

# SEMIL-1300GC Series

Wide-temperature Fanless GPU Computer supporting NVIDIA® RTX A2000/ Tesla T4 GPU/ Quadro P2200 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with M12 connectors



## Key Features

- Fanless GPU computer with NVIDIA® RTX A2000/ Tesla T4/ Quadro P2200
- Guaranteed non-throttling GPU performance up to 62°C ambient
- Intel® Xeon® E or 9th/ 8th-Gen Core™ i7/ i5/ i3 CPU
- Patented 2U 19" chassis for rack or wall-mount\*
- 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
- CE, FCC and EN 50155 certified

\*R.O.C Patent No. 1697759  
\*CN Patent Pending

## Introduction

SEMIL-1300GC series is the world's first wide-temperature fanless edge AI computer supporting NVIDIA® RTX A2000, Tesla T4 or Quadro P2200 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 A2000, Tesla T4 or Quadro P2200 GPU, users can utilize the scalable GPU performance that offers up to 8.1 TFLOPS in FP32 or 130 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 A2000, Tesla T4 or Quadro P2200, 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

SEMIL-1341GC		SEMIL-1321GC	
System Core			
Processor	Supporting Intel® Xeon® E and 9 <sup>th</sup> / 8 <sup>th</sup> -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		
Chipset	Intel® C246 platform controller hub		
Graphics	Integrated Intel® UHD Graphics 630		
Acceleration GPU	NVIDIA® Tesla T4 for AI inference	NVIDIA® RTX A2000/ Quadro P2200 for AI inference	
Memory	Up to 64 GB ECC/ non ECC DDR4-2666/ 2400 SDRAM (two SODIMM sockets)		
AMT	Supports AMT 12.0		
TPM	Supports TPM 2.0		
I/O Interface			
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)		
10 GbE Port (Build Option)	Optional: 1x 10 GbE port by Intel® X550AT controller (M12 X-coded)**		
Native Video Port	1x VGA (M12 A-coded), supporting 1920 x 1200 resolution 1x DisplayPort connector, supporting 4096 x 2304 resolution		
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)		
USB	3x USB 3.1 Gen1 2x USB 2.0 (M12 A-coded) 1x USB 2.0 (internal)		
Audio	1x 3.5 mm jack for mic-in and speaker-out		
Storage Interface			
SATA HDD	2x Internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1		
mSATA	2x full-size mSATA port (mux with mini-PCIe)		

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Storage Interface			
M.2	1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation		
Expansion Bus			
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		
Power Supply			
DC Input	8 to 48V DC input		
Ignition Control	Built-in ignition power control		
Mechanical			
Dimension	440mm (W) x 310mm (D) x 86.5mm (H) (excl. rack-mount bracket)		
Weight	12 kg		
Mounting	Rack-mounting and wall-mounting		
Environmental			
Operating Temperature	with 35W CPU -40°C ~ 70°C ****		
	with >= 65W CPU -40°C ~ 70°C ***/ **** (configured as 35W TDP mode) -40°C ~ 50°C ***/ **** (configured as 65W TDP mode)		
Storage Temperature	-40°C ~ 85°C		
Humidity	10%~90% , non-condensing		
Vibration	MIL-STD-810G, Method 514.7, Category 4		
Shock	MIL-STD-810G, Method 516.7, Procedure I		
EMC	EN-50155, CE/FCC Class A, according to EN 55032 & EN 55035		

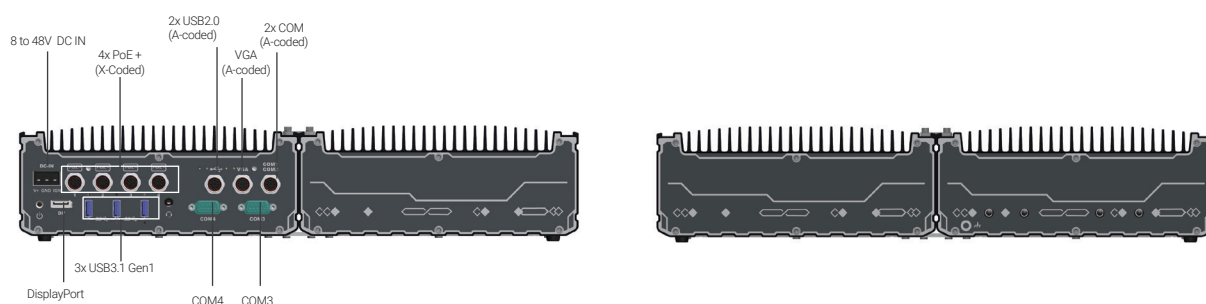
\*\* For optional 10GbE support, please contact Neosys Technology

\*\*\* 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.

\*\*\*\* For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required

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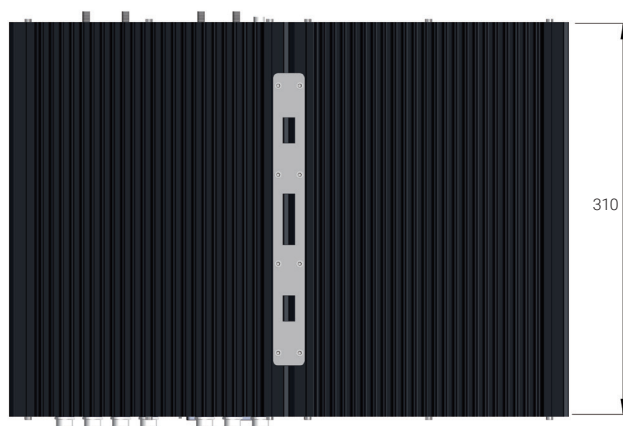
## Appearance



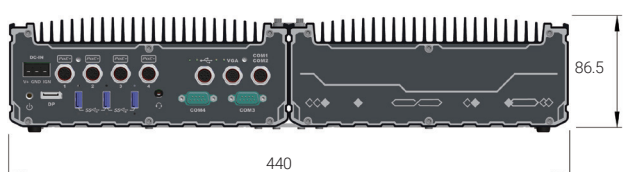
## Dimensions

Unit : mm

### Mounting Configuration



▲ SEMIL 19" rack-monuted



▲ SEMIL wall-mounted

## Ordering Information

Model No.	Product Description
SEMIL-1341GC	Wide-temperature fanless GPU computer with NVIDIA® Tesla T4 GPU and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with M12 connectors
SEMIL-1321GC	Wide-temperature fanless GPU computer with NVIDIA® Quadro P2200 GPU and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with M12 connectors
SEMIL-1321GC-A2K	Wide-temperature fanless GPU computer with NVIDIA® RTX A2000 GPU and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with M12 connectors

## Optional Accessories

M12-Cable-Kit	4x PoE+, VGA, 2x USB2.0 (by Y-cable), 2x COM (by Y-cable) and DC power cables
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.