Accelerating Edge AI

AI Performance and Efficiency at the Intelligent Edge, Powered by Intel

Key Features

- **Broad portfolio of infrastructure solutions for any deployment scenario**
- **CPU-based AI inferencing with AVX2 instruction sets**
- **Intel® Core™ Ultra series processors with up to 16 P/E/LPE cores, integrated GPU (12 Xe cores), and up to 50 NPU TOPS**
- **Intel Xeon® 6 SoC with up to 72 Performance cores**
- **Intel Arc™ Pro B-series GPUs for energy-efficient AI acceleration and scalability**

Edge AI Solutions Built for Performance

The long-standing partnership between Supermicro and Intel powers a wide range of edge systems designed for AI in space-constrained and remote environments. Combining optimized hardware with Intel's advanced processors, these platforms enable businesses to deploy and scale AI applications with speed, efficiency, and reliability.

Intel technologies bring powerful compute, AI acceleration, and flexible deployment options to the edge. With the OpenVINO toolkit, developers can optimize AI inference and deploy scalable solutions across multiple hardware platforms.

From CPUs to GPUs and NPUs, Intel's edge AI portfolio delivers the right balance of performance and efficiency for modern AI workloads.

CPU-Integrated AI Acceleration

Intel's AI-enabled processors are built for demanding edge workloads, including data inferencing. Advanced Vector Extensions (AVX2) enable efficient parallel data processing, allowing small language models and similar AI workloads to run directly on the CPU, reducing the need for external processing.

Intel Core Ultra processors extend this capability with integrated GPU and NPU acceleration. The integrated GPU shares its memory with the CPU and excels at processing graphics and accelerated workloads. The NPU handles low-power AI tasks independently, freeing CPU resources and improving overall efficiency.

This performance-efficient architecture makes Intel processors ideal for AI deployments across retail, manufacturing, healthcare, and other edge environments.

Reliable, Scalable AI Performance

Built for professional media creation and edge AI, Intel Arc Pro B50, B60, and B70 GPUs deliver powerful AI acceleration based on Intel's Xe2 architecture.

With up to 32GB VRAM, these GPU cards support demanding workloads such as generative AI and local model inference. The compact B50 (70W) fits edge devices and small systems with up to 170 TOPS, while the B60 and B70 delivers higher compute performance (up to 367 TOPS), greater memory bandwidth, and multi-GPU scalability for larger models.

Industry-standard APIs, ISV certifications, and PCIe 5 connectivity make it easy to deploy AI workloads on-premises or at the network edge—reducing latency, improving data control, and minimizing cloud dependency.

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Compact Edge Systems

Supermicro's compact edge systems deliver powerful compute and AI capabilities in a high-density, small-form-factor platform. Designed for deployment in virtually any environment, these systems can be installed in closets, mounted on walls or poles, and even operate reliably in harsh conditions. This flexibility makes them ideal for space-constrained settings such as manufacturing plants, retail stores, and point-of-sale environments.

Compact edge systems are available with a range of different Intel processor options, enabling customers to match the power efficiency and performance needed for their use case.

Edge AI Systems	Fanless Edge AI System SYS-E103-14AP	Compact Edge System SYS-E300-14AR	Compact Edge Server SYS-E403-14B-FRN2T
Processor Support	Intel Core Ultra 7/5/3 (Series 3) processor	Intel Core Ultra 9/7/5 (Series 2) processor	Single Intel Xeon 6700/6500 series processor
Memory Slots & Capacity	2 SO-DIMM slots; Up to 128GB non-ECC DDR5-7200MT/s	2 SO-DIMM slots; Up to 96GB non-ECC DDR5-6400MT/s	8 DIMM slots, Up to 2TB ECC DDR5-6400MT/s
AI Accelerator	Integrated NPU and GPU	Integrated NPU and GPU	Up to 1 Intel Arc Pro B50 Up to 3 Intel Arc Pro B60 (single-width) Up to 1 Intel Arc Pro B60 (double-width) Up to 1 Intel Arc Pro B70
I/O Ports	2 RJ45 2.5 GbE LAN ports w/ PoE 1 RJ45 1 GBe LAN port 4 USB 2.0 Type-A ports 2 USB 3.2 Gen2 Type-A ports 2 HDMI 2.1 ports 2 COM ports 1 SMBus 8-bit GPIO port	2 RJ45 10 GbE LAN ports 2 RJ45 2.5 GbE LAN ports 1 RJ45 1 GbE Dedicated BMC port 4x USB 3.2 Gen2 Type-a ports 1x HDMI 2.1 port 1x DP 1.4 port 1x Antenna (optional)	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
Motherboard	X14SPN-H	X14SAV-TLN4F	X14SBW-TF
Form Factor	Fanless Embedded 195x126x115 mm (7.7x5.0x4.5")	Compact Embedded 254x226x43 mm (10.0x8.9x1.7")	Compact Server 117x267x406 mm (4.6x10.4x16.0")
Expansion & Storage Slots	1 M.2 B-key (USB 3.2) 2242/2280/3052 1 M.2 E-Key (USB 2.0) 2230 1 M.2 M-key (PCIe Gen 5) 2242/2280	1 PCIe 5.0 x16 LP slot (optional) 1 internal fixed 2.5" SATA bay (optional) 1 M.2 B-Key (PCIe 3.0) 3052	3 PCIe 5.0 x16 FHFL slots 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
Cooling	Fanless Cooling	1 CPU heatsink with 80x15mm Fan 2x 4-PIN PWM 40x40x28mm Fans	3x 8cm heavy duty fans with optimal fan speed control
Operating Temperature	0°C~45°C (32°F~113°F)	0°C~40°C (32°F~104°F)	0°C~45°C (32°F~113°F)
Power	150W Power supply	180W Power supply	800W Redundant Platinum Level (94%) power supply

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Short-depth Rackmount Servers

Supermicro's rackmount edge servers combine short-depth chassis design with front I/O access, enabling efficient deployment in remote and space-constrained environments. Available in 1U and 2U form factors, these systems deliver enterprise-grade performance alongside a wide range of connectivity and expansion options.

With support for powerful GPUs and extended operating temperature ranges, these systems are well-suited for AI inferencing workloads. The balance of flexibility, performance, and durability makes them ideal for industries requiring reliable computing at the edge.

Edge AI Systems	1U Rackmout Edge AI Server SYS-112D-36C-FN3P	2U Rackmount Edge AI Server SYS-212B-(F)N2T	2U Enterprise Edge AI Server SYS-212GB-NR
Processor Support	Intel Xeon 6 SoC processor	Single Intel Xeon 6700/6500 series processor	Single Intel Xeon 6700/6500 series processor
Memory Slots & Capacity	4 DIMM slots; Up to 512GB DDR5-6400MT/s	8 DIMM slots; Up to 1TB DDR5-6400MT/s or up to 512GB DDR5-8000MT/s	16 DIMM slots; Up to 1TB DDR5-6400MT/s or up to 512GB DDR5-8000MT/s
AI Performance	Up to 1 Intel Arc Pro B60 (single-width)[1] Up to 1 Intel Arc Pro B60 (double-width)	Up to 3 Intel Arc Pro B50[1] Up to 3 Intel Arc Pro B60 (single-width) Up to 2 Intel Arc Pro B60 (double-width) Up to 2 Intel Arc Pro B70	Up to 4 Intel Arc Pro B60 (double-width) Up to 4 Intel Arc Pro B70
I/O Ports	1 RJ45 1 GbE LAN port 2 QSFP28 100 GbE LAN ports 2 USB 2.0 header ports 2 USB 3.2 Type-A ports 1 VGA port 1 COM port 1 TPM header	1 RJ45 1 GbE Dedicated BMC port 2 RJ45 10 GbE LAN ports 2 USB 3.2 Type-A ports 1 VGA port 1 TPM onboard 1 TPM header	1 RJ45 1 GbE Dedicated BMC port 1 USB 3.0 Type-A ports 1 mini-DP port
Motherboard	X14SDV-36C-SP3F	X14SBM-TF	X14SBGM
Form Factor	1U Short-depth Rackmount 43x437x399 mm (1.7x17.2x15.7")	2U Short-depth Rackmount 89x437x459 mm (3.5x17.2x17.7")	2U Rackmount 88x438x900 mm (3.5x17.2x35.4")
Expansion & Strorage Slots	1 PCIe 5.0 x16 FHFL slot 2 Internal fixed 2.5" PCIe 4.0 x4 NVMe drive bays 1 M.2 M-key (PCIe 4.0 x4 NVMe) 2280	2 PCIe 5.0 x16 FHFL slots[1] Up to 4 hot-swappable 2.5" NVMe drive bays 2 M.2 M-key (PCIe 5.0 x2 NVMe) 2280/22110	7 PCIe 5.0 x16 FHFL slots (4x DW, 1x SW) 4 hot-swappable E1.S NVMe drive bays 2 M.2 M-key (PCIe 5.0 x2 NVMe) 2280/22110
Cooling	Up to 5 Counter-rotating, Hot-swappable 40x40x56mm Fan(s)	Up to 4x 4-PIN PWM 8cm fans	Up to 6x 6cm heavy duty fans
Operating Temperature	0°C~40°C (32°F~104°F)	5°C~40°C (41°F~104°F)	10°C~35°C (50°F~95°F)
Power	Up to 2x 800W redundant Platinum level (96%) power supplies	1x 2000W Redundant Titanium Level (96%) Power supply	3x 2000W Redundant (2+1) Titanium Level (96%) Power supply

[1] Front IO systems support passive cooled GPUs only
[2] Alternative configurations available

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