

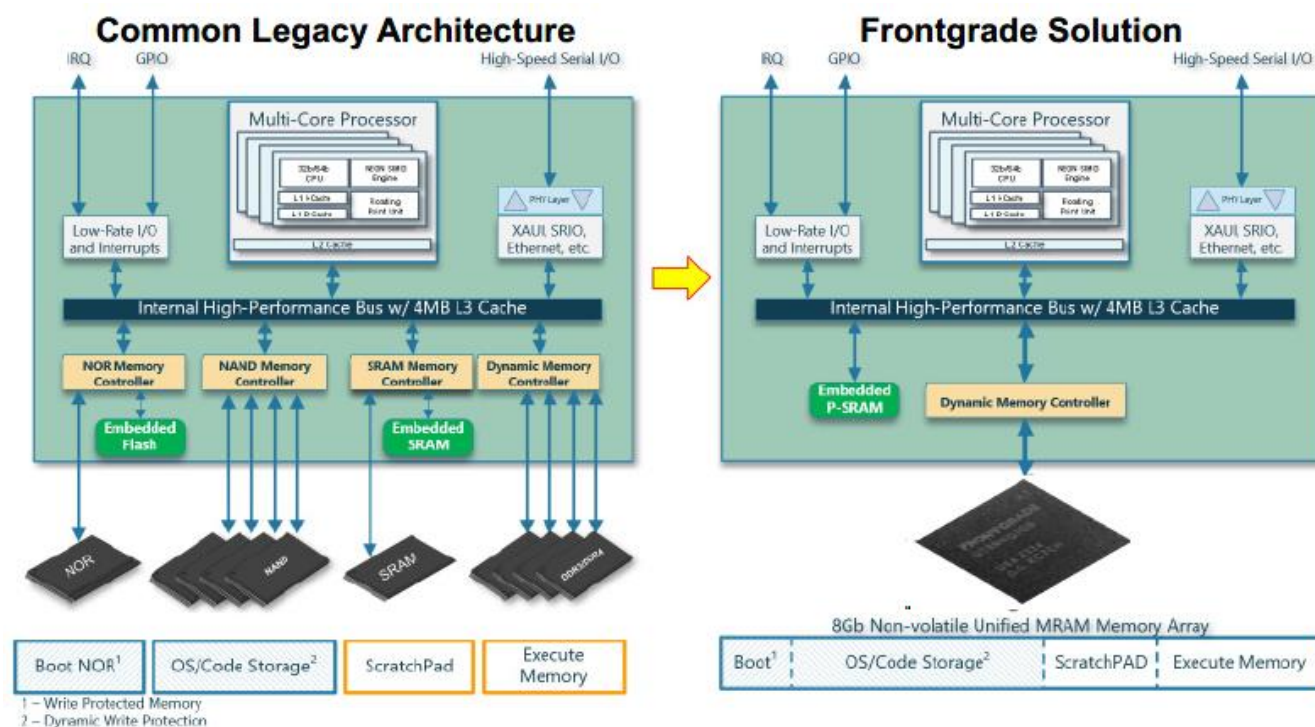
1 Gb, 2 Gb, 4 Gb and 8 Gb RadHard Dual Quad SPI MRAMs



Real-time systems in Space have traditionally relied upon multiple volatile & non-volatile memory devices to support function such as boot, system configuration, code execution, as well as data monitoring and logging, due to varying performance, endurance, radiation resilience and reliability. Now, Frontgrade helps designers achieve these functions with their high density, high performance, low power, non-volatile MRAM, all in a Single Package! Simplify your design with Frontgrade Space Grade solutions!

Data is written into memory instantly, is always non-volatile, protecting data in the event of a power loss.

Radiation effects characterization report available upon request.



Features:

- High Density: (1Gbit up to 8Gbit)
- High Endurance: Unlimited Read Cycles / 10^{16} Write Cycles
- Premier Retention: (20 years @ 85°C, 10 years at 125°C)
- Interface: Dual-Quad SPI – support 8-bit wide transfer
 - Dual QPI (4-4-4) – up to 108MHz SDR
 - Dual QPI (4-4-4) – up to 54MHz DDR
- High Reliability: (multibit embedded error correction)
- Soft Error Immune
- No Wear Leveling Required
- Hardware and Software Data Protection with Low Voltage Write Inhibit
- Provided with Frontgrade’s Radiation Assurance

Applications:

- Versal Boot RAM (write protected memory)
- OS/Code Storage, ScratchPAD, Execute Memory
- Reconfigurable computing image storage
- Ideal for applications needing low power, infinite endurance requiring the ability to store and retrieve data without incurring large latencies.

Operational Environment:

- Temperature Range: -40°C to +125°C
- Total Dose: 100 krad(Si)
- SEL Immune: ≤ 78 MeV-cm²/mg

Physical:

- 224-Ball PBGA unleaded (SAC305) or leaded (63Sn 37Pb)
- 20mm x 20mm x 1.5mm

Power:

- Low Power: (50ma per Gbit active)
- VCC: 2.50V – 3.60V, VCCIO 1.8V – 3.3V

Qualifications:

- Frontgrade’s Space PEM L1 and L2 Manufacturing and Qualification Flows– based on NASA-PEM-INST-001