Flashtec™ NVRAM Drive Family

NV1616 and NV1604 Flashtec PCIe NVRAM Drives

The Microsemi Flashtec™ NVRAM Drive family provides a PCI Express NVRAM solution based on the most advanced NVMe controller on the market. This family provides a new level of performance to the memory/storage hierarchy, ushering storage system OEMs, cloud applications, and service providers to the era of storage-class memory.

Establishes New Storage Tier with Superior Performance

- Non-volatile DRAM-like performance, NAND persistence
- Over 10 million IOPS (direct memory mode, available for NV1616 only)
- Sub-microsecond latency

Ease-of-Use for Faster Time to Market

- Industry-standard interfaces
- Application-friendly for ease of integration
- Zero maintenance green backup
- “Enterprise Class” for mission-critical data center
- Uncompromising quality and reliability
- Unlimited endurance NVRAM
- Small form factor for high-density rack solutions

Cloud-Scale Performance and Availability

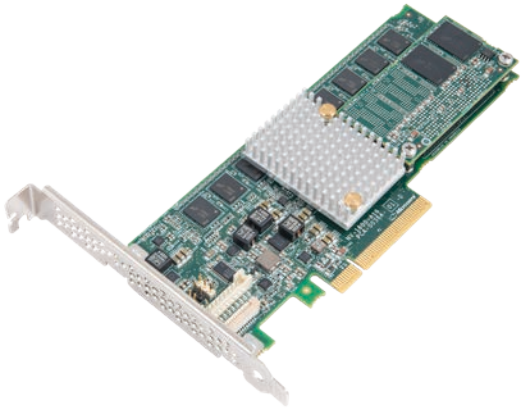
While SSD solutions continue to replace traditional HDDs in the performance tier of the storage hierarchy, there remains a significant performance gap between the memory tiers and the storage tiers in terms of latency, endurance, and high availability. As application demands continue to increase at an ever growing pace to keep up with the growth rate of cloud services, relying on volatile memory to achieve desired performance leaves applications vulnerable to data loss in the event of a system failure.

There is a need for a new tier of memory that provides mission-critical applications with the necessary safety net for their data while keeping pace with the application requirements for performance without compromising data protection, reliability, and availability.

Flashtec NVRAM Drive products serve exactly that need, and with >10M IOPS and up to 16 GB of memory per card, the product family can address the needs of the most demanding applications.

Lower Total Cost of Ownership (TCO)

Power failure protection is built into Flashtec NVRAM Drive products. A flash-based backup unit protects DRAM content in the event of a power failure. This backup unit eliminates the Uninterruptible Power Supply (UPS) or Backup Battery Unit (BBU), frees up rack space, and reduces support and maintenance costs without compromising critical system data across power failures.



Highlights

- Unlimited endurance: unlike SSDs, DRAM has practically unlimited endurance, and with up to 16 GB of non-volatile DRAM memory, NVRAM drives can fit very demanding workloads as well
- High-performance I/O: 1 million IOPS in NVMe block mode (512 B); over 10 million IOPS in direct memory mode
- Power failure protection: flash-based backup unit protects DRAM content in the event of a power failure
- Higher availability: a fast backup and recovery cycle ensures that mission-critical applications will have a shorter recovery time across power failure events
- Lower TCO: eliminating the Uninterruptible Power Supply (UPS) or Backup Battery Unit (BBU) frees up rack space and reduces support and maintenance costs without compromising critical system data across power failures

Applications

- Write cache for low-latency response time
- 64-bit addressable persistent metadata memory region
- Persistent shared memory for scale-out clustered systems
- High-performance journaling or write ahead logging
- Persistent cache for fast cache rebuild
- Performance tier de-staging to sequential-access capacity tier

Included

- NVRAM card
- SCM-F100/F35 module and cable

Flashtec™ NVRAM Drive Family

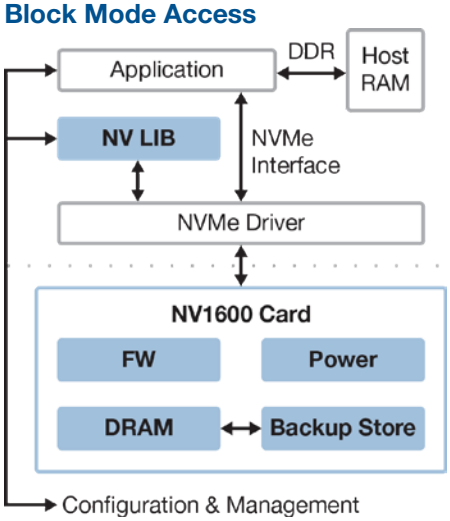
NV1616 and NV1604 Flashtec PCIe NVRAM Drives

Features

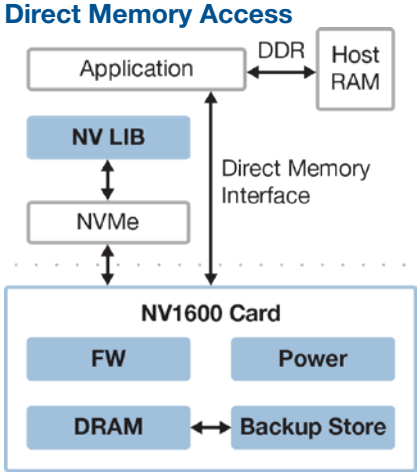
General Features	
Host interface	x8 lane
PCI express	3.0
Form factor	Low profile MD2 PCIe add-in card
Access modes	Block mode and direct memory mode
Memory capacity	4/16 GB configurations
Backup store	Flash module
Data retention offline	3 months
Backup power supply	Tethered super capacitor mode
Restore time	<15 sec
Backup time	<20 sec
Backup cycles	Up to 3000
Monitoring and alerts	Yes
Hardware Support	
Driver support industry	Supported NVMe drivers
Application support	NV-lib for application integration
Data Protection and Security	
Authentication	Optional host authentication sequence
Mechanical and Environmental	
Form factor	MD2 low profile PCIe card
Operating temperature	0 °C to 50 °C at 200 LFM
Power consumption	<20 W typical; 5 W idle
Reliability	
Maintenance	No maintenance required
Operational lifetime	5 years
Compliance and Certification	
NVMe.org	NVMe 1.0 compatible
PCIe SIG	Certified

Further resources and information can be found at:
http://www.microsemi.com/products/storage/storage

Block Mode Access



Direct Memory Access



Ordering Information

Model	Description	Part Number
NV1616	16 GB NVRAM PCIe drive and SCM-F100	2284700-R
NV1604	4 GB NVRAM PCIe drive and SCM-F35	2285400-R

Microsemi
Power Matters.™

Microsemi Corporate Headquarters
One Enterprise, Aliso Viejo, CA 92656 USA
Within the USA: +1 (800) 713-4113
Outside the USA: +1 (949) 380-6100
Fax: +1 (949) 215-4996
Email: sales.support@microsemi.com
www.microsemi.com

©2018 Microsemi Corporation. All rights reserved. Microsemi and the Microsemi logo are registered trademarks of Microsemi Corporation. All other trademarks and service marks are the property of their respective owners.

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions, security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California and has approximately 4,800 employees globally. Learn more at www.microsemi.com.

Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.

PMC-2142816. 6.0. 02/18