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SMART Modular Technologies Introduces Flash Memory Drives with SEU Mitigation for Remote Applications

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Single-Event-Upset mitigation technology significantly reduces service costs in demanding networking, telecom, and edge server applications

NEWARK, Calif.--(BUSINESS WIRE)-- **SMART Modular Technologies, Inc. ("SMART")** , a division of **SGH** (Nasdaq: **SGH**) and a global leader in memory solutions, solid-state drives, and advanced memory, announces a proprietary technology to mitigate the adverse impact of single event upsets (SEUs) in high-reliability flash-memory based systems. SMART Modular's MP3000 NVMe SSD products with SEU mitigation reduce annual failure rates from as high as 17.5k/Mu (million units) to less than 10/Mu and can save hundreds of thousands of dollars in potential service costs by helping to ensure hundreds of hours of uninterrupted uptime, especially important for tough-to-repair remote deployments.

SMART's MP3000 PCIe/NVMe and ME2 SATA product portfolios include SEU mitigation technology to protect against system failures in the field. (Photo: Business Wire)

"Our industry standard SATA and PCIe NVMe boot drives can slash annual failure rates by as much 99.7% by recovering from soft errors due to single event upsets," states Satya Iyer, SMART's vice president of specialty memory. "In networking and telecom applications in remote and hard-to-service locations, SEU mitigation and the ability to recover from soft errors can make the difference for systems that require 24/7 uptime."

SEUs are an inadvertent change in "bit status" that occurs in digital systems when high-energy neutrons, or alpha particles, randomly strike and cause bits in memory -- logic components -- to literally flip their state. These high-energy particles can originate from terrestrial or extraterrestrial sources such as cosmic rays. SEUs can lead to

abnormal operation of digital systems or total system failure. Addressing these errors or upsets within the SSD enable recovery without the need for a full system reboot which is critical in terms of maintaining reliable operations and uninterrupted runtimes.

The SEU mitigation technology is superior to other solutions that simply rely on ECC for the internal SRAM. By having the ability to gracefully reboot itself without a host system reboot, the SSD also handles possible flipped bits in other components within the SSD which might account for an additional 10% of failures. Designed for applications that require maximum uptime, these boot drives with SEU mitigation come in storage capacity ranges from 60GB to 1.92TB, and are available in commercial and industrial temperature grades.

The **ME2 SATA M.2** and **mSATA drives** with SEU mitigation provide 60GB to 1.92TB of storage and are available in commercial grades (operating temperature: 0 to 70°C) and industrial grades (operating temperature: -40 to 85°C). The M.2 2280 also supports SafeDATA ™ power loss data protection.

The **MP3000 NVMe PCIe drives** with SEU mitigation provide 80GB to 1.92TB of storage in M.2 2280, M.2 22110 and E1.S form factors and are available in commercial temperature grades (operating temperature: 0 to 70°C) and industrial temperature grades (operating temperature: -40 to 85°C). They also support SafeDATA ™ power loss data protection. Visit **SMART's website** to learn more.

About SMART Modular Technologies, Inc.

For more than 30 years, **SMART Modular Technologies** has been helping customers around the world enable high performance computing through the design, development and advanced packaging of specialty memory solutions. Our robust portfolio ranges from today's leading edge technologies to standard and legacy DRAM and Flash storage products. We provide standard, ruggedized and custom memory and storage solutions that meet the needs of diverse applications in high-growth markets.

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