

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



[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 Neousys' 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 9th/ 8th-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.

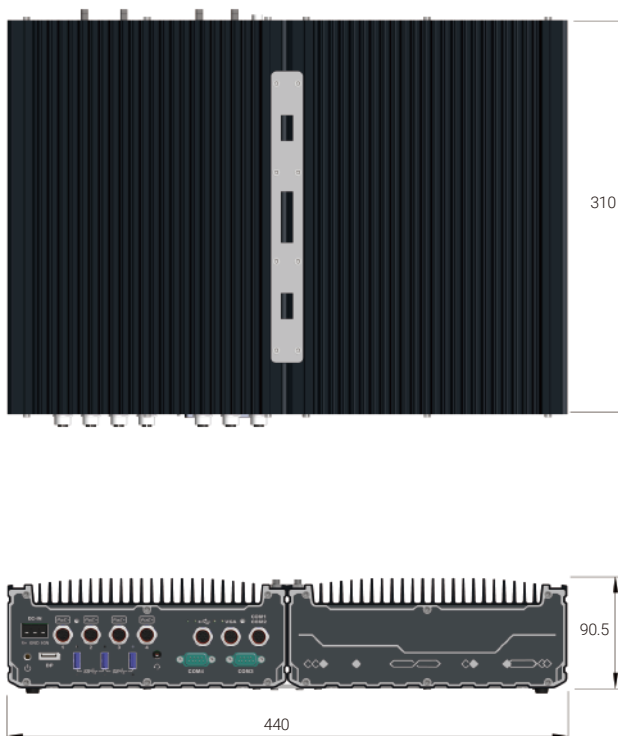
[3]For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required

Appearance



Dimensions

Unit : mm



Mounting Configuration



▲ SEMIL 19" rack-mounted



▲ SEMIL wall-mounted




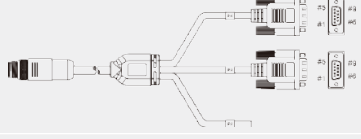


Ordering Information

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