Microprocessor - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Microprocessor Market size is estimated at USD 109.12 billion in 2025, and is expected to reach USD 144.18 billion by 2030, at a CAGR of 5.73% during the forecast period (2025-2030).

Due to the growing popularity of 5G and high-performance computing devices, increasing adoption of cloud-based software and data centers, advancements in artificial intelligence and machine learning solutions, and the increasing demand for household appliances and automobiles will likely fuel the microprocessor market growth.

Key Highlights
- A microprocessor is a microcomputer's controlling unit, built on a chip, capable of performing Arithmetic Logic Unit (ALU) operations and communicating with other linked devices. A microprocessor comprises a Control Unit, a Register Array, and an ALU. The ALU performs arithmetic and logical operations; the Control Unit supervises data flow and instructions through the computer, and the Register Array stores accumulators and data. The microprocessor performs Fetch, Decode, and Execute in the provided sequence.
- The rapid rise of the Internet of Things is one significant reason for promoting microprocessor usage. As collecting data from a far wider range of things is now technically and economically feasible than before, companies frequently misjudge the complexity and volume of data generated by IoT products and platforms, necessitating the deployment of solutions to help them manage and interpret all of the data they are now collecting. Microprocessors which are among the major component of IoT infrastructure, are thus expected to grow in demand.
- In addition, the growing demand for Augmented Reality and Virtual Reality apps and devices, as well as digital cameras and gaming consoles, is propelling the worldwide microprocessor market forward.
- Apart from this, the increasing penetration of smart home products is also driving the demand for microprocessors. Devices like

smart locks, fire, and smoke alarm systems, smart speakers, etc., are increasingly taking their place in the lives of people. Coupled with the increasing spending capacity of the middle class, especially across developing countries such as India, Brazil, etc., are expected to support the growth of the studied market further.
- The expanding data center industry is also expected to create a favorable scenario for the studied market's growth, as IT infrastructure, UPS (uninterruptible power supply) systems, power distribution units (PDUs), and cooling units all use microprocessors in some form or other. Furthermore, the multiple benefits of adopting micro-data centers, such as decreased transactional costs, high functionality, and high storage, are expected to propel the demand for such data center types, driving the studied market's growth in the process.
- However, the factors such as the shortage of semiconductor chips, the complexity involved in the production of microprocessor integrated circuits, circuit design expenses, escalating raw material prices, decreased shipment of computer systems, and increased sales of low-cost mobile devices are challenging the growth of the studied market.
- A notable impact of COVID-19 was observed on the microprocessors market. Although, the demand increased significantly during the pandemic, especially across the consumer electronics and healthcare industry. The vendors felt it hard to match the demand owing to limited production capabilities and supply chain constraints due to widespread lockdowns imposed across various countries.
- However, with the conditions returning to normalcy, the market is expected to gain traction as a significant portion of the semiconductor manufacturers is increasing their investment and efforts to scale up the production of microprocessors and other semiconductor products. Furthermore, the increasing penetration of technologies such as automation, connected cars, AI, ML, and IoT are creating a favorable market scenario for the growth of the studied market in the post-COVID period.

Microprocessor Market Trends

Consumer Electronics Segment to drive the Market Growth

- Microprocessors are increasingly used in consumer electronics applications such as desktop PCs, smartphones, tablets, and servers because of their fast processing speed, small size, and ease of maintenance. This multipurpose electronic processing device may be configured to accomplish about 3 billion activities per second, transport data swiftly between memory regions, and conduct sophisticated mathematical calculations such as floating-point operations. The rising consumer electronic segment will favor the Microprocessor Market, contributing to market growth and progress for the market under consideration.
- The gaming industry has grown significantly in recent years, rather more dramatically since the outbreak of the pandemic, as gaming devices such as PC, game consoles, smartphones, etc., contain embedded systems comprising many components all serving a specific function, the growing gaming market will contribute to the growth of smartphones, Gaming consoles, and VR/AR devices, ultimately influencing the growth of microprocessors globally.
- The popularity of smartphones and tablets in recent years has influenced PC demand. Microprocessor and GPU market growth have been impacted by the portability and performance of new-generation smartphones and tablets. When compared to those utilized in smartphones and tablets, PC processors and GPUs are usually more expensive. Desktop PCs have significantly declined in the PC category as more users chose portable devices such as smartphones and tablets for day-to-day tasks. Furthermore, because PCs have a long lifecycle and cannot be replaced in a short time, there is a growth in overall demand for the smartphone industry, which can be easily upgraded to improved technology quickly.
- Furthermore, the arrival of 5G is expected to significantly expedite the adoption of smartphones and other wearable devices owing to the availability of a low latency and high-speed network, creating the demand for microprocessors in the process. According to Ericsson, global smartphone subscriptions are expected to grow from 6,260 million in 2021 to 7,790 million by 2028.

Asia Pacific to Account for a Significant Market Share

- The Asia-Pacific region commands a significant market share and is predicted to grow the fastest over the forecast period. The increased use of smartphones and other devices in the region, such as laptops, mobile phones, desktop computers, and tablets, is credited with the increase. Due to factors such as fast digitalization, increased penetration of high-tech gadgets, and progress of automotive electronics, developing economies such as China and India are also helping market expansion. Furthermore, increased Internet of Things (IoT) usage, large government IT investment, and rising demand for cloud-based services will drive the regional market throughout the projection period.
- The automotive industry is expected to generate considerable demand for microprocessors as the demand for luxury cars with advanced functionalities has been increasing lately in the Asia Pacific region. Furthermore, stringent government regulations regarding passenger and vehicle safety also contribute positively to the studied market's growth in Asia Pacific.
- China is expected to remain dominant in the studied market due to the presence of a large consumer electronics and automotive manufacturing industry. According to the China Association of Automobile Manufacturers, in April 2022, around 996,000 passenger cars and 210,000 commercial vehicles were produced in China. Additionally, during the month, China's automotive industry produced a total of about 1.2 million vehicles.
- Considering the growing demand for semiconductor chips, and ongoing issues with the United States, various Chinese firms, including Alibaba and Baidu, among others, have been making investments in manufacturing their own chips, a move considered progress toward China's goal of increasing local capabilities in a crucial technology. China has outlined seven technology fields in its 14th five-year plan, including artificial intelligence, quantum computing, semiconductors, and space, as its priority which is expected to drive opportunities in the studied market.
- A similar trend has been observed across other countries as well, which are continuously launching initiatives to drive the semiconductor industry's growth in their respective regions. For instance, India's DIR-V program, which aims to accelerate the country's semiconductor ecosystem by mass-producing next-generation indigenous microprocessors, was recently revealed. By December 2023, the Indian government hopes to have achieved heavy-grade commercial silicon production and design victories. In the same vein, the government has inked five Memorandums of Understanding with companies such as Sony India, ISRO, BEL, and others to promote the usage of the Shakti and Vega RISC-V microprocessors, which were created in-house.

Microprocessor Industry Overview

The Microprocessor Market is concentrated due to the high initial investments and is dominated by a few major players. However, the growing market demand and stable profitability are expected to drive new players into the market, making it more competitive. Some of the key players in the market are Intel, Nvidia, Qualcomm, etc.

In February 2023, India's Centre for Development of Advanced Computing (C-DAC) announced they are working on the country's first indigenously designed family of microprocessors. The organization's roadmap for processors is aimed at helping the country become self-reliant in microprocessors. C-DAC targets to achieve 64 PetaFlops (PF) of cumulative compute power across the country by the end of 2024.

In January 2023, Intel unveiled its latest 13th Gen H and HX series of laptop processors at CES 2023. According to the company, these high-performance laptop processors offer up to 24-core CPU, DDR5 support, PCIe Gen5, and more. The company also announced the 13th Gen Intel Core P and U series of processors with improved Iris Xe onboard graphics and up to 14 core CPU designs.

Additional Benefits:

- The market estimate (ME) sheet in Excel format

- 3 months of analyst support

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