

# Flashtec<sup>TM</sup> 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 sequentialaccess capacity tier

#### Included

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



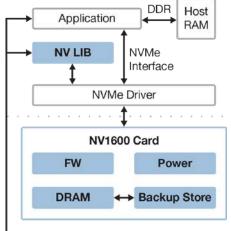
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#### **Features**

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 PCle card				
Operating temperature	0 °C to 50 °C at 200 LFM			
Power consumption	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				

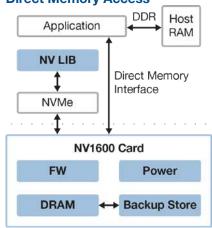
Further resources and information can be found at: http://www.microsemi.com/products/storage/storage

#### **Block Mode Access**



→ Configuration & Management

### **Direct Memory Access**



#### **Ordering Information**

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



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