

ASUS IoT PE8000G

Edge AI computer with Intel® Core™ 14th/13th/12th Gen. CPU and support for up to 2 NVIDIA® RTX 4090 GPU cards

Features

- Intel® Core™ 14th/13th/12th Gen. CPU
- Supports up to two NVIDIA® RTX 4090 GPU cards
- Intel® R680E chipset
- 4x hot-swappable 2.5" SSDs
- MIL-STD-810H certification



ASUS IoT PE8000G – High-performance Edge AI GPU computer

The ASUS IoT PE8000G is a rugged Edge AI GPU computer designed for demanding GPU computing workloads. With support for up to two NVIDIA® RTX 4090 (450W) GPU cards and a built-in 14th or 13th Generation Intel® Core™ processor, the ASUS IoT PE8000G delivers outstanding performance for real-time AI inference at the edge.

Powerful processors and GPU support

Equipped with the latest 14th and 13th Generation Intel® Core™ CPUs, ASUS IoT PE8000G offers up to 16 cores and 24 threads with a TDP of 35W to 65W. The Intel® R680E chipset ensures stable and efficient performance. In addition, ASUS IoT PE8000G supports up to 64GB ECC/non-ECC DDR5 4800 SDRAM for fast and reliable data processing.

Robust design for extreme conditions

ASUS IoT PE8000G is built to military standards (MIL-STD-810H) and offers exceptional durability and thermal design. It is capable of operating reliably in extreme temperatures from -20°C to 60°C. Thanks to its wide DC input range of 8-48V and integrated ignition control and power monitoring, it is ideal for use in harsh environments.

Thanks to its robust design and powerful hardware, the ASUS IoT PE8000G is suitable for a wide range of applications. From machine vision to intelligent video analytics (IVA) to factory automation, the ASUS IoT PE8000G elevates edge AI inference applications to the level of mission-critical tasks.

Optimized system reliability and resilience

The sophisticated mechanical design of the ASUS IoT PE8000G ensures high system reliability and resilience. Not only can it withstand shock and vibration, but it can also perform consistently in demanding environments. This makes it the ideal choice for applications that require high availability and longevity.

The ASUS IoT PE8000G is therefore the perfect solution for demanding edge AI applications that require the highest performance and reliability.

Appearance



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Specifications	ASUS IoT PE8000G
SYSTEM	
CPU	Intel® Core™ CPUs of the 14th/13th/12th Generation: – Intel® Core® i9-12900E (65W, 16-core, 2.3 GHz – 5.0 GHz) – Intel® Core® i9-12900TE (35W, 16-core, 1.1 GHz – 4.8 GHz) – Intel® Core® i7-12700E (65W, 12-core, 2.1 GHz – 4.8 GHz) – Intel® Core® i7-12700TE (35W, 12-core, 1.4 GHz – 4.7 GHz) – Intel® Core® i5-12500E (65W, 6-core, 2.9 GHz – 4.5 GHz) – Intel® Core® i5-12500TE (35W, 6-core, 1.9 GHz – 4.3 GHz) – Intel® Core® i3-12100E (64W, 4-core, 3.2 GHz – 4.2 GHz) – Intel® Core® i3-12100TE (35W, 4-core, 2.1 GHz – 4.0 GHz)
Chipset	Intel® R680E
Graphics	Support for up to two 450W NVIDIA® RTX 4090 GPU cards
RAM	Up to 64GB DDR5 up to 4800MHz, ECC/no ECC (two SODIMM slots)
TPM	On-Board Infineon TPM
AMT	Intel vPro / AMT support
Watchdog	HW WDT Enable (WDT_EN)
Storage	4x 2.5" bays (hot-swappable, supports SATA 3.0, 7~7.5mm)
Expansion	7x PCIe slots (1x PCIe Gen4 x16 + 3x PCIe Gen3 x4 + 2x Gen3 x1 or 2x PCIe Gen4 x8 + 3x PCIe Gen3x4 + 2x PCIe Gen3 x1) 1x MiniPCIe slot (supports mSATA or cellular module) supports single Nano-SIM 1x M.2 2280 M-Key socket (supports NVMe PCIe x4) 1x M.2 2230 E-Key socket (supports CNVi, Wi-Fi/BT module) 1x M.2 3042/3052 B-Key (supports M.2 5G/ 4G module/ UDR GPS module) supports Dual Nano SIM
Operating System	Windows 10 IoT Enterprise Ubuntu
INTERFACE	
Ethernet	1x Intel® i219-LM (1 GbE), supports PXE boot, RJ-45, Wake on LAN 1x Intel® i226-IT (2.5 GbE), supports PXE boot, RJ-45, Wake on LAN
USB	1x USB 3.2 Gen2x2 (20G), type C 4x USB 3.2 Gen2x1 (10G), type A 2x USB 3.2 Gen1 (5G), type A 2x USB 2.0, type A
COM	2x COM: RS-232/422/485, DB-9 4x COM: RS-232, DB-9 – Punched-out connection (optional)
Video	2x HDMI 1.4, supports up to 4,096 x 2,160 @ 30 Hz 2x DP 1.2, supports up to 4,096 x 2,160 @ 60 Hz, DP++
Audio	Mic-in, Line-out
Other	4x DI, 4x DO support isolation (optional) 4x LED indicators (by on-board SMD) show PWR/ Memory (HDD)/ Watch Dog Timer(WDT)/ Ignition(IGN) 4x mobile radio antennas / mobile radio: 4G LTE, 5G NR 2x Wi-Fi antennas / Wi-Fi: WiFi5, WiFi6/6E
ENVIRONMENTAL	
Power Supply	2x 4-pin plug-in connection block for 8-48V DC input Power supply 960W (optional) ATX/AT ignition Power-related buttons: power button, reset pinhole, header for remote power button
Operating Temperature	-20 ~ 60°C with 35W CPU (or CPU configured as 35W TDP), and all modules in operation (industrial components) -20 ~ 55 °C with 65W CPU, and all modules in operation (industrial components) 0 ~ 40° with all modules in operation (commercial components)
Storage Temperature	-40° ~ 80°C
Vibration / Shock Resistance	Vibration: In operation, MIL-STD-810H, Method 514.8, 5-500 Hz, Table 514.8C-1 Shock: In operation, MIL-STD-810H, method 516.8, procedure I, table 516.8-IV (20G/11ms)
Humidity	10 ~ 95% @ 40°C, non-condensing
Dimensions	225 (W) x 288 (H) x 443 (D) mm
Weight	12.2 kg
Mounting	Mounting kit for damping bracket Optional GPU card holder
Certifications	CE, FCC, VCCI, BSMI, CB, GA (RoHS)

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Ordering Information							
CPU	CHIPSET	SO-DIMM	2.5" SATA	COM	4x COM	DIO	Operating Temperature
i9-12900E	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C
i9-12900TE	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C
i7-12700E	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C
i7-12700TE	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C
i5-12500E	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C
i5-12500TE	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C
i3-12100E	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C
i3-12100TE	R680E	2x	4x	2x	Optional	Optional	-20~-60°C / 0~40°C

Packing List

- 6x Anti-shok & vibration damper
- 3x Desktop mount bracket
- 2x Power terminal block
- 2x GPU power cable

Optional Accessories

- 1x DIO terminal block
- 2x GPU card holder set
- 2x GPU power cable (12-pin)