

# SEMIL-1300 Series

Half-Rack Rugged Fanless Computer Supporting Intel® Xeon® E or 9th/ 8th-Gen Core™ Processor with M12 connectors



## Key Features

- Intel® Xeon® E or 9th/ 8th-Gen Core™ i7/ i5/ i3 CPU
- 2U half-rack fanless system, -40 °C to 70 °C operation
- 4x 802.3at Gigabit PoE+, VGA, 2x USB 2.0, 2x COM via M12 connectors
- M.2 B key for 4G/ 5G module, M.2 E key for WiFi module
- Patented supercapacitor-based uninterruptible power backup\* (SEMIL-1311J)
- 8 to 48V wide-range DC input with built-in ignition power control
- CE, FCC and EN 50155 certified

Contact Neosys

Get Quote

\*R.O.C Patent No. I598820

## Introduction

SEMIL-1300 series is a rugged fanless computer with robust M12 I/O connectors in a standard 2U 19" half-rack form factor enclosure. Powered by Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU and coupled with workstation-grade Intel® C246 chipset, it supports up to 64 GB DDR4 ECC/non-ECC memory and offers flexible mounting options to wall or rack-mount up to two SEMILs side by side.

SEMIL-1300 series incorporates Neosys' best-in-class passive thermal design for proven -40 °C to 70 °C fanless operation. It offers a variety of I/O connectivities utilizing M12 connectors that are reliably robust, cost-effective and can be obtained off-the-shelf. There are also generic I/Os with screw-lock mechanisms to guarantee an extreme-rugged connection in shock and vibration environments. It has four 802.3at PoE+ ports, each supplying 25W of power to the connected device such as an IP or GigE camera. SEMIL-1300 is designed with 4G/5G and WiFi5/WiFi6 wireless connectivity in mind and it supports 8 to 48V wide-range DC input with ignition power control for in-vehicle use while complying with EN 50155.

In addition, SEMIL-1311J is equipped with Neosys' patented SuperCAP-based UPS containing 2500 watt-second stored energy to sustain and safely shut down the system during unforeseen power outages. It is the perfect solution for data protection and applications in unstable power environments. With a standard half-rack design, proven wide temperature operation capability, protected against shock/ vibration and power interruption, Neosys' SEMIL-1300 series is the ideal robust solution for extreme-rugged deployment.

## Specifications

	SEMIL-1301	SEMIL-1311J
<b>System Core</b>		
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	
Chipset	Intel® C246 platform controller hub	
Graphics	Integrated Intel® UHD Graphics 630	
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	
<b>I/O Interface</b>		
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	
<b>Storage Interface</b>		
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	

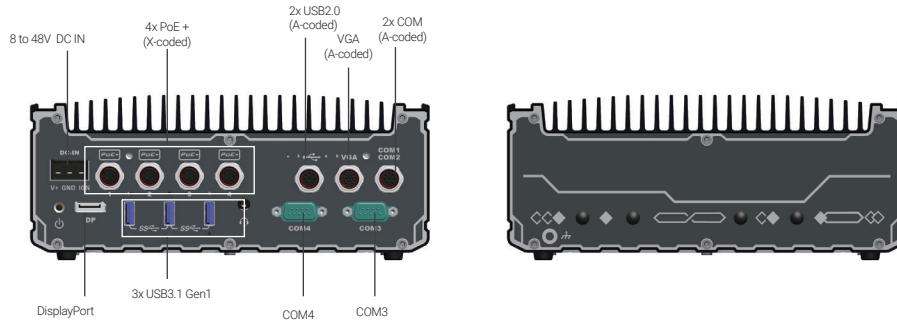
	SEMIL-1301	SEMIL-1311J
<b>Expansion Bus</b>		
Mini PCI-E	2x full-size mini PCI Express sockets (mux with mSATA) 1x M.2 3042/ 3052 B key socket for selected M.2 4G/ 5G module 1x M.2 2242/ 2252 E key for selected WiFi module	
<b>Power Supply</b>		
DC Input	8 to 48V DC input	
Ignition Control	Built-in ignition power control	
<b>Power Backup</b>		
Capacity	-	2500 watt-second
<b>Mechanical</b>		
Dimension	220mm (W) x 310mm (D) x 90.5mm (H) (excl. rack-mount bracket)	
Weight	5.8 kg	6 kg
Mounting	Rack-mounting and wall-mounting	
<b>Environmental</b>		
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

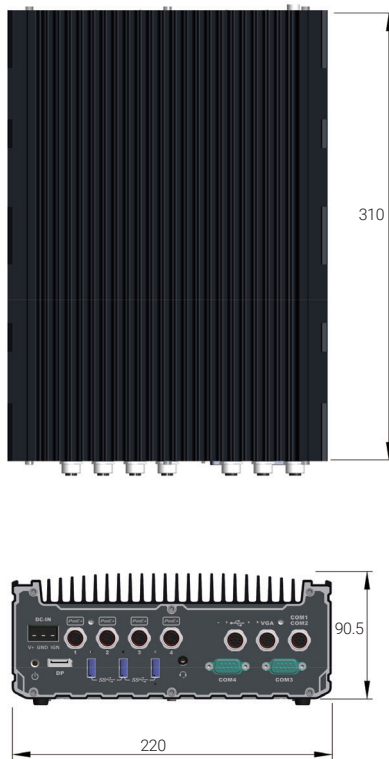
\*\*\* For Xeon E 2176G/ 2278GE, i7-9700E, and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.

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

## Appearance



## Dimensions



Unit : mm

### Mounting Configuration



▲ SEMIL 19" rack-mounted



▲ SEMIL wall-mounted



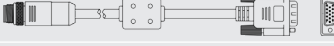
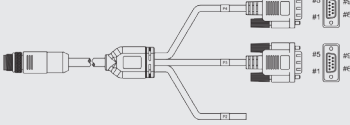

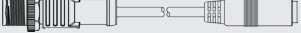
## Ordering Information

Model No.	Product Description
<b>SEMIL-1301</b>	Half-Rack Rugged Fanless Computer supporting Intel® Xeon® E or 9th/ 8th-Gen Core™ processor with M12 I/Os
<b>SEMIL-1301-10G</b>	Half-rack rugged fanless computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with M12 I/Os and 10GbE port
<b>SEMIL-1311J</b>	Half-Rack Rugged Fanless Computer supporting Intel® Xeon® E or 9th/ 8th-Gen Core™ processor with M12 I/Os and SuperCAP UPS
<b>SEMIL-1311J-10G</b>	Half-rack rugged fanless computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with M12 I/Os, SuperCAP UPS and 10GbE port

## Optional Accessories

<b>PA-160W-OW</b>	160W AC-DC power adapter, 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature : -30 to 70°C.
<b>JPlate-SL</b>	Joint plate assembly for SEMIL
<b>Cblkit-M12</b>	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-180CM2	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		
<b>Cblkit-M12-SEMIL1300</b>	4x Cbl-M12X8M-RJ45-CAT6A-500CM	1x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A17M-2DB9M_OW2-180CM1
SEMIL-1300-10G M12 cable kit		
<b>Cblkit-M12-SEMIL1300</b>	5x Cbl-M12X8M-RJ45-CAT6A-500CM	1x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A8M-2DB9M_OW2-180CM1
SEMIL-1704 M12 cable kit		
<b>Cblkit-M12-SEMIL1700</b>	4x Cbl-M12X8M-RJ45-CAT6A-500CM	1x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A8M-2DB9M_OW2-180CM1
	1x Cbl-M12S4F-OW4-180CM1	
SEMIL-1704-10G M12 cable kit		
<b>Cblkit-M12-SEMIL1700-10G</b>	5x Cbl-M12X8M-RJ45-CAT6A-500CM	1x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A8M-2DB9M_OW2-180CM1
	1x Cbl-M12S4F-OW4-180CM1	
SEMIL-1708 M12 cable kit		
<b>Cblkit-M12-SEMIL1708</b>	8x Cbl-M12X8M-RJ45-CAT6A-500CM	2x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A8M-2DB9M_OW2-180CM1
	1x Cbl-M12S4F-OW4-180CM1	
SEMIL-1708-10G M12 cable kit		
<b>Cblkit-M12-SEMIL1708-10G</b>	9x Cbl-M12X8M-RJ45-CAT6A-500CM	2x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A8M-2DB9M_OW2-180CM1
	1x Cbl-M12S4F-OW4-180CM1	
SEMIL-1708-ADO M12 cable kit		
<b>Cblkit-M12-SEMIL1708-ADO</b>	8x Cbl-M12X8M-RJ45-CAT6A-500CM	2x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A8M-2DB9M_OW2-180CM1
	1x Cbl-M12S4F-OW4-180CM1	1x Cbl-M12A8M-ADJ-180CM
SEMIL-1708-10G-ADO M12 cable kit		
<b>Cblkit-M12-SEMIL1708-10G-ADO</b>	9x Cbl-M12X8M-RJ45-CAT6A-500CM	2x Cbl-M12A8M-2U2TA-180CM
	1x Cbl-M12A17M-VGA-180CM2	1x Cbl-M12A8M-2DB9M_OW2-180CM1
	1x Cbl-M12S4F-OW4-180CM1	1x Cbl-M12A8M-ADJ-180CM