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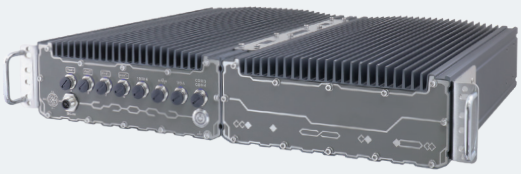
# SEMIL-1700GC Series

IP67 Waterproof GPU Computer supporting NVIDIA® RTX A2000/ Tesla T4/ Quadro P2200 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with All M12 Connectors



## Key Features

- **IP67 waterproof GPU computer with NVIDIA® RTX A2000/ Tesla T4/ Quadro P2200**
- **Intel® Xeon® E or 9th/ 8th-Gen Core™ i7/ i5/ i3 CPU**
- **Patented waterproof 2U 19" chassis for rack or wall-mount***
- **Guaranteed non-throttling GPU performance up to 62°C ambient**
- **Up to eight 802.3at Gigabit PoE+ ports via M12 X-coded connectors**
- **VGA, USB 2.0 and COM ports via M12 A-coded connectors**
- **8 to 48V wide-range DC input with built-in ignition power control**
- **MIL-STD-810G and EN 50155 certified**

*R.O.C Patent No. I697759
*CN Patent Pending

## Introduction

SEMIL-1700GC series is one of the world's first IP67-rated, waterproof and dustproof inference server with pre-installed NVIDIA® RTX A2000, Tesla T4 or Quadro P2200 for the most demanding environments. It is a brand new page in Neousys' chapter of innovations as it represents a new level of robustness for rugged edge AI solutions. Coupled with Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU, the system delivers excellent CPU and GPU performances for advanced edge AI applications in various environmental settings. SEMIL-1700GC series features Neousys' patented system architecture* to guarantee -40°C to 70°C fanless operation in a rack or wall-mountable 2U 19" enclosure.

SEMIL-1700GC series features a sophisticated thermal design to dissipate the heat generated by RTX A2000, Tesla T4 or Quadro P2200 GPU to ensure maximum GPU performance in high-temperature environments. It has a corrosion-proof, stainless steel/ aluminum chassis with molded o-rings plus patented fusion mechanism design to offer extraordinary durability and watertight construction. SEMIL-1700GC series offers a variety of I/O connectivities, including 802.3at Gigabit PoE+, VGA, USB, COM ports and optional 10G Ethernet, all using M12 connectors for water-proof and extreme-rugged connectivity in shock and vibration conditions. Additionally, it features M.2 for NVMe SSD, 2.5" SATA storage accommodation, 8 to 48V wide-range DC input with ignition power control and complies with MIL-STD-810G and EN 50155.

The inference acceleration of rugged GPU computers actualized real-time AI inference applications at the edge, where extremely rough conditions are expected. By combining powerful CPU/ GPU, robust IP67 protection, true fanless wide-temperature operation, rugged M12 connectors, and standard 2U 19" rack, SEMIL-1700GC series reveals unprecedented possibilities of deploying AI to places that have yet to be reached.

## Specifications

| | SEMIL-1744GC | SEMIL-1724GC | SEMIL-1748GC | SEMIL-1728GC |
|---|---|---|---|---|
| **System Core** | | | | |
| Processor | Supporting Intel® Xeon® E and 9th/ 8th-Gen CPU (LGA1151 socket)<br>- Xeon E 2278GE (8C/16T) / 2278GEL (8C/16T) / 2176G (6C/12T)<br>- i7-9700E, i7-9700TE, i7-8700, i7-8700T<br>- i5-9500E, i5-9500TE, i5-8500, i5-8500T<br>- 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 | NVIDIA® RTX A2000/ Quadro P2200 | NVIDIA® Tesla T4 | NVIDIA® RTX A2000/ Quadro P2200 |
| 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) | | 7x 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 | | | |
| Series Port | 2x 3-wires RS-232 ports COM1 & COM2 (M12 A-coded) | | | |
| USB | 2x USB 2.0 (M12 A-coded)<br>1x USB 2.0 (internal) | | 4x USB 2.0 (M12 A-coded)<br>1x USB 2.0 (internal) | |
| Audio | - | | 1x mic-in and speaker-out (M12 A-coded) | |
| **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) | | | |
| M.2 | 1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation | | | |

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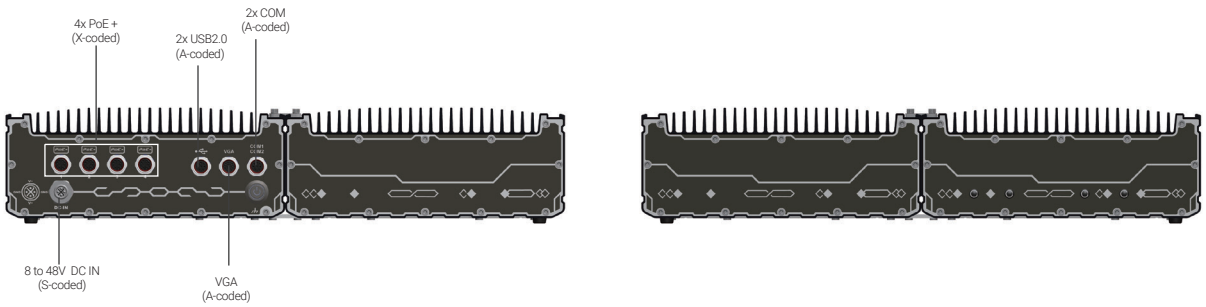
|---|---|---|---|---|
| **Expansion Bus** | | | | |
| Mini PCI-E | 2x full-size mini PCI Express sockets (mux with mSATA) | | 2x full-size mini PCI Express socket (mux with mSATA)<br>2x full-size mini PCI Express socket | |
| **Power Supply** | | | | |
| DC Input | 8 to 48V DC input (M12 S-coded) | | | |
| Ignition Control | Built-in ignition power control (IGN/ GND signal via M12 serial port connector) | | | |
| **Mechanical** | | | | |
| Dimension | 440mm (W) x 310mm (D) x 86.5mm (H) (excl. rack-mount bracket) | | | |
| Weight | 12 kg | | 12.2 kg | |
| Mounting | Rack-mounting and wall-mounting | | | |
| **Environmental** | | | | |
| Operating Temperature | **with 35W CPU**<br>-40°C ~ 70°C **** <br><br>**with >= 65W CPU**<br>-40°C ~ 70°C ***/ **** (configured as 35W TDP mode)<br>-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 | | | |

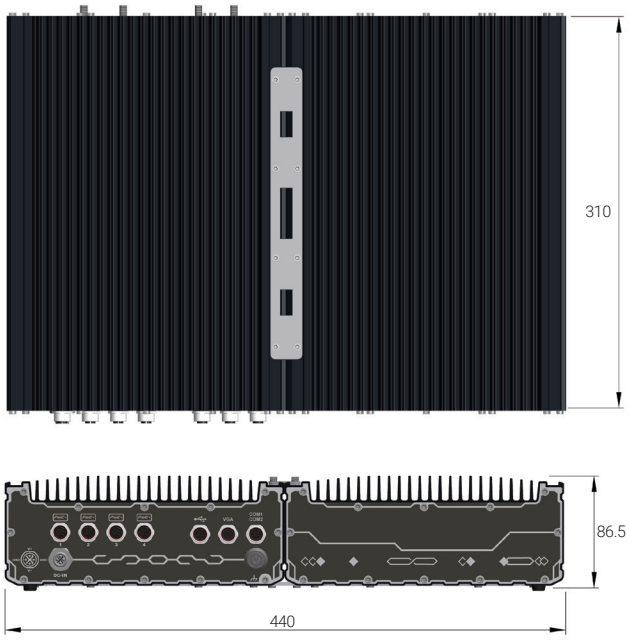
** For optional 10GbE support, please contact Neousys Technology
*** For Xeon E 2176G/ 2278GE, i7-9700E, and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.
**** For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required

## Appearance

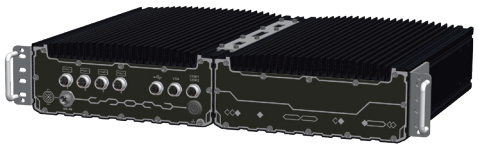



## Dimensions

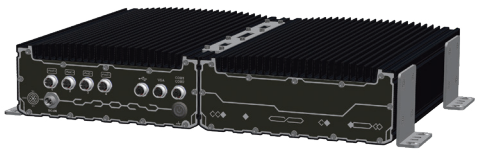
Unit : mm




**Mounting Configuration**



▲ SEMIL 19" rack-monuted



▲ SEMIL wall-mounted

## Ordering Information

| Model No. | Product Description |
|---|---|
| SEMIL-1744GC | IP67 Waterproof GPU Computer supporting NVIDIA® Tesla T4 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with 4x M12 PoE+ ports |
| SEMIL-1724GC | IP67 waterproof GPU computer supporting NVIDIA® Quadro P2200 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with 4x M12 PoE+ ports |
| SEMIL-1724GC-A2K | IP67 waterproof GPU computer supporting NVIDIA® RTX A2000 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with 4x M12 PoE+ ports |
| SEMIL-1748GC | IP67 waterproof GPU computer supporting NVIDIA® Tesla T4 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with 8x M12 PoE+ ports |
| SEMIL-1728GC | IP67 Waterproof GPU Computer supporting NVIDIA® Quadro P2200 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with 8x M12 PoE+ ports |
| SEMIL-1728GC-A2K | IP67 Waterproof GPU Computer supporting NVIDIA® RTX A2000 and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with 8x M12 PoE+ ports |

## 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 |