

Edge AI GPU System

PE8000G (Preliminary)

High-throughput GPU Computing Edge AI System supporting Intel® 13th/ 12th-Gen Core™ CPU and up to dual 450W GPU Card



Features

- Intel® 13th/ 12th-Gen Core™ CPU (Alder Lake-S, R680E chipset)
- Support up to dual 450W NVIDIA® GPU card
- Four hot-swappable 2.5" SSD
- 8~48V wide-range DC-in w/ built-in Ignition power control
- Comply with MIL-STD 810H (TBD)

Specifications

| | | | | | | | | | | |
|----------------------------|----------------------|---|---|------------------------|-------------------------|------------------------|-------------------------|---|-------------------------|--|
| System | CPU | Intel® Core® i9-12900E | Intel® Core® i9-12900TE | Intel® Core® i7-12700E | Intel® Core® i7-12700TE | Intel® Core® i5-12500E | Intel® Core® i5-12500TE | Intel® Core® i3-12100E | Intel® Core® i3-12100TE | |
| | TDP | 65W | 35W | 65W | 35W | 65W | 35W | 65W | 35W | |
| | # of Cores | 16 | 16 | 12 | 12 | 6 | 6 | 4 | 4 | |
| | P Core Base Freq. | 2.3 GHz | 1.1 GHz | 2.1 GHz | 1.4 GHz | 2.9 GHz | 1.9 GHz | 3.2 GHz | 2.1 GHz | |
| | Max Turbo Freq. | 5.0 GHz | 4.8 GHz | 4.8 GHz | 4.7 GHz | 4.5 GHz | 4.3 GHz | 4.2 GHz | 4.0 GHz | |
| | Chipset | R680E | | | | | | | | |
| | Memory | 2 x SO-DIMM, DDR5 up to 4800MHz MHz, ECC/ non ECC, max. 64GB | | | | | | | | |
| External Interfaces | Display | 2x HDMI 1.4, supports up to 4096 x 2160 @ 30 Hz 2x DP 1.2, supports up to 4096 x 2160 @ 60 Hz, DP++ | | | | | | | | |
| | Ethernet | 1x Intel® i219-LM (1 GbE), support PXE boot, RJ45, wake on Lan 1x Intel® i226-IT (2.5 GbE), support PXE boot, RJ45, wake on Lan | | | | | | | | |
| | AMT | Supports Intel vPro/ AMT | | | | | | | | |
| | 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 USB2.0, type A | | |
| | Audio | Mic in; Line out | | | | | | | | |
| | COM | 2x COM: RS-232/422/485, DB9 4x COM: RS-232, DB9 --- Punch-out port (optional) | | | | | | | | |
| | DIO | 4x DI, 4 x DO support isolation (optional) | | | | | | | | |
| | LED | LED Indicators x 4 (by on-board SMD shows PWR/ storage (HDD)/ watch dog timer(WDT)/ ignition(IGN) | | | | | | | | |
| | Antenna | 4x cellular; 2x wifi | | | | | | | | |
| | Expansion | PCIe | 7 x PCIe slots (1 x PCIe Gen4 x16 + 3 x PCIe Gen3 x4 + 2 x Gen3 x1 or 2 x PCIe Gen4 x8 + 3 x PCIe Gen3 x4 + 2 x PCIe Gen3 x1) | | | | | | | |
| Mini PCIe | | 1 x Mini PCIe socket (support mSATA or cellular module) support single nano SIM | | | | | | | | |
| M.2 M Key | | 1 x M.2 2280 M-key socket (support NVMe PCIe4) | | | | | | | | |
| M.2 E Key | | 1 x M.2 2230 E-key socket (support CNVi, Wi-Fi/BT module) | | | | | | | | |
| M.2 B Key | | 1 x 3042/3052 (support M.2 5G/ 4G module/ UDR GPS module) support dual nano SIM | | | | | | | | |
| 2.5" SATA | | 4 x 2.5" slots (hot-swappable, supports SATA 3.0, 7~7.5mm) | | | | | | | | |
| Wireless | Wifi | WiFi5, WiFi 6/6E | | | | | | | | |
| | Cellular | 4G LTE, 5G NR | | | | | | | | |
| Power | System Power | 2 x 4 pin pluggable terminal block for 8-48V DC input | | | | | | | | |
| | Power related button | Power button Reset pinhole Header for remote power button | | | | | | | | |
| | Power Supply | 960W (Optional) | | | | | | | | |
| | Type | ATX/AT/Ignition | | | | | | | | |
| Mechanical | Mounting | Damping bracket mounting kit | | | | | | | | |
| | GPU holder | Card holder (optional) | | | | | | | | |
| | Dimension | 225 x 288 x 443 mm | | | | | | | | |
| | Weight | 12.2 kg | | | | | | | | |
| Environment | Operating Temp. | * -20~60°C with 35W CPU (or CPU configured as 35W TDP), and all module operating (industrial parts) * -20~55°C with 65W CPU, and all module operating (industrial parts) * 0~40° with all module operating (commercial parts) | | | | | | | | |
| | Storage Temp. | -40~85°C | | | | | | | | |
| | Relative Humidity | 10 to 95% (non-condensing) | | | | | | | | |
| | EMC | CE, FCC VCCI, BSMI | | | | | | | | |
| | Safety | CB, BSMI | | | | | | | | |
| | Vibration | Operating: MIL-STD-810H, Method 514.8, 5-500 Hz, Table 514.8C-I | | | | | | | | |
| | Shock | Operating: MIL-STD-810H, Method 516.8, Procedures I, Table 516.8-IV (20G/11ms) | | | | | | | | |
| | Green | GA (RoHS) | | | | | | | | |
| Security | TPM | On-board Infineon TPM | | | | | | | | |
| Others | Watch dog timer | HW WDT Enable (WDT_EN) | | | | | | | | |
| | OS | Windows 10 IoT Enterprise, Linux(UBUNTU) | | | | | | | | |

Ordering Information:

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

Packing List:

| Description | Qty |
|-------------------------------|-----|
| Anti shock & vibration damper | 6 |
| Desktop mount bracket | 3 |
| Power terminal block | 2 |
| GPU power cable | 2 |

Optional Accessories:

| Description | Qty |
|--------------------------|-----|
| DIO terminal block | 1 |
| GPU card holder set | 2 |
| GPU power cable (12 Pin) | 2 |