Global Nor Flash Memory Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 135 pages | Mordor Intelligence

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Report description:

The Global NOR Flash Memory Market is estimated at USD 2876.82 million in 2021 and is expected to register a CAGR of 5.79% during the forecast period 2022-2027. The NOR Flash memory sectors are witnessing a rapid growth rate due to their demand growth in multiple applications from automotive to consumer electronics.

Key Highlights
The current semiconductor shortages and undersupply of other memory products such as the DRAM and NAND have increased the demand and the average selling price of the NOR Flash products since the pandemic; over the coming years, the ASP of NOR flash is expected to decline significantly owing to growing stockpiles and impacting demand.
The growing digitalization is driving the requirements of data logging, artificial intelligence, and over-the-air updates, which are mainly incorporated by wearables. Such demand for technology in wearables is driving the demand for the NOR flash market.
One of the major applications of NOR Flash in the growing IoT market is True Wireless Stereo (TWS) hearable devices. As Apple, Samsung, Sony, Xiaomi, Huawei, and others have come up with ideas to create connections with smartphones and hearing device, the need for improving acoustic features have increased, and that drives the NOR flash as more firmware needs to be stored in NOR flashes of the TWS hearables.
Research and development costs are expected to increase with the growing end-user requirements for NOR flash memory. Vendors like Micron have invested USD 15 billion to construct a new fabrication facility for memory manufacturing in Boise, Idaho.
The electronics device sector was impacted significantly by the COVID-19 outbreak, as China is one of the major suppliers of raw materials and finished products. The industry amid the pandemic faced a reduction in production, disruption in the supply chain, and price fluctuations. Further, the sales of prominent electronic companies were affected during the period. The travel restriction on both people and products hampered the market's growth in the short run. However, due to the pandemic and supply shortages, the average selling price of the NOR flash memory increased, and the NOR flash memory market slightly gained an

edge over the overall memory market.

NOR Flash Memory Market Trends

Cosumer Electronics to Hold a Major Share in the Market

NOR Flash is often deployed as an embedded device for code execution in many portable consumer products, such as cameras, wearables, or mobile phones. As such, the significant growth in the usage of these products in recent years is driving the demand for the market studied. For instance, according to the Consumer Technology Association (CTA), smartphone shipments are projected to reach 154.1 million units (USD 74.7 billion in shipment revenues) in 2022, marking a 3% growth from 2021.
A common application area for NOR Flash is wearables and hearables. Memory is a key design factor in enabling many of the advanced features in these devices, like the sleek design and lightweight. Many devices are beginning to implement data logging as well. Such advanced capabilities drive the need for more non-volatile memory or memory that can retain stored data even when powered off. Since many wearables and hearables are battery-operated, NOR Flash is often the memory of choice, given its fast read access, endurance, and reliability.
Further, the applications of NOR Flash are estimated to boost in the coming era of the Internet of Things (IoT). Due to the increasing availability of high-speed connectivity, rising cloud adoption, and increasing use of data processing and analytics, the adoption of IoT is growing steadily. For instance, as per Ericsson, there were 1.9 billion cellular IoT connections in the world in 2022, which is expected to grow to 5.5 billion in 2027, registering a CAGR of 19% over the period.
Among the several IoT applications, true wireless stereo (TWS) hearable devices have driven a significant momentum on NOR Flash. Apple was the first company to realize wireless stereo transmission with the launch of AirPods, which creates connections between earbuds and iPhones. Eventually, many players, like Samsung, Sony, Huawei, Xiaomi, and other brands, entered the TWS hearables market and released their own products. To improve the acoustic features, more firmware needs to be stored in NOR Flashes in TWS hearables. Hence, the rise of the TWS Bluetooth hearables market is expected to drive the demand for NOR Flash strongly.
The market growth in the segment is also positively influenced by the high demand for OLED displays for smartphones, wearables, laptops, and TVs. For instance, with the rapid increase of OLED mounting on tablets and laptops, in October 2021, Samsung Display announced plans to expand its mid-size organic light emitting diode (OLED) display shipments to more than 10 million units in 2022, which is an increase of about 60% compared to 2021.
OLED display suffers the disadvantages of luminance and color non-uniformity, where a NOR Flash could prove beneficial. OLED uses organic semiconductors as the emitting material. With the addition of production discrepancies, the same-colored sub-pixels might vary in brightness levels under the same electrical signal, which might cause luminance and color non-uniformity. To cope with this non-uniformity, an external NOR Flash could be used to store compensation data, application programs, or firmware images. As such, the growing demand for OLED displays is anticipated to fuel the demand for NOR Flash memory significantly.

China to Hold Major Market Share and Witness Highest Rate of Shipment Volume of NOR Flash Memory

China is the largest consumer of electronics globally. Several recent initiatives have also been taken to boost the industry's output. For instance, in January 2021, the Chinese government announced plans to expand the domestic market for electronic components to CNY 2.1 trillion (USD 327 billion) by 2023. Besides, the region is home to some of the largest players in the market, such as GigaDevice. The combination of these factors makes China one of the most promising regions for the market. The market studied is growing with the proliferating electronics industry in the region as NOR flash memory is often used to store configuration data in numerous digital products. Electronics is one of the largest industries in China and is a significant contributor

to the country's overall economic growth.
The concentration of electronics manufacturing in China has provided a foundation for the significant development of IoT products in the country, further stimulated by massive domestic consumer demand. IoT development in China also benefits from massive state-led spending on enabling infrastructure. For instance, China recently announced a three?year plan for new IoT infrastructure development (2021?2023), targeting the initial completion of new IoT infrastructure in major cities by the end of 2023. Such initiatives will fuel the growth of IoT-enabled smart devices, facilitating market growth.
China is also accelerating the construction of 5G base stations, supporting 5G applications in the industrial, education, and other sectors. According to the Ministry of Industry and Information Technology (MIIT), in the first quarter of 2022, China added a total of 48.1 million 5G users to reach 403 million. As per the ministry, the country had reached a 5G penetration of 24.3%. The growing penetration of 5G networks has emerged as a significant driver of the growth of IoT and other intelligent automation applications.
China is also the largest automotive market in the world, which is another important driver for market growth in the region. China ranks first among countries with the largest production of passenger cars. According to the China Association of Automobile Manufacturers (CAAM), in 2021, around 21.41 million passenger cars and 4.67 million commercial vehicles will be produced in China. The EV adoption in the region is also growing, contributing to the market's growth. As per CAAM, in 2021, around 2.9 million battery electric vehicles will be sold in China, an increase of 162% compared to 2020.

NOR Flash Memory Market Competitor Analysis

The Global NOR Flash Memory market is moderately fragmented. The Market is dominated by major vendors, such as Infineon, Micron Technology, GigaDeviceSemiconductor (Beijing) Inc., and Winbond ElctronicsCorporation. The market is moderately fragmented. As the entry barriers in the market are high, the entry of new players is difficult. The existing vendors in the market are investing heavily in the R&D of new and innovative products.

March 2022 - Winbond Electronics launched the W25Q64NE, a 1.2V SpiFlash NOR flash IC in a 64 Mb density. The new NOR flash memory would offer its customers a large code storage capacity and active mode power savings per the latest requirements of mobile devices and smart wearables.
March 2022 - CAES, a provider of mission-critical electronics for aerospace and defense, introduced a line of RadHard NOR Flash Memory devices that deliver the boot-memory densities required by microprocessors and FPGAs utilized in space applications. The new radiation-hardened (RadHard) devices feature high levels of space assurance needed for the longest, harshest space missions. They include the industry's first 1 Gb monolithic NOR Flash Memory device enabling the storage of mission-critical boot images.
April 2022 - Microchip announced the release of SST26LF064RT, a 64-Mbit serial quad I/O NOR flash memory device for harsh aerospace and defense systems. The commercial off-the-shelf (COTS) memory technology device has a high radiation tolerance and is capable of operating in 50 kilorad (krad) Total Ionizing Dose (TID). The space-qualified second SuperFlash device from Microchip has been mainly developed to reduce development time, cost, and risk in the systems.

Additional Benefits:

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

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