

Kioxia introduces UFS 4.1 embedded memory for automotive applications

04-Aug-2025 13:30 GMT

IHS Markit
S&P Global
Supply Chain and Technology, Automotive

The new UFS 4.1 devices offer enhanced performance, flexibility and diagnostics with Kioxia's advanced 3D flash technology

Kioxia Corp. has announced the initiation of sampling for its new Universal Flash Storage (UFS) Ver. 4.1 embedded memory devices specifically designed for automotive applications. These devices are engineered to meet the demands of next-generation in-vehicle systems, offering considerable performance, flexibility and diagnostic enhancements powered by Kioxia's generation 8 BiCS FLASH 3D flash memory and controller technology. The UFS 4.1 memory devices are available in capacities of 128 GB, 256 GB, 512 GB and 1TB, and are intended to serve the needs of automotive systems such as infotainment, advanced driver assistance systems, telematics, domain controllers and vehicle computers. They conform to the AEC-Q100/104 Grade 2 standards with the capability to withstand case temperatures up to 115°C.



Source: Getty Images

The 512-GB UFS 4.1 devices significantly improve upon Kioxia's previous UFS 3.1 generation, with approximately 2.1 times improvement in sequential and random read performance, approximately 2.5 times in sequential write performance, and approximately 3.7 times in random write performance. These enhancements are aimed at delivering a more responsive experience in data-intensive automotive settings. Key features of the UFS 4.1 devices include compliance with the UFS 4.1 Specification, including WriteBooster-related extensions for enhanced performance flexibility, and enhanced diagnostic capabilities with a new vendor-specific device health descriptor for simplified monitoring and predictive maintenance.

The UFS 4.1 devices incorporate Kioxia's generation 8 BiCS FLASH 3D flash memory and controller in a JEDEC-standard package. The generation 8 BiCS FLASH technology introduces CBA (CMOS directly Bonded to Array) technology, marking significant advancements in flash memory design by directly bonding CMOS circuitry to the memory array. This innovation offers substantial improvements in power efficiency, performance and density.

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