-Z11, 1 x CPU heatsink, 1 x Rail kit Content  Part Numbers  Barebone with rail kit: 6NG242Z11MR-00 - Motherboard: 9MZ12HD3NR-00 - Rail kit: 25HB2-3A0202-K0R - CPLI heatsink: 25ST1-15320E-11R	Internal I/O	1 x TPM header, 1 x Front panel header	System Fans	5 x 80x80x38mm (16,300rpm)
Rear I/O  2 x USB 3.0, 1 x VGA, 1 x MLAN, 1 x ID LED  Packaging Content  Packaging Content  1 x G242-Z11, 1 x CPU heatsink, 1 x Rail kit Content  Part Numbers  Barebone with rail kit: 6NG242Z11MR-00 - Motherboard: 9MZ12HD3NR-00 - Rail kit: 25HB2-3A0202-K0R - CPU heatsink, 2SST1.15320E- 11R	Front I/O	1 x Reset button, 1 x NMI button, 1 x System status LED,		Operating humidity: 8%-80% (non-condensing) Non-operating temperature: -40°C to 60°C
Backplane I/O Front side_CBPG041: 4 x SATA/SAS ports Rear side_CBP2021: 2 x NVMe/SATA/SAS ports Speed and bandwidth: SATA 6Gb/s, SAS 12Gb/s or PCle x4 per port  Content  Part Numbers Barebone with rail kit: 6NG242Z11MR-00 - Motherboard: 9MZ12HD3NR-00 - Rail kit: 25HB2-3A0202-K0R - CPU beatsink: 25ST1.15306-11R	Rear I/O	2 x USB 3.0, 1 x VGA, 1 x MLAN, 1 x ID LED	Dookoging	
Speed and bandwidth: SATA 6Gb/s, SAS 12Gb/s or PCle x4 per port  Part Numbers  Barebone with rail kit: 6NG242Z11MR-00 - Motherboard: 9MZ12HD3NR-00 - Rail kit: 25HB2-3A0202-K0R - CPLI heatsink: 25ST1-15306-11R	Backplane I/O			1 A GE42-E11, 1 A GEO HEAISHIK, 1 A FIAH KIL
- CPII heatsink: 259T1-15320E- I1D		Speed and bandwidth:	- Motherboard: 9MZ12HD3NR-00	
Optional TPM2 0 kit: CTM010 - Back plane board_4-port: 9CBPG041NR-00	TPM			<ul> <li>- Back plane board_4-port: 9CBPG041NR-00</li> <li>- Back plane board_2-port: 9CBP2021NR-00</li> <li>- Riser Card: 9CRSG02CNR-00</li> <li>- Front panel board: 9CFP1000NR-00</li> </ul>
Gross Weight: 18:3 kg  - Front panel board: 9CFP1000NR-00	Weight	· ·		



<sup>\*</sup> AMD, and the AMD Arrow logo, AMD EPYC, AMD Radeon Instinct and combinations thereof are trademarks of Advanced Micro Devices, Inc.











<sup>\*</sup> NVIDIA, the NVIDIA logo and Tesla are trademarks and/or registered trademarks of NVIDIA Corporation in the U.S. and other countries.