Creating Tomorrow's Memories

XMC Fast Flash Disk Module

VITA 42.3 PCIexpress • Up to 4TB

pSLC & eNAND TLC • Conduction Cooled • I-Temp

Photon Series

ASXMC670 / ASXMC680

PCIe 1X / 4X Lane • NVMe • H/W Secure Erase

3,000 MB/s	2,700 MB/s	1,000 G	2,000,000 hrs	4TB	70,000 ft
Sustained Read	Sustained Write	Shock Resistance	MTBF	Max Capacity	Operating Altitude

PRODUCT OVERVIEW

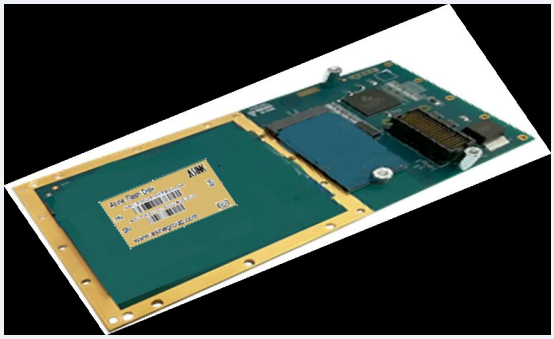
The ***Photon Series*** ASXMC670/680 is ASINE's XMC Fast Flash Disk module, designed for mission-critical airborne, defense, and industrial platforms where cableless, direct-to-backplane storage is essential. The module plugs into a single XMC slot and interfaces via the VITA 42.3 PCIexpress bus — no connecting cables or harness required.

Available in pSLC and eNAND TLC flash configurations up to 4TB, the ASXMC670/680 delivers up to 2,700 MB/s sustained read performance with hardware-triggered fast sanitize erase, MIL conformal coating, and conduction cooling for sealed, fan-less enclosures. The module is scanned and registered directly by the host CPU upon power-up — transparent to the operating system with no special drivers required.

Built for environments where storage failure is not an option: airborne ISR, cockpit recording, tactical data acquisition, and high-speed flight data capture.

QUICK REFERENCE

Interface: VITA 42.3 PCIexpress • VITA 42.0 (XMC) NVMe PCIe
Lane Config: ASXMC670: PCIe 1X lane • ASXMC680: PCIe 4X lane
Host Connection: P15 XMC PCIe bus • No cables or harness required
Flash Technology: pSLC (up to 660GB) • eNAND TLC (up to 3,840GB)
Capacity Range: 330GB to 4TB
Sustained Read: Up to 3,000 MB/s (Gen3)
Sustained Write: Up to 2,700 MB/s @ 330/660GB • 1,000 MB/s @ 1TB/2TB
Operating Temp (SMART): Commercial: 0°C to +70°C • Industrial: −40°C to +85°C
Altitude: −1,000 ft. to 70,000 ft. (operating)
Secure Erase: H/W trigger on P16 • Fast sanitize (few seconds typical)
Cooling: Conduction Cooled • Single high 10mm XMC format
OS Support: Windows • Linux • No special drivers required



ASXMC670/680 Photon Series — XMC Flash Disk Module
Images for reference only

KEY DIFFERENTIATORS

- No cables or harness — direct XMC bus connection
- H/W triggered secure erase via P16 signal
- Single high 10mm XMC — minimal footprint
- Conduction cooled — fully sealed enclosure compatible
- MIL conformal coating available
- Write protect option for OEM
- Long-term product lifecycle support
- VITA 42.3 PCIexpress compliant

PERFORMANCE SPECIFICATIONS

Parameter	Specification	Notes
Sustained Read	Up to 3,000 MB/s	*Gen3 PCIe • capacity dependent*
Sustained Write	Up to 2,700 MB/s @ 330GB/660GB	*1,000 MB/s @ 1TB/2TB*
Random Read IOPS (4KB)	Up to 335K IOPS	*Capacity & technology dependent*
Random Write IOPS (4KB)	Up to 280K IOPS	*Capacity & technology dependent*
Interface	VITA 42.3 PCIexpress • VITA 42.0 (XMC) NVMe	*PCIe 4X lane (ASXMC680) • 1X lane (ASXMC670)*
Endurance (TBW)	Up to 1,200 TBW @ 2TB (standard)	*Enterprise (option V): 4,000 TBW @ 660GB @ 128K sustain*
Secure Erase	H/W signal trigger on P16 • Fast sanitize (few seconds typical)	*Capacity dependent*
OS Support	Windows • Linux • NVMe native	*No special drivers required*
Write Protect	Optional (OEM • MOQ apply)	*eNAND TLC and pSLC*

ENVIRONMENTAL, MECHANICAL & RELIABILITY

Environmental	Specification
Operating Temp	Commercial: 0°C to +70°C
Industrial Temp	−40°C to +85°C (by SMART data)
Storage Temp	−45°C to +95°C
Humidity	5% to 95% RH, non-condensing
Altitude (Operating)	−1,000 ft. to 70,000 ft.
Shock (Operating)	1,000 G / 0.5 ms half-sine
Shock (Non-Operating)	1,000 G / 0.5 ms
Vibration (Operating)	2.17 GRMS (5–700 Hz)
Vibration (Non-Operating)	3.13 GRMS (5–800 Hz)
Vibration Standard	Per product qualification test data
Module Standard	VITA 42.3 / VITA 42.0 compliant
Form Factor	Single high 10mm XMC • VITA 42.0
Conformal Coating	MIL-grade • Available for aerospace, naval, medical
Cooling	Conduction cooled • No airflow required

Reliability & Power	Specification
MTBF	2,000,000 hours (Telcordia SR-332)
Error Correction	Embedded EDC/ECC • Bad Block Mapping
Wear Leveling	Dynamic & Static
Self-Test	Built-in power-up • Auto self-diagnostics
Power (Average)	2.8W
Power (Maximum)	3.4W
Power (Idle)	0.75W
Flash Options	pSLC: up to 660GB • eNAND TLC: up to 3,840GB
Capacity Range	330GB • 660GB • 960GB • 1,920GB • 3,840GB
H/W Secure Erase	Not available on 3,840GB model
Long-term Support	Optional • OEM lifecycle programs available
Compliance	VITA 42.3 • VITA 42.0 (XMC)
EMI/EMC	Contact factory for EMI/EMC documentation

VALIDATED APPLICATIONS

Airborne & Defense	Industrial & Recording	Mission-Critical Systems
• Airborne ISR systems	• Factory automation	• Mission-critical applications
• High-speed flight data recording	• Telecommunications infrastructure	• Naval & maritime systems
• Cockpit voice & data recording	• Digital recorders	• Medical instrumentation
• Tactical storage & recorders	• Data acquisition systems	• Aerospace ground support
• Rugged embedded computing	• Testing instrumentation	• Autonomous vehicle platforms
• Video surveillance • JPEG2000	• JBOD • NAS • SAN • RAID	• Secure data destruction applications

Ordering Information

ASXMC6x0-[cap]-[t][c][f][[h]m][xnn]
cccc: 0330;0660;1000;2000;3840 [GB]

xx / y = factory codes • consult factory

Sfx	Feature	Type	Status
t	C Commercial Z Industrial temperature	Option	Available
D	Conduction Cool	Option	Available
F	MIL Coated	Option	Available

Sfx	Feature	Type	Status
H	H/W trigger SE	Option	Up to 2TB
m	T eNAND TLC V pSLC	Option	Up to 3.78TB
x20	AES256 OPAL	Option	
xnn	Factory setting		

NDA required. Spec subject to change. Rev 2026.2

THE ASINE ADVANTAGE

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