Edge AI Systems

Performance and Efficiency for Distributed AI Applications

Infrastructure Solutions for AI Workloads at the Enterprise Edge

- **Right-sized infrastructure solutions for AI applications at the edge**
- **Power-efficient performance for optimized TCO**
- **Extensive AI accelerator compatibility, from specalized M.2 modules to multiple double-width GPUs per system**
- **Intel®, AMD, and ARM® processor options available**
- **A broad range of form factors, from compact, fanless systems for space-constrained environments to rackmount servers for the edge data center**

AI Inferencing at the Edge

As AI applications are integrated into business processes and our personal lives, edge inferencing is becoming critical for applications that demand real-time insights. Processing data locally—whether from sensors, cameras, or industrial equipment—dramatically reduces latency, lowers dependence on network bandwidth, and enhances data security.

Supermicro Edge AI systems enable intelligent decision-making where it's needed most, unlocking faster responses and improving overall system efficiency. Selecting the right infrastructure solution for each deployment scenario is essential. Supermicro offers scalable, AI-optimized solutions to ensure maximum ROI from edge AI initiatives.

Low Power, High Efficiency

AI at the edge demands both performance and efficiency. Supermicro's Edge AI systems are designed to provide optimal performance-per-watt, allowing careful alignment of CPU and GPU resources with the specific needs of the workload. Whether deploying lightweight inference models or running complex LLM pipelines, Supermicro systems balance compute power and energy usage to ensure total cost of ownership (TCO) stays within budget. This power-efficient architecture makes Supermicro ideal for remote and distributed environments, where energy constraints are common and reliability is essential.

Versatile Edge Deployments

Deployments at the edge often present unique challenges - from limited space and power availability to harsh environmental conditions. Supermicro's Edge AI portfolio offers extensive configurability to meet diverse customer needs across industries.

With support for a broad range of processors, accelerators, and form factors, our systems are purpose-built for edge environments. Compact, ruggedized, and thermally optimized, Supermicro Edge AI solutions can be tailored to fit even the most constrained installations—delivering enterprise-grade performance at the edge without compromise.

AI Accelerator Compatibility

Supermicro Edge AI systems support a broad spectrum of AI accelerators to meet the diverse demands of edge applications. From specialized platforms like NVIDIA® Jetson Orin™ NX and low-power M.2 AI modules, to servers with high-performance GPUs including NVIDIA RTX™ Pro 6000 Blackwell edition and NVIDIA H200 NVL, Supermicro systems are designed to support the demands of any edge AI scenario.

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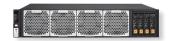| Edge AI Systems	ARS-E103-JONX-H2	SYS-E100-13AD	SYS-E300-14AR
Processor Support	NVIDIA® Jetson Orin™ NX with 8-core Arm® Cortex ® -A78AE processor	12th Generation Intel® Core™ i3, i5, i7 or Celeron processor, up to 10C/20T	Intel® Core™ Ultra 9/7/5 (Series 2) processors
Memory Slots & Capacity	16GB ECC LPDDR5X	2 SO-DIMM slots; Up to 64GB non-ECC DDR5-4800MT/s	2 SO-DIMM slots, Up to 96GB ECC/non-ECC DDR5-6400MT/s
AI Accelerator	1024 NVIDIA® CUDA® Cores and 32 Tensor Cores onboard	Hailo-8™ M.2 AI processor compatible	Up to 1 single-width GPU Onboard NPU accelerator
I/O Ports	4 RJ45 1 GbE ports (optional PoE) 1 RJ45 10 GBe port 1 USB 3.2 Gen2 Type-C port 3 USB 3.2 Gen2 Type-A ports 1 HDMI 2.0 port 2 COM RS232/RS422/RS485 ports 1 CANBus port 1 4 DI / 4 DO (terminal block) port Optional 5G/Wi-Fi 6 support	2 GbE LAN ports (Intel i225-IT) 2 USB3.2 ports 2 USB-C port (Alt mode mini DP) 4 USB2.0 ports 1 HDMI 2.0 port 1 HDMI 1.4b port 4 COM port 1 GPIO 8-bit configurable HD Audio MIC in / LINE out (Optional) TPM onboard	2 RJ45 10 GbE LAN ports 2 RJ45 2.5 GbE LAN ports 1 RJ45 GbE Dedicated BMC LAN port USB 3.2 Gen2 Type-A ports 1 VGA port 1 DisplayPort port 1 HDMI port 1 TPM header 1 TPM Onboard/port 80
Motherboard	AOM-JSOR-001	X13SAN	X14SAV-TLN4F
Form Factor	Fanless Embedded 80x185x140 mm (3.2x7.3x5.5")	Fanless Embedded 44x195x150 mm (1.7x7.7x5.94")	Fan-based Embedded 43x265x226 mm (1.7x10.4x8.9")
Expansion Slots	1 M.2 B-key (USB 3.0) 3052/3042 1 M.2 E-Key (PCIe x1, USB 2.0) 2230 (	1 M.2 B-Key (SATA; USB 3.0) 2242/2280 1.M.2 E-Key (PCIe 3.0 slot) 2230	1 PCIe 5.0 x16 LP slot (optional) 1 M.2 slot B-key (PCIe 4.0 x2) 3052
Drive Bays	1 M.2 M-key (PCIe 4.0 x4 NVMe) 2280	1 M.2 M-key (PCIe 4.0 x4 NVMe) 2242/2280	1 internal fixed 2.5" SATA bay 1 M.2 M-key(PCIe 5.0 x4 NVMe) 2280
Cooling	Fanless Cooling	Fanless Cooling	1 CPU heatsink with 80x15mm Fan 2x 4-PIN PWM 40x40x28mm Fans
Operating Temperature	-25°C~60°C (-40°F~131°F)	0°C~50°C (32°F~122°F)	0°C~40°C (32°F~104°F)
Power	9~36V DC Power input Optional AC Power supply	84W Power supply	180W Power supply

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Edge AI Systems	SYS-E403-14B-FRN2T	SYS-112B-FWT	AS -1115S-FWTRT
Processor Support	Single Intel® Xeon® 6700/6500 series processor with P-cores or 6700 series processor with E-cores	Single Intel® Xeon® 6700/6500 series processor with P-cores or 6700 series processor with E-cores	Single AMD EPYC™ 8004 Series Processor
Memory Slots & Capacity	8 DIMM slots; up to 2 TB ECC DDR5-6400MT/s	8 DIMM slots; up to 1 TB ECC DDR5-6400MT/s	6 DIMM slots; up to 768 GB ECC DDR5-4800MT/s
GPU	Up to 1 double-width GPU or 2 single-width GPUs	Up to 1 single-width GPU	Up to 2 single-width GPUs
I/O Ports	1 RJ45 1GbE Dedicated BMC LAN port 2 RJ45 10 GbE LAN ports 4 USB 3.2 Gen1 Type-A port 1 VGA port 1 COM port 1 TPM header	2 RJ45 10 GbE LAN ports 2 USB 3.2 Gen1 Type-A ports 2 USB 3.2 Gen1 ports 1 VGA port 1 COM port 1 TPM header	1 RJ45 1GbE Dedicated BMC LAN port 2 RJ45 10 GbE LAN ports 4 USB ports 1 VGA port 1 TPM header
Motherboard	X14SBW-TF	X14SBW-TF	H13SVW-NT
Form Factor	Box PC 117x267x406 mm (4.6x10.4x16.0")	1U Rackmount 45x437x429mm (1.7x17.2x16.9")	1U Rackmount 45x437x429mm (1.7x17.2x16.9")
Expansion Slots	3 PCIe 5.0 x16 FHFL slots	2 PCIe 5.0 x16 FHFL slots 1 PCIe 5.0 x16 LP spot	2 PCIe 5.0 x16 FHFL slots 1 PCIe 5.0 x16 LP spot
Drive Bays	2 hot-swappable 2.5" NVMe drive bays 2 internal fixed 2.5" SATA drive bays 2 M.2 M-Key (PCIe 5.0 x2 NVMe) 2280/22110	2 internal fixed 2.5" NVMe/SATA drive bays 2 M.2 M-key (PCIe 5.0 x2 NVMe) 2280/22110	2 internal fixed 2.5" NVMe/SAS/SATA drive bays 2 M.2 M-key (PCIe 3.0 x4 NVMe) 2280/22110
Cooling	3x 8cm heavy duty fans with optimal fan speed control	6x 4cm heavy duty fans with optimal fan speed control	6 Heavy duty counter-rotating 4cm Fans
Operating Temperature	0°C~45°C (32°F~113°F)	0°C~35°C (32°F~95°F)	0°C~40°C (32°F~104°F)
Power	800W Redundant Platinum Level (94%) power supply	800W Redundant Platinum Level (94%) power supply	800W Redundant Platinum Level (94%) power supply

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Edge AI Systems	SYS-212B-(F)LN2T	SYS-212B-(F)N2T	AS -2116S-(F)TNRT
Processor Support	Single Intel® Xeon® 6700/6500 series processor with P-cores or 6700 series processor with E-cores	Single Intel® Xeon® 6700/6500 series processor with P-cores or 6700 series processor with E-cores	Single AMD EPYC™ 9005 Series processor
Memory Slots & Capacity	8 DIMM slots; up to 2TB ECC DDR5-6400MT/s	8 DIMM slots; up to 2TB ECC DDR5-6400MT/s	12 DIMM slots; up to 3 TB ECC DDR5-6400MT/s
GPU	Up to 1 double-width GPU or 4 single-width GPUs	Up to 2 double-width GPU or 3 single-width GPUs	Up to 8 double-width GPU or 19 single-width GPUs
I/O Ports	1 RJ45 1 GbE Dedicatd BMC LAN port 2 RJ45 10 GbE LAN ports 2 USB 3.2 Gen1 Type-A ports 1 VGA port	1 RJ45 1 GbE Dedicatd BMC LAN port 2 RJ45 10 GbE LAN ports 2 USB 3.2 Gen1 Type-A ports 1 VGA port 1 TPM header	1 RJ45 1 GbE Dedicatd BMC LAN port 2 RJ45 10 GbE LAN ports 4 USB 3.2 Gen1 Type-A ports 1 VGA port
Motherboard	X14SBI-TF	X14SBM-TF	H14SSL-NT
Form Factor	2U Rackmount 89x437x450mm (3.5x17.2x17.7")	2U Rackmount 89x437x450mm (3.5x17.2x17.7")	2U Rackmount 89x437x450mm (3.5x17.2x17.7")

Expansion Slots	Default
	    3 PCIe 5.0 x16 (in x16) HHFL slots
	    3 PCIe 5.0 x8 (in x8) HHFL slots
	Option A
	    3 PCIe 5.0 x16 (in x16) HHFL slots
	    3 PCIe 5.0 x8 (in x8) HHFL slots
	    1 PCIe 5.0 x16 (in x16) FHFL double-width slot
		Default
		    2 PCIe 5.0 x16 (in x16) FHFL slots
		Option A
		    2 PCIe 5.0 x16 (in x16) FHFL slots
		    1 PCIe 5.0 x16 (in x16) FHFL double-width slot
		    1 PCIe 5.0 x16 (in x16) HHHL slot
		    1 PCIe 5.0 x8 (in x8) HHHL slot
		Option B
		    2 PCIe 5.0 x16 (in x16) FHFL slots
		    1 PCIe 5.0 x16 (in x16) HHHL slot
			Default
			    3 PCIe 5.0 x16 (in x16) HHFL slots
			    2 PCIe 5.0 x8 (in x8) HHFL slots
			
			Option A
			    1 PCIe 5.0 x16 (in x16) FHFL double-width slot

Drive Bays	4 hot-swappable 2.5" NVMe drive bays 2 M.2 M-key (NVMe) 2280/2210	4 hot-swappable 2.5" NVMe drive bays 2 M.2 M-key (NVMe) 2280/2210	4 hot-swappable 2.5" NVMe drive bays 2 M.2 M-key (PCIe 5.0 x4 NVMe) 2280/2210
Cooling	4x 4-PIN PWM 8cm Fans	4x 4-PIN PWM 8cm Fans	4x 8cm Fans
Operating Temperature	0°C~40°C (32°F~104°F)	0°C~40°C (32°F~104°F)	10°C~35°C (50°F~95°F)
Power	2000W Redundant Titanium level (96%) power suppply	2000W Redundant Titanium level (96%) power suppply	2000W Redundant Titanium level (96%) power suppply

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Edge AI Systems	SYS-222HE-FTN	AS -2115HE-FTNR	SYS-322GA-NR
Processor Support	Dual Intel® Xeon® 6700/6500 series processors with P-cores or 6700 series processors with E-cores	Single AMD EPYC™ 9005/9004 Series processor	Dual Intel® Xeon® 6900 series processors with P-cores
Memory Slots & Capacity	32 DIMM slots; up to 8 TB ECC DDR5-5200MT/s	24 DIMM slots; up to 6 TB ECC DDR5-4400MT/S	24 DIMM slots; up to 6 TB ECC DDR5-8800MT/S
GPU	Up to 3 double-width GPU or 4 single-width GPUs	Up to 4 double-width GPU or 4 single-width GPUs	Up to 8 double-width GPU or 19 single-width GPUs
I/O Ports	1 RJ45 1 GbE Dedicated BMC LAN port 2 USB 3.0 ports 1 VGA port	1 RJ45 1 GbE Dedicated BMC LAN port 2 USB 3.0 ports 1 VGA port	1 RJ45 1 GbE Dedicated BMC LAN port 2 USB 3.2 Gen1 Type-A ports 1 VGA port 1 TPM header
Motherboard	X14DBM-SP	H13SSH	X14DGB-XAP
Form Factor	2U Rackmount 89x437x574mm (3.5x17.2x22.6")	2U Rackmount 89x437x574mm (3.5x17.2x22.6")	3U Rackmount 132x438x800mm (5.2x17.3x31.5")

Expansion Slots	Option A
	    3 PCIe 5.0 x16 FH/10.5"L double-width slots
	    1 PCIe 5.0 x16 FHHL slot
	    2 PCIe 5.0 x16 AIOM slots (OCP 3.0 compatible)
	Option B
	    6 PCIe 5.0 x8 (in x16) FH/10.5"L slots
	    2 PCIe 5.0 x8 (in x16) FHHL slots
	    2 PCIe 5.0 x16 AIOM slots (OCP 3.0 compatible)
	Up to 4 CXL 2.0 x16/x8 devices
		Default
		    2 PCIe 5.0 x16 (in x16) AIOM slots (OCP 3.0 compatible)
		    3 PCIe 5.0 x16 (in x16) FHFL slots
		    2 PCIe 5.0 x8 (in x16) FHFL slots
		Option A
		    2 PCIe 5.0 x16 (in x16) AIOM slots (OCP 3.0 compatible)
		    4 PCIe 5.0 x16 (in x16) FHFL slots
		Option B
		    2 PCIe 5.0 x16 (in x16) AIOM slots (OCP 3.0 compatible)
		    8 PCIe 5.0 x8 (in x16) FHFL slots]
		8 PCI 5V 32-bit slots
		1 M.2 M-key (PCIe 3.0 x4) 22110/2280
		1 M.2 M-key (PCIe 3.0 x2) 22110/2280
			Default
			    8 PCIe 5.0 x16 (in x16) FHFL double-width slots
			Option A
			    8 PCIe 5.0 x16 (in x16) FHFL double-width slots
			    2 PCIe 5.0 x16 (in x16) FHFL slots
			Option B
			    20 PCIe 5.0 x8 (in x16) FHFL slots

Drive Bays	6 hot-swappable 2.5" NVMe/SAS/SATA drive bays Up to 4 additional hot-swappable 2.5" NVMe drive bays 2 M.2 M-key (PCIe 5.0 x20 NVMe) 2280/22110/25110	6 hot-swappable 2.5" PCIe 5.0 x4 NVMe/SAS/SATA driver bays 1 M.2 M-key (PCIe 3.0 x4 NVMe) 22110/2280 1 M.2 M-key (PCIe 3.0 x2 NVMe) 22110/2280	Up to 14 hot-swappable E1.S PCIe 5.0 x4 NVMe drive bays or Up to 6 hot-swappable 2.5" PCIe 5.0 x4 VNMe drive bays
Cooling	6 counter-rotating 60x60x56mm Fans	6x 6cm heavy duty fans with optimal fan speed control	5 Front 8cm Fan(s) 6 Internal 6cm Fan(s)
Operating Temperature	10°C~35°C (50°F~95°F)	10°C~35°C (50°F~95°F)	10°C~35°C (50°F~95°F)
Power	2000W Redundant Titanium level (96%) hot-pluggable power supply	1200W Redundant Titanium level (96%) hot-pluggable power supply	3200W Redundant (2+1) Titanium level (9600%) hot-pluggable power supplies

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