



EDGE AI SERVER

# LLM-1U-RPL

1U Edge AI Rackmount Server with 12th/13th Gen Intel® Core® Processor and Q670E Chipset



## Features

- Support 12th/13th Gen Intel® Core™ Processors (LGA 1700, 65W Max TDP)
- Intel® Q670E Chipset
- 2x DDR4 3200MT/s SODIMM. Max. up to 64GB
- 3x 2.5GbE (Support Wake-on-LAN and PXE)
- Triple 4K Display: 2x DP++, 1x HDMI
- 1x PCIe x16 (Gen 4) or 2x PCIe x8 (Gen 4) slot
- 1x M.2 M Key, 1x M.2 B Key, 1x M.2 E Key
- 2x 2.5" SATA SSD Drive bays (Support RAID 0,1)
- 2x RS-232/422/485 COM Ports, 2x RS-232 (Internal)
- 6x USB 3.2 Gen 2 (Rear), Front: 2x USB 3.2 Gen 1 (Front)
- 600W Redundant Power Supply
- Support TPM 2.0
- UL 62368 Ed. 3, FCC, CE

## Specifications

System	
Processor	
Support 12/13th Gen Intel® ADL & RPL Processor (LGA 1700, 65W/35W TDP)	
- Intel® Core™ i9-13900E/i9-12900E, 65W	
- Intel® Core™ i9-13900TE/i9-12900TE, 35W	
- Intel® Core™ i7-13700E/i7-12700E, 65W	
- Intel® Core™ i7-13700TE/i7-12700TE, 35W	
- Intel® Core™ i5-13500E/i5-12500E, 65 W	
- Intel® Core™ i5-13500TE/i5-12500TE, 35W	
- Intel® Core™ i3-13100E/i3-12100E, 60W	
- Intel® Core™ i3-13100TE/i3-12100TE, 35W	
- Intel® Core™ 300T, 35W	
- Intel® Pentium® G7400E, 46W / G7400TE, 35W	
- Intel® Celeron® G6900E, 46W / G6900TE, 35W	
System Chipset	Intel® Q670E PCH
LAN Chipset	Intel® I226LM PCIe 2.5GbE LAN Intel® I226V PCIe 2.5GbE LAN Intel® I226V PCIe 2.5GbE LAN
Audio Codec	Realtek ALC897
System Memory	2x DDR4 3200MT/s SODIMM. Max. up to 64 GB (Default: 8GB & Non- ECC supported)
Graphics	AMD Radeon Graphics
BIOS	AMI UEFI 256MB SPI Flash
Watchdog	Software Programmable Supports 1~255 sec. System Reset
TPM	TPM 2.0
Display	
Display Port	2x Dual Mode DisplayPort 1.4a Max Resolution 4096 x 2304 @60Hz
HDMI	1x HDMI 1.4b Max Resolution 4096 x 2304 @24Hz
Multiple Display	3x Independent Displays
Storage	
SSD/HDD	2x 2.5" Hot-swap SATA SSD Drive Bays (7mm/15mm) Support RAID 0,1
Expansion	
M.2 B-Key	1x M.2 B key Type: 3042 • Support PCIe x1 +USB 3.2 Gen 2x1 + USB 2.0 • Support NVMe Storage/AI Module/4G/5G
M.2 E-Key	1x M.2 E-Key Type: 2230 (Support PCIe x1 + USB 2.0; Support CNVi) Devices Supported: Intel® AX210 Wi-Fi 6E & BT-5.1 (vPro Supported)
M.2 M-Key	1x M.2 M-Key Type (2242/2280): • Support PCIe x4 Gen3 NVMe SSD • PCIe x4 Gen3 signal from PCH • Support B+M Key
PCIe	1x PCIe x16 Gen 4 or 2x PCIe x8 Gen 4
Card Dimension	267 (L) x 112 (H) mm, dual slot
I/O	
Audio	Line-out/Mic-in
COM	2x DB9 COM1: RS232/422/485 COM2: RS232
LAN	3x RJ45 (2.5GbE)
USB	6x USB 3.2 Gen2 (Rear) 2x USB 3.2 Gen 1 Type-A (Front)

Others	1x Power button 1x HD LED 1x Power LED 1x Safety Lock
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## Operating System

Windows	Windows 10/11
Linux	Linux Kernel

## Power

Power Mode	AT, ATX (Default ATX)
Power Ignition Sensing	Adjustable Power Ignition Management
Power Supply	2x 600W (1+1) Redundancy Power Supply AC: 115 to 230 V DC: -36 to -72 V
Power Connector	IEC 60320 C14

## System Cooling

Fan	1x CPU Fan Cooler 3x Hot-Swap Dual Smart Fans
Air Filter	1x Dust Fan Filter

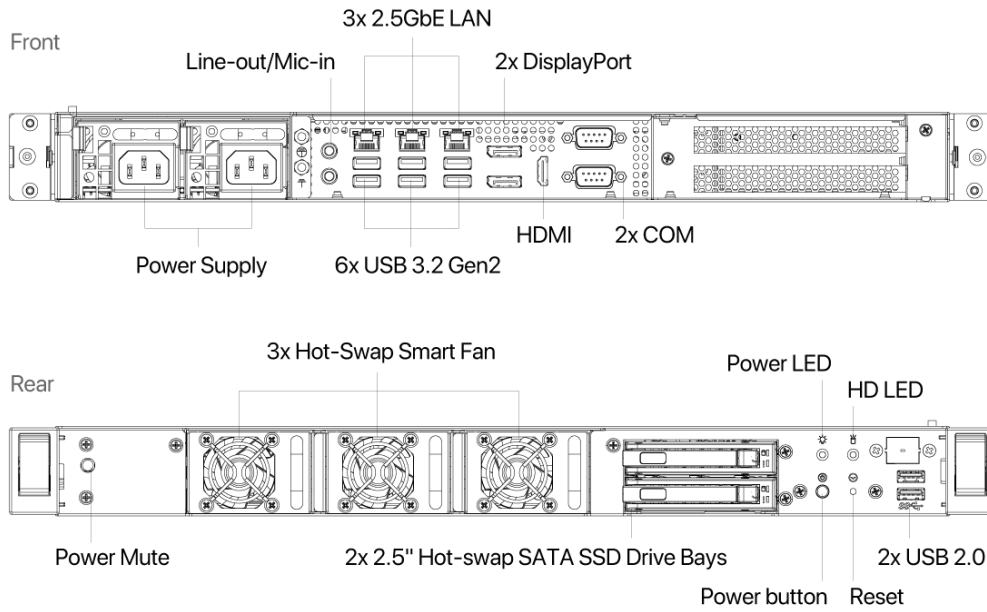
## Environment

Operating Temperature	0°C to 35°C with 0.6 m/s airflow
Storage Temperature	-20°C to 70°C
Relative Humidity	5% to 95% (non-condensing)
Certification	UL 62368 Ed. 3, CE, FCC Class A
Vibration	With SSD: 1 Grms (5 - 500 Hz, 0.5 hr/axis)
Shock	With SSD: NA-G half-sin 11ms

## Physical

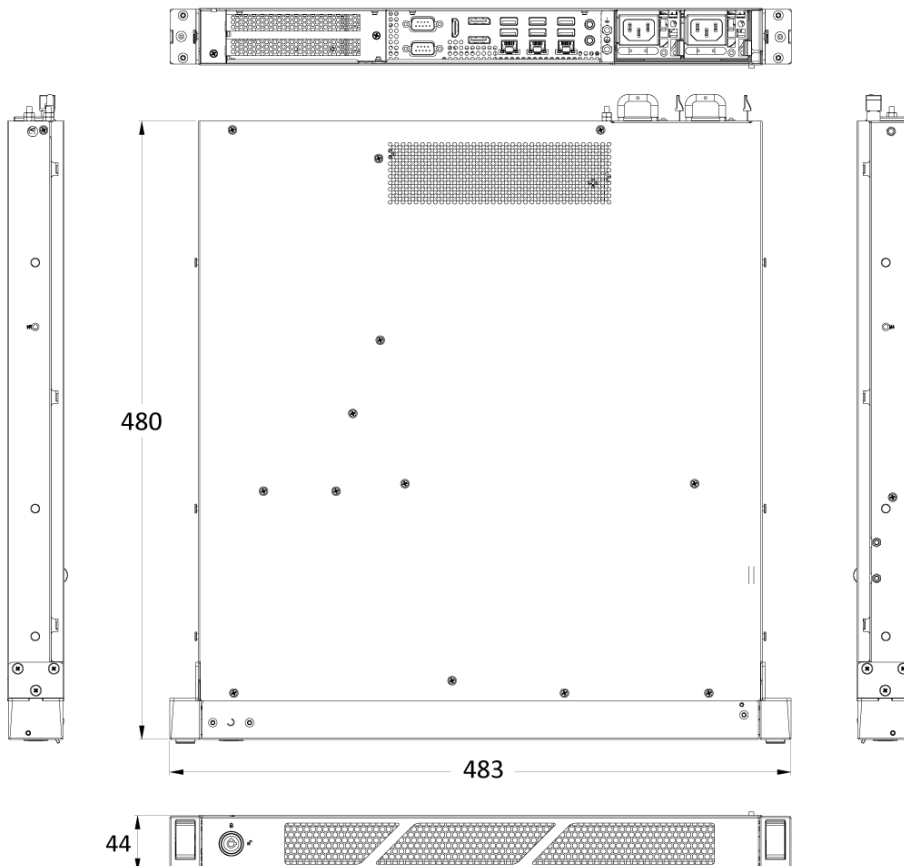
Form Factor	1U
Dimensions (WxDxH)	483 (W) x 480 (D) x 44 (H) mm
Weights	4 kg
Construction	Heavy Duty Metal
Mounting Options	Rackmount

External I/O Mechanical Layout



Dimension

Unit: mm



## Compatible GPU AVL

Model	GPU Memory	Memory Bandwidth	CUDA Cores	Tensor Cores	RT Cores	AI TOPS	Dimensions	Power & Thermal
NVIDIA RTX PRO 4500 Blackwell	32GB GDDR7 ECC	896 GB/s	10,496	328	82	1,687	4.4" H X 10.5" L, FHFL Dual Slot	200 W
NVIDIA RTX PRO 4000 Blackwell	24GB GDDR7 ECC	672 GB/s	8,960	280	70	1,247	4.4" H X 9.5" L, FHML Single Slot	140 W
NVIDIA RTX PRO 4000 Blackwell SFF Edition	24GB GDDR7 ECC	432 GB/s	8,960	280	70	770	2.7" H x 6.6" HHHL, Dual Slot	70 W
NVIDIA RTX PRO 2000 Blackwell	16GB GDDR7 ECC	288 GB/s	4,352	136	34	545	2.7" H x 6.6" L, HHHL Dual Slot	70 W
NVIDIA RTX 5000 Ada Generation	32GB GDDR6 ECC	576 GB/s	12800	400	100	1044	4.4" x 10.5" FH   DS	250 W
NVIDIA RTX 4500 Ada Generation	24GB GDDR6 ECC	432 GB/s	7680	240	60	634	4.4" x 10.5" FH   DS	210 W
NVIDIA RTX 4000 Ada Generation	20GB GDDR6 ECC	360 GB/s	6144	192	48	428	4.4" x 9.5" FH   SS	130 W
RTX 4000 SFF Ada Generation	20GB GDDR6 ECC	320 GB/s	6144	192	48	307	4.7" x 6.6" LP   DS	70 W
NVIDIA RTX 2000 Ada Generation	16 GB GDDR6 with ECC	224 GB/s	2816	88	22	192	2.7" x 6.6" LP   DS	70 W
NVIDIA RTX A1000	8GB GDDR6	192 GB/s	2304	72	18	108	2.7" H x 6.4" LP   SS	50 W

## Compliances and Standards

Vibration	<p>With SSD: 1 Grms (5 - 500 Hz, 0.5 hr/axis) IEC60068-2-64:2008 Designed to comply with MIL-STD-810H Method 514.8 Procedure I</p>
Shock	<p>With SSD: NA-G half-sin 11ms IEC60068-2-27:2008 Designed to comply with MIL-STD-810H Method 516.8 Procedure I</p>
Operating Temperature	<p>0°C to 35°C with 0.6 m/s airflow IEC60068-2-1:2007 (Cold test procedure) IEC60068-2-2:2007 (Dry heat test procedure) IEC60068-2-3:2007 (Damp heat, steady state, test procedure) IEC60068-2-14:2009 (Wide temperature range thermal shock)</p>
EMC	<ul style="list-style-type: none"> <li>• FCC Class A</li> <li>• CE</li> <li>• ICES-003</li> <li>• UKCA</li> <li>• Industrial EMC Compliance               <ul style="list-style-type: none"> <li>- EN 61000-4-2: 2009</li> <li>- EN IEC 61000-4-3: 2020</li> <li>- EN 61000-4-4: 2012</li> <li>- EN 61000-4-5: 2014 +A1: 2017</li> <li>- EN 61000-4-6: 2014</li> </ul> </li> </ul>
Safety	<ul style="list-style-type: none"> <li>• UL Safety: UL62368-1, 3rd Ed., (cULus)</li> <li>• Test procedure: CB Scheme</li> <li>• Standard: IEC 62368-1:2018</li> </ul>

## Available Models

Model No.	Description
LLM-1U-RPL-1E16-600W-AC-P	1U Edge AI Rackmount Server with 12th/13th Gen Intel® Core® Processor and Q670E PCH, 1x PCIeX16, 2x 600W AC
LLM-1U-RPL-1E16-600W-DC-P	1U Edge AI Rackmount Server with 12th/13th Gen Intel® Core® Processor and Q670E PCH, 1x PCIeX16, 2x 600W DC
LLM-1U-RPL-2E8-600W-AC-P	1U Edge AI Rackmount Server with 12th/13th Gen Intel® Core® Processor and Q670E PCH, 2x PCIeX8, 2x 600W AC
LLM-1U-RPL-2E8-600W-DC-P	1U Edge AI Rackmount Server with 12th/13th Gen Intel® Core® Processor and Q670E PCH, 2x PCIeX8, 2x 600W DC

## Optional Accessories

Model No.	Description
999930	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm

## Packing List

1x LLM-1U-RPL Edge AI Rackmount Server  
 1x CPU Fan Cooler  
 1x Safety Lock Toolkit  
 2x Power Cords