Serial Interface NAND – An Excellent NOR Flash Alternative

NOR flash memory has been commonly used in consumer and industrial devices. But, new, enhanced features in IoT and communications applications are driving the need for higher density flash memory.
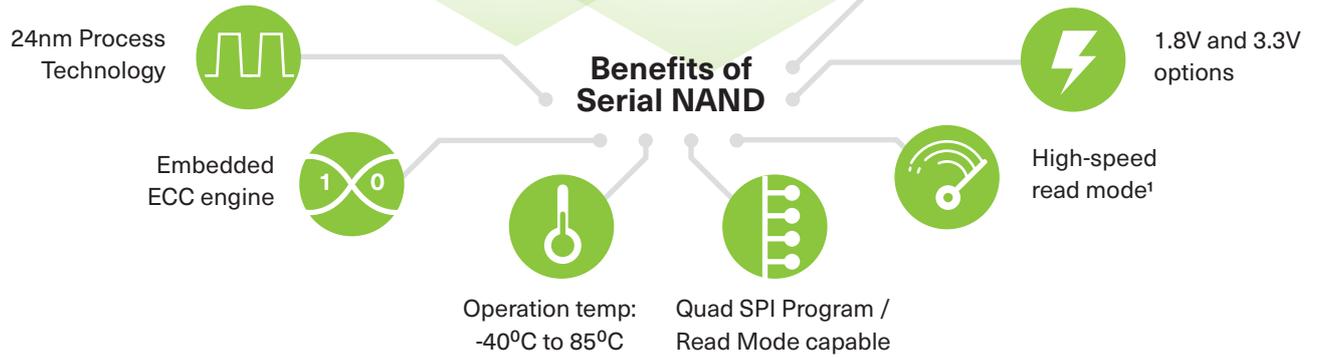
Replacing SPI NOR with Serial NAND

KIOXIA's Serial NAND is SLC NAND with a serial peripheral interface (SPI). SPI is an industry standard inter-chip interface that is used in NOR flash and supported by most microprocessors and microcontrollers.

Cost advantage over SPI NOR

Benefits of Serial NAND

- 24nm Process Technology
- Low pin count interface
- 1.8V and 3.3V options
- Embedded ECC engine
- Operation temp: -40°C to 85°C
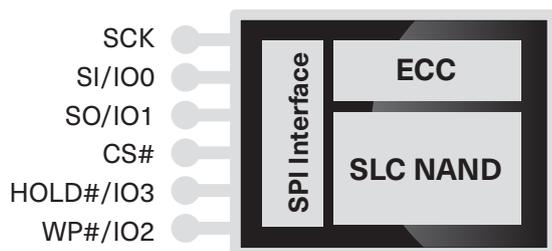- Quad SPI Program / Read Mode capable
- High-speed read mode[1]

Design Considerations

- Host microprocessor with SPI interface
- Serial NAND is H/W pin compatible with SPI NOR
- NOR and Serial NAND use different software drivers
- NAND offers lower cost per bit

Applications

- Smart Speakers
- Wearables
- Flat Screen TVs
- Printers
- Robots
- Medical Monitoring Equipment

Low Pin Count Interface

- SCK
- SI/IO0
- SO/IO1
- CS#
- HOLD#/IO3
- WP#/IO2

SPI Interface | ECC | SLC NAND

Densities[2]

| 1Gb | 2Gb | 4Gb | 8Gb |

KIOXIA

KIOXIA delivers flash-based products for next-generation storage applications. Having invented NAND flash over 30 years ago, KIOXIA is now one of the world's largest flash memory suppliers – and continues to move the technology forward.