

System-on-Chip (SoC) Market Forecasts to 2030 – Global Analysis By Type (Digital SoC, Analog SoC, Mixed-Signal SoC, Application-Specific SoC, Programmable SoC and Other Types), Technology, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global System-on-Chip (SoC) Market is accounted for \$187.9 billion in 2024 and is expected to reach \$356.6 billion by 2030 growing at a CAGR of 10.5% during the forecast period. A System-on-Chip (SoC) is a single integrated circuit that combines all of the necessary parts of an electronic system or computer into a single, small chip. These elements usually include of memory, input/output ports, a central processing unit (CPU), a graphics processing unit (GPU), and other peripherals. SoCs are perfect for applications in wearable technology, embedded systems, mobile devices, and Internet of Things devices because of their ability to maximize performance and power efficiency. SoCs aid in the development of contemporary electronics and the spread of intelligent, networked devices by reducing the need for several separate components and enabling lighter, more compact designs.

According to Ericsson's latest mobility report, 5G mobile subscriptions are expected to surpass 1.5 billion globally by the end of 2023, creating substantial demand for advanced SoC solutions that can support high-speed data processing and efficient power management.

Market Dynamics:

Driver:

Growing demand for high-performance computing & AI integration

The need for sophisticated SoCs with more processing capacity is being driven by the growth of AI-powered applications in a variety of sectors, including as consumer electronics, healthcare, and the automotive industry. In order to optimize machine learning workloads and provide real-time decision-making and increased efficiency, modern SoCs have specialized AI accelerators, GPUs, and NPUs. High-performance processors that can manage challenging computational processes are also becoming more and more necessary as data centers and cloud computing infrastructure growth.

Restraint:

High cost of advanced manufacturing processes

Chip design, verification, and testing require significant research and development (R&D) investments, which can be a barrier for smaller companies entering the market. The complexity of fabrication increases as semiconductor technology advances to smaller process nodes like 5nm and 3nm, resulting in higher capital expenditures and operational costs. Additionally, the need for sophisticated lithography equipment, such as extreme ultraviolet (EUV) technology, further adds to manufacturing expenses hampering the market growth.

Opportunity:

Growing number of connected devices

SoCs are increasingly the go-to option for facilitating smooth communication and data processing as billions of networked devices demand small, effective processing units. Low-power SoCs are being used by sectors including healthcare, industrial automation, and smart homes to provide sophisticated features and real-time monitoring. The need for integrated chip solutions that provide high-speed connection and low-latency operations is being further fueled by the rollout of 5G networks.

Threat:

Ongoing semiconductor shortage & geopolitical risks

The significant reliance on a small number of major semiconductor producers, namely Samsung and TSMC, has resulted in supply constraints that have an impact on the availability of SoCs in a variety of sectors. Global production and distribution have been

impacted by trade restrictions resulting from disputes between major economies, such as the US and China. Additionally, natural calamities, such as manufacturing shutdowns due to earthquakes or power outages, can further strain semiconductor supply networks.

Covid-19 Impact

The COVID-19 pandemic has had a mixed impact on the SoC market. On one hand, the increased demand for remote work, online education, and digital entertainment during lockdowns has driven the need for advanced computing solutions, boosting the demand for SoCs. The acceleration of digital transformation initiatives and the adoption of cloud services have further supported market growth. On the other hand, the pandemic has disrupted supply chains, leading to delays in production and increased costs and reduced consumer spending have also affected the market.

The digital SoC segment is expected to be the largest during the forecast period

The digital SoC segment is expected to account for the largest market share during the forecast period due to their high processing power and versatility. The growing demand for smartphones, tablets, and other connected devices drives the adoption of digital SoCs. Additionally, the integration of AI and machine learning capabilities into digital SoCs enhances their performance and functionality contributing to the market growth.

The chip architecture segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the chip architecture segment is predicted to witness the highest growth rate driving the demand for advanced SoCs. The increasing complexity of applications and the need for higher performance levels require continuous advancements in chip architecture. The adoption of RISC-V and other open-source architectures is also gaining traction, providing flexibility and cost advantages further support the rapid growth of this market.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share driven by the expanding consumer electronics industry, rising urbanization, and increasing adoption of smart devices. Countries like China, Japan, and South Korea are leading the adoption of advanced SoCs, supported by government initiatives and

investments in semiconductor manufacturing. The growing demand for high-performance computing and AI applications further drives market growth in Asia Pacific.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR due to the growing demand for advanced computing solutions in industries such as automotive, healthcare, and telecommunications drives the adoption of SoCs in North America. Moreover, increasing focus on AI and digital transformation also boosts the demand for advanced SoCs in the region semiconductor manufacturing capabilities further support market growth.

Key players in the market

Some of the key players in System-on-Chip (SoC) market include Apple Inc., Broadcom Inc., HiSilicon, Huawei Technologies Co. Ltd, Infineon Technologies, Intel Corporation, Magna International Inc, Maxim Integrated Products, Inc, Mediatek Inc., Microchip Technology Inc., NXP Semiconductors NV, ON Semiconductor Qualcomm Incorporated, Renesas Electronics Corporation, Samsung Electronics Co. Ltd, STMicroelectronics NV, Taiwan Semiconductor (TSMC), Texas Instruments Incorporated and Toshiba Corporation.

Key Developments:

In February 2025, Broadcom Inc announced availability of its end-to-end PCIe Gen 6 portfolio. Broadcom has further extended its multi-generational PCIe leadership by allowing early access to its PCIe Gen 6 Interop Development Platform (IDP), which simplifies interoperability and system design.

In February 2025, Algeria Telecom and Huawei announced the official launch of the national 400G WDM project, building an all-optical premium transmission foundation covering the whole country, helping Algeria accelerate the development of its national digital economy.

In January 2025, Infineon Technologies AG announced the formation of a new business unit to drive the company's growth in the area of sensors by combining the existing Sensor and Radio Frequency (RF) businesses into one dedicated organization.

Types Covered:

Digital SoC

Analog SoC

Mixed-Signal SoC

Application-Specific SoC

Programmable SoC

Other Types

Technologies Covered:

Chip Architecture

Integration Technology

Connectivity & Communication Technology

Fabrication Process

Other Technologies

Applications Covered:

Smartphones & Tablets

Wearables

Smart Home Devices

Advanced Driver Assistance Systems

Networking Equipment

Medical Devices & Imaging Equipment

Data Centers & Surveillance Systems

Other Applications

End Users Covered:

Consumer Electronics

Automotive

IT & Telecommunication

Healthcare

Artificial Intelligence (AI) & High-Performance Computing

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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