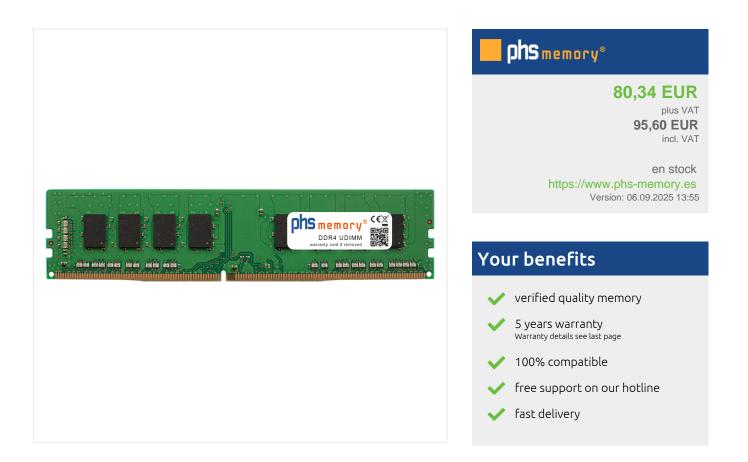


# 32GB Computer memory DDR4 for MSI Gaming 9 ACK X99A UDIMM



### PHS-memory® - computer memory with 100% quality

- many years of IT competence
- Free support for optimal configuration and product selection
- High availability through professional warehouse management
- Fast delivery in throughout Europe
- Short response times and professional order processing due to full digitalization throughout the entire process with complete traceability
- Incoming goods inspection include checks of the DRAMs, PCBs and the programmed SPDs in order to exclude possible errors (Controlled BOM).
- PHS-memory® brand memories guarantee 100% compatibility to the specified system.
- PHS-memory® memories can be used together with existing memories in the device depends on to the configuration rules of the system.
- The "fallback option" in the SPD of PHS-memory® allows DRAMs with higher clock rates to be operated together with older memory modules with lower clock rates within the system.
- Products with unique serial number for service and warranty
- Pre-sales and after-sales support by technically trained personnel



# Memory Specification

-	133.35mm	-
		31.25mm 30.75mm 17.60mm
◄ 56.10mm	64.60mm	

Memory size	32GB
Memory technology	DDR4
ECC support	ΠΟ
JEDEC Norm	PC4-2666V-U
DRAM Organization	2Gx8
Rank	2Rx8
Туре	UDIMM (Non-ECC unbuffered)
Number of pins	288 Pin DIMM
Memory data transfer rate	2666MHz @ CL19
Voltage	1,2 Volt
Speciality	-
Board dimensions	133,35 x 31,25 (LxB mm)
Operating temperature	0° C - 85° C
Storage temperature	-40° C - +95° C
RoHS compliant	yes
SKU	SP467653
EAN	4067488311857

Note: The module specified in this datasheet is one of several possible configurations available under this part number.

Some details may differ from the specifications described here and the illustration, but have no negative influence on the functionality.



# System Specifications

The memory is 100% compatible with this sytem:

System manufacturer	MSI		
Device type	Motherboard-memory		
Device family	Gaming		
Device series	9 ACK Serie		
Device name	Gaming 9 ACK X99A		
Maximum memory*	2TB / 256GB according to manufacturer		
Number of memory sockets	8		

\* The specifications for the maximum memory upgrade may differ from those of the manufacturer MSI. Often the information given in the manual for the maximum memory upgrade is not up to date. New memory technologies, bios updates or newer software versions often allow the use of memory modules with a higher capacity than specified by the manufacturer with the same performance and stability.

# Information on memory allocation

### Which memory configuration is possible?

memory for Core i7 5th Generation CPU:

- Optimal performance is achieved by 4 or 8 identical memories per CPU.
- If an i7 processor is used, UDIMM memory modules must be installed.

#### memory for Xeon CPU:

- When using an XEON CPU, ECC and RDIMM memory must be used.
- The device supports ECC DIMM (with error correction code) or RDIMM (Registered DIMM) RAM memories. RDIMM
  memories are recommended when large memory capacities are to be achieved.
- The different memory technologies (ECC / RDIMM) may not be mixed.
- If a memory expansion is to be made with the already existing RAM memories, it must be checked which memory technology (ECC/ RDIMM) is already installed in the system.

CPU im System	UDIMM	UDIMM ECC	RDIMM
Core i7-5960X	4GB UDIMM		
Core i7-5930K	8GB UDIMM		
Core i7-5820K	16GB UDIMM		
	32GB UDIMM		
Xeon E5-1600 v3		8GB UDIMM ECC	8GB RDIMM



Xeon E5-2600 v3		16GB RDIMM
		32GB RDIMM
		64GB RDIMM DDP
		128GB RDIMM 3DS
		256GB RDIMM 3DS

# Information on memory installation

- Turn off the system
- Remove the plug of the power supply unit (if connected)
- Remove the battery, according to the user manual of the system
- Always ground yourself before touching electronic components
- Protect the memory module from static voltages:
- Do not touch the gold pins of the memory module - Only touch the sides of the memory module
- Use a grounding strap and/or ESD glove if possible

General installation instructions are supplied by E-Mail.



# Further memory options for MSI Gaming 9 ACK X99A

Size	SKU	Technology	Туре	Number of pins	Brand	Reference no.
4GB	SP152047	DDR4	UDIMM (Non- ECC unbuffered)	288 Pin DIMM	PHS-memory®	
8GB	SP159621	DDR4	RDIMM (ECC Registered)	288 Pin DIMM	PHS-memory®	
8GB	SP159618	DDR4	UDIMM ECC (ECC unbuffered)	288 Pin DIMM	PHS-memory®	
8GB	SP152048	DDR4	UDIMM (Non- ECC unbuffered)	288 Pin DIMM	PHS-memory®	
16GB	SP467652	DDR4	UDIMM (Non- ECC unbuffered)	288 Pin DIMM	PHS-memory®	
16GB	SP160747	DDR4	RDIMM (ECC Registered)	288 Pin DIMM	PHS-memory®	
32GB	SP467653	DDR4	UDIMM (Non- ECC unbuffered)	288 Pin DIMM	PHS-memory®	
32GB	SP159620	DDR4	RDIMM (ECC Registered)	288 Pin DIMM	PHS-memory®	
64GB	SP463658	DDR4	RDIMM (ECC Registered) 3DS	288 Pin DIMM	PHS-memory®	
128GB	SP463659	DDR4	RDIMM (ECC Registered) 3DS	288 Pin DIMM	PHS-memory®	
256GB	SP463660	DDR4	RDIMM (ECC Registered) 3DS	288 Pin DIMM	PHS-memory®	

### PHS-memory® warranty

Every PHS-memory® is equipped with a 5-years-warranty of perfect operation. If the RAM module is defective or fails within 5 years of purchase when used properly, you will receive an appropriate RAM module free of charge. If a suitable memory module is no longer available, we will refund the purchase price.



For more information on warranty and service please visit https://www.phs-memory.es/-W5Y



### Contact Information

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All information without guarantee. Technical changes and errors excepted. You can find current price information in our online shop at https://www.phs-memory.es