

DDR4 NVDIMM

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SMART's DDR4 NVDIMMs combine non-volatile memory functionality with high-speed DDR4 DRAM technology. DDR4 NVDIMMs provide a persistent memory solution to significantly accelerate application performance in server and storage appliances.

SMART's DDR4 NVDIMM feature proprietary SafeStor™ technology, the engine which initiates backup and restore operations upon command from the host controller. The NVDIMM also support multiple command delivery options to trigger SafeStor™ backup during a host detected power outage and recovery events. The SafeStor™ engine also employs multi-channel NAND Flash and high-speed switching circuitry to provide robust backup and restore capability, all while functioning as a JEDEC standard DDR4 RDIMM during normal operation.

SMART offers NVDIMMs with encryption for high-security applications where data protection is required. SMART's NVDIMMs use the AES-XTS 256 standard (Advanced Encryption Standard) developed by the IEEE. AES is used to encrypt top secret data at agencies, governments, banks, and other organizations around the world and is regarded as one of the strongest encryption methods in existence.

NVDIMMs support Autonomous Self Refresh (ASR). SMART's patented ASR feature allows the NVDIMM to independently initiate a backup in the event of an OS crash (operating system), CPU fault, MCU fault (Memory Controller Unit), BIOS hang, blue screen, or other motherboard failures which result in a hang without power loss where the customer has data in the DIMM that they want to save and recover after a system is reset to recover from the hang.

Features & Benefits

- Fits standard 288-pin DIMM socket
- During normal operation, NVDIMM will function as a standard RDIMM module
- During a power loss, the contents of the DRAM are automatically backed up to Flash
- NVDIMM with Encryption also offered as an option

Product Family Overview

Capacity	Speed	Configuration
4GB to 16GB	2400/2666	2G x4, 1Gx4, 512M x8

Applications

High performance servers

- Database and analytics servers
- High performance replacement for existing NVRAM PCIe cards
- Journaling & check-pointing for In-memory databases
- Real-time response in financial trading & social media

High performance storage servers

- SAN appliances and arrays
- NAS filers
- Distributed storage systems
- High performance replacement for existing NVRAM PCIe cards
- Tiering and caching
- Meta data storage
- SSD address mapping table



DDR4 NVDIMM Ordering Information

288 PIN - DDR4 NVDIMM

SMART Part Number	Density	Height (mm)	Module Config	Device Config	Speed	Voltage	Command Set	Temp
ST2047NJ420493SCL2	16GB	31.25	2Gb x72	2Gx4	2666MT/s	1.2V	SMART	0°C to +70°C
ST2047NR420493SCL2	16GB	31.25	2Gb x72	2Gx4	2666MT/s	1.2V	JEDEC	0°C to +70°C

DDR4 NVDIMM Backup Power Module Ordering Information

SMART Part Number	Description/Form Factor	DDR4 NVDIMM Supported	
SSC15241SMT0051B	2.5"	4GB or 8GB	
SSC20041SMT0051B	2.5"	16GB	
SSCA8062SMTH061B	2.5"	32GB	
SSC30442SMT0041B	HHHL PCIe (Half Height Half Length)	4GB or 8GB or 16GB	
SSC40042SMT0071B	HHHL PCIe (Half Height Half Length)	32GB	
SSC40042SMT0072B	HHHL PCIe (Half Height Half Length)	Two 16GB's	
SSC40042SMTDE82B	HHHL PCIe (Half Height Half Length)	Two 16GB's	
SSC15241SMT0051B	Intel RAID Maintenance Free Backup Unit Form Factor	4GB or 8GB	
SSC20041INT0021B	Intel RAID Maintenance Free Backup Unit Form Factor	16GB	
SSC36041INT0011B	Half-width BPM (hybrid)	4GB or 8GB	
SSC54061INT0011B	Half-width BPM (hybrid)	16GB	
SSC14041SMCD011B	Half-width BPM (supercap)	4GB or 8GB	
SSC24041SMCD011B	Half-width BPM (supercap)	16GB	
SSC48042SMTDE82B	HHHL PCIe	Two 16GB's (ES Sep)	
SSC40042SMTDE81B	HHHL PCIe	One 32GB	

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