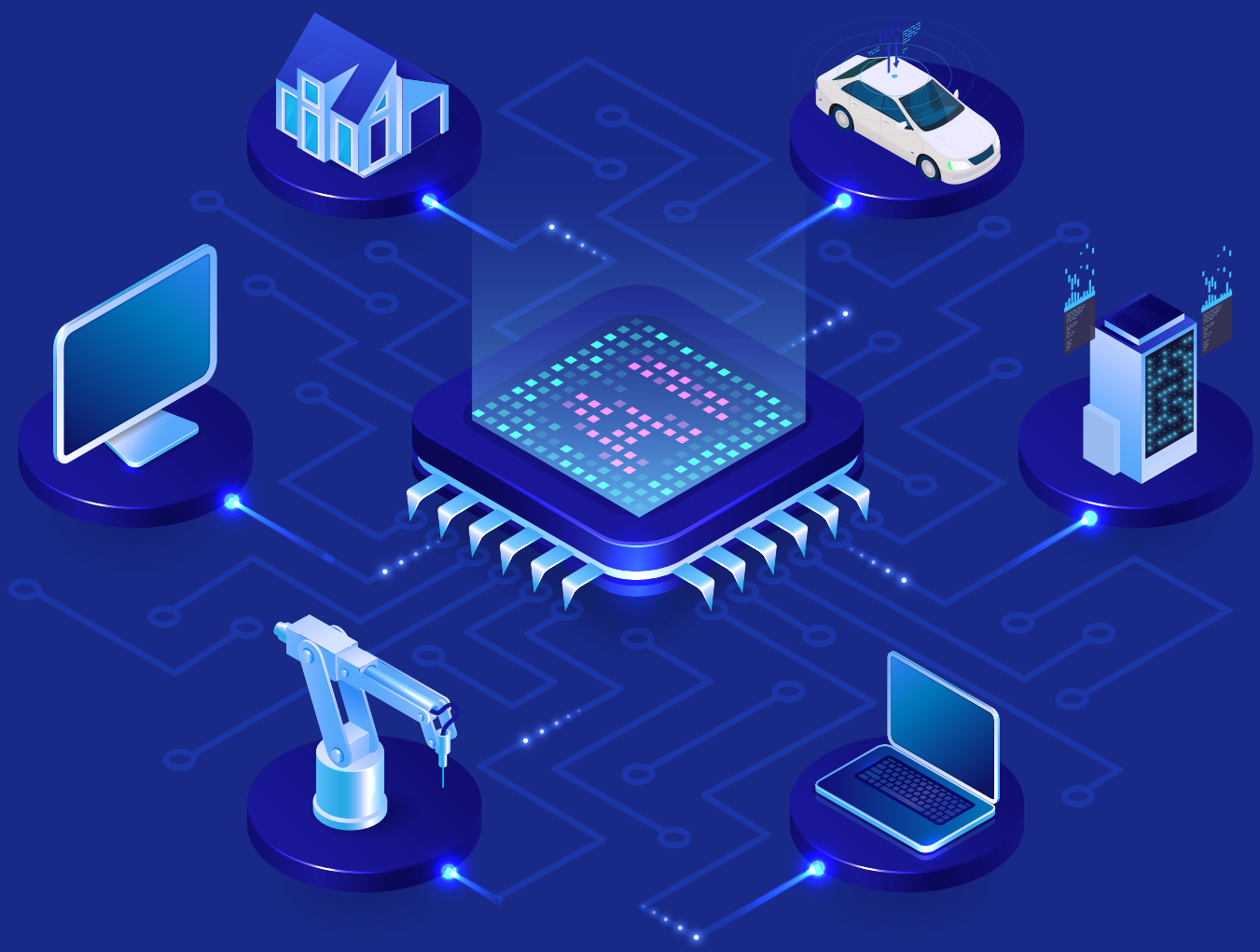
avalue Technology Inc.

# Empowering the Next Generation of Edge Intelligence

From Data Center to the Edge



# Why Avalue Edge AI?

Avalue provides a scalable Edge AI portfolio built on the latest Intel® architectures—from dual Intel® Xeon® 6 server-grade infrastructure to rugged fanless embedded systems and versatile barebone platforms. With optimized AI enablement, industrial reliability, and flexible integration, Avalue helps customers deploy Edge AI faster across diverse applications and environments.

Through close collaboration with Intel on roadmap alignment and platform validation, Avalue accelerates development and deployment with confidence.

### AI-Optimized Architecture

Supports Intel accelerators

### Industrial Reliability

Wide-temp support, fanless design, 24/7 operation

### Flexible Integration

Rich I/O, expansion slots, and customizable design

# From Model to Deployment

**Open-source pre-trained Models**

**Model Optimization with OpenVINO**

**OpenVINO Runtime**

### Edge AI HW Platforms

- SBC
- Box PC
- System w/ GPU Expansion
- Panel PC
- Server

### Deploy across Vertical Markets

- Healthcare
- Industrial
- Retail
- Smart City
- Energy

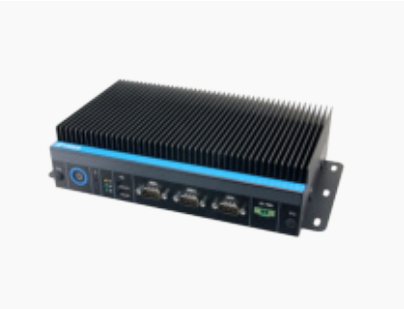
# Technical Highlight

Powered by the latest Intel® platforms and AI software enablement, Avalue delivers scalable Edge AI solutions across every performance tier.

- **Intel® Xeon® 6**
  For high performance computing density and server-grade AI infrastructure
- **Intel® Core™ Ultra Meteor Lake & Arrow Lake**
  For efficient edge inference and rugged deployments
- **Intel® 14th Gen Core™ (Raptor Lake-S Refresh)**
  For versatile industrial and commercial edge systems
- **Intel® Arc™ Graphics support**
  For accelerated visual computing and ai workloads
- **Intel® OpenVINO™ Toolkit enablement**
  For optimized inference performance and faster time-to-deployment

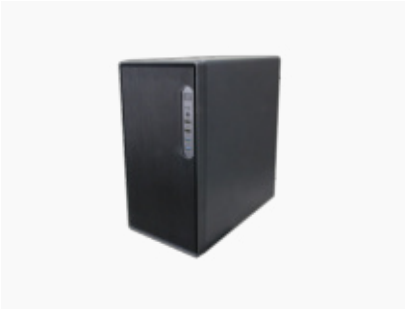
AI computing requirements vary by model size, throughput, and latency. Avalue delivers scalable platforms—from entry edge and barebone systems to dual-socket server infrastructure—for light to heavy AI workloads.

| Performance Level | Key Requirement | Model |
|---|---|---|
| Performance | Multi-stream analytics, large models, low latency, scalable structure | HPM-GNRDE, HPM-P820 |
| Mainstream | Multi I/O, PCIe expansion, CPU/GPU acceleration | EMS-ARH |
| Entry | Classification, anomaly detection, light inference, etc. | EMS-MTH |



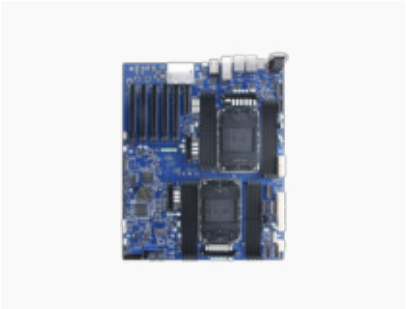
**EMS-MTH/EMS-ARH**

Intel® Arrow/ Meteor Lake-H Core™ Ultra 7/5 Processor Fanless Rugged Embedded System



**BMX-P820**

Intel® 14th Gen Core™ i7/i5/i3 Processor CPU Barebone System



**HPM-GNRDE**

Dual Intel®Xeon® 6 Processor EATX Server Board

# Core Advantages

- **Extreme Performance Across Every Layer**
  From cloud infrastructure to rugged edge deployment, Avalue delivers scalable compute power—ranging from dual Xeon® 6 server-grade platforms to compact fanless systems.

- **AI-Optimized Architecture**
  Optimized for Edge AI inference with Intel® OpenVINO™, and compatible with popular frameworks such as ONNX Runtime and TensorFlow for faster time-to-deployment.

- **Seamless Connectivity & Expandability**
  Rich I/O design with PCIe Gen4/Gen5, M.2 NVMe, high-speed LAN, and 5G-ready expansion enables flexible integration across diverse industrial applications.

- **Industrial-Grade Reliability**
  Built for harsh environments with fanless operation, wide-temperature support, and enterprise-ready quality—ensuring 24/7 stable deployment.

- **Long-Term Supply & Global Support**
  Backed by Avalue's lifecycle management, technical enablement, and global support resources to accelerate project development and long-term maintenance.

## Certification & Support

| | | |
|---|---|---|
| CE / FCC / RoHS Compliant | Long-term supply & lifecycle management | SDK, BSP, and system integration assistance |

# Industry Applications & Use Cases

From Edge AI servers to rugged gateways and vision inspection systems, Avalue enables real-time intelligent solutions across key industries.


**Use Case:**
Traffic flow monitoring and incident detection at intersections

**AI Task:**
Video analytics | Vehicle detection | Real-time alerts

**Impact:**
Reduce congestion and improve traffic safety through faster response and optimized traffic control.


**Use Case:**
Customer flow analytics and smart signage engagement

**AI Task:**
People counting • Behavior analysis • Personalized content

**Impact:**
Improve store operations and increase conversion by understanding customer behavior and optimizing staff and promotions.


**Use Case:**
Automated visual inspection and predictive maintenance on production lines

**AI Task:**
Defect detection • Anomaly detection • Predictive analytics

**Impact:**
Reduce downtime and improve yield by detecting issues early and enabling real-time quality control.


**Use Case:**
AI-assisted medical imaging diagnosis and clinical decision support

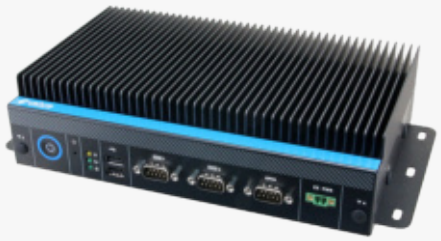
**AI Task:**
Lesion detection • Image segmentation • Disease classification • Risk prediction

**Impact:**
Improve diagnostic accuracy and speed by assisting radiologists, enabling early disease detection, and reducing workload through automated image analysis.

# Edge System Line-up

A scalable lineup built on the latest Intel® platforms—ranging from dual-socket server-grade infrastructure to rugged fanless embedded systems and versatile barebone solutions.

01



## EMS-MTH

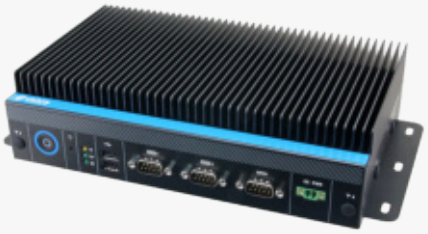
**Intel® Meteor Lake-H Rugged Embedded System,AI-Ready Platform with Advanced Energy Efficiency**

Built for edge AI and industrial environments, EMS-MTH integrates Intel® Meteor Lake-H processors and supports up to 64GB DDR5 memory. Its IP50-rated fanless chassis ensures reliable operation in harsh conditions.

### Key Features

- Intel® Meteor Lake-H Core™ Ultra 7/5 Processor
- Fanless design, IP50 protection, -40°C ~ 50°C operation
- 2 x SODIMM DDR5 up to 64GB
- 5G module support, TPM 2.0 onboard
- Rich I/O: USB3.2, HDMI, DP, COM, LAN, GPIO
- CE, FCC Class B certified

02



## EMS-ARH

**Intel® Arrow Lake-H Rugged Embedded System Compact, Powerful, and Fanless for Harsh Environments**

Powered by Intel® Arrow Lake-H Core™ Ultra 7/5 processor, EMS-ARH combines performance and efficiency in a fanless, compact design. With rich I/O and 5G support, it's perfect for AIoT and embedded automation.

### Key Features

- Intel® Arrow Lake-H Core™ Ultra 7/5 Processor
- Fanless operation: -40°C to 50°C
- Up to 64GB DDR5 6400MT/s
- Dual LAN, dual HDMI, DP, multiple USB & COM ports
- M.2 NVMe Gen4x4, 5G module support
- CE, FCC Class B


03

## BMX-P820

**Intel® 14th Gen Core™ Barebone System**
**Versatile Performance for Edge AI and Industrial Applications**

The BMX-P820 is a compact yet powerful barebone system powered by the latest Intel® Core i7 14th Gen Raptor Lake-S Refresh Processor (35W / 65W). Designed for industrial and edge computing, it supports dual DDR5 SO-DIMMs up to 64 GB, multiple display outputs, and high-speed I/O expansion.Ideal for smart manufacturing, digital signage, and automation control systems.

### Key Features

- Intel® 14th Gen Raptor Lake-S Refresh (35 W / 65 W) processors
- 2 × DDR5 4800 MHz SO-DIMM (up to 64 GB non-ECC)
- Dual LAN (Intel® i219LM + I226V Ethernet)
- 1 × HDMI 1.4b (4K @ 30 Hz) + 2 × DP++ 1.4a (4K @ 60 Hz)
- 3 × SATA III + 1 × PCIe x16 (Gen 4)
- 1 × M.2 M-Key (PCIe x4 + SATA III) + 1 × M.2 E-Key (2230 CNVi)
- Onboard Infineon TPM 2.0 (SLB 9670VQ2.0)
- Realtek ALC897 audio codec with multiple I/O
- ATX power input

04

## HPM-GNRDE

**Dual Intel® Xeon® 6 Server Motherboard**
**Extreme Performance for AI & Data Center Applications**

The HPM-GNRDE motherboard delivers exceptional computing density with dual Intel® Xeon® 6 6500P / 6700P processors, supporting up to 4TB DDR5 RDIMM/MRDIMM memory and PCIe 5.0 NVMe storage. Ideal for AI inference, data aggregation, and edge cloud servers.

### Key Features

- Dual Intel® Xeon® 6 6500P / 6700P (350W each)
- 16x DDR5 6400/8000 MHz RDIMM & MRDIMM, up to 4TB
- IPMI 2.0 with AST2600 BMC controller onboard
- 2 x 10GbE + 2 x 1GbE Ethernet ports
- 9x SATA III, dual M.2 PCIe 5.0 NVMe SSD
- Advanced thermal design, 12" x 14.5" PCB


avalue
Technology Inc.