KIOXIA's UFS: Next Generation Flash Memories for Automotive Deployment

Facing the technological challenges posed by e-mobility and autonomous driving, along with higher demands in relation to safety and sustainability, the automotive industry needs support from advanced semiconductor solutions. For the new breed of smart and connected vehicles that are now starting to be introduced, reliable data storage will be mandatory.

As a leading supplier and acknowledged pioneer in Flash Memory, KIOXIA offers Universal Flash Storage (UFS) devices that have been specifically developed so they can meet future automotive expectations.

UFS is one of the key technologies for infotainment, wireless communication and Advanced Driver Assistance Systems (ADAS) implementations in modern vehicles. Supplied in compact package formats with standardized interfaces that will facilitate their integration, these devices support much faster read/write speeds than alternative memory options. Consequently, this memory technology is the optimal

selection for many applications within the automotive sector (as well as having value in industrial, mobile and various other markets).

Find out more ›

Key Features of KIOXIA's Automotive UFS

- AEC-Q100 qualified
- High-speed serial interface
- Ultra-reliable and robust technology (based on 15 nm NAND and 3D BiCS Flash topologies)
- Integrated memory management:
    - Error correction code mechanisms
    - Bad block management
    - Wear-levelling
    - Garbage collection
- Automotive specific functions (including built-in diagnostics, refresh, thermal throttling, pre-programming, etc.)
- Power management functions to conserve electricity consumption
- Compliant with IATF16949
- Extensive temperature range (-40° C to +105 °C)

Flash Memory Leveraging Unique Core Technology

KIOXIA'S UFS is based on the company's proprietary high-capacity NAND Flash Memory, with the memory resource and the controller chip all being incorporated into a single package. Through specifying a KIOXIA UFS solution, automotive engineers can benefit from bad block management, wear leveling and error correction code functionalities. It means that the workloads placed upon host processors can be reduced and system responsivity increased. KIOXIA'S UFS solutions help to simplify development cycles and shorten time-to-market.

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