

32GB (2x16GB) Kit Computer memory DDR3 for QNAP TS-451+ SO DIMM



phs memory®

216,64 EUR

plus VAT

257,80 EUR

incl. VAT

immediately available

<https://www.phs-memory.com>

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Your benefits

- ✓ verified quality memory
- ✓ 5 years warranty
Warranty details see last page
- ✓ 100% compatible
- ✓ free support on our hotline
- ✓ fast delivery

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



Memory size	16GB
Memory technology	DDR3
ECC support	no
JEDEC Norm	PC3L-12800S
DRAM Organization	1Gx8
Rank	2Rx8
Type	SO DIMM
Number of pins	204 Pin DIMM
Memory data transfer rate	1600MHz @ CL11
Voltage	1,35 Volt
Speciality	-
Board dimensions	67,6 x 30 (LxB mm)
Operating temperature	0° C - 85° C
Storage temperature	-40° C - +95° C
RoHS compliant	yes
SKU	SP237238
EAN	4055069231700

overRAMing - maximize your RAM



Most systems - including the QNAP TS-451+ - can be upgraded with more memory than originally specified by the device manufacturer.

Therefore, our memory specialists continuously analyze new memory solutions in selected systems. Due to improved manufacturing technologies, new memories with higher performance and capacity will be tested for stability and functionality.

Then the new memory solutions are released for the respective systems. Use the benefits of larger computer memory capacity with the PHS-memory® overRAMing memory solutions.

<https://www.phs-memory.com/-BOR>

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 system:

System manufacturer	QNAP
Device type	Storage/NAS
Device family	NAS TS
Device series	TS-x51 Serie
Device name	TS-451+
Standard memory	8GB (2x4GB)
Maximum memory*	32GB / 8GB according to manufacturer
Number of memory sockets	2
Annotation	Attention: If you want to use both memory slots, you have to install a memory kit of two identical memory modules. Because of this fact we offer matched memory kits for your Qnap system.

* The specifications for the maximum memory upgrade may differ from those of the manufacturer QNAP. 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.

Memory modules with our overRAMing-symbol are approved by us for maximum memory expansion.

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 QNAP TS-451+

Size	SKU	Technology	Type	Number of pins	Brand	Reference no.
4GB	SP152477	DDR3	SO DIMM	204 Pin DIMM	PHS-memory®	RAM-4GDR3L-SO-1600
16GB	SP237238	DDR3	SO DIMM	204 Pin DIMM	PHS-memory®	
8GB	SP210347	DDR3	SO DIMM	204 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.com/-W5Y>



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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.com>