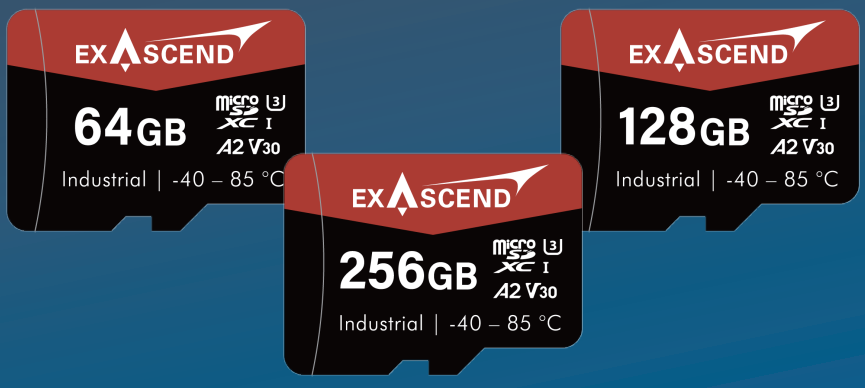
EXASCEND

WHITEPAPER

Addressing Emerging Edge AIoT Challenges with Exascend Industrial microSD

Rugged industrial-grade removable storage for connected intelligence at the edge



Exascend Industrial-grade microSD300

Overview

Today, a growing number of edge devices are deployed close to their data sources, far from conventional data centers. These devices, including IoT endpoints, smart cameras, data loggers, sensors, and processors, generate a substantial amount of data that needs to be stored, processed, and analyzed in order to create business intelligence.

Advancements in AI and machine learning have contributed to shaping this horizon. With AI and deep learning, businesses can turn data-driven intelligence into predictive analytics and actionable insights, resulting in more informed decision-making, better services, and better outcomes.

CAPACITIES

8 GB	16 GB	32 GB
64 GB	128 GB	256 GB

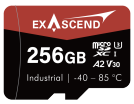
INTERFACE

SD 6.0

FORM FACTOR

microSDHC/microSDXC

ORDERING INFORMATION



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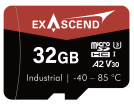

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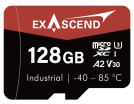

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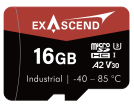

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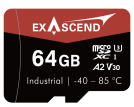

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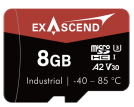


EX256GUSDV30-IDE

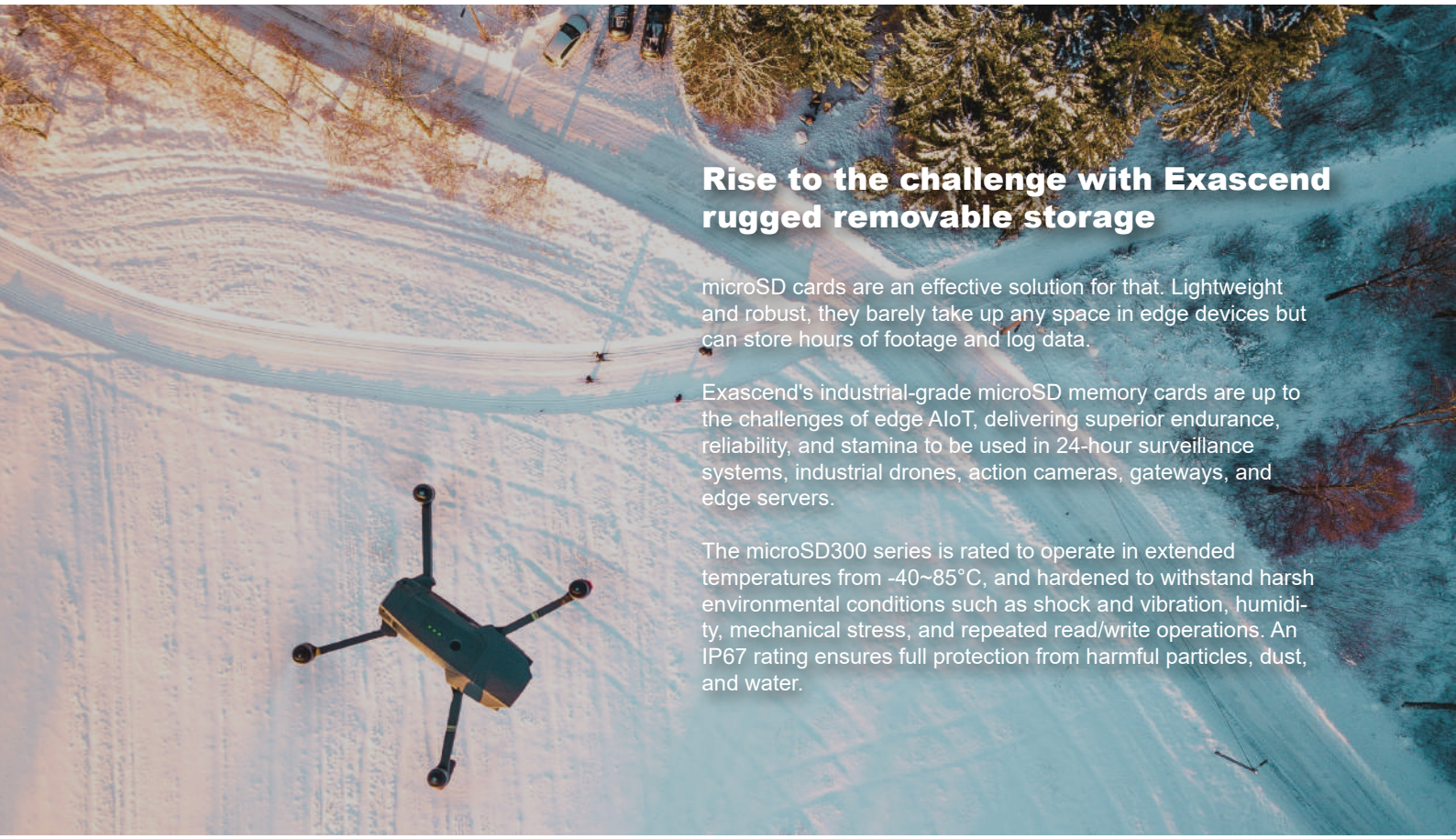
Real-time processing challenges arise as data scales by the minute

As connected AIoT devices proliferate, however, so does the amount of data collected at the edge. Since it would be time- and cost-prohibitive to transport all data back to a data center or a cloud for processing, many edge systems instead handle data at the edge to minimize backhaul load and latency overhead. Some examples of industries that increasingly require real-time data processing and analytics include surveillance, telematics, transportation, industrial automation, and smart retail.

While edge computing enables organizations to process data closer to the source, it also requires uninterrupted IoT connectivity and reliable hardware. More than ever, the sheer volume of data generated by write-intensive systems at the edge demands low-latency, high-endurance, and high-reliability compact storage.

PRODUCT HIGHLIGHTS

- microSDHC/microSDXC, U3, V30, Class 10, A2
- Wide temperature: -40 – 85°C
- Up to 256 GB storage large capacity
- Up to 90/80 MB/s read/write
- 2,000 IOPS random write
- MTBF of 2,000,000 hours
- IP67 waterproof and dustproof
- 3D TLC NAND flash



Rise to the challenge with Exascend rugged removable storage

microSD cards are an effective solution for that. Lightweight and robust, they barely take up any space in edge devices but can store hours of footage and log data.

Exascend's industrial-grade microSD memory cards are up to the challenges of edge AIoT, delivering superior endurance, reliability, and stamina to be used in 24-hour surveillance systems, industrial drones, action cameras, gateways, and edge servers.

The microSD300 series is rated to operate in extended temperatures from -40~85°C, and hardened to withstand harsh environmental conditions such as shock and vibration, humidity, mechanical stress, and repeated read/write operations. An IP67 rating ensures full protection from harmful particles, dust, and water.

High sustained and random performance for data demands

Additionally, Exascend's industrial microSD cards are rated A2 for application performance, guaranteeing a minimum of 4000 IOPS and 2000 IOPS for random read and write, which is equivalent to 8 – 10X that of a typical HDD performance. They are therefore ideal for compact edge equipment and provide faster data processing for applications that require quick read/write access, such as AI, machine learning, and telematic devices.

Exascend's microSD cards are designed to be highly reliable and durable, ideal for long-term use in industrial settings. In applications that operate 24/7 and require continuous data input, they ensure a sustained write speed of no less than 30 MB/s, and maximum read and write speeds of 90 MB/s and 80 MB/s.

Built to last with long life and reduced maintenance costs

With an MTBF of 2 million hours, Exascend industrial memory cards feature high endurance and long product life, which can help bring down maintenance costs and improve system uptime, lowering the total cost of ownership (TCO) for businesses.

With Exascend's powerful firmware technology, the purpose-designed industrial microSD storage meets a wide range of stringent industrial and IoT requirements.

Empowering connected intelligence at the edge

Leveraging R&D expertise, Exascend offers extensive firmware tuning and customization capabilities. Our industrial-grade cards come with advanced storage management features, including firmware-based power loss protection (PLP), Auto Read Refresh, advanced LDPC error correcting code (ECC), and global wear leveling. They are particularly suited for edge applications such as high-intensity loggers and surveillance systems, factory automation, smart driving, vehicle monitoring, platooning, facial and AI pattern recognition, visual analytics, and machine learning.

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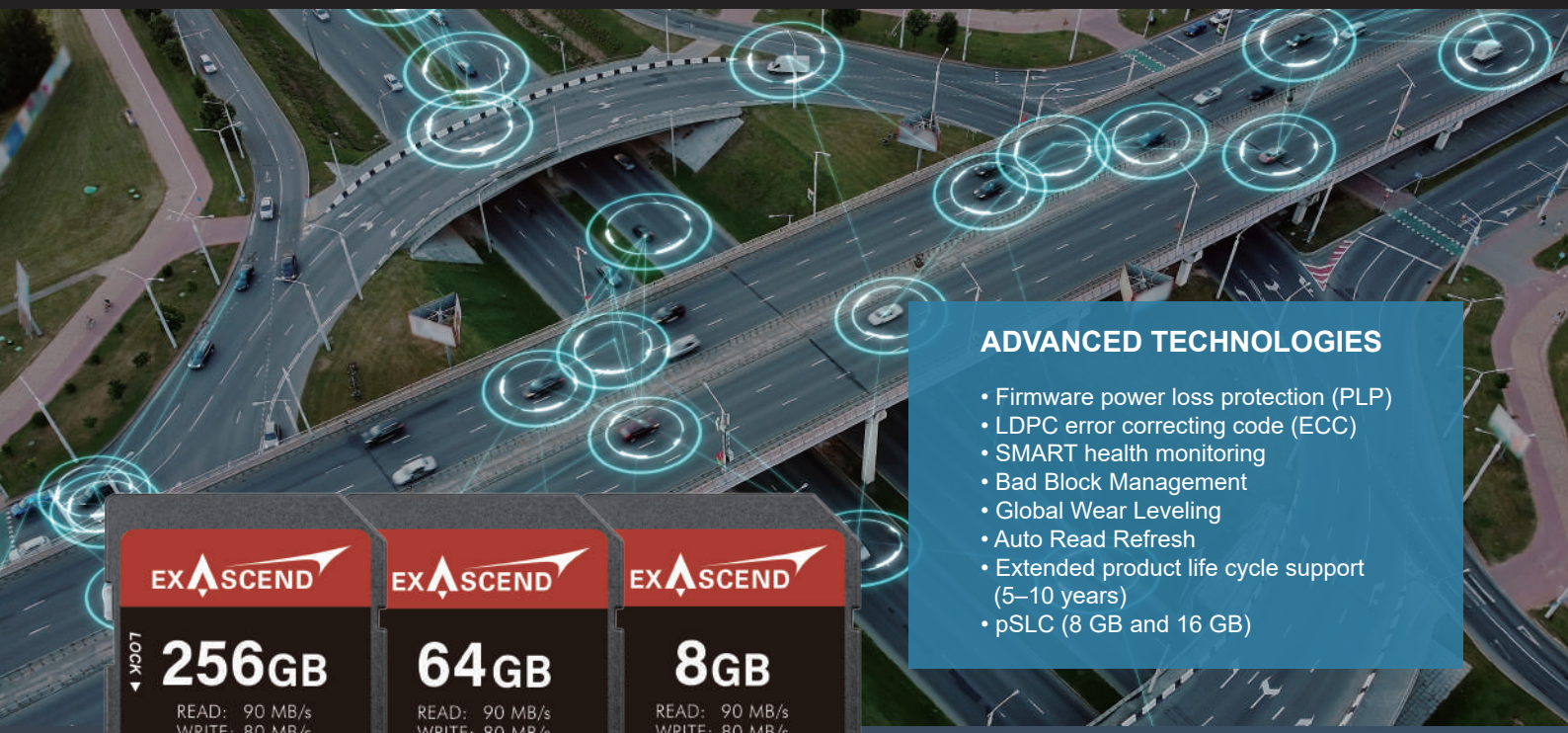
Secure data with Write Protect and life cycle support

Data security is a key consideration in edge computing. Exascend industrial microSD comes equipped with the Write Protect function to ensure data security. The industrial-grade memory cards are also rated for an extended product life cycle of at least five to ten years, ensuring the integrity and longevity of data stored.



Exascend

Industrial-grade SD & microSD cards

Exascend is a service-oriented provider of innovative standard and custom storage solutions specialized in low-power, high-performance, and high-reliability products. Since its founding, the company has been awarded more than 60 U.S. and worldwide patents on storage-related technologies. With full product lines of enterprise and industrial PCIe NVMe and SATA-III SSDs, CFexpress, CFast, SD, microSD cards, card readers and DRAM, Exascend's capabilities span across hardware, firmware, software, product engineering, manufacturing and customization services.

Exascend takes pride in enabling its global customers to push the boundary of possibilities and to differentiate with quality, reliability and flexibility – Inspiration to Innovation.