Supermicro Edge AI
Edge Video Transcoding, Edge Inference, Edge Training

Across industries, businesses whose employees and customers engage at edge locations - in cities, factories, retail stores, hospitals, and many more - are increasingly investing in deploying AI at the edge. By processing data and utilizing AI and ML algorithms at the edge, businesses overcome bandwidth and latency limitations, enabling real-time analytics for timely decision making, predictive care and personalized services, and streamlined business operations.

Purpose-built, environment-optimized Supermicro Edge AI servers with various compact form factors deliver the performance needed for low-latency, open architecture with pre-integrated components, diverse hardware and software stack compatibility, and privacy and security feature set required for complex edge deployments out of the box.

**Systems**

**Short-Depth 5G/Edge & Hyper E**
Compute and AI Performance at the Edge

**Extra Large Workload:**
2U Hyper-E
- 3 NVIDIA H100 PCIe
- 6 NVMe drives
- 32 DIMMs DDR5-4800

**Medium Workload:**
Short-Depth Multi-GPU Edge Server
- 1U Compact Edge/5G Server
- 2 NVIDIA L4 2 Internal Drive Bays
- 8 DIMMs DDR5-4800

**Large Workload:**
Compact System
- Powerful expandable server for the Edge
- 1 NVIDIA L40S or 2 L4
- 8 DIMM slots DDR5-4800
- 4 NVMe Drives

**Small Workload:**
Embedded System
- Ultra-compact Fanless Edge Server
- CPU (or ASIC) based Inference
- Up to 64GB DDR5
- M.2 M/B/E-Key with Nano SIM Card Slot

**Recommended NVIDIA GPUs**

**L4**
- HHHL SW
- PCIe 4.0 x16
- 72W
- 24GB GDDR6

**L40S**
- FHFL DW
- PCIe 4.0 x16
- 350W
- 48GB GDDR6

**L40**
- FHFL DW
- PCIe 4.0 x16
- 300W
- 48GB GDDR6
**Accelerate Edge AI Workloads**

**Edge Video Transcoding, Edge Inference, Edge Training**

**Opportunities and Challenges:**
- Space and weight limitation, power constraints
- Balancing data throughput for video and audio requirements with cost of storage and bandwidth constraints
- Latency impacting response time and service quality
- Data privacy and security, regulatory compliance
- Resiliency in face of network outages
- Long product lifecycle requirements

**Key Technologies:**
- CPU or GPU-based Edge AI Inferencing, GPU-based Edge AI training, and video transcoding/encoding/decoding
- NVIDIA L4, L40S, L40, A30, A40, T4, A2 GPUs
- Short-depth chassis design for edge locations with AC or DC power supply options
- Front I/O with broad range of expansion and I/O port for flexibility and serviceability
- Ruggedized systems designed to be placed outside of the data center

**Solution Stack:**
- NVIDIA® TensorRT™ and Triton Inference Server
- NVIDIA DeepStream, Clara, Merlin, Metropolis, Morpheus, Omniverse, and Riva
- NVIDIA Fleet Command
- Intel® OpenVINO

**Use Cases:**
- Video processing: decode, encode, and transcode
- Edge inference: vision, speech, anomaly detection, etc.
- Markets: security and surveillance, retail, manufacturing, healthcare, and medical devices

**GPU Acceleration for Complete Range of Workloads**

Go to [www.supermicro.com/ai](http://www.supermicro.com/ai) or scan the QR code to download the AI Workload Solution Brochure: