

SEMIL-1300GC Series

Wide-temperature Fanless GPU Computer including NVIDIA® RTX 2000 Ada and supporting Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with M12 connectors

Key Features

- Fanless GPU computer with NVIDIA® RTX 2000 Ada
- Intel® Xeon® E or 9th/ 8th-Gen Core™ i7/ i5/ i3 CPU
- Patented 2U 19" chassis for rack or wall-mount^[1]
- Four 802.3at Gigabit PoE+ ports via M12 X-coded connectors
- VGA, USB 2.0 and COM ports via M12 A-coded connectors
- 1x DisplayPort and 3x USB 3.1 Gen1 ports
- 8 to 48V wide-range DC input with built-in ignition power control
- MIL-STD-810G and EN 50155 EMC compliant


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[1]R.O.C Patent No. 1697759

Introduction

SEMIL-1300GC series is the world's first wide-temperature fanless edge AI computer supporting NVIDIA® 2000 Ada for demanding environments. Coupled with Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU, the system delivers excellent CPU and GPU performances for modern edge AI applications. SEMIL-1300GC series features Neosys' patented thermal system architecture* to guarantee -40°C to 70°C fanless operation in a rack-mountable or wall-mountable 2U 19" enclosure.

SEMIL-1300GC series features an advanced passive cooling design to ensure the CPU/ GPU does not throttle when operating in high-temperature environments. Compatible with a RTX 2000 Ada GPU, users can utilize the scalable GPU performance that offers up to 12.0 TFLOPS in FP32 or 191.9 TOPS in INT8. The system leverages M12 connectors for Gigabit PoE+, USB 2.0, VGA and COM ports to offer rugged cable connectivity. Other high-speed computer I/Os include DisplayPort, USB 3.1 Gen1, optional 10G Ethernet and storage interfaces such as an M.2 for NVMe SSD and SATA ports, making SEMIL-1300GC expandable and versatile.

The GPU-powered deep learning systems actualized real-time AI inference applications at the edge by thriving in rough conditions. Combining a RTX 2000 Ada, wide-temperature fanless design and rugged M12 connectors, the SEMIL-1300GC series reveals unprecedented possibilities of deploying AI to places that have yet to be reached.

Specifications

| System Core | | Storage Interface | |
|-----------------------------------|---|------------------------------|---|
| Processor | Supporting Intel® Xeon® E and 9 th / 8 th -Gen CPU (LGA1151 socket) - Xeon E 2278GE (8C/16T) / 2278GEL (8C/16T) / 2176G (6C/12T) - i7-9700E, i7-9700TE, i7-8700, i7-8700T - i5-9500E, i5-9500TE, i5-8500, i5-8500T - i3-9100E, i3-9100TE, i3-8100, i3-8100T | M.2 | 1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation |
| Chipset | Intel® C246 platform controller hub | Expansion Bus | |
| Graphics | Integrated Intel® UHD Graphics 630 | Mini PCI-E | 2x full-size mini PCI Express sockets (mux with mSATA) 1x M.2 3042/ 3052 B key socket for selected M.2 4G/ 5G module 1x M.2 2242/ 2252 E key for selected WiFi module |
| Acceleration GPU | NVIDIA® RTX 2000 Ada for AI inference | Power Supply | |
| Memory | Up to 64 GB ECC/ non ECC DDR4-2666/ 2400 SDRAM (two SODIMM sockets) | DC Input | 8 to 48V DC input |
| AMT | Supports AMT 12.0 | Ignition Control | Built-in ignition power control |
| TPM | Supports TPM 2.0 | Mechanical | |
| I/O Interface | | Dimension | 440mm (W) x 310mm (D) x 90.5mm (H) (excl. rack-mount bracket) |
| PoE+ | 1x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I219 (M12 X-coded) 3x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I210 (M12 X-coded) | Weight | 12 kg |
| 10 GbE Port (Build Option) | Optional: 1x 10 GbE port by Intel® X550AT controller (M12 X-coded) | Mounting | Rack-mounting and wall-mounting |
| Native Video Port | 1x VGA (M12 A-coded), supporting 1920 x 1200 resolution 1x DisplayPort connector, supporting 4096 x 2304 resolution | Environmental | |
| Series Port | 2x 3-wires RS-232 ports COM1 & COM2 (M12 A-coded) 1x software-programmable RS-232/ 422/ 485 port (COM3, DB9) 1x RS-232 port (COM4, DB9) | Operating Temperature | with 35W CPU -40°C ~ 70°C ^[2] with >= 65W CPU -40°C ~ 70°C ^{[2]/[3]} (configured as 35W TDP mode) -40°C ~ 50°C ^{[2]/[3]} (configured as 65W TDP mode) |
| USB | 3x USB 3.1 Gen1 2x USB 2.0 (M12 A-coded) 1x USB 2.0 (internal) | Storage Temperature | -40°C ~ -85°C |
| Audio | 1x 3.5 mm jack for mic-in and speaker-out | Humidity | 10%~90% , non-condensing |
| Storage Interface | | Vibration | MIL-STD-810G, Method 514.7, Category 4 |
| SATA HDD | 2x Internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1 | Shock | MIL-STD-810G, Method 516.7, Procedure I |
| mSATA | 2x full-size mSATA port (mux with mini-PCIe) | EMC | EN 50121 (EN 50155 EMC) EN-50155, CE/FCC Class A, according to EN 55032 & EN 55035 |

^[2]For Xeon E 2176G/ 2278GE, i7-9700E, and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.

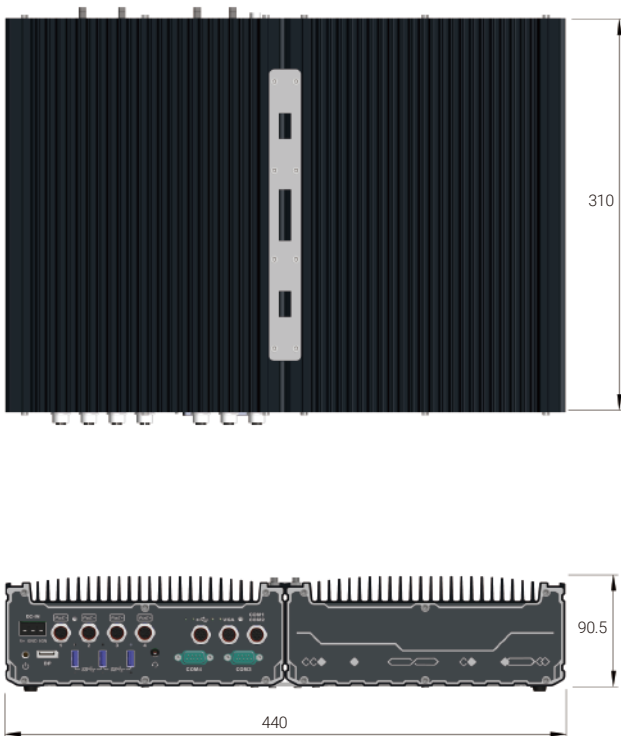
^[3]For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required

Appearance



Dimensions

Unit : mm



Mounting Configuration



▲ SEMIL 19" rack-monuted



▲ SEMIL wall-mounted




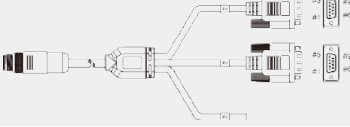

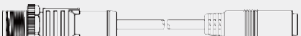
Ordering Information

| Model No. | Product Description |
|----------------------|---|
| SEMIL-1321GC-ADA | Wide-temp Fanless GPU Computer w/ NVIDIA® RTX 2000 ADA, 4x M12 PoE+ ports supporting Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU |
| SEMIL-1321GC-10G-ADA | Wide-temp Fanless GPU Computer w/ NVIDIA® RTX 2000 ADA, 4x M12 PoE+ ports, 10GbE port supporting Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU |

Optional Accessories

| | |
|-------------|---|
| PA-280W-ET2 | 280W AC/ DC power adapter 24V/ 11.67A; 16AWG/ 100cm; cord end terminals for terminal block, operating temperature: -30°C to 60°C. |
| Cblkit-M12 | Please refer to the Cable Kit Guide on the following page |

SEMIL-1000 Series

| Type | Model Name | Description |
|---|-----------------------------|--|
|  | Cbl-M12X8M-RJ45-CAT6A-500CM | M12 (8-pole-X-coded) to RJ45, CAT6, length : 500CM |
|  | Cbl-M12A8M-2U2TA-180CM | M12 (8-pole-A-coded) to 2xUSB 2.0 type A (female), Length: 180CM |
|  | Cbl-M12A17M-VGA-180CM3 | M12 (17-pole-A-coded) to VGA (Male), Length: 180CM |
|  | Cbl-M12A8M-2DB9M_OW2-180CM1 | Cable 180cm, M12 A-Code Male 8P to x2 DB9 Male+2P |
|  | Cbl-M12S4F-OW4-180CM1 | Cable 180cm, M12 S-Code Female 4P to Open Wire 4P |
|  | Cbl-M12A8M-ADJ-180CM | M12 (8-pole-A-coded) to Audio Jack, Length : 180CM |

Cable Kit

| SEMIL-1300 M12 cable kit | | |
|-------------------------------------|--------------------------------|---------------------------------|
| Cblkit-M12-SEMIL1300 | 4x Cbl-M12X8M-RJ45-CAT6A-500CM | 1x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A17M-2DB9M_OW2-180CM1 |
| SEMIL-1300-10G M12 cable kit | | |
| Cblkit-M12-SEMIL1300 | 5x Cbl-M12X8M-RJ45-CAT6A-500CM | 1x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A8M-2DB9M_OW2-180CM1 |
| SEMIL-1704 M12 cable kit | | |
| Cblkit-M12-SEMIL1700 | 4x Cbl-M12X8M-RJ45-CAT6A-500CM | 1x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A8M-2DB9M_OW2-180CM1 |
| | 1x Cbl-M12S4F-OW4-180CM1 | |
| SEMIL-1704-10G M12 cable kit | | |
| Cblkit-M12-SEMIL1700-10G | 5x Cbl-M12X8M-RJ45-CAT6A-500CM | 1x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A8M-2DB9M_OW2-180CM1 |
| | 1x Cbl-M12S4F-OW4-180CM1 | |
| SEMIL-1708 M12 cable kit | | |
| Cblkit-M12-SEMIL1708 | 8x Cbl-M12X8M-RJ45-CAT6A-500CM | 2x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A8M-2DB9M_OW2-180CM1 |
| | 1x Cbl-M12S4F-OW4-180CM1 | |
| SEMIL-1708-10G M12 cable kit | | |
| Cblkit-M12-SEMIL1708-10G | 9x Cbl-M12X8M-RJ45-CAT6A-500CM | 2x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A8M-2DB9M_OW2-180CM1 |
| | 1x Cbl-M12S4F-OW4-180CM1 | |
| SEMIL-1708-ADO M12 cable kit | | |
| Cblkit-M12-SEMIL1708-ADO | 8x Cbl-M12X8M-RJ45-CAT6A-500CM | 2x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A8M-2DB9M_OW2-180CM1 |
| | 1x Cbl-M12S4F-OW4-180CM1 | 1x Cbl-M12A8M-ADJ-180CM |
| SEMIL-1708-10G-ADO M12 cable kit | | |
| Cblkit-M12-SEMIL1708-10G-ADO | 9x Cbl-M12X8M-RJ45-CAT6A-500CM | 2x Cbl-M12A8M-2U2TA-180CM |
| | 1x Cbl-M12A17M-VGA-180CM3 | 1x Cbl-M12A8M-2DB9M_OW2-180CM1 |
| | 1x Cbl-M12S4F-OW4-180CM1 | 1x Cbl-M12A8M-ADJ-180CM |