# Unigen™

UNIGEN CORPORATION

# PRODUCT OVERVIEW

# SOLUTIONS. SERVICES. SIMPLIFIED.

From EMS to OEM and everything in between, Unigen has been a trusted technology partner to customers worldwide for over 30 years. Established in 1991, Unigen is a global leader in the design and manufacture of industrial and enterprise grade OEM products. Through Unigen's EMS business, we provide end-to-end services, from design to NPI, mass production, and after-market support. Our state-of-the-art manufacturing facilities in the U.S.A., Vietnam, and Malaysia along with engineering and support facilities worldwide, enable Unigen to deliver high-quality products and services to customers across a wide array of industries.

## Global Footprint

**Headquarters:** Newark, CA, USA

**Factories:** Newark, CA; Hanoi, Vietnam; Penang, Malaysia

**Global Sites:** Chengdu, Shenzhen, Hong Kong, Malaysia

## Industries We Serve

- Automotive
- Artificial Intelligence
- Defense & Aerospace
- Embedded/ Industrial
- Enterprise / Data Center
- Healthcare
- Internet of Things
- Networking
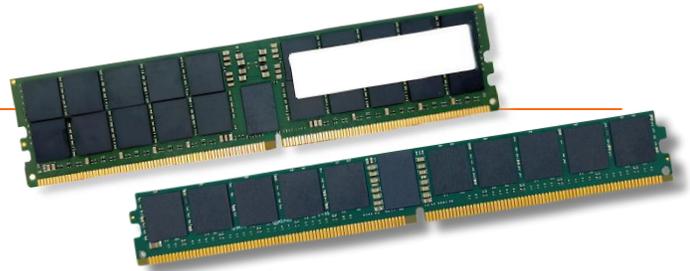- Wireless/ Telecom

## EMS Capabilities

- Supply Chain Management
- New Product Introduction
- PCB Assembly & Test
- Test-as-a-Service
- System Integration
- Supply Chain Management
- Precision Mechanicals
- Aftermarket Services

# Memory Products

## DRAM Modules

From legacy products to the latest technology, Unigen's DRAM module portfolio meets a wide range of requirements no matter the application, workload, form factor or operating environment.

- ⊕ **Enterprise Grade DRAM**
- ⊕ **Multiple Configurations & Form Factors**
- ⊕ **30μ Gold Finger Plating**
- ⊕ **JEDEC Compliant**
- ⊕ **Long-Term Supply Continuity**
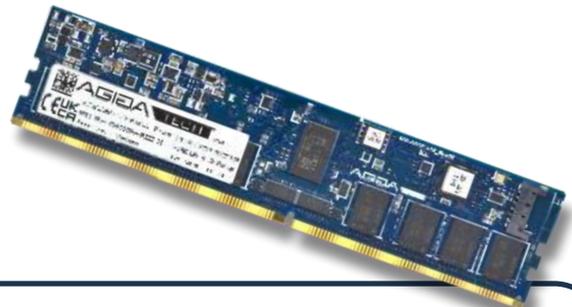- ⊕ **Extensive Reliability & Production Test Capabilities**

### DDR2 / DDR3 / DDR4 / DDR5

- UDIMM, SODIMM, RDIMM, Mini-RDIMM, VLP
- Unbuffered, Registered, ECC
- Capacity: Up to 64GB
- Speed: Up to 6400 MT/s
- Commercial and Industrial Temperature

## Persistent Memory / NVDIMM

Unigen's persistent memory solutions blur the lines between memory and storage by combining the low-latency and near-infinite endurance of DRAM with the non-volatility of Flash. The result is a byte-addressable persistent memory solution to meet the high-performance needs of scalable infrastructure.

### CXL NVRAM

- x8 CXL 2.0 / 3.0
- Capacity: 16GB, 32GB
- DDR4-3200 (NVDIMM IP Re-Use)
- Integrated Supercap Design
- Add-In-Card, E3.S form factors
- 1 NUMA Hop Latency

### DDR4 NVDIMM-N*

- Capacity: 16GB, 32GB
- Speed: Up to 3200 MT/s
- JEDEC Compliant Non-Volatile DIMM
- Byte-Addressable Persistent Memory
- 8th Generation Design
- Technical Expertise (AgigA Tech)

*Under EOL, recommend CXL for future platforms

## Power Modules

### PowerGEM®

- Battery-Free Power Modules
- Supercapacitor-Based Designs for High Reliability (EDLC and hybrid cells)
- NVDIMM Backup Power or General Purpose Energy Source (e.g. BBU replacement)

# Solid State Drives

## Boot Drives

Boot Drives are SSDs primarily used to store an OS and essential system files, enabling fast system startup and improved overall performance.

- ⊕ **2GB to 3.84TB Capacities**
- ⊕ **High-Endurance NAND**
- ⊕ **Single-Sided PCBA Designs**

### eUSB

- Capacity: 2GB to 32GB
- Flash Type: SLC
- Form Factors: Hirose, 2mm, 2.54mm
- Up to 79 MB/s Read and 53 MB/s Write
- 3.3V or 5V VDC Available

### SATA

- Capacity: Up to 1.9TB
- Flash Types: 3D iTLC, 3D gTLC, SLC, MLC,
- Form Factors: 1.8'', 2.5'', MO-297, MO-300, M.2 2242, M.2 2280
- Up to 570 MB/s Read and 510 MB/s Write

### NVMe

- Capacity: Up to 3.84TB
- Flash Types: 3D TLC, 3D iTLC
- Form Factors: M.2 2230, M.2 2280, E1.S
- Up to 7400 MB/s Read and 6700 MB/s Write

## Client SSDs

Client SSDs are designed for consumer use, offering a balance between performance and cost-effectiveness for tasks like gaming, web browsing, and everyday computing.

- ⊕ **Modern TLC NAND**
- ⊕ **Gen4.0 PCIe, SATA or PATA Available**
- ⊕ **Single-Sided PCBA Designs**

### NVMe

- Capacity: Up to 3.84TB
- Flash Types: 3D TLC, 3D iTLC
- Form Factors: M.2 2230, M.2 2242, M.2 2280
- Up to 7400 MB/s Read and 6700 MB/s Write

### SATA

- Capacity: Up to 1.9TB
- Flash Types: 3D iTLC, 3D gTLC, SLC, MLC,
- Form Factors: 1.8'', 2.5'', MO-297, MO-300, M.2 2242, M.2 2280
- Up to 570 MB/s Read and 510 MB/s Write

### PATA

- Available Types: Compact Flash, USB (removable)

# Solid State Drives

## Enterprise SSDs

Enterprise SSDs are built for data centers and server applications, prioritizing high performance, endurance, and reliability to handle heavy workloads.

- ⊕ **Enterprise Level TLC**
- ⊕ **Power Loss Protection**
- ⊕ **Enterprise SSD Security & Data Protection**

### NVMe

- Capacity: Up to 7.68TB
- Flash Types: 3D eTLC, eTLC BiCS5, eTLC B47R
- Form Factors: M.2 2280, U.2, E1.S, E1.L, E3.S, AIC
- Up to 6971 MB/s Read and 4700 MB/s Write

### SATA

- Capacity: Up to 122.88TB
- Flash Types: eTLC, 3D iTLC, 3D gTLC
- Form Factors: M.2 2242, M.2 2280, 2.5'', E3.L
- Up to 570 MB/s Read and 535 MB/s Write

## Industrial SSDs

Industrial SSDs are rugged & durable, with extended temperature ranges and resistance to harsh operating environments, making them suitable for industrial and embedded applications.

- ⊕ **High Endurance SLC, pSLC, iTLC**
- ⊕ **I-temp -40 to 85° C**
- ⊕ **Environmental hardening such as conformal coating available**

### eUSB

- Capacity: 2GB to 32GB
- Flash Type:  SLC
- Form Factors: Hirose, 2mm, 2.54mm
- Up to 79 MB/s Read and 44 MB/s Write
- 3.3V or 5V VDC Available

### SATA

- Capacity: Up to 1.92TB
- Flash Type: SLC
- Form Factors: M.2 2242, M.2 2260, M.2 2280, MO-297, MO-300, 1.8'', 2.5''
- Up to 570 MB/s Read and 350 MB/s Write

# Edge Servers & Enterprise I/O

## Compact Edge Server

Unigen offers compact edge servers to enable our customers to take on complex workloads, process locally, and only send the key data back to cloud applications or to enterprise data centers. This allows you to reduce operational expenditure on cloud services and data transfers while reducing the computation latency.

⊕ **Vertically Integrated Manufacturing**

⊕ **Available with WiFi, 4G/5G, & GPS**

⊕ **Flexible Configurations Available**



### Edge Storage Server

- SOC: Intel 4-core Atom
- Memory: 16GB DDR4 - 32GB DDR4
- Storage: 256GB SSD
- 4-POE, 2-USB
- Passively Cooled IPX5 Chassis
- Add up to 8TB NVMe data drive to make this a storage server

## PCIe Switch

⊕ **Customizable Features & Form Factors**

⊕ **High-Speed Board Design**

⊕ **Fully Compatible with Microchip ChipLink Tools**



### Gen4 PCIe Switch

- PCIe Gen4 52-lane Evaluation Kit
- Microchip Switchtec PFX PM40052 PCIe Switch
- Supports nine (9) Gen4 x4 Endpoint Devices
- PCIe Add-in-Card Form Factor

## Interposers & Adapters

⊕ **Customization Services**

⊕ **High Speed Board Design**

⊕ **Full Turnkey**

⊕ **Long-Term Support**

### SAS to Dual SATA Interposer



### SAS to SATA Interposer

### U.2 to M.2 Adapter

- SAS 2.0 / SATA 3.0 compliant
- Marvell 6Gb/s SAS to SATA single-chip controller
- Enables standard single-port SATA drives to function as dual-ported SAS drives

- Gen4 Capable
- Automotive Grade Temp -55 °C to 125 °C
- Supports 2230, 2242, 2260, 2280, 22110 form factors

# AI Solutions

## AI Modules

Unigen's AI Modules use up to 2 Hailo-8 Edge AI processors, featuring up to 26 tera-operations per second (TOPS) each. With an architecture that takes advantage of the core properties of neural networks, the Hailo-8 neural chips designed onto the modules allow edge devices to run deep learning applications at full scale more efficiently, effectively, and sustainably than other AI chips and solutions.

### Biscotti E1.S AI Module

- AI Accelerator: Hailo-8
- Up to 1600 TOPs of inference performance with air-cooled Dual CPU Servers
- Use 20% of the Watts with TPUs compared to training GPUs
- 20% of ASP and TCO compared to training GPU servers
- 12-week lead times, significantly less than the typical for GPU servers

### Amaretti E1.S AI Module

- AI Accelerator: SAKURA-II
- Up to 1920 TOPs of inference performance with air-cooled Dual CPU Servers
- Use 20% of the Watts with TPUs compared to training GPUs
- GenAI LLMs for up to 20B parameters
- 14-week lead times, significantly less than the typical for GPU servers
- Up to 32GB per module

### Poptart AI E3.S Module

- AI Accelerator: Hailo-8
- Up to 1600 TOPs of inference performance with air-cooled Dual CPU Servers
- Use 20% of the Watts with TPUs compared to training GPUs
- 20% of ASP and TCO compared to training GPU servers
- 12-week lead times, significantly less than the typical for GPU servers

### Tiramisu AI E3.S Module

- AI Accelerator: SAKURA-II (Dual)
- Up to 3840 TOPs of inference performance with air-cooled Dual CPU Servers
- Use 20% of the Watts with TPUs compared to training GPUs
- GenAI LLMs for up to 20B parameters
- 14-week lead times, significantly less than the typical for GPU servers
- Up to 64GB per module

# AI Solutions

## AI Servers

Unigen is bringing a new vision to the world of edge AI servers. These new platforms provide a fully integrated solution with hardware and software in a rugged enclosure. They offer multiple interfaces and the ability for customization to empower customers to unleash the full potential of AI technology.

### *Cupcake* Edge AI Server

- Host Processor: Intel 4-core Atom
- AI Processors: Hailo AI, EdgeCortix, and others
- Memory: Up to 32GB DDR4 3200
- Storage: Up to 2TB SSD
- 4 PoE, 2 USB Ports
- Wireless Connectivity (4G/5G, WiFi, GPS)
- Passively Cooled IPX5 Chassis
- Flexible Configurations Available

*Cupcake*

### *Poundcake* Air-Cooled 2U AI Server

- **Visual Inference Server**
- EB202-CP-UG SKU (From AIC)
- Air-Cooled AI Inference Server
- Over 400 TOPS of Performance
- 8 Unigen Biscotti AI modules
- 16-core AMD EPYC CPU
- 128GB DDR5 Memory
- 960GB Enterprise SSD

*Poundcake*

### *Poundcake-LLM* AI Server

- **Generative AI Inference Server**
- Up to 20B-parameter Generative AI (LLM/VLM)
- 240 tokens/sec with 16 Unigen Tiramisu modules
- AIC EB202-CP Chassis, Motherboard, 2 x E3.S Boxes, Dual Power Supply
- AMD Genoa CPU with 16-32 Cores and AVX Media Decoding
- 8 - 16 Unigen E3.S Tiramisu AI Modules (up to 32 SAKURA-II EdgeCortix Processors)

*Poundcake-LLM*

# AI Solutions

## AI Server Appliances

Unigen's AI Server Appliances deliver powerful, ready-to-deploy solutions built for coding, language processing, object detection, and automated evaluation. Each appliance is engineered for high performance and seamless integration, enabling organizations to leverage advanced AI capabilities with reliability and ease.
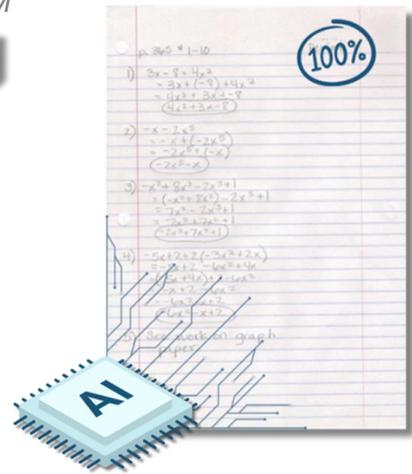
*Poundcake-LLM*

### Coding Appliance

On-premise AI coding and development, delivering a cloud-like experience within your own secure infrastructure.

- GPT OSS 20B LLM
- Unigen EB202-CP-LLM_32 (Generative AI Server)

*Poundcake-LLM*

### Grading Appliance

Automated grading and evaluation of math, spelling, grammar, and other academic tasks.

- Gemma3 12B + IP Agent
- Unigen EB202-CP-VLM_16 (Generative AI Server)

*Poundcake*

### VMS Appliance

Complete AI video monitoring solution, supporting up to 100 channels.

- Network Optix MetaNX + Scailable AI
- Unigen EB202-CP-UG (Visual AI Server)

# Get In Touch

sales@unigen.com

+1 (510) 896-1818
+1 (800) 826-0808

www.unigen.com

USA Headquarters
39730 Eureka Dr,
Newark CA 94560

Local Sales Support