RS521A-E12-RS12U AMD Turin 9005

AMD Single Socket, High Performance 2U Server

Form Factor / 2U

CPU Number / 1

Memory Number / 24*

5th Generation AMD EPYC Processors with AMD 3D V-Cache technology

ASUS RS521A-E12-RS12U was designed to accelerate application performance leveraging accelerator cards and storage scalability. With the CPU and memory configured in a front parallel design that enables efficient airflow for excellent thermal performance, RS521A-E12-RS12U is optimized for rack placement. Featuring the single processor in a 2U chassis, RS521A-E12 series delivers the right-sized rack server dimensions for price sensitive applications and meets the demanding computing requirements.

FEATURE

- 1 x AMD EPYC 9005 Series Processor
- With 24*DDR5 DIMM up to 5200Mhz
- PCIe Gen5 slots
- Max 2x DW GPU cards supported
- Rack-optimized Design
- 12 x 3.5” Hot-swap HDD bays

Target market

- Data center Storage Server
- Enterprise Application

Industry-leading memory capability

With 2 DIMM per channel design, RS521A-E12 Series supports up to 24 x DIMM slots. The CPU’s memory controller supports DDR5 memory with 12 channels up to 5200Mhz . We deliver the industry-leading technology of server memory for our customers’ business.

AMD EPYC™ 9005 Series Processors

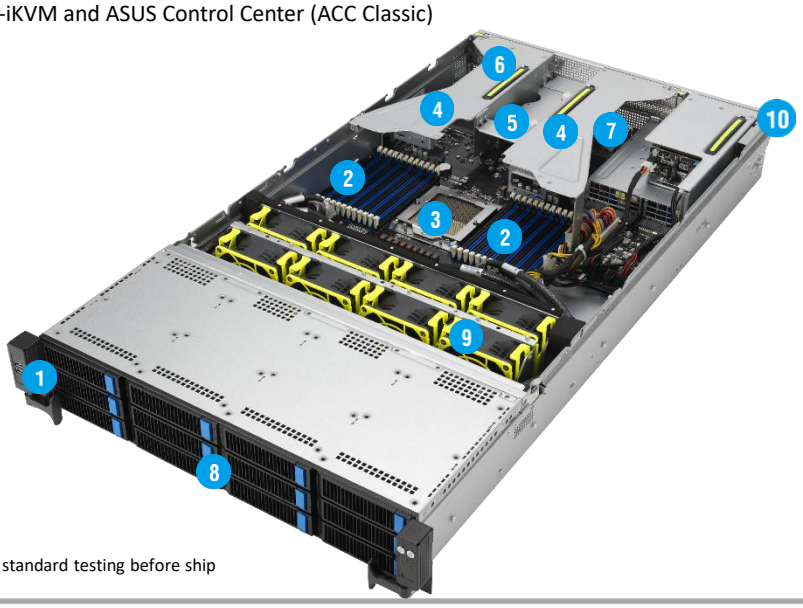
The RS521A-E12 Series is built on the latest AMD EPYC™ 9005 Series Processor, and designed for the demand of scale-out computing, and wide range of existing and emerging workloads.

The best storage interface combination for software-defined storage management

Front: 12 x 3.5" hot-swap storage bays (supports maximum **12 x 3.5**’’ U.2/U.3 NVMe devices)
Rear: 2 x 2.5**"** hot-swap storage bays (supports SATA devices)

Comprehensive IT infrastructure management solution

ASMB11-iKVM and ASUS Control Center (ACC Classic)



1. Asset Tag
2. 24*DDR5 DIMM up to 5200Mhz
3. AMD EPYC™ 9005 Processor Family (Up to 400W)
3. 2 x PCIe x16 slot(Gen5 x16 link, FHFL) or dual-slot GPU cards
5. 2 x PCIe x16 slot(Gen5 x8 link, LP)
6. 1 x OCP 3.0 Mezzanine (Gen5 x16 link)
7. 1+1 80 PLUS Titanium /Platinum PSUs
8. **12 x 3.5**” Hot-swap HDD Bays
9. 4 x Redundant fans (optional)*
10. 2 x Rear-bay support SATAIII

*Please select it when purchasing order and we will have assembling and standard testing before ship

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RS521A-E12-RS12U

SPECIFICATION

Processor Support.		1 x Socket SP5 (LGA 6096) Supports AMD EPYC™ 9005 series processors or AMD EPYC™ 9004 series processors, up to 400W, with AMD 3D V-Cache technology	
Core Logic		System on Chip (SOC)	
Memory	**Total Slots**	**24** 12-channel, 2 DIMM per channel	
	Capacity	Maximum up to 3,072GB	
	Memory Type	AMD EPYC™ 9005 series processors DDR5 6400/5600 RDIMM/3DS RDIMM 2DPC (1 of 2) up to 5200 with "6400 RDIMM", other 4800 2DPC (2 of 2, 1R+1R) up to 4400, with "6400 RDIMM", other 4000 2DPC (2 of 2, 2R+2R) up to 4000, with "6400 RDIMM", other 3600	AMD EPYC™ 9004 series processors DDR5 4800 RDIMM/ 3DS RDIMM 2DPC (1 of 2) up to 4800, 2DPC (2 of 2, 1R+1R) up to 4000 2DPC (2 of 2, 2R+2R) up to 3600
	Memory Size	128GB, 96GB, 64GB, 32GB, 16GB (RDIMM) *Refer to ASUS server AVL for the latest update	
Expansion Slots	**Total PCIe Slots**	Up to 5 PCIe Gen5 slots + 1 OCP3.0	
	Slot Type	2 x PCIe x16 slot(Gen5x16 link, FHFL) or dual-slot GPU cards or 4 x PCIe x16 slot(Gen5 x8 link, FHFL) 1 x PCIe x16 slot(Gen5 x8 link, LP) 1 x OCP 3.0 Mezzanine (Gen5 x16 link)	
Disk Controller	**SATA Controller**	CPU Integrated	
	SAS Controller	Optional kits: Broadcom Mega RAID 9560-16I ASUS PIKE II 3008 8-port SAS HBA card	
Storage Bays		**12** x 3.5" hot-swap drive bays 12 x U.2/U.3 NVMe/SATA/SAS *SAS support only from optional SAS HBA/RAID card **2** x 2.5" hot-swap drive bays (Rear-bay support SATAIII) **2** x M.2 socket (Gen4 x4 link or SATA mode, up to 22110 module)	
Networking	**LAN**	1 x Dual Port Intel I350-AM2 Gigabit LAN Controller, 1 x Dedicated Management port	
Graphic	**VGA**	Aspeed AST2600 64MB	
Front I/O Ports		2 x USB 3.2 Gen1 ports	
Rear I/O Ports		2 x USB 3.2 Gen1 ports, 1 x VGA port, 2 x RJ-45 GbE LAN ports, 1 x RJ-45 Management LAN port	
Switch/LED		**Front:** 1 x Power Switch (w/ LED) 1 x Reset Switch 1 x Location Switch (w/ LED) 1 x HDD Access LED 1 x Message LED LAN 1-2 LED **Rear:** 1 x Port80 LED (Q-Code) 1 x Power Switch w/ LED 1 x Location Switch w/ LED 1 x Message LED	
OS Support		Please find the latest OS support from OS Compatibility Guide | ASUS	
Management Solution	**Software**	ASUS Control Center (Classic)	
	Out of Band Remote Management	On-Board ASMB11-iKVM for KVM-over-IP	
Dimension		840mm x 449mm x 88.1mm (2U) 33.07" x 17.68" x 3.47"	
Net Weight Kg **(CPU, DRAM & HDD not included)**		17.95 kg	
Gross Weight Kg **(CPU, DRAM & HDD not included, Packing include)**		25.14 kg	
Power Supply **(following different configuration by region)**		1+1 Redundant 2000W/1600W 80 PLUS Titanium Power Supply 1+1 Redundant 1200W 80 PLUS Platinum Power Supply	
Environment		Operation temperature: 10℃ ~ 35℃ Non operation temperature: -40℃ ~ 70℃ Non operation humidity: 20% ~ 90% (Non condensing)	

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RS521A-E12 Series

SPECIFICATION

Series	RS521A-E12 Series Support Matrix	
Model	**RS521A-E12-RS24U**	**RS521A-E12-RS12U**
Processor	1 x Turin CPU or 1 x Genoa CPU	
GPU	Up to 4 single-slot or 2 double-slot GPU cards (RS521A-E12-RS24, 24 NVMe SKU can't support GPU)	
Memory	24 x DIMM slots with AMD EPYC™ 9005 series processors DDR5 6400/5600 RDIMM/3DS RDIMM Maximum 3,072GB 2DPC (1 of 2) up to 5200 with "6400 RDIMM", other 4800 2DPC (2 of 2, 1R+1R) up to 4400, with "6400 RDIMM", other 4000 2DPC (2 of 2, 2R+2R) up to 4000, with "6400 RDIMM", other 3600 with AMD EPYC™ 9004 series processors DDR5 4800 RDIMM/ 3DS RDIMM Maximum 3,072GB 2DPC (1 of 2) up to 4800, 2DPC (2 of 2, 1R+1R) up to 4000 2DPC (2 of 2, 2R+2R) up to 3600	
M.2	2 x PCIe x4 or 2 x SATA	
Fan	Optional Redundant Fan **optional, cannot be purchased separately	
Expansion	**[24 x NVMe]** **1** x PCIe Gen5 x8, LP + 1 x OCP3.0 (can't support GPU) **[16 x NVMe or 12x NVMe]** up to 5 PCIe Gen5 slots + 1 OCP3.0 2 x PCIe Gen5 x16, FHFL or 4 x PCIe Gen5 x8, FHFL 1 x PCIe Gen4 x8, LP 1 x OCP3.0 (PCIe Gen5 x16)	up to 5 PCIe Gen5 slots + 1 OCP3.0 2 x PCIe Gen5 x16, FHFL or 4 x PCIe Gen5 x8, FHFL 1 x PCIe Gen5 x8, LP 1 x OCP3.0 (PCIe Gen5 x16)
Storage	**24** x 2.5" hot-swap drive bays (optional) -24 x U.2/U.3 NVMe -16 x U.2/U.3 NVMe + 8x SAS/SATA (must use RAID card) **2** x 2.5" hot-swap drive bays (Rear-bay support SATAIII) Support tri-mode Card (Broadcom) *SAS support only from optional SAS HBA/RAID card	**12** x 3.5" hot-swap drive bays -12 x U.2/U.3 NVMe/SATA/SAS* **2** x 2.5" hot-swap drive bays (Rear-bay support SATAIII) Support tri-mode Card (Broadcom) *SAS support only from optional SAS HBA/RAID card
NIC	2 x 1GbE RJ45 onboard LAN ports (Intel i350-AM2 controller) 2 x 10Gb OCP Card (Optional) 1 x Management LAN	

* The total number of NVMe drives installed will affect the total number of GPUs that can be installed.

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