

NOR Flash - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2026 - 2031)

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Report description:

NOR Flash Market Analysis

The NOR flash market was valued at USD 3.05 billion in 2025 and estimated to grow from USD 3.23 billion in 2026 to reach USD 4.27 billion by 2031, at a CAGR of 5.75% during the forecast period (2026-2031). Growth momentum reflects rising content in advanced driver-assistance systems (ADAS), wider use in IoT edge nodes, and renewed investment in industrial automation. Serial architectures dominate because their low pin count, compact footprint, and energy efficiency align with space-constrained products. Interface upgrades-especially Quad and Octal SPI-are lifting read bandwidths, enabling faster boot and richer code execution. Manufacturers are also responding with lower-voltage parts, automotive-grade functional-safety certifications, and early 3D NOR pilots that raise density without sacrificing reliability.

Global NOR Flash Market Trends and Insights

Firmware-intensive ADAS and Domain Controllers Accelerating Automotive-grade NOR Demand

Automotive platforms are migrating from distributed electronic control units to domain and zone architectures that centralize real-time firmware. NOR Flash delivers deterministic read latency and instant-on execution, attributes that underpin functional safety targets. Infineon's SEMPER family, now ASIL-D certified, demonstrates how integrated error-checking and dual-bank redundancy strengthen code-storage resilience. As Level 2+ and Level 3 features proliferate, demand for 512 Mb-2 Gb serial parts is rising, propelling automotive NOR volumes at 7.13% CAGR through 2030.

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Quad/Octal SPI Adoption for Fast-Boot IoT Edge Devices across Global Manufacturing Hubs

Quad SPI already powers more than half of IoT code-storage sockets, yet Octal/xSPI is emerging because it pushes sustained read bandwidths to 400 MB/s while halving download times. Synopsys reports that xSPI cuts pin-count overhead versus parallel memory, easing PCB routing and lowering BOM cost. GigaDevice's GD25LX series shows an 80% reduction in firmware load time, enabling real-time analytics at the edge. This throughput benefit is unlocking richer sensor-fusion and over-the-air update features in industrial settings.

Cost Premium over NAND Above 256 Mb Limiting High-Density Consumer Adoption

When code size grows beyond 256 Mb, Serial NAND or eMMC often displace NOR because they offer two to five times lower cost per bit. Vendors are countering with hybrid designs, such as GigaDevice's QSPI NAND-that deliver NOR-like random read at NAND economics. Nevertheless, high-density consumer devices will continue to evaluate total system cost before selecting NOR.

Other drivers and restraints analyzed in the detailed report include:

Constellation-Scale LEO Satellites Requiring Radiation-Hardened NOR Flash Devices
China's 55 nm and 40 nm Indigenous Process
Push for NOR Self-Sufficiency
Scaling Ceilings Beyond 45 nm Steering OEM Roadmaps Toward MRAM/ReRAM Substitutes

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Serial products supplied 88.67% of the 2025 market share, reflecting their four-to-six-pin interface, smaller packages, and lower assembly complexity. Parallel NOR remains relevant where true random byte access is mandatory, such as heads-up displays and fail-safe clusters, but its footprint is narrowing as microcontroller and FPGA suppliers migrate to serial code storage.

Component vendors bundle Serial NOR with pre-verified driver stacks, accelerating time-to-market for OEMs. Emerging 3D NOR prototypes will debut first in serial footprints, giving the architecture another density and cost tailwind. In this context, the NOR Flash market continues to favor Serial device roadmaps through the decade.

Quad SPI delivered 40.72% revenue in 2025, underpinning mainstream microcontrollers. The segment's CAGR eases as installed bases peak, while Octal/xSPI climbs at 7.15% on workloads that need instant-on Linux or AUTOSAR images. Octal also aligns with JEDEC xSPI protocol, enabling NOR Flash market share gains among automotive Tier 1s and industrial SIs that value pin compatibility across densities.

The NOR Flash market size for Octal/xSPI parts is projected to jump significantly by 2031. Backward-compatible software hooks ease migration; hence, designers can phase-upgrade bandwidth without board redesign. Suppliers are merging interface advancements with security and functional-safety options to target premium sockets.

Devices with greater than 256 Mb captured 19.94% market share in 2025 due to their suitability for sophisticated infotainment head units and programmable logic controllers. Meanwhile, 64-Mb-and-less (greater than 32 Mb) parts grow fastest at 8.12% because they balance capacity and cost for firmware-rich IoT nodes.

Higher-density roadmaps leverage stacked-die or emerging 3D layouts to mitigate planar scaling ceilings. However, volume growth will remain strongest in 32-64 Mb sockets where code expansion in edge devices collides with tight bill-of-materials

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constraints. Vendors provide pin-compatible upgrade paths across density steps, minimizing redesign effort for OEMs.

NOR Flash Market is Segmented by Type (Serial, Parallel), Interface (SPI Single/Dual, and More), Density (2 Mb and Less, and More), Voltage (3V Class, and More), End-User Application (Consumer Electronics, and More), Process Technology Node (90 Nm and Older, and More), Packaging Type (WLCSP/CSP, and More), and Geography (North America, and More). The Market Forecasts are Provided in Terms of Value (USD) and Volume (Units).

Geography Analysis

Asia Pacific controlled about 60.55% of the NOR Flash market revenue in 2025 and is projected to expand significantly by 2031. China's semiconductor self-sufficiency drive has drawn considerable capital toward 55 nm and 40 nm serial lines, shifting regional procurement toward domestic vendors. Taiwan continues to supply a significant portion of global wafers, anchoring external customers despite geopolitical risk. Japan and South Korea contribute through long-established fabs; Kioxia's new Kitakami Fab 2 will add incremental capacity starting late 2025.

North America represents a premium segment specialized in automotive, industrial, and aerospace designs. Government incentives under the CHIPS Act are catalyzing local wafer starts and advanced-packaging projects, diversifying supply away from overseas foundries. Micron is broadening its automotive NOR portfolio, with Li Auto's cross-domain controller an illustration of U.S. memory inside Chinese EVs.

Europe maintains strict reliability and traceability standards that align with NOR's functional-safety traits. Infineon's headquarters in Germany anchors a domestic supply chain serving Tier 1 automotive and Industry 4.0 OEMs. EU policymakers are channeling funds toward a resilient semiconductor ecosystem, which could ease the region's dependence on Asian foundries while strengthening demand visibility for NOR suppliers.

List of Companies Covered in this Report:

Winbond Electronics Corporation
Macronix International Co. Ltd.
GigaDevice Semiconductor Inc.
Infineon Technologies AG
Micron Technology Inc.
Integrated Silicon Solution Inc.
Microchip Technology Inc.
Renesas Electronics Corporation
Elite Semiconductor
Microelectronics Technology Inc.
Wuhan XMC Puya Semiconductor (Shanghai) Co. Ltd.
Samsung Semiconductor Alliance
Memory Zbit Semiconductor
YMTC - Xi'an Longsys Fudan Microelectronics Group Co. Ltd.
AMIC Technology Corporation
BOYA Microelectronics Co. Ltd.
XTX Technology (Shenzhen) Limited
Shenzhen Longsys Electronics Co. Ltd.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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