

Phase Change Memory Market - Forecasts from 2021 to 2026

<https://marketpublishers.com/r/P8E7D735395CEN.html>

Date: March 2021

Pages: 125

Price: US\$ 4,250.00 (Single User License)

ID: P8E7D735395CEN

Abstracts

The global phase change memory market is expected to grow at a compound annual growth rate of 66.71% over the forecast period to reach a market size of US\$12,450.978 million in 2026 from US\$347.914 million in 2019. The market is expected to surge in the coming years because of the adoption of novel and advanced storage technologies. The next-generation market will register supplementary growth, during the forecast period, as major companies have been trying to capture significant market share, in the crowded embedded storage space market. Phase Change Memory, known as a non-volatile memory, that stores and saves data by changing and altering the state of a material. This type of storage is faster, as compared to other flash memory, and provides better endurance. Major companies have been trying to develop advanced phase storage memory devices and solutions, for their customers. For Instance, Intel, one of the major players in the market, had been shipping and selling a device known as 3D XPoint, next-generation memory storage, based on phase change. The company sells this device for Solid State Storage Devices and other related products. Other companies, such as Micron, had been developing novel phase storage technology and solutions. In 2019, STMicroelectronics, one of the major players in the market, had been sampling products, which were based on embedded phase-change memory. The company had been developing and manufacturing an automotive microcontroller, which contained embedded phase change, and was based on 28nm FD-SOI technology. The phase change memory market is a novel and emerging market and is expected to register significant growth in the coming years.

Increasing Number of Smartphone Shipments

The growth in the number of smartphone units' shipments, with the launch of innovative, advanced, and novel solutions, is expected to drive the Phase Change

Memory market growth, during the forecast period. According to the data released by the International Data Corporation, worldwide smartphone manufacturers, vendors, and producers shipped a total of around 354.7 million smartphones, in the third quarter of 2020. The sales and revenue declined in the year 2020, because of the COVID-19 Pandemic Impact, but the market is expected to rebound in the year 2021, because of the growth in emerging, novel, and developing markets, such as China, India, Vietnam, Indonesia, and others. Samsung, one of the major players in the market, had a worldwide market share of 22.7% in the third quarter of the year 2020 and had registered over 80.4 million shipments. The company had a growth of 2.2%, year on year basis. Xiaomi, one of the biggest smartphone manufacturers, had a market share of 13.1% in the third quarter of 2020 and showed a rise and growth of 42%, on a year-on-year basis. The company is expected to use phase change memory storage solutions, in their smartphones in the coming years, as the company moves towards premium products. Countries like China and India are expected to drive market growth in the coming years. India is registering substantial growth, in the past few years. According to the International Brand Equity Foundation, a think tank of the Ministry of Commerce, the country's smartphone market grew by 14.5%, YoY, with a shipment of approx. 142.3 million units, in the year 2018. The country is expected to have more than 829 million smartphone users, by the year-end 2022. According to China's Academy of Telecommunication Research Statistic, around 73% of 529 handset manufactures in the country, had been engaging in the manufacturing of smartphones. The International Data Corporation also stated that the smartphone market is expected to register a growth of 4.3%, year over year growth, in the next few years. Companies like Apple delivered excellent performance in the last quarter of the year 2020, with over 90.1 million devices and products shipped. According to the report, Samsung shipped over 266.7 million units in the year 2020, followed by Apple (206.1), Huawei (189.0), and Xiaomi (147.8), in the same year.

Current Trends

With the advancement and innovation in technologies, the market is expected to surge at an exponential rate in the coming years. Major companies have been trying to develop advanced, novel, and innovative products and technologies, for their customers. Companies have been investing a significant sum of capital into Research and Development, and product differentiation. Recently, Intel, one of the major players in the market, sold its Nand Solid-State and Flash Drive manufacturing assets to SK Hynix, a major South Korean Firm, for US\$9 billion. The company had been keeping 3D XPoint based Optane Product, which is also based on phase storage memory technology. The product had no transistors and puts selectors and memory cells, at the

intersection of perpendicular wires in grids. The major reason for the adoption of Optane products is due to the surge in demand for more threads and cores in a computer. Other companies have been making major developments in the market. IBM, one of the biggest players in the market, devised a programming approach, with the use of phase-change memory technology, that achieved reduced energy consumption and greater accuracy. Researchers working on the IBM project stated that phase-change memory could alter state when current passes through it. The novel technology would be used with Artificial Intelligence. In October 2020, STMicroelectronics, a worldwide semiconductor leader, announced the details of its innovative and advanced Stellar Automotive Microcontrollers. The novel product showed how the devices ensured deterministic and reliable execution of various and multiple real-time applications. The company would use non-volatile phase-change memory, to support safety standards by delivering very effective over the air updates and single-bit overwrite capability, with minimum or no downtime. The rise in the automotive sector is also expected to have a major factor in the market. Electric vehicles would have a major impact in the coming years. According to the International Energy Agency, sales of electric cars were around 2.1 million, worldwide, in the year 2019. With the adoption of novel microcontrollers, the phase change memory market will register supplementary growth in the coming years.

Segmentation:

By Technology

PCM as DRAM

PCM as Static RAM (SRAM)

PCM as Storage-Class Memory

PCM as Flash Memory

By Application

Automotive

Smart Cards

Cell Phones

Others

By geography

North America

USA

Canada?

Mexico

South America

Brazil

Argentina

Others

Europe

UK

Germany

France

Spain

Others

Middle East and Africa

Saudi Arabia

Israel

Others

Asia Pacific

Japan

China

India

South Korea

Others

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