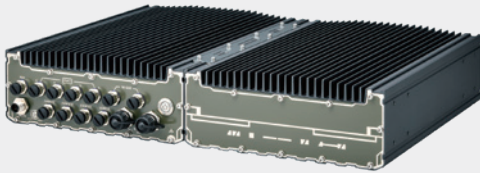# SEMIL-2000GC Series

19" rack mount IP69K waterproof computer including NVIDIA® L4, supporting Intel® 14th/ 13th/ 12th-Gen Core™ processor with 2x M12 10GbE and 4x M12 PoE+ ports

Key Features

- · IP69K waterproof GPU computer with NVIDIA® L4 GPU
- · -40°C to 70°C wide-temperature fanless operation
- · 2x 10GbE, 1x GbE, and 4x 2.5GbE PoE+ via M12 X-coded connectors
- · 2x SocketCAN and 2x USB3.2 Gen1 Type-C w/ DP alternative mode
- · 8 to 48V wide-range DC input with reverse polarity protection and built-in ignition power control
- · MIL-STD-810H compliant

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

CE FC

Introduction

SEMIL-2000GC is an extreme-rugged IP69K dustproof and waterproof edge AI platform in a 2U 19" rack-mount form factor. SEMIL- 2000GC incorporates Neousys' best-in-class thermal design to ensure fanless maximum GPU performance in wide range -40°C to 70°C temperatures. The system is also integrated with an NVIDIA® L4 GPU that offers up to 2.5 times the performance over Tesla T4.

Powered by Intel's 14th/ 13th/ 12th-Gen platform, SEMIL-2000GC benefits from Intel® 7 photolithography with performance and efficient core hybrid performances while supporting up to 64 GB DDR5 memory.
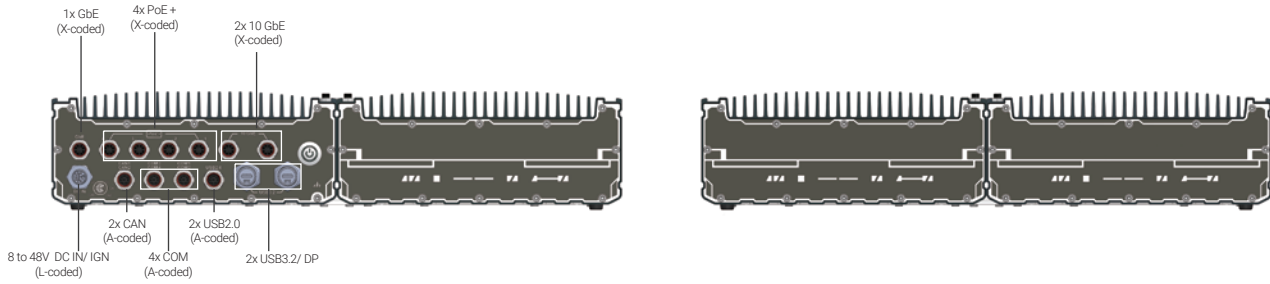
SEMIL-2000GC adopts a corrosion-proof stainless steel and aluminum chassis to counteract moisture and salinity. By utilizing M12 connectors, it offers extremely rugged connections in shock and vibration environments with two CAN bus 2.0 with SocketCAN driver, two USB 3.2, seven Ethernet (including two 10GbE), and four 802.3at PoE+ ports to supply 25.5W of power per port to connected compatible devices. Internally, there is an M.2 M-key socket to support NVMe SSD and mini-PCIe sockets for extending feature sets. Additionally, SEMIL-2000GC features two 2.5" SATA SDD/ HDD accommodation, 8-48V wide-range DC input with ignition power control, and it is also in compliance with MIL-STD-810H standards.
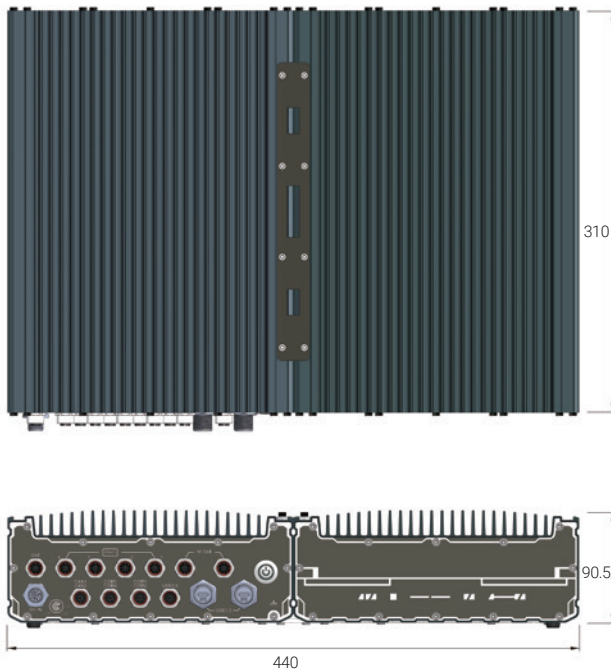
Specifications

System Core		
Processor	Supporting Intel® 13th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-13900E/ i9-13900TE - Intel® Core™ i7-13700E/ i7-13700TE - Intel® Core™ i5-13500E/ i5-13400E/ i5-13500TE - Intel® Core™ i3-13100E/ i3-13100TE	Supporting Intel® 12th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-12900E/ i9-12900TE - Intel® Core™ i7-12700E/ i7-12700TE - Intel® Core™ i5-12500E/ i5-12500TE - Intel® Core™ i3-12100E/ i3-12100TE - Intel® Pentium® G7400E/ G7400TE - Intel® Celeron® G6900E/ G6900TE
Chipset	Intel® Q670E platform controller hub	
Graphics	Integrated Intel® UHD Graphics 770 (32EU)	
Acceleration GPU	NVIDIA® L4 GPU	
Memory	Up to 64 GB DDR5 4800 SDRAM (two SODIMM slots)	
AMT	Supports Intel vPro/ AMT 16.0	
TPM	Supports dTPM 2.0	

I/O Interface	
Ethernet Port	2x 10GbE Ethernet by X550-AT2 (with WoL) (M12 X-coded) 4x 2.5GbE Ethernet by Intel I226-IT (PoE+) (M12 X-coded) 1x GbE Ethernet by Intel I219-LM (with WoL) (M12 X-coded)
PoE+	4x IEEE 802.3at PoE+ PSE with 100 W total power budget
CAN Bus	2x isolated CAN 2.0 port, supporting SocketCAN in Linux
USB	2x Type-C USB 3.2 Gen1x1 (5Gbps) ports (shared DisplayPort) 2x USB 2.0 ports (M12 A-coded)
Video Port	2x Type-C USB connector supporting DP output (shared USB3.2 Gen1x1)
Serial Port	2x isolated 3-wire RS-232 ports (COM1/ COM2) 1x isolated 3-wire RS232 (COM3) & 1x RS-422/ 485 port (COM4)

Storage Interface	
SATA HDD	2x Internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
M.2	1x M.2 2280 M key NVMe socket (PCIe Gen4x4) for NVMe SSD

Expansion Bus	
Mini PCI-E	3x full-size mini PCI Express socket with SIM slot
M.2	1x M.2 2242/3052 B key socket with dual SIM slot for M.2 5G/ 4G module 1x M.2 2230 E key socket for Wi-Fi

Power Supply	
DC Input	8V to 48V DC input, with reverse polarity protection (M12 L-coded)
Ignition Control	Built-in ignition power control (IGN/ GND signal via M12 L-coded connector)

Mechanical	
Dimension	440mm (W) x 310mm (D) x 90.5mm (H) (excl. rack-mount bracket)
Weight	12 kg
Mounting	Rack-mounting (standard) and wall-mounting (standard)

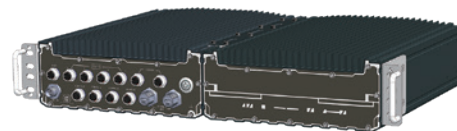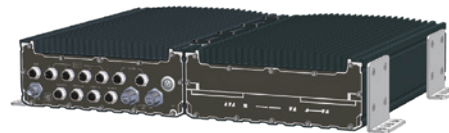| Environmental	
Operating Temperature	**With 35W CPU** -40°C to 70°C **With CPU operating >= 65W CPU** -40°C to 70°C (configured as 35W TDP mode) -40°C to 60°C (configured as 65W TDP mode)
Storage Temperature	-40°C ~85°C
Humidity	10%~90% , non-condensing
Vibration	MIL-STD-810H, 514.8C-IV. Category 4
Shock	MIL-STD-810H, 516.8 Procedure I
EMC	EN 50121 (EN 50155 EMC) CE/FCC Class A, according to EN 55032 & EN 55024
Ingress Protection	IP69K

NEOUSYS TECHNOLOGY

Appearance

1x GbE (X-coded)
4x PoE + (X-coded)
2x 10 GbE (X-coded)
2x CAN (A-coded)
2x USB2.0 (A-coded)
8 to 48V DC IN/ IGN (L-coded)
4x COM (A-coded)
2x USB3.2/ DP

Dimensions

Unit : mm

310
440
90.5

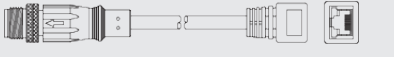**Mounting Configuration**

▲ SEMIL 19" rack-monut

▲ SEMIL wall-mount
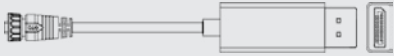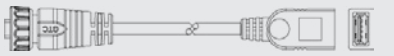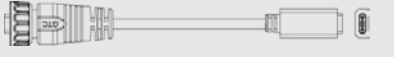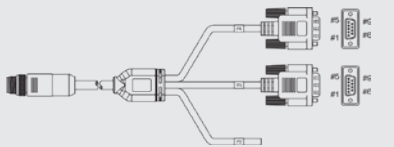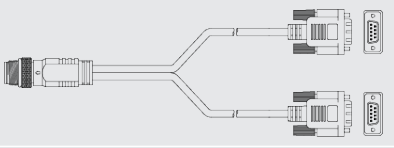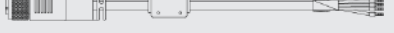
Ordering Information

Model No.	Product Description
SEMIL-2047GC	19" rack mount IP69K waterproof computer including NVIDIA® L4, supporting Intel® 14th/ 13th/ 12th-Gen Core™ processor with 2x M12 10GbE and 4x M12 PoE+ ports

Optional Accessories

PA-280W-CW6P-2P	280W AC-DC power adapter 24V 11.67A, 85~264VAC, -30~+70°C w/ Wafer FML6P to 2P End Terminal cable for AWP/SEMIL
PA-600W-C4PY-4P	600W AC-DC power adapter 24V 25A, 85~264VAC, -20~+70°C, w/ 4PY Terminal to 4P End Terminal cable for AWP/SEMIL

SEMIL-2000 Series

Type	Model Name	Description
	Cbl-TpCPlug-DPM-1M	TypeC Male Plug to DP Male Cable, Length : 1M
	Cbl-TpCPlug-U3TA-50CM	TypeC Male Plug to USB3.0 Type-A FML, Length: 50CM
	Cbl-TpCPlug-UTpCF-50CM	TypeC Male Plug to USB Type-C FML Cable, Length : 50CM
	Cbl-M12X8M-RJ45-500CM	M12(8-pole-X-coded) to RJ45, CAT6, Length : 500CM
	Cbl-M12A8M-2U2TA-180CM1	M12 (8-pole-A-coded) to 2xUSB 2.0 type A (female), Length: 180CM
	Cbl-M12A8M-2DB9M_OW2-180CM1	M12 A-Code Male 8P to x2 DB9 Male+2P, Length: 180CM
	Cbl-M12A8M-2DB9M-180CM	M12 (8-pole-A-coded male) to 2x DB9 male, Length: 180CM
	Cbl-M12L5F-CordEnd5-180CM	M12 L-Code 5P(FML) to Cord End Terminal 5P, Length: 1.8M

Cable Kit

SEMIL-2000 M12 cable kit

Cblkit-M12-SEMIL2000	7x Cbl-M12X8M-RJ45-500CM	1x Cbl-M12A8M-2U2TA-180CM1
	2x Cbl-M12A8M-2DB9M_OW2-180CM1 (COM1/2 & CAN1/2)	1x Cbl-M12A8M-2DB9M-180CM (COM3/4)
	1x Cbl-M12L5F-CordEnd5-180CM	