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# Analog Integrated Circuit (IC) - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019-2029

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**Report description:**

The Global Analog Integrated Circuit Market size is estimated at USD 91.26 billion in 2024, and is expected to reach USD 129.69 billion by 2029, growing at a CAGR of 7.28% during the forecast period (2024-2029).

Key Highlights
-An analog integrated circuit (IC) is a network of interconnected components manufactured on a single wafer of semiconducting material. These components operate across a continuous range of input signals, contrasting with their digital counterparts, which utilize only two input and output voltage levels. These circuits process, receive, and generate multiple energy output levels during device operation. Electronic devices employing components such as oscillators, DC amplifiers, multi-vibrators, and audio amplifiers utilize analog circuits, which maintain equal output and input levels.
-The introduction and adoption of emerging technologies such as the Internet of Things (IoT) are expected to propel the market growth owing to the evident benefits of analog ICs across a considerable range of real-time connected devices and applications. Owing to the increasing availability of high-speed connectivity, rising cloud adoption, and increasing use of data processing and analytics, the adoption of the Internet of Things (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.
-Furthermore, the adoption of analog ICs has surged in recent years due to the proliferation of smartphones, consumer electronics, computers, and storage devices, as well as the increased sales of electric vehicles. Various ICs used in smartphones include charge ICs, display PMICs, SoC PMICs, and Camera PMICs. Key players such as Apple, Qualcomm, Intel, and Samsung S.LSI dominate this market. Consequently, with the growing production and sales of smartphones featuring advanced technologies and the increasing integration of 5G and 6G, the analog IC market is anticipated to gain substantial traction globally.
-However, global smartphone demand is projected to decline in 2023 compared to 2022 due to ongoing inflation, reduced

consumer spending, and a weaker consumer outlook. This decline is expected to temporarily hamper the Analog IC market. Nevertheless, the market is predicted to recover slightly in FY 2024 owing to heightened demand for 5G smartphones and the expanding 5G network connectivity worldwide, particularly driven by the increased proliferation of 5G and foldable smartphones. For instance, as per GSMA, by 2025, 5G networks will likely cover one-third of the world's population.
-There is a significant dependency on the availability of skilled analog chip design engineers in the industry. However, there is a need for such skills within the semiconductor industry. According to Cindi Harper, Human Resources, Talent Planning, and Acquisition at Intel, the demand for talent in the industry surpasses the supply. Similarly, Ruchir Dixit, country manager at Siemens EDA, has stated that the US expects a shortage of 250,000 semiconductor engineers over the next five years. China and Taiwan anticipate shortages of 300,000 and 50,000 engineers, respectively. Such trends hinder the market's growth.
-Moreover, the conflict between Russia and Ukraine is expected to significantly impact several industries like the electronics industry. The conflict has already exacerbated the semiconductor supply chain issues and the chip shortage that have impacted the industry for some time. The disruption caused volatile pricing for critical raw materials like nickel, palladium, copper, silicon, Germanium, Indium Gallium Arsenide Phosphide, titanium, aluminum, and iron ore, resulting in material shortages. Further, according to SEMI, Russia is a global supplier of 45-50% of palladium. The material is used to form bonding wires, lead frames, electrodes, plating, and coating for semiconductor packaging. Therefore, with every country shutting doors for trading with Russia, the semiconductor manufacturers' focus is increasing on alternative raw material supplies, further delaying the production of semiconductors required in the market.

Analog Integrated Circuit (IC) Market Trends

Cell Phone within Communication Segment to Hold Major Share

- This segment encompasses application-specific analog ICs designed for and used in cellular phones and multifunction (voice/web/email) handheld devices, where voice communication remains a primary function. These phones are intended for wide-area cellular networks such as 2G, 3G, and Wimax, employing comprehensive transmission formats like CDMA, GSM, and their upgraded versions.
- The escalating rates of smartphone adoption, particularly in developing nations, are fueled by increasing population growth and urbanization in these regions. For instance, Ericsson forecasts predict that global mobile subscriptions are expected to reach approximately 8.4 billion by 2022, indicating a continuous upward trend.
- The advent of 5G technology is fostering a surge in 5G smartphone penetration. As per the November 2022 Ericsson Mobility Report, it's anticipated that 5G mobile subscriptions will reach 5 billion by the end of 2028. Notably, 5G networks are expected to cover 85% of the population and handle around 70% of mobile traffic.
- The introduction of chipsets tailored for 5G smartphones by numerous industry players is contributing significantly to the market's growth. For example, Google unveiled the Pixel 6a, Pixel 7, and Pixel 7 Pro in 2022 to support India's 5G network. The Pixel 6a supports 19 5G bands, while Pixel 7 and 7 Pro support 22.
- Reports from the Consumer Technology Association (CTA) and the US Census Bureau project an increase in smartphone sales value in the United States from USD 73 billion in 2021 to USD 74.7 billion in 2022. Additionally, GSMA estimates a rise in smartphone subscribers in North America to 328 million by 2025, along with increased penetration rates for mobile subscribers (86%) and Internet users (80%).
- The Ericsson Mobility Report suggests that the Middle East & Africa (MEA) region may have 60 million 5G service subscribers by 2024, accounting for approximately 3% of all mobile subscriptions. GSMA estimates around 50 million 5G connections across MENA, with potentially 20 million connections in the Arab States alone by 2025. These statistics underscore the swift pace of mobile adoption driving the studied market

## China is Expected to be the Fastest Growing Market in the Asia Pacific Region

- China is anticipated to emerge as a dominant player in the analog IC market, owing to the presence of major semiconductor manufacturers, rapid industrialization, and a vast consumer electronics market. The region is renowned for its high-volume production of semiconductors and the adoption of analog IC across diverse industries, such as consumer electronics, automotive, and telecommunications. These factors are expected to fuel the growth of the studied market in the country, thereby presenting lucrative opportunities for market players.
- In addition, the country is experiencing a thriving IT and data center industry, which is attributed to the increasing volume of data generated annually. China's remarkable ascent as a dominant force in the global technology sector is primarily bolstered by its flourishing data center ecosystem. The Chinese market for Internet data centers stands out as one of the most technologically advanced markets worldwide, with numerous organizations operating through digital platforms.
- Furthermore, it is expected that the rising investments in data centers and the increasing internet penetration is expected to create the demand for many of these devices to incorporate sensors that interact with the physical world, requiring analog processing for analog to digital conversion. By combining these functions with digital technology, a cost-effective, low-power, and reliable solution is achieved. As a result, these factors are expected to drive the growth of the global analog IC market during the forecast period.
- Moreover, the increasing 5G networking capabilities are expected to create a massive demand for analog IC modules. China has emerged as a prominent player in the 5G arena with a substantial deployment of 5G base stations. As per the data released by MIIT, China had 2.31 million 5G base stations by the end of 2022. The country's massive investment in infrastructure and ambitious rollout strategies have enabled it to achieve extensive 5G coverage. Experts predict that the 5G base stations in China will surpass six million by 2024.
- Furthermore, according to China Academy of Information and Communications Technology (CAICT), In July 2022, the shipment volume of 5G smartphones in China amounted to 14.7 million units, representing over 73 % of the total smartphone shipments. Additionally, 5G smartphones accounted for 74 % of all mobile phone shipments in China during that month. The year-to-date total for 5G smartphone shipments in 2022 reached 124 million units. Furthermore, China released 121 new 5G mobile phone models in the same year. The rising 5G smartphone penetration will likely drive the demand for analog IC.
- China remains the leading global vehicle market in annual sales and manufacturing output, per ITA. The domestic production is projected to touch 35 million vehicles by 2025. Additionally, the automotive industry in China has intensified its global outreach in the current year, with exports witnessing a remarkable surge of 81% year-on-year to 1.76 million vehicles in the first five months of 2023, as per the data disclosed by the China Association of Automobile Manufacturers (CAAM). Such significant capabilities in manufacturing automobiles are expected to create a significant demand for the studied market in the industry for their wide range of applications in modern cars.

## Analog Integrated Circuit (IC) Industry Overview

The forecast for the Analog Integrated Circuit (IC) Market indicates a semi-consolidated landscape. Manufacturers are engaged in fierce competition, leveraging product innovation and technological differentiation. Many companies are strategically investing in the development of analog ICs to secure a first-mover advantage and maintain competitiveness. Notable players in this arena include Analog Devices Inc., Infineon Technologies AG, Microchip Technology Inc., NXP Semiconductors NV, and ON Semiconductor.

In February 2023, Analog Devices Inc. and Marvell Technology Inc. introduced their cutting-edge 5G massive MIMO (mMIMO) reference design platform, integrating Open RAN support. This pioneering platform combines ADI's state-of-the-art RadioVerse Transceiver SoC with Marvell's OCTEON 10 Fusion 5G baseband processor, delivering an industry-leading 5 nm digital beamforming solution for 5G. By harnessing this advanced technology, the platform significantly accelerates the time-to-market for advanced mMIMO radio units and O-RAN support, achieving up to 40% lower energy consumption, reduced size, and lighter weight.

In January 2023, Microchip Technology unveiled its latest addition to the radiation-tolerant portfolio, the MIC69303RT 3A Low-Dropout (LDO) Voltage Regulator. This commercial-off-the-shelf (COTS) power device represents a significant stride for Microchip as it expands its range in radiation-tolerant technology. The introduction of this COTS rad-tolerant power management solution aims to unlock new design opportunities in space applications within Microchip's analog power and interface business unit.

Additional Benefits:

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

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