Altos BrainSphere™ R680 F7

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The Altos BrainSphere™ R680 F7 is a 4U GPU server platform designed to meet the high-performance demands of AI training, high-performance computing (HPC), and enterprise data workloads. Powered by dual 6th Gen Intel® Xeon® processors, DDR5 memory, and support for high-performance GPUs, it delivers compute density and configuration flexibility for a wide range of deployments.

Extreme Compute Power for AI and HPC

Equipped with Intel® Xeon® 6700/6500 series CPUs, the R680 F7 delivers strong per-core performance and AI acceleration. It supports up to 8x dual-slot GPUs and is capable of hosting 8x NVIDIA H200 NVL with 4-way NVLink™ bridges—ideal for training large AI models, simulations, and generative workloads.

With 32 DDR5 RDIMM/MRDIMM slots supporting up to 8000 MT/s, it ensures high-throughput memory access for latency-sensitive applications like deep learning and analytics.

Optimized Thermal, Power, and Manageability

The 4U chassis maintains thermal stability under full load, with streamlined airflow and tool-less fan modules. Redundant 3+1 Titanium 3000W PSUs support efficient, continuous operation in dense deployments.

It also features the ASPEED® AST2600 BMC for remote management via IPMI, HTML5 KVM, and SNMP v3, along with built-in security features such as TPM 2.0 and UEFI Secure Boot.

Flexible Architecture with Scalable Investment Efficiency

The R680 F7 offers a more flexible PCIe-based architecture compared to HGX platforms, providing greater configuration scalability to balance performance and cost. This enables phased GPU deployment, supports a broader range of accelerators, and adapts more easily to evolving AI workloads.

With the integration of Altos aiWorks solution, the R680 F7 further enhances resource allocation, simplifies AI workflow orchestration, and maximizes return on infrastructure investment.

Specification

CPU	Number of processors	Dual Intel® Xeon® 6 Processors, TDP up to 350W
		- Intel® Xeon® 6700-Series Processors
		- Intel® Xeon® 6500-Series Processors
GPU		Up to 8 PCIe GPUs: NVIDIA RTX PRO™ 6000 Blackwell Server Edition, H200 NVL, L40S
Memory	Memory slot	32 DIMM slots, 8-Channel DDR5 RDIMM/MRDIMM [1]
	Memory type	RDIMM Up to 6400 MT/s (1DPC), 5200 MT/s (2DPC)
		MRDIMM Up to 8000 MT/s
LAN		2 x 10GbE (Support NCSI function)
		1 x 1 GbE Management port
TPM		1 x TPM2.0 module
Drive Bay		Up to12 x 2.5"(Hot-swapable) Gen5 NVMe/SATA/SAS-4
I/O ports		2 x USB 3.2 Gen1, 1 x VGA, 2 x 10GbE RJ45 ports, 1 x 1 GbE Management port
PCIe Expansion Slots		- 8 x FHFL x16 (Gen5 x16) for GPUs
		- 4 x FHHL x16 (Gen5 x16)
		- 3 x LP x16 (Gen5 x16)
Power supply		3+1 3000W 80 Plus Titanium redundant power supplies
Cooling		Air cool
Operating Properties		Operating: 10°C to 35°C, 8% to 80% (non-condensing)
		Non-operating: -40°C to 60°C, 20% to 95% (non-condensing)
Security and Manageability		ASPEED® AST2600 BMC
		TPM 2.0 (FIPS, CC-TCG certification)
		UEFI Secure Boot
		SNMP v3 Support
Form factor	Dimensions (D x W x H)	4U
		448 (D) x 176 (W) x 880 (H) mm
		448 (D)x 176(W) x 1000.5(H)mm with optional fan kit
OS		Microsoft® Windows Server, Red Hat Enterprise Linux Server, Ubuntu Server LTS

1.   MRDIMMs are only supported with Intel® Xeon® 6 Processors with P-cores and in a 1DPC configuration.