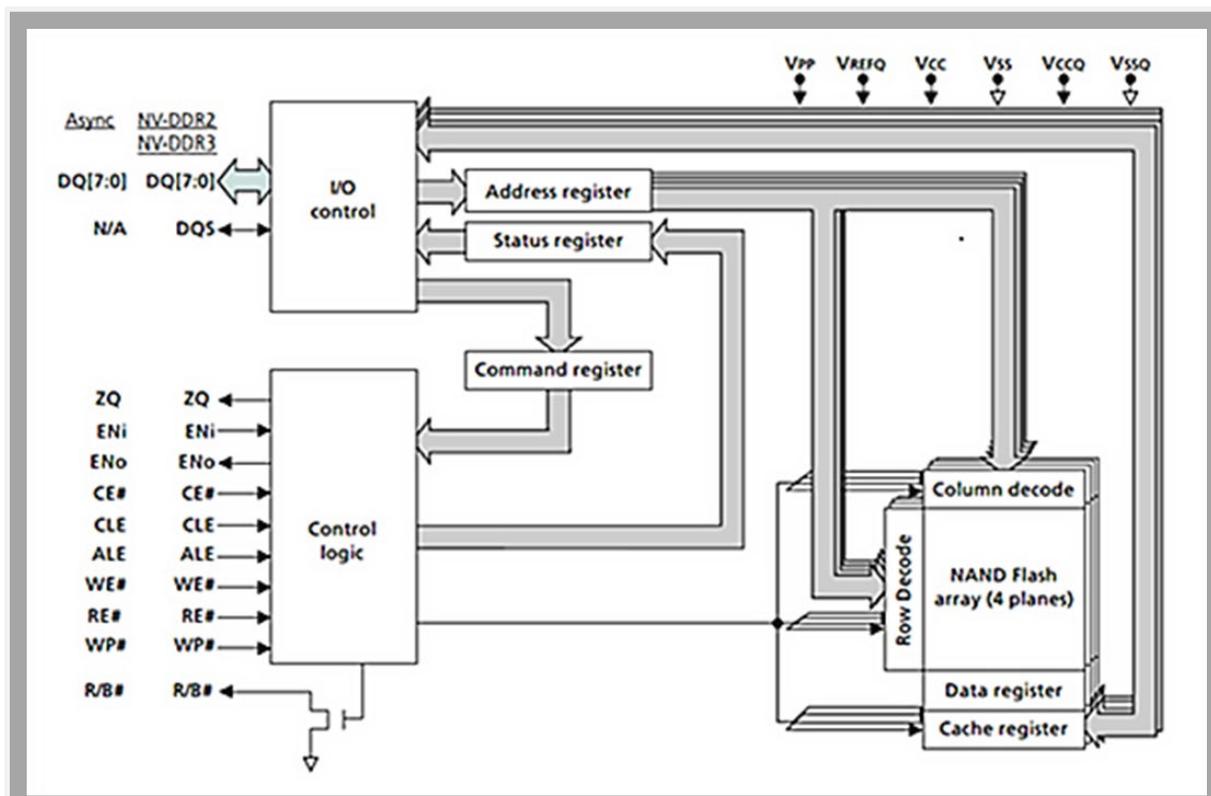


4Tb TLC NAND Flash UT81NDQ512G8T

For space applications demanding the highest reliability for the most extreme environments, Frontgrade offers the industry's highest density, UT81NDQ512G8T, 4Tb TLC NAND Flash.

Frontgrade's NAND Flash is based on the Triple-Level Cell (TLC) NAND technology offering some of the highest density devices available in a single JEDEC 132-BGA package. This high-performance memory device is packaged in a JEDEC standard single 132-Plastic Ball Grid Array (PBGA). The device supports synchronous and asynchronous data interfaces to transfer commands, address, and data within each die and is Open NAND Flash Interface (ONFI) 4.0 compliant. The UT81NDQ512G8T follows the PEM-INST-001 (NASA EEE-INST-002) – Level 2 flow qualification.



UT81NDQ512G8T Block Diagram

4Tb TLC NAND Flash

UT81NDQ512G8T

FEATURES:

- 4Tb density
- +3.3V Core and +1.8V, +1.2V I/O Supply Voltage
- Open NAND Flash Interface (ONFI) 4.0 Compliant
- Triple-Level Cell (TLC) Technology
- Organization
- Page Size: x8 18,592 Bytes
- Block Size: 2304 Pages
- Plane Size: 4 planes x 504 blocks
- Device Size: 16,128 Blocks
- Synchronous I/O Performance
 - NV-DDR2 Support (533MT/s r/w throughput per pin)
 - NV-DDR3 Support (667MT/s r/w throughput per pin)
- Asynchronous I/O Performance
 - tRC/tWC: 20 ns (min)
- Array Performance
- Read Page: 74 uS (typical)
- Program Page: 1900 uS (typical)
- Erase Block: 15 ms (typical)
- Data Retention: JESD47G Compliant
- Endurance:
 - 3 K Program/Erase Cycles (TLC mode)
 - 40 K Program/Erase Cycles (SLC mode)

APPLICATIONS:

- Solid-State Drives
- Solid-State Recorders
- Reconfigurable Computing
- Imaging and Communications Data Buffering
- Space Computing

OPERATIONAL ENVIRONMENT:

- Temp Range: -40°C to +85°C
- Total Ionizing Dose (TID): 50 krad(Si)*
- SEL Immune: ≤ 55 MeV-cm²/mg @ 85°C*

PHYSICAL:

- JEDEC 132-PBGA, 1mm pitch

POWER:

- <300mW (typical per active die)

QUALIFICATIONS:

- PEM-INST-001 (NASA EEE-INST-002) – Level 2*

* Product in development, targeted specification