System On Chip (Soc) Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 140 pages | Mordor Intelligence

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Report description:

The system on chip (SoC) market is expected to reach USD 215.16 billion in five years, recording a CAGR of 7.88% over the forecast period. The rising deployment of IoT technology and the increasing demand for smart and power-efficient electronic devices are among the key factors driving the market's growth.

Key Highlights
The market sizing encompasses the revenue generated through the sales of SoCs in different regions. The study also tracks the key market parameters, underlying growth influencers, and major vendors operating in the industry, which supports the market estimations and growth rates over the forecast period.
The increasing penetration of 5G has further increased the demand for 5G-enabled smartphones, contributing to the growth of the market. For instance, according to the Consumer Technology Association (CTA), 5G smartphone sales were expected to generate USD 61 billion in revenue (up by 404%) in 2021, and shipments were expected to be up by 530% from the previous year.
The growing demand for AI chip technology is also expected to boost the market's growth over the forecast period, as AI chips typically come in the form of an SoC. These chips can process huge amounts of data, identify the underlying patterns, interpret the trends, and utilize the feed to achieve specific goals.
As technology continues to evolve, several industries are adopting automation and digitization, thereby bringing opportunities to the key players for entering new markets. However, the initial R&D costs associated with the system on a chip (SoC) are high. Owing to the increasing customization of SoC for various products, the players need to focus on various R&D projects simultaneously, which increases their project costs. Such factors are expected to hamper the market's growth over the forecast period.
COVID-19 had a significant impact on the market in several ways. The pandemic disrupted the supply chain for the entire semiconductor industry by complicating the shipping and transportation activities and reducing access to labor. However,

COVID-19 also accelerated the demand for systems on chips (SoCs) by starting a new wave of digital transformation and remote work, which increased the demand for computing devices like laptops and tablets.

System On Chip (SoC) Market Trends

Increasing Investments in 5G and Growing Demand for 5G Smartphones

One of the key factors driving the growth of the market is the rising investments in 5G technology. As per GSMA, by 2025, 5G networks are expected to cover one-third of the world's population. The organization also predicted that the number of 5G connections will surpass 1 billion by the end of 2022 and 2 billion by 2025, making up over a fifth of mobile connections.
A crucial element of initial 5G network rollouts has been field programmable gate array (FPGA) chipsets, an IC generally used in early commercial 5G solutions for its programmability and design flexibility. However, with this flexibility, there are some trade-offs, primarily less overall processing power. To reach the processing power necessary for 5G, there is a requirement for the installation of multiple FPGAs, leading to the challenges of increased power consumption, higher costs, and larger-sized equipment. To address the industry's high-volume mass production requirements and the need for more power efficiency and increased operating frequency capabilities, many of today's network technology OEMs are moving to ASICs-based System-on-a-Chip (SoC) product designs.
With the industry solidified around the 5G NR standard, the transition to SoC-based radio technology presents the next phase of commercial 5G solutions. Current commercial solutions are moving away from programming or reconfiguring circuitry and designing permanent, application-specific circuits that consume less power. Consequently, SoC-based radio equipment is expected to enable 5G solutions that are more compact, simpler to deploy, and more power efficient.
Along with the rising investments in 5G, the demand for 5G-enabled smartphones is also increasing parallelly. For instance, as per the Consumer Technology Association (CTA), the revenues from 5G smartphones are expected to reach USD 61.37 billion in 2022, up by 15% from USD 53.38 billion in 2021. 5G smartphones were also estimated to make up 62% of all smartphone units in 2021 and rise to 72% in 2022. As such, many players are launching chipsets focused on 5G to cater to this segment's increasing demand.

Asia-Pacific is Expected to Hold a Significant Market Share

Under the "Make In India" initiative launched by the Government of India, various companies have been investing in the Asia-Pacific countries.
In March 2022, UST, a digital transformation solutions company and Karnataka Information Technology Venture (KITVEN) Fund, through its Semi-Conductor Venture Fund and Semiconductor Fabless Accelerator Lab, jointly invested in Calligo Technologies, a machine learning and data science products and services company, with an aim to support the "Make In India" initiative.
Calligo Technologies is engaged in the development of a Posit-enabled RISC-V multicore processor (system-on-chip, SoC)) to power accelerator boards targeting the artificial intelligence (AI) segments and high-performance computing (HPC). In line with this investment, Calligo plans to expand its software-only focus to silicon, software, firmware, board, and applications across various emerging markets. Such initiatives by the companies, coupled with various government initiatives in the region, are expected to boost the demand for SoC chips in Asia-Pacific region during the forecast period.
Along with the increasing demand and advancing technologies for SoC chips in the market, various companies have been launching new and innovative products in the market.
For instance, in February 2022, Wipro Limited collaborated with Intel Foundry Services Accelerator - Design Services Alliance with an aim to support application-specific integrated circuit (ASIC) designs and complex SoC used in a wide variety of products,

ranging from sports cars to smartphones.

System On Chip (SoC) Market Competitor Analysis

The system on chip (SoC) market is fragmented due to the presence of domestic and global players. Major players use various strategies, such as product launches, agreements, and acquisitions, to increase their footprints in the market. The key players in the market are Broadcom Inc., Intel Corporation, MediaTek Inc., Microchip Technology Inc., NXP Semiconductors NV.

June 2022 - Samsung collaborated with Google to develop the 2nd Generation Tensor SoC, which would be integrated with Google's phones, including Pixel 7 and 7 Pro. Samsung will be mass-producing Google's second-generation Tensor chipset in the 4nmprocess, and it is expected to be released in October.
June 2022 - MediaTek introduced Dimensity 9000+, an upgrade to its top-of-the-line 5G smartphone processor. This new, high-end solution outshines Dimensity 9000 in terms of performance, making the next generation of flagship smartphones more powerful and efficient.

Additional Benefits:

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

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