

Industry-Tailored SSD & Memory Solutions

Real-World Use Case Collection



ADVANTECH

Enabling an Intelligent Planet

Industrial SSD & Memory Solutions

with Expert Customization Services

Industrial Rigorous
Test Criteria

Comprehensive
Security Function

Pre-Qualified
Reliability

3 years
Longevity

First-to-Market
Access

Customization
Service

Technical
Support



PHISON SK hynix micron

Advantech proudly offers its own lines of industrial-grade SSD and DRAM solutions—SQFlash and SQRAM—engineered with a clear focus on security and reliability. Backed by a dedicated SQ team, these products are built to meet rigorous industrial standards, ensuring stable and optimized performance in the most demanding environments. In addition to robust hardware, we provide extensive customization services and intelligent software tools to maximize utility. Whether for servers, edge devices, or outdoor deployments, SQFlash and SQRAM deliver dependable performance tailored to your application needs.

Real-world Use Cases are Explored Next.



Real-World Storage & Memory Applications

01

Factory Automation & Robotics

- Semiconductor Process Equipment
- Semiconductor Manufacturing Equipment
- Industrial Robotic Systems
- Automotive Robotic Arms
- AGV Robotics

02

Security & Public Safety

- Network Security & Application Delivery Appliance
- Secure Government Computing Solutions
- Traffic Police Control Room

03

Rugged Applications

- Embedded Computing Mission Data Recorder in Flight
- Tactical Land Systems & Control Console
- 5G Data Logging Applications in Drones
- High-Speed Trains

04

Medical Applications

- Medical CT Scanner
- Edge Server for Genomic Sequencing



Semiconductor Process Equipment

SQF-S25 840V

2.5" SATA SSD

SuperCap Power-Loss Protection

China

Semiconductor process equipment uses the SQF-S25V8-1K9GDVCC 1.9TB 2.5-inch SATA SSD to store operating systems, process recipes, calibration data, and equipment logs. Integrated SuperCap-based power-loss protection safeguards critical information during unexpected shutdowns, helping ensure continuous operation, minimize recovery time, and support reliable long-term deployment across demanding semiconductor production environments worldwide.



Challenges & Demands

- Protect critical recipes, calibration data, and logs from sudden power failures
- Support continuous data recording and write-intensive workloads
- Maintain reliable data access during 24/7 equipment operation
- Meet long qualification cycles and extended equipment lifecycles

Solutions & Technologies (SQF-S25 840V)

- 1.9TB industrial 2.5" SATA SSD for high-volume data storage
- Embedded SuperCap H/W PLP safeguards data during unexpected shutdowns
- Industrial-grade hardware and firmware support continuous workloads
- Controlled configuration ensures reliable long-term deployment.

Benefits

- Preserves critical process data and system integrity
- Reduces data corruption, recovery time, and unplanned downtime
- Simplifies integration through a standard 2.5" SATA interface
- Enhances equipment reliability throughout its operational lifecycle



Semiconductor Manufacturing Equipment

SQF-C8M 730

PCIe Gen4 x4 M.2 2280 SSD

High Endurance

China

Advantech's authorized regional distributor in Northeast China, delivering industrial automation and embedded computing solutions. Expertise in industrial computers, embedded systems, data acquisition, industrial networking, HMI, and system integration for transportation, defense, telecommunications, manufacturing, and industrial automation.



Challenges & Demands

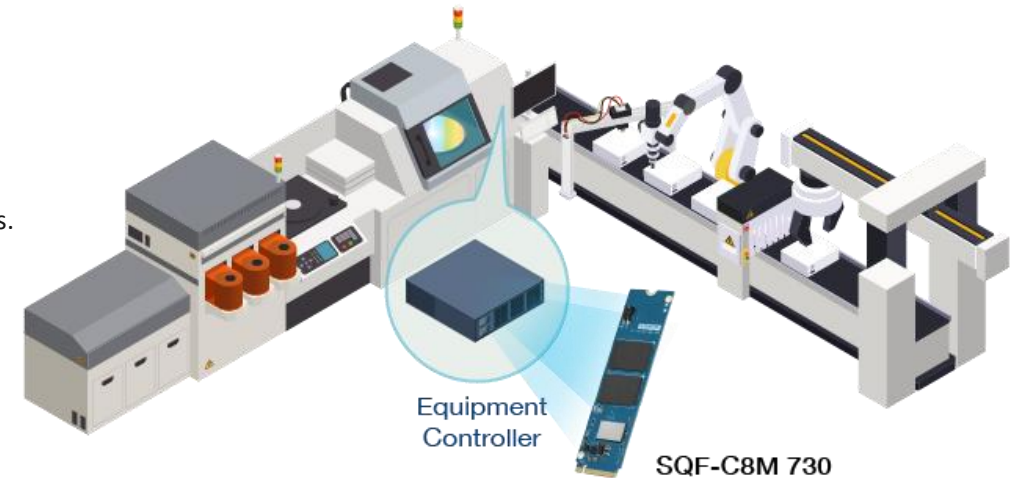
- Reliable operation across extended industrial temperature ranges
- Resistance to shock, vibration, humidity, and harsh industrial environments
- Stable memory and storage performance for continuous operation and edge data logging
- Long product lifecycle with fixed BOM control and long-term supply support

Solutions & Technologies (SQF-C8M)

- SQFlash PCIe Gen4 NVMe SSD delivers high reliability and endurance for industrial edge applications.
- Supports flexible expansion through modular architecture and iDoor modules for diverse industrial applications.
- Fanless, ruggedized platform designed for continuous operation in harsh industrial environments.
- Enables local data processing, device connectivity, and real-time industrial automation.
- Bridges field devices and enterprise systems to support Industry 4.0 and smart manufacturing.

Benefits

- High-endurance industrial SSD solution
- Reliable 24/7 data logging and storage
- Long-term product availability
- Excellent data integrity and performance



Industrial Robotic Systems

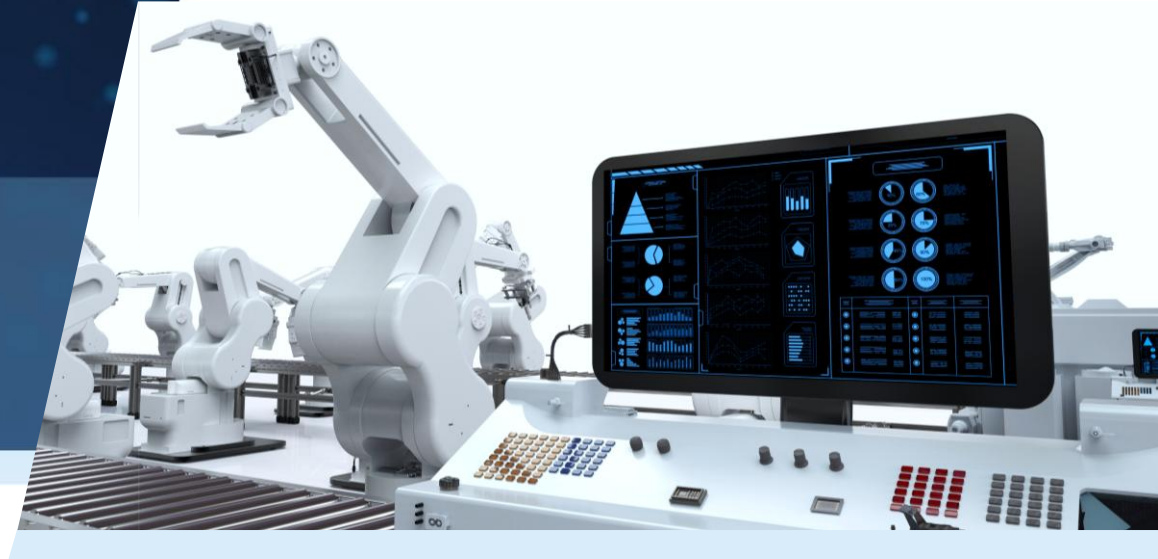
SQF-C8M 730

PCIe Gen4 x4 M.2 2280 SSD

High Endurance

South Korea

Robotic arms are automated devices that replicate human arm movements to perform tasks such as assembly, welding, and material handling. They have multiple joints for flexible motion and are controlled by programming and sensors for precision and efficiency. SSDs used in robotic applications require strong reliability. They must operate stably in various environments to ensure data integrity and continuous system operation.



Challenges & Demands

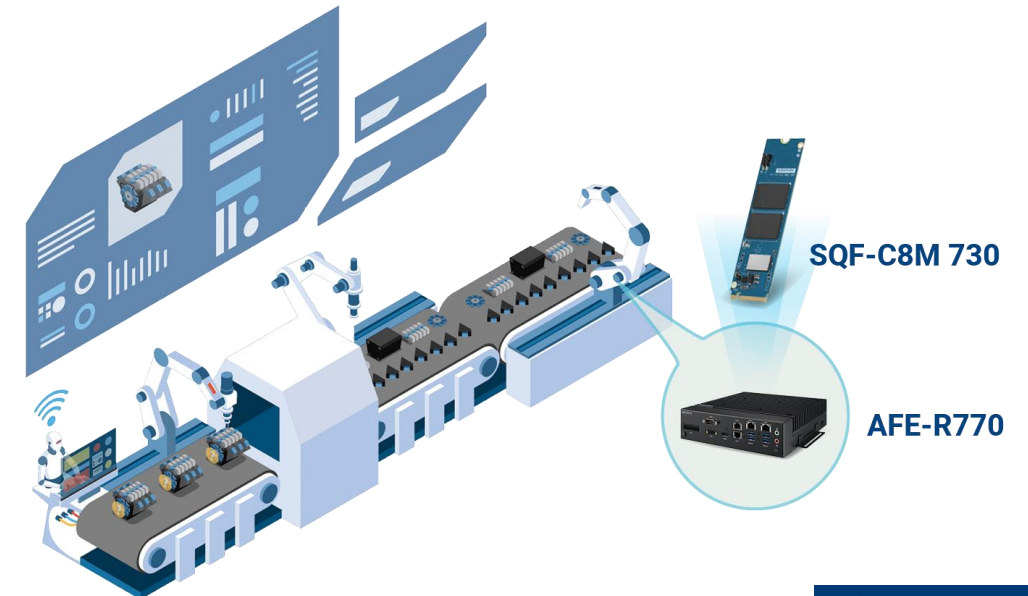
- Data endurance and reliability
- Easily reboot process
- Prevent data corruption during sudden power loss

Solutions & Technologies (SQF-C8M 730)

- High endurance (DWPD) for SSD lifespan extension
- Simply SSD back up & recovery which system can reboot by simple one command
- Hardware power loss protection ensures complete data integrity

Benefits

- User friendly for operators
- Long-term data retention and device reliability



Automotive Robotic Arms

SQF-S10 640

SATA 3 CFast Card

High Endurance

Japan

Industrial robotic arms are widely used in automotive manufacturing for welding, assembly, painting, and material handling applications. These systems rely on storage devices to record operational data, production programs, and controller information, requiring continuous and stable system performance. In factory environments where unexpected power interruptions may occur, storage solutions must provide high endurance, reliable data retention, stable performance, and long-term product availability to ensure uninterrupted operation and minimize maintenance costs.



Challenges & Demands

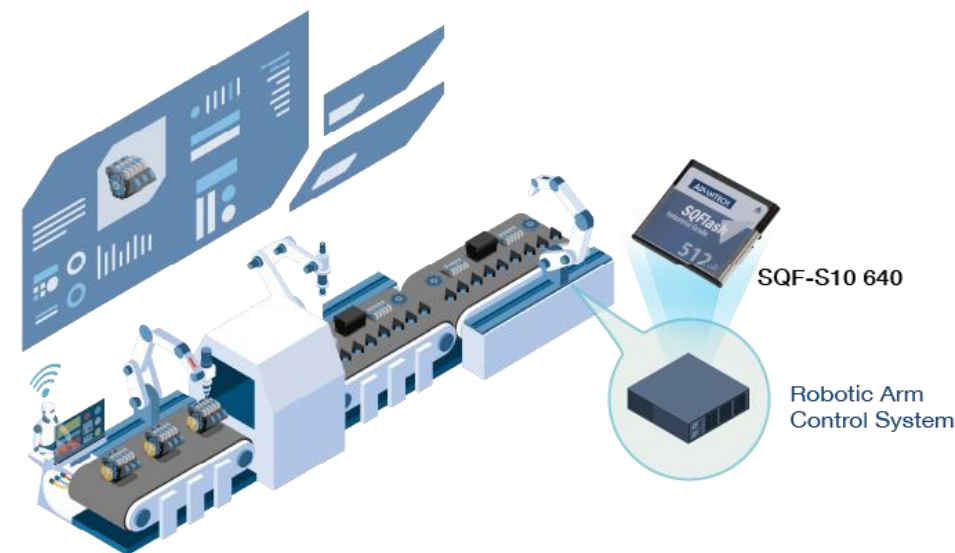
- Frequent unexpected power outages in factory environments
- High endurance requirements due to continuous system operation and intensive data logging
- Stable performance for robotic controller applications
- Long-term product availability to support production lifecycle management

Solutions & Technologies (SQF 640 CFast Card with UMLC NAND)

- High-endurance UMLC NAND technology for extended SSD lifespan
- Firmware optimization to maximize endurance and maintain stable performance under industrial workloads
- Strong technical support for controller-level integration
- Dedicated application engineering support for issue investigation and system validation

Benefits

- Improved reliability in environments with unexpected power interruptions
- Enhanced data integrity and reduced risk of data corruption
- Faster issue resolution through dedicated technical and AE support
- Increased production uptime and operational efficiency for automotive manufacturing lines



AGV Robotics

SQF-S8B 650 / SQR-SDF (ECC)

SATA M.2 2280 SSD / DDR4 ECC SODIMM

USA

The AGV industry is rapidly growing driven by smart manufacturing and automated logistics demands. Core technologies include high-precision navigation, sensor fusion, and AI-based autonomous control. AGV systems heavily rely on reliable SSD storage to handle real-time data and task information, while DDR memory supports fast data processing and multitasking. With the advancement of AI and edge computing, SSDs and DDR play an increasingly critical role as key components in enhancing AGV performance and reliability.



Challenges & Demands

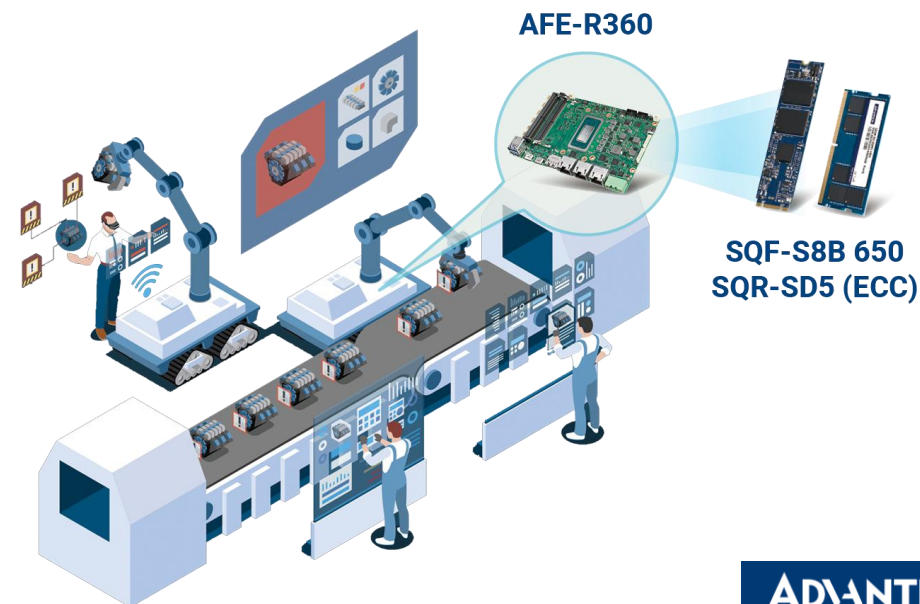
- 24/7 operation
- Faster boot and load times
- Data integrity and power loss protection

Solutions & Technologies (SQF-S8B 650 / SQR-SD5 with ECC)

- High endurance (DWPD) for SSD lifespan extension
- Hardware power loss protection ensures complete data integrity
- High speed with ECC function

Benefits

- Reduced labor costs
- Longer lifespan
- Faster speeds, reduced latency, and quicker boot/load times



Network Security & Application Delivery Appliance

SQR-RD4N

DDR4 RDIMM

USA

A leading provider of enterprise networking and cybersecurity solutions delivers high-performance appliances for application delivery, traffic management, load balancing, and secure remote access. These systems process large volumes of encrypted network traffic and maintain millions of concurrent sessions, requiring server-class memory with exceptional reliability, stability, and long-term availability to ensure uninterrupted service across mission-critical data center environments.



Challenges & Demands

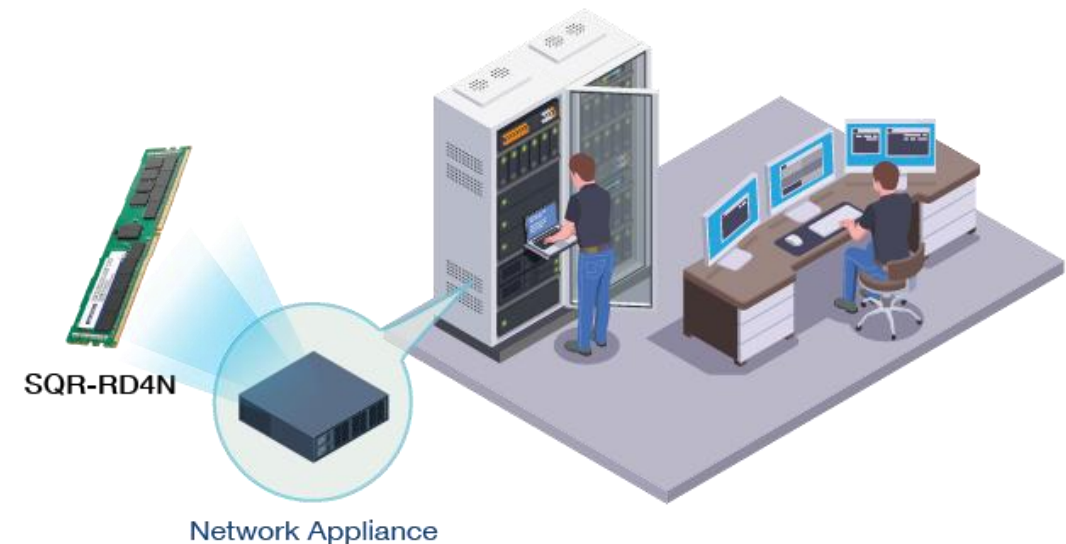
- High-capacity memory to support millions of concurrent network sessions
- 24/7 continuous operation with enterprise-class reliability
- Low-latency memory performance for real-time traffic processing
- Long product lifecycle with fixed BOM control for enterprise deployment
- High compatibility with server-grade Intel Xeon / AMD EPYC platforms

Solutions & Technologies (SQR-RD4N)

- Enterprise-grade ECC Registered DIMM for maximum system stability
- High-capacity DDR4 RDIMM designed to support demanding networking workloads
- Fixed BOM design for long-term product consistency
- Industrial-quality validation with long-term lifecycle support
- Reliable supply management for enterprise infrastructure deployment

Benefits

- Supports high-speed application delivery and network traffic processing
- Ensures maximum uptime for mission-critical networking infrastructure
- Improves system reliability through ECC error correction
- Simplifies long-term maintenance with stable BOM management
- Reduces deployment risk with dedicated engineering and technical support



Secure Government Computing Solutions

SQF-CM8 920F

PCIe Gen3 x4 M.2 2280 SSD

FIPS 140-2

USA

A leading provider of secure computing solutions delivers high-reliability desktop systems designed for government and mission-critical applications. These systems require advanced data protection, stable performance, and long-term product availability to support sensitive workloads and secure operations. By integrating enterprise-grade SSD solutions with FIPS 140-2 certified security features, these platforms ensure encrypted data protection, enhanced reliability, and consistent performance for demanding government environments where security and compliance are essential.



Challenges & Demands

- Strict compliance with government data protection and encryption standards (FIPS 140-2)
- High-volume, secure local storage for sensitive government administrative and operational data
- 24/7 high reliability and durability for long-term daily desktop use
- Extended product lifecycle with fixed BOM control to ensure seamless, standardized deployment
- High levels of physical and software-based data protection against unauthorized access or tampering

Solutions & Technologies (SQF-CM8 920F)

- High-security SSD solution certified to comply with FIPS 140-2 encryption standards
- Hardware-based AES 256-bit encryption for robust data-at-rest protection
- Fixed BOM control to guarantee long-term hardware and firmware consistency
- Industrial-grade validation designed for high-end government desktop platforms
- Integrated power-loss protection (PLP) and advanced thermal management for data integrity

Benefits

- Meets stringent government regulatory and compliance security requirements
- Protects sensitive data from breach or physical extraction with hardware encryption
- Simplifies IT procurement and OS image maintenance through strict BOM lock
- Minimizes system downtime and maintenance costs with long-lifecycle durability
- Provides seamless integration and plug-and-play compatibility with government PC architectures



Traffic Police Control Room

SQR-SD4N DDR4 SODIMM Netherland

An global leader in visualization and display solutions, the company delivers advanced video wall and control room technologies for mission-critical environments. Traffic police control rooms demand uninterrupted operation to monitor traffic conditions, manage incidents, and support public safety around the clock. Even brief system instability can reduce operator efficiency and compromise critical decision-making.



Challenges & Demands

- 24/7 continuous operation requiring maximum system reliability
- Stable memory performance for multi-display visualization and real-time data processing
- Long product lifecycle with fixed BOM control to minimize maintenance and requalification costs
- Stable supply and long-term product availability to support large-scale deployments, even during market supply shortages

Solutions & Technologies (SQR-SD4N 8/16/32GB)

- Industrial-grade DRAM ICs from tier-one manufacturers for superior compatibility and reliability
- Fixed BOM management ensure consistent product quality throughout the project lifecycle
- Industry-leading quality with an RMA rate below 300 DPPM
- Strong technical support from the Advantech engineering team

Benefits

- Ensures uninterrupted 24/7 operation for public safety and emergency response
- Protects real-time surveillance and video wall applications from unexpected system interruptions
- Maintains continuous operation of traffic management systems



Embedded Computing Mission Data Recorder in Flight

SQF-S25 840D / SQR-SD4I

2.5" SATA SSD / DDR4 SODIMM

Norway

An industry leading provider of rugged embedded computing solutions for aerospace and mission-critical applications. Mission Data Recorders operate in harsh environments with extreme temperatures and humidity. To meet these stringent requirements, both system memory and storage devices must provide exceptional reliability, environmental protection, and long-term operational stability throughout the equipment lifecycle.



Challenges & Demands

- Reliable operation across extended industrial temperature ranges during flight missions
- Resistance to humidity, condensation, and other environmental contaminants
- High memory capacity and storage stability under continuous data recording and mission-critical workloads
- Long product lifecycle with fixed BOM control for military qualification programs

Solutions & Technologies (SQF 840D 1TB & SQR-SD4I 8/16/32GB)

- Wide-temperature operation (-40°C to 85°C) ensures reliable performance in extreme environments
- Acrylic Coating protects PCB surfaces from moisture, condensation, dust, salt contamination, and corrosive gases
- High-capacity 1TB storage with a stable supply to support high-volume data demand.
- Comprehensive industrial-grade firmware with customizable thermal throttling.

Benefits

- Protects the system against moisture, humidity, and condensation during altitude and temperature changes
- Ensures uninterrupted mission data recording throughout every mission, even in harsh operating environments
- Extends product lifetime and lowers maintenance costs in harsh military environments through a fixed BOM solution
- Faster qualification and issue resolution through dedicated AE and technical support



Tactical Land Systems & Control Console

SQF-S25 840

2.5" SATA SSD

Quick Erase / Conformal Coating

Israel

A globally recognized defense systems provider, delivers advanced multi-domain land solutions, digital combat platforms, and tactical capabilities. Modern combat platforms integrate immense streams of sensor and telecommunication data in real time, requiring mission-critical reliability to ensure uninterrupted battlefield operations. To safeguard critical data integrity in the most demanding environments, these ground-based computing platforms require rugged, military-grade storage solutions with customized security features and exceptional physical durability.



Challenges & Demands

- Continuous operation in harsh environments with extreme shock, vibration, and temperature fluctuations.
- Fast, secure storage for real-time tactical processing and sensor data acquisition.
- Data sanitization for instant, irreversible data deletion if equipment is compromised in the field.
- Protection against moisture, dust, and chemical corrosion in tactical operations.

Solutions & Technologies (SQF 840D 1TB & SQR-SD4I 8/16/32GB)

- High-endurance SSD designed for maximum service life and operational stability in defense applications.
- Compact, high-performance interface providing rapid data access while conserving space in dense embedded systems.
- Specialized firmware function providing instant, complete, and unrecoverable data sanitization on command.
- Uniform, protective conformal coating applied to the PCB assembly to protect circuits against moisture, dust, chemical ingress, and corrosion.

Benefits

- Ensures system reliability during rugged field use, helping minimize data-related equipment failures and maintenance requirements in the field.
- Enables rapid, fail-safe destruction of sensitive mission data to prevent compromise, protecting personnel and strategic assets.
- Significantly improves the physical resilience of the storage module, ensuring stable performance despite prolonged exposure to extreme environmental conditions.



5G Data Logging Applications in Drones

SQF-C8M ER-1

PCIe Gen4 x4 M.2 2280 SSD

Thermal Solution / TCG Opal 2.0

Europe

5G edge servers used in data logging applications in drone which must provide low-latency, high-bandwidth computing resources at the network edge. This enables faster and more efficient data processing. These resources are particularly useful in surveillance, in-vehicle, and aviation applications.



Challenges & Demands

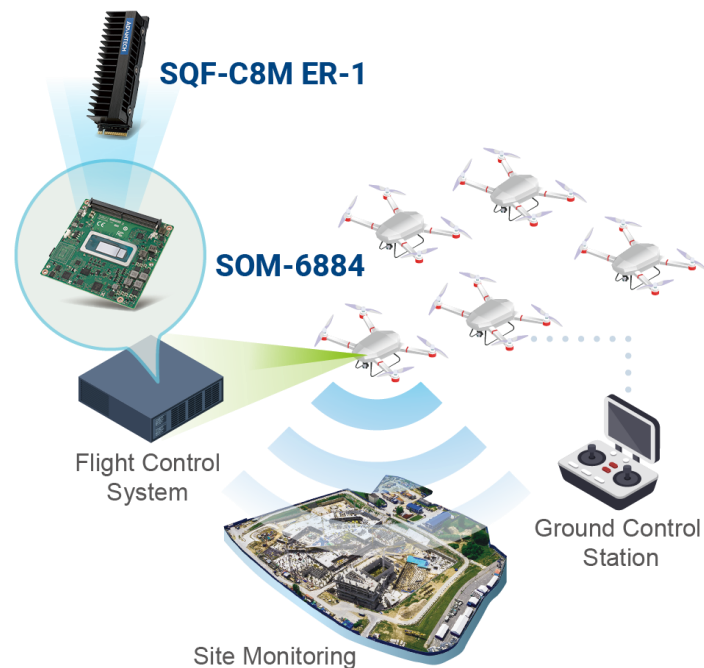
- Industrial-grade NAND, controllers, and thermal management ensure stable performance across extreme temperatures
- High-speed writes & large capacity ensure reliable capture of flight and sensor data
- Self-encrypting & firmware safeguards to prevent data corruption during high-stress operation

Solutions & Technologies (SQF-C8M ER-1 1TB)

- Supports read and write speeds of up to 7,100 and 6,700 MB/s, with a capacity of up to 15.3 TB per drive
- Available in both M.2 2280 and U.2 form factors
- Adopts industrial heatsinks and a robust firmware thermal throttling mechanism to ensure optimal heat dissipation
- Serves as self-encrypting drive (SED) and is compliant with TCG-OPAL 2.0, supporting AES-256 encryption

Benefits

- SQFlash undergoes a 24-hr high-low burn-in test under 100% full load conditions and a low-temperature boot-up test with 1,000 cycles
- 100% burn in test at the production line before shipment



High-Speed Trains

SQR-YD4I

DDR4 Rugged SODIMM

Singapore

The high-speed trains generate and process massive amounts of real-time data to ensure safety, efficiency. From train control to monitoring systems, memory solutions play a critical role in supporting data acquisition under harsh operating conditions. To meet these requirements, rugged DRAM modules are adopted, providing stable and reliable performance even in environments where shock, wide temperature, and continuous operation are the norm. The selected solution for this upgrade was the SGRAM DDR4 ECC Rugged DIMM, renowned for its durability and resilience in challenging environment.



Challenges & Demands

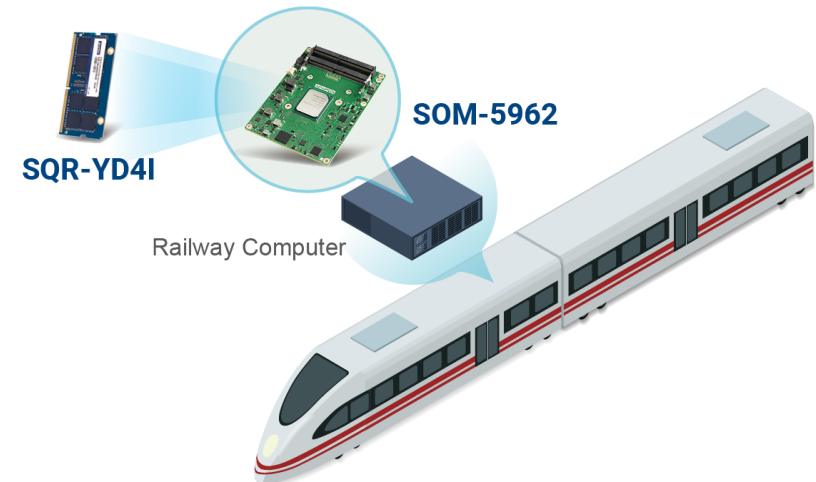
- Zero tolerance failure for Memory
- Wide temperature specification request
- Anti-Shock & Vibration
- Stable supply is very crucial since aircraft platforms operate 10–20+ years at least

Solutions & Technologies (SQR-YD4I 32GB)

- MIL-STD-810H Shock Certification, tested with 40G/30G sawtooth shock in 6 directions under 18 shocks of 10ms duration
- MIL-STD-810H Random Vibration Certification, testing X, Y, and Z axes for 1 hour per axis in operation mode
- SGRAM Manager Software to monitor DRAM health status and provide overheating alerts
- 30μ" chamfer edge gold fingers

Benefits

- SQR-YD4I memory technology provides an ECC solution, ensuring data integrity even in the face of environmental challenges
- SQR-YD4I memory adopts 2 mounting holes design to secure DRAM on the MB for shock
- resistance to perform stability in extreme conditions



Medical CT Scanner

SQR-RD4N

DDR4 RDIMM

Germany

One of the world's leading medical technology companies, providing advanced diagnostic imaging systems including CT scanners and molecular imaging solutions. Modern CT scanners generate and process enormous volumes of imaging data within milliseconds. To ensure uninterrupted clinical workflow and accurate diagnosis, the computing platform requires industrial-grade server memory with exceptional reliability, long-term availability, and stable performance throughout the product lifecycle.



Challenges & Demands

- Continuous 24/7 operation in hospitals with extremely high system reliability requirements
- Large-capacity memory to support high-speed CT image acquisition and real-time image reconstruction
- Stable supply and a long product lifecycle, ensuring uninterrupted delivery even during market shortages to support customers' high-volume demand
- Responsive sales, product management, and engineer teams for system integration, validation, and lifecycle management

Solutions & Technologies (SQR-RD4N 32GB)

- Original-grade Hynix Industrial ICs from tier-one IC suppliers for maximum compatibility and reliability
- Fixed BOM and controlled component management to minimize requalification risks
- ECC Registered DIMM architecture for improved data integrity and enhanced system stability
- Long-term product availability and supply commitment to support medical equipment lifecycles

Benefits

- Maintains system reliability during continuous 24/7 hospital operation, helping minimize maintenance and service interruptions
- Provides stable memory performance for high-speed image reconstruction and real-time diagnostic processing
- Ensures uninterrupted CT system operation, enabling hospitals to deliver continuous diagnostic services without unexpected downtime



Edge Server for Genomic Sequencing

SQF-CE3 EU-2

PCIe Gen5 x4 E3.S 1C SSD

USA

A medical technology company developing next-generation genomic sequencing equipment needed to process massive amounts of DNA data in real time. Each sequencing run generates terabytes of raw data that must be quickly analyzed and stored, creating heavy I/O and computational demands.



Challenges & Demands

- Enormous throughput required to handle TB-scale genomic datasets per run
- High reliability demanded to avoid data loss or corruption in clinical analysis
- Power efficiency critical to reduce heat and noise in compact lab equipment

Solutions & Technologies (SQF-CE3 EU-2)

- SQF-CE3 EU-2 series, PCIe Gen5 SSD delivering >14GB/s throughput
- End-to-End Data Protection for data integrity
- High Data Reliability UBER<1sector per 1018bit read
- Random IOPS performance for real-time analysis pipelines
- Best Serviceability, design with power management and hot plugging support

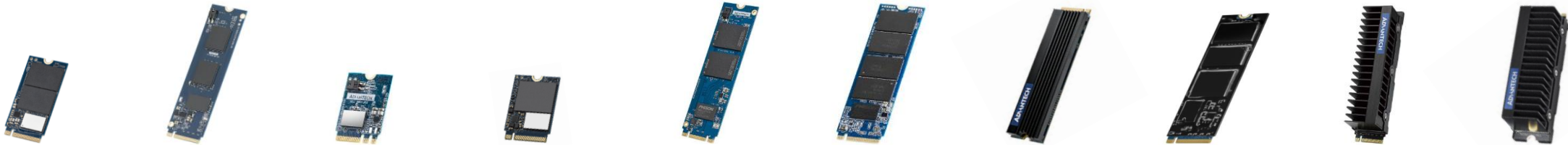
Benefits

- Accelerates data-intensive genetic testing workloads
- Large capacity achieve to 15.3TB
- Hot plugging and rugged case
- Integrated thermal solution, performance stabilization
- Hardware and firmware PLP support



Product Selection Guide: SQFlash Industrial Storage Solutions

PCIe



Model Name	SQF-C4M 730	SQF-C8M 740	SQF-C3A 720	SQF-C3M 730	SQF-C8B 720	SQF-C8M 720	SQF-CM8 920	SQF-CM8 920F	SQF-C8M ER-1	SQF-C8M 930
Form Factor	M.2 2242	M.2 2280	M.2 2230	M.2 2230	M.2 2280	M.2 2280	M.2 2280	M.2 2280	M.2 2280	M.2 2280
Transfer Protocol	PCIe Gen4 x4 NVMe 1.4	PCIe Gen5 x4 NVMe 2.0	PCIe Gen3 x2 NVMe 1.3	PCIe Gen4 x4 NVMe	PCIe Gen3 x2 NVMe	PCIe Gen3 x4 NVMe	PCIe Gen3 x4 NVMe 1.3	PCIe Gen3 x4 NVMe 1.3	PCIe Gen4 x4 NVMe	PCIe Gen4 x4 NVMe
Connector	M-Key	M-Key	A+E Key	M-Key	M-Key	M-Key	M-Key	M-Key	M-Key	M-Key
Flash Type	3D TLC	3D TLC	3D TLC BiCS5	3D TLC	3D TLC	3D TLC	3D TLC BiCS5	3D TLC	Enterprise TLC	3D TLC
Maximum Power Consumption	Read 4~5W	Read 5.9W / Write 5.1W	Read 1.9W / Write 1.9W	~5W	~2W	~4W	Read 5.3W / Write 5.5W	~5.5W	~8W	~6W
Capacity	Up to 2TB	Up to 4TB	128GB~512GB	Up to 2TB	128GB~512GB	Up to 2TB	240GB~1.9TB	Up to 2TB	Up to 8TB	Up to 8TB
Maximum Read / Write Performance (MB/s)	3550 / 3000	10300 / 8600	1200 / 900	5000 / 4000	1700 / 1000	3300 / 3000	3300 / 3000	3300 / 3000	7000 / 6800	7400 / 6800
Op. Temperature	-40~85℃	-40~85℃	-40~85℃	-40~85℃	-40~85℃	-40~85℃	-40~85℃	-40~85℃	-40~85℃	-40~85℃
DeviceOn / SQ Manager	Support	Support	Support	Support	Support	Support	Support	Support	Support	Support
Shock	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms	1500G / 0.5ms
Vibration	20G	20G	20G	20G	20G	20G	20G	20G	20G	20G

Product Selection Guide: SQFlash Industrial Storage Solutions

SATA



Model Name	SQF-S25 650	SQF-SM8 640	SQF-SM4 640	SQF-S8B 650	SQF-SLM 650	SQF-S25 840	SQF-SM8 840F	SQF-S25 840L
Form Factor	2.5" SATA SSD	M.2 2280 (B-M key)	M.2 2242 (B-M key)	M.2 2280	SQF-SLM	2.5" SATA SSD	M.2 2280	2.5" SATA SSD
Transfer Protocol	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Connector	7 + 15 pin SATA	M.2 B+M Key SATA pin-out	M.2 B+M Key SATA pin-out	M.2 B+M Key SATA pin-out	7 + 15 pin SATA	7 + 15 pin SATA	M.2 B+M Key SATA pin-out	7 + 15 pin SATA
Flash Type	3D TLC / sTLC	3D TLC	3D TLC	3D TLC / 3D sTLC	3D TLC	3D TLC / sTLC	3D TLC	3D TLC
Maximum Power Consumption	1.8W	750mA	500mA	1.8W	1.4W	4.6W	2.0W	3.4W
Capacity	TLC: 64GB~2TB / sTLC: 32GB~512GB	16GB~1TB	16GB~1TB	TLC: 64GB~2TB / sTLC: 32GB~512GB	TLC: 64GB~1TB	TLC: 240GB~15.3TB / sTLC: 60GB~1.9TB	240GB~1.9TB	240GB~1.9TB
Maximum Read / Write Performance (MB/s)	550 / 520 MB/s	560 / 490 MB/s	560 / 500 MB/s	550 / 520 MB/s	550 / 520 MB/s	550 / 530 MB/s	550 / 530 MB/s	550 / 530 MB/s
Op. Temperature	0~70°C / -20~85°C / -40~85°C	0~70°C / -40~85°C	0~70°C / -40~85°C	0~70°C / -20~85°C / -40~85°C	0~70°C / -20~85°C / -40~85°C	0~70°C / -40~85°C	0~70°C / -40~85°C	0~70°C / -40~85°C
DeviceOn / SQ Manager	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Shock	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5ms	1,500G, Peak / 0.5ms
Vibration	20G, Peak / 80~2,000Hz	20G, Peak / 80~2,000Hz	20G, Peak / 80~2,000Hz	20G, Peak / 80~2,000Hz	20G, Peak / 80~2,000Hz	20G, Peak / 80~2,000Hz	20G, Peak / 80~2,000Hz	20G, Peak / 80~2,000Hz

Product Selection Guide: SQRAM Industrial Memory Solutions

DDR5



Model Name	SQR-SD5N	SQR-SD5M	SQR-SD5I	SQR-SD5U	SQR-SD5 (ECC)	SQR-UD5N	SQR-UD5 (ECC)	SQR-RD5N	SQR-CX5N
Interface	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5	DDR5
Form Factor	SODIMM	SODIMM	SODIMM	SODIMM	SODIMM	UDIMM	ECC UDIMM	RDIMM	CXL 2.0
Pin	262pin	262pin	262pin	262pin	262pin	288pin	288pin	288pin	288pin
Frequence (MT/s)	7200/6400/5600	7200/6400/5600	7200/6400/5600	5600	7200/6400/5600	7200/6400/5600	7200/6400/5600	7200/6400/5600	PCIe Gen.5 x8
Capacity	8/16/32/48/64GB	8/16/32/48/64GB	8/16/32/48/64GB	16/32GB	16/32GB	8/16/32/48/64GB	16/32GB	16/32/64/128GB	64GB
Voltage	1.1v	1.1v	1.1v	1.1v	1.1v	1.1v	1.1v	1.1v	1.1v
Temperature	0~95℃	-25~95℃	-40~95℃	-40~105℃	0~95℃	0~95℃	0~95℃	0~95℃	0~70℃

DDR4



Model Name	SQR-SD4N	SQR-SD4I	SQR-SD4 (ECC)	SQR-UD4N	SQR-UD4 (ECC)	SQR-RD4N	SQR-RD4M	SQR-YD4I	SQR-HS4N
Interface	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4	DDR4
Form Factor	SODIMM	SODIMM	ECC SODIMM	UDIMM	ECC UDIMM	RDIMM	RDIMM	RUGGED DIMM	HEATSINK SODIMM
Pin	260pin	260pin	260pin	288pin	288pin	288pin	288pin	260pin	260pin
Frequence (MT/s)	3200	3200	3200	3200	3200	3200	3200	3200	3200
Capacity	4/8/16/32GB	4/8/16/32GB	4/8/16/32GB	4/8/16/32GB	8/16/32GB	8/16/32GB	8/16/32GB	16/32GB	8/16/32GB
Voltage	1.2v	1.2v	1.2v	1.2v	1.2v	1.2v	1.2v	1.2v	1.2v
Temperature	0~85℃	-40~85℃	0~85℃	0~85℃	0~85℃	0~85℃	-20~85℃	-40~85℃	0~85℃

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