

Controlling ECC Complexities and Providing Higher NAND Performance



Enhanced ClearNAND Flash is a specialized nonvolatile memory solution that enables applications to store data in new ways. It handles NAND's ever-increasing ECC requirements, while meeting the market's high-density requirements.

Enhanced ClearNAND Flash is like regular NAND—the interface and package types are the same—but ClearNAND integrates a controller and NAND die in an MCP. The internal controller offloads ECC from the host controller, freeing designers from having to adjust their controller every time the NAND changes.

Enhanced ClearNAND Flash

Enterprise-class Enhanced ClearNAND Flash provides increased speed and high endurance, along with several advanced features that pave the way for better, more efficient designs. It also supports both the asynchronous and synchronous versions of the ONFI interface.

Enhanced ClearNAND Features

- 32GB–64GB
- Up to 16-way parallelism
- ONFI-standard 100-ball BGA package
- Sync or async NAND Flash interface (ONFI EZ 3.X)
- Single external channel for host controller pin savings
- Enhanced command set
 - Enables real-time solution check
 - Improves system integrity
 - Reduces host controller pin count
 - Improves performance

5 Benefits of Designing with Enhanced ClearNAND Flash

1. Reduce ECC Complexity

An internal controller offloads ECC from the host controller, eliminating the need to make adjustments every time the NAND technology changes.

2. Easy Integration

Utilizing the same ONFI asynchronous or synchronous interface enables easy migration from standard NAND to ClearNAND.

3. Better System Performance

Advanced features open the door to new, otherwise-impossible design ideas.

4. Improved Reliability

Error management algorithms improve endurance.

5. Lower System Costs

Reduced complexity of the host controller helps reduce costs.



Micron Enhanced ClearNAND Flash Memory

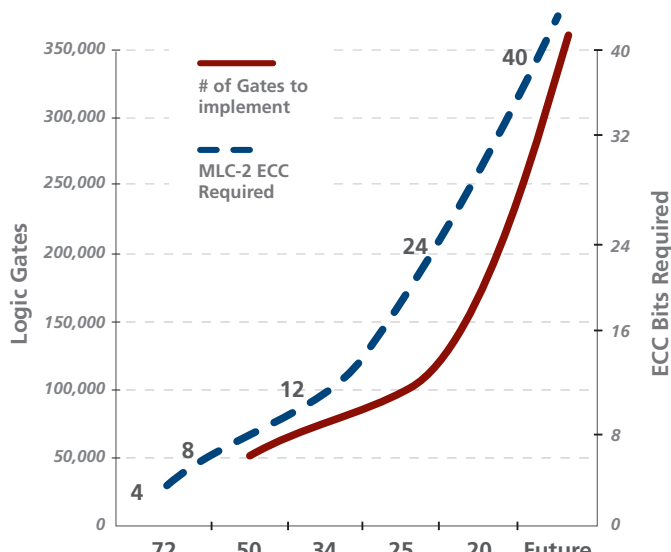
Enhanced ClearNAND Applications

- Tablet PCs
- Set-top boxes
- Digital TVs
- Video-on-demand
- Smartphones
- SSDs
- High-performance computing
- DRAM destaging
- Enterprise storage arrays

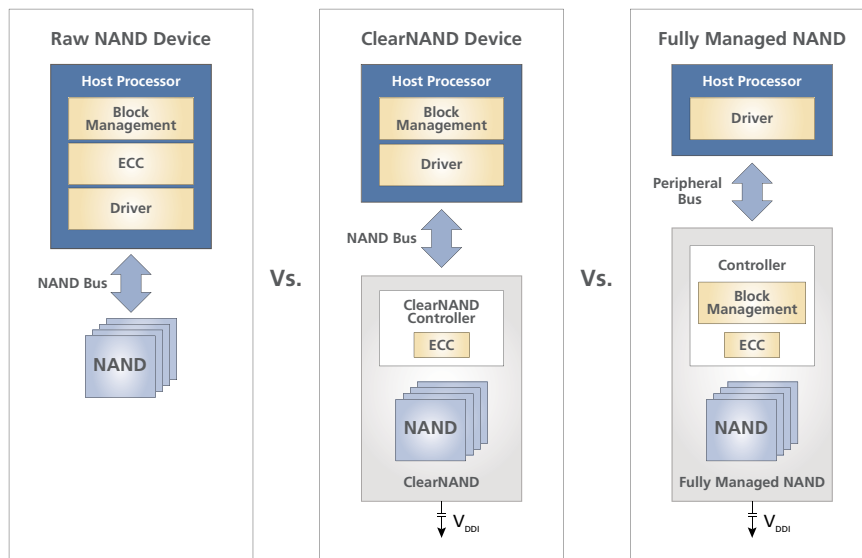
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Enhanced ClearNAND Flash devices are available now. To find out more about product specifications, visit micron.com/cleannand

ECC Complexity Trends



System Comparison



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