

## Applications

- High speed, high capacity, secure data recording for: test and development applications operating in the range, storing mission data in the field, and applications such as telemetry, avionics and aerospace, command, control, communications, intelligence, surveillance, reconnaissance (C4ISR).
- Scalable storage architecture for data intensive workloads by aggregating capacity and performance through multiple networked ACUMEN nodes using NVMe/TCP.
- Cyber secure embedded AES-256, NIST ratified and FIPS 197-approved encryption protects sensitive and classified, stored data in remote and unpredictable environments.
- Ultra-rugged data storage for systems operating in marine, desert, jungle, polar, or space conditions.
- Compact, powerful, and secure for remote, distributed, and mobile applications.

## Benefits

- Flexible and agile multi-node networked architecture is easy to configure, expand, and re-assign to meet diverse, ever changing environments.
- Cyber secure, encrypted data storage, preventing unauthorized access to data.
- Designed to withstand the harshest remote environments.
- Low SWaP when small size, light weight, and low power are required.

## ACUMEN™

### SCALABLE SECURE NETWORK STORAGE NODES

#### WITH CYBER SECURITY CAPABILITY

#### M-SERIES FOR MILITARY APPLICATIONS

BITMICRO® ACUMEN Scalable Secure Network Storage Nodes provide AES-256 encrypted storage, protecting data from external threats. Combine multiple ACUMEN nodes to increase performance and capacity as-needed to solve your most data intensive workloads.

Each ACUMEN node includes secure solid-state storage capacity that can function as file-based NAS or block-based storage (iSCSI or NVMe/TCP) with dual 10Gb Ethernet ports for high-bandwidth data transfers. With NVMe/TCP, one or many ACUMEN nodes can be combined to create a single namespace. To scale capacity and performance for a namespace, simply add more ACUMEN nodes.

ACUMEN nodes are compact, lightweight, portable and have embedded Power over Ethernet, reducing the footprint required for space-constrained platforms through a single connection for power and data. ACUMEN nodes can easily be transported from an airborne system to a base system or to a remote location. ACUMEN nodes are military grade, capable of operating reliably in the harshest air, land, sea, and space environments. ACUMEN nodes are verified rugged to withstand the shock and vibration associated with mobile, widely distributed, and remote systems.



## Feature Highlights:

- NIST ratified, FIPS 197- approved AES-256 encryption for protecting data when stored.
- Dual 10Gb/s Ethernet ports for easy network connectivity and namespace creation.
- Each ACUMEN node provides up to 4TB of capacity.
- Aggregate multiple networked ACUMEN nodes to increase namespace capacity and performance.
- Use standard file system commands and data protection methods to ensure continuous access to mission data.
- Compact size, portable, minimal power, and low weight allow for use in a large variety of systems where low SWaP is important.
- Mil-Spec focused rugged design withstands wide temperature ranges, high humidity, extreme vibration and shock.

## Product Specifications

Model	Low SWaP Model
<b>Capacity</b>	
Storage Capacity	Up to 4TB
Supported NAND Types	3D TLC (Optional: SLC)
<b>Power</b>	
Power Consumption	~ 30W
Voltage	12V DC (Optional: 48V DC POE)
<b>Connectivity</b>	
Network Protocol Options	Block-based: NVMe/TCP (NVMe over Fabrics) Block-based: iSCSI File-based: CIFS/SMB (NAS) File-based: CephFS (NAS)
Device Interface	2 x 10GbE (Optional: 1 x USB 3.0)
<b>Security and Data Protection</b>	
Data Encryption-Stored Data	Embedded AES-256, NIST ratified and FIPS 197-approved
FIPS 140-2 Level 3 Compliance	Optional
Crypto Erase	Optional
PowerGuard® Power Loss Data Protection	Optional
<b>Manufacturing</b>	
Ruggedness Level	Verified Rugged
<b>Military Options</b>	
Connectors	Rugged, multi-insertion, and/or environmentally sealed connectors
Solder	Leaded
Potting / Encapsulation	All methods/types
Conformal Coating	All methods/types – including Silicone, Acrylic, Urethane
<b>Physical</b>	
Form Factor	Self-contained External Chassis
Dimensions (L x W x H)	5.5 in x 2.75 in x 1.59 in (140 mm x 69.85 mm x 40.4 mm)
Weight	18 oz. (510.3 gm)
<b>Environmental (Operational)</b>	
Temperature	Industrial Extended Temp: -40 to 70 °C Industrial Wide Temp: -40 to 85 °C
<b>Warranty</b>	
Standard	1 Year
Extended (Optional)	3 Years

### For more information:

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