SEMIL-1700 series

Rugged 2U embedded computer with IP67 protection for extreme industrial environments

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Features

- Intel® Xeon® E or 9th and 8th gen. Core™ i7/i5/i3 processor
- Intel® C246 chipset for reliable performance
- 2x DDR4 ECC/non-ECC SDRAM, up to 64 GB
- Up to 8x M12-protected PoE+ Gigabit ports with up to 25W power
- IP67- and MIL-STD-810G-certified housing

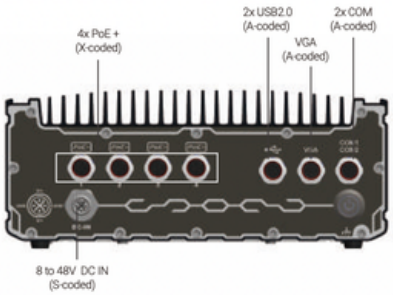
SEMIL-1700 series – Extremely Rugged 2U embedded PC with IP67 protection

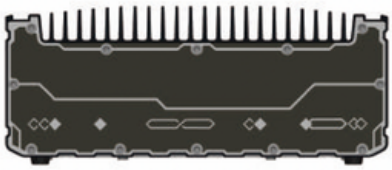
The SEMIL-1700 series is a fully IP67-protected embedded PC designed for demanding industrial environments. Thanks to a corrosion-resistant housing made of stainless steel and aluminum, it is resistant to moisture and salt water. Equipped with an Intel® Xeon® E or 9th/8th-Gen Core™ processor and the Intel® C246 chipset, the series supports up to 64 GB DDR4 ECC/non-ECC RAM and offers robust performance for edge computing applications. The SEMIL-1700 series has up to eight M12-protected PoE+ Gigabit ports that supply connected devices with up to 25W each. In addition, it offers M.2 NVMe SSD support, Mini PCIe slots and two 2.5" SATA SSD/HDD bays for maximum flexibility. The PC is designed for an 8-48V DC input with ignition control and complies with MIL-STD-810G and EN 50155 EMC standards. This makes it ideal for use in vehicles, railroad infrastructure and outdoor industrial applications.

Power failure protection with SuperCAP-UPS

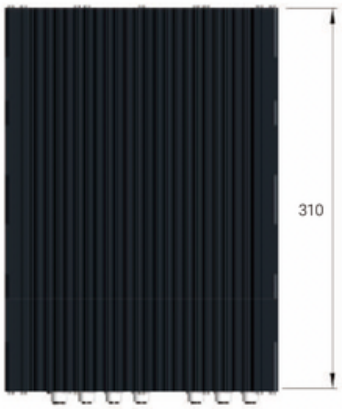
The SEMIL-1710J model features a SuperCAP-based uninterruptible power supply (UPS) with 2500 watt seconds of storage capacity, which protects the system in the event of sudden power failures and enables a controlled shutdown. The SEMIL-1700 series combines uncompromising robustness with high-performance computing and is the ideal solution for extremely harsh operating environments.

Appearance



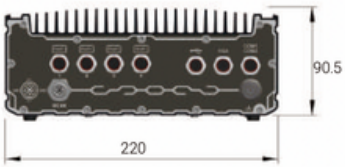


Dimensions (mm)



Dual SEMIL 19" rack-mounted

Dual SEMIL 19" wall-mounted



SEMIL 19" wall-mounted

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Specifications	SEMIL-1704	SEMIL-1714J	SEMIL-1708	SEMIL-1718J
SYSTEM				
CPU	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			
RAM	2x DDR4-2666/2400 SDRAM SODIMM, up to 64GB ECC/Non-ECC			
Storage	2x Internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1 2x full-size mSATA port (mux with mini-PCIe) 1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation			
Expansion	2x full-size mini PCI Express socket (mux with mSATA)		2x full-size mini PCI Express socket (mux with mSATA) 2x full-size mini PCI Express socket	
AMT	Supports AMT 12.0			
TPM	Supports TPM 2.0			
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) Optional: 1x 10 GbE port by Intel® X550AT controller (M12 X-coded)		1x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I219 (M12 X-coded) 7x IEEE 802.3at (25.5W) Gigabit PoE+ ports by Intel® I210 (M12 X-coded) Optional: 1x 10 GbE port by Intel® X550AT controller (M12 X-coded)	
USB	2x USB 2.0 (M12 A-coded) 1x USB 2.0 (internal)		4x USB 2.0 (M12 A-coded) 1x USB 2.0 (internal)	
COM	COM 1/2: 2x 3-wires RS-232 ports COM1 & COM2 (M12 A-coded)			
Video	1x VGA (M12 A-coded), supporting 1920 x 1200 resolution			
Audio	–		1x mic-in and speaker-out (M12 A-coded)	
ENVIRONMENTAL				
Cooling	Fanless			
Power Supply	8 to 48V DC input (M12 S-coded) Built-in ignition power control (IGN/ GND signal via M12 serial port connector)			
SuperCAP UPS	-	2500 watt-seconds	-	2500 watt-seconds
Operating Temperature	**with 35W CPU** -40°C ~ 70°C[2] **with >= 65W CPU** -40°C ~ 70°C [1] [2] (configured as 35W TDP mode) -40°C ~ 50°C [1] [2] (configured as 65W TDP mode)			
Storage Temperature	-40° ~ 85°C			
Vibration / Shock Resistance	Vibration: MIL-STD-810G, Method 514.7, Category 4 Shock: MIL-STD-810G, Method 516.7, Procedure I			
Humidity	10 ~ 90% , non-condensing			
Dimensions (W x D x H)	220 x 310 x 90.5mm			
Weight	5.8kg	6kg	5.9kg	6.2kg
Mounting	Rack-mounting and wall-mounting			
IP Rating	IP67			
Certifications	EN 50121 (EN 50155 EMC) CE/FCC Class A, according to EN 55032 & EN 55035			

[1] 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.

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

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Ordering Information	Product Description
SEMIL-1704	Half-rack IP67 waterproof computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with 4x M12 PoE+ ports
SEMIL-1704-10G	Half-rack IP67 waterproof computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with 4x M12 PoE+ ports and 10GbE port
SEMIL-1708	Half-rack IP67 waterproof computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with 8x M12 PoE+ ports
SEMIL-1708-10G	Half-rack IP67 waterproof computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with 8x M12 PoE+ ports and 10GbE port
SEMIL-1714J	Half-rack IP67 waterproof computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with 4x M12 PoE+ ports and SuperCAP UPS
SEMIL-1714J-10G	Half-rack IP67 waterproof computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with 4x M12 PoE+ ports, SuperCAP UPS & 10GbE port
SEMIL-1718J	Half-rack IP67 waterproof computer supporting Intel® Xeon® E or 9th / 8th-Gen Core™ processor with 8x M12 PoE+ ports and SuperCAP UPS
Optional Accessories	
PA-160W-OW	160W AC-DC power adapter, 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature : -30 to 70°C.
JPlate-SL	Joint plate assembly for SEMIL
Cblkit-M12	Please refer to the Cable Kit Guide on the next page

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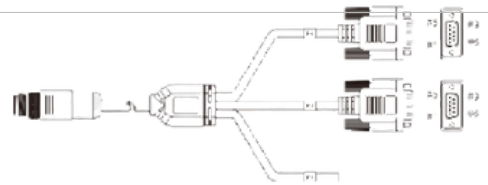
Cable Kit Guide	Model Name	Product Description
	Cbl-M12X8M-RJ45-CAT6A-500CM	M12 (8-pole-X-coded) to RJ45, CAT6, length : 500CM
	Cbl-M12A8M-2U2TA-180CM	M12 (8-pole-A-coded) to 2xUSB 2.0 type A (female), Length: 180CM
	Cbl-M12A17M-VGA-180CM3	M12 (17-pole-A-coded) to VGA (Male), Length: 180CM
	Cbl-M12A8M-2DB9M_OW2-180CM1	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	Model Name	Product Description
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