Cupcake 2
Edge AI Server

Unigen's Cupcake 2 Edge AI Server delivers a solid platform for Machine Learning and Inference AI in a compact and rugged enclosure. With the right combination of I/O Interfaces and Expansion Capabilities to capture and process video and multiple types of signals through its POE ports and then to deliver the processed data to the client either over a wired or wireless network. Supporting Neural Networks from the leading ISV providers, Cupcake 2 delivers the flexibility to allow custom solutions.

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Up to 52 TOPS of AI Performance

Ruggedized Design

The Cupcake 2 combines the secure performance of a 4-Core Intel Atom SOC with up to a 52 TOPS AI Processing Board wrapped up in a compact, fan-less, rugged chassis. This allows the OS and Applications to run on the SOC while the TPU handles all the AI processing in parallel. This Edge AI Server is a capable performer for Delivery, Transportation, Retail, Agriculture, Healthcare, Manufacturing, Hospitality and Security.

Multiple Interfaces & Expansion Capabilities

The Cupcake 2 features an array of IO capabilities with 4 GbE POE ports, multiple USB, HDMI 2.0 and a selectable RS232/RS485. Internal and external expansion is available from an SD Card Slot as well as multiple M.2 slots for wireless communication, Micro SIM and an EDSFF Connector for the AI Processor.

SDK and ISV Software Available

Unigen is working with multiple IHVs and ISVs to provide access to the complete libraries for creating Neural Networks for custom applications. The SDK's can be utilized for internal programming for applications and ISVs are available to work with our platform to create end to end solutions.

Private Clouds

The Cupcake 2 platform has partners that are ready and able to provide direct to cloud solutions both on the premise as well as with local cloud colocation centers where data can be safely stored, made available for extra computation and accessed with excellent QoS for AI and management applications.

Options (See Selection Guide)

Available with WiFI, 4G, 5G, GPS, GSSS, Memory up to 64GB (3200), Up to 7.68TB NVMe SSD

Product Specifications

System	
CPU	Intel® Atom® x6414RE Processor SoC
Memory	16GB DDR4 2400 SO-DIMM
Graphics	Intel® UHD Graphics
Storage	64GB SSD
Ethernet	GbE x 1, GbE With POE+ (30W Max) x 4
Audio	Line in x1, Line out x 1, Mic in x 1
Display	HDMI 2.0b x 1
USB	USB 3.1 Type A x 2 USB Type C
Expansion Slot	SD card slot x 1 M.2 2230 E-key x 1 for AI of WiFi M.2 2242/2280 M-key x 1 (SATA III/PCIe Gen 3.0) M.2 2042 B-key x 1 E1.S 4-lane PCIe 3.0 x 1 (EDSFF) for AI or Storage Micro SIM slot x 1
I/O Placements	
Power	12V DC-IN connector and power button
Reset	Reset button
Debug port	USB to UART Micro B
COM	D-Sub 9-pin connector x 1 selectable RS232/RS485
CAN	4-Pin terminal block header
Power	12V DC 10A
Security	TPM 2.0
OS Support	Linux, Microsoft
Dimension	170mm x 158mm x 49.5mm
Operating Temperature	0°C ~ 50°C
Benchmark	
Passmark Tests (Non-AI Performance)	*Score (Composite: 1227.8 Marks)*
Storage Performance	1692 Marks
Memory Performance	1036 Marks
CPU Performance	2181 Marks
Low End Graphics	59.3 Marks
Cinebench	739.3
WinRAR I/O	1714 KB/s

* Preliminary Performance based upon Measured Data on Cupcake 2.1 Platform

Processor	☑ Intel Elkhart Lake (Atom X6414RE)
Memory	☐ 4GB ☑ 16GB ☐ 8GB ☐ 32GB
Storage Type	☑ High Endurance SATA ☐ High Capacity NVMe
Storage Capacity	☐ 32GB ☐ 960GB ☑ 64GB ☐ 1.92TB ☐ 128GB ☐ 3.84TB ☐ 256GB ☐ 7.68TB ☐ 512GB
WiFi – M.2 2230	☐ Yes ☐ No
4G – M.2 3042	☐ Yes ☐ No
5G – M.2 3042	☐ Yes ☐ No
AI Module	☐ Blaize P1600 ☐ Hailo-8 ☐ Degirum ☐ Hailo-8 x 2 ☐ MemryX
Rugged Enclosure	☑ Yes ☐ No
Branding	☑ Unigen ☐ Custom (Please specify)