

Saudi Arabia Semiconductor Market Segmented By Component (Memory Devices, Microprocessors, Analog IC, Sensors, Discrete Power Devices, Others), By Application (IT & Telecom, Automotive, Consumer Electronics, Other Industries), By Type (Extrinsic Semiconductor, Intrinsic Semiconductor), By Material Type (Silicon, Germanium, Gallium Arsenide), By Region, Competition Forecast & Opportunities, 2018-2028F

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Abstracts

Saudi Arabia Semiconductor market is expected to increase during the forecast period, owing to the following factors including favourable demographics, boosting foreign trade and investments. Semiconductors such as memory chips are a backbone and a prerequisite for any endeavours in emerging technologies. Everything from artificial intelligence (AI) to smartphone reliance to internet of things (IoT) and 5G adoption, have been influenced by semiconductors. Semiconductor is used to power technologies that enrich lives of consumers and make businesses run smarter, faster, and more efficiently.

Semiconductors are substances whose conductivity falls between those of conductors and those of non-conductors or insulators. In addition to pure materials like silicon or germanium, semiconductors can also contain compounds like gallium arsenide or cadmium selenide. Doping, a procedure that involves adding small amounts of impurities to clean semiconductors, results in significant changes in the material's conductivity. Many products employ semiconductors, including computers, smartphones, appliances, gaming equipment, and medical devices.

Increasing Trend of Vehicle Electrification

In recent years, the cost of electric vehicles has been comparatively very high due to the high manufacturing cost. The growth of new start-ups in the electric vehicle segment brought new innovative ideas and technologies which helped in reducing the production cost of vehicle electrification. This resulted in consumers shifting focus towards electric vehicle segment. The rise of fuel prices has also escalated the speed of vehicle electrification, especially in cities where gas emissions, congestion, and mobility problems are raising the demand for new features in cars. The use of semiconductors has also enabled replacing the manual system with an electric system. Electrification of vehicles offers additional benefits such as reduced carbon emission and increased fuel mileage.

Furthermore, government of Saudi Arabia is promoting vehicle electrification to accelerate sustainable mobility growth. For instance, in February 2023, Saudi Arabia investigated in several opportunities and are currently making plans to become an EV manufacturing hub starting with 500,000 cars, by 2030. The country has already flexed some of its abilities to invest in the electric vehicle with USD 2 billion spent on a majority stake in Lucid Motors, a US-based EV maker. Also, in January 2023, the California startup Canoo, signed an agreement with Saudi's General Contracting Company (GCC), Olayan, to distribute its vehicles in the country. Hence, the growth trend of vehicle electrification has surged the demand for semiconductors in Saudi Arabia as they are an important component in electric vehicles.

Technological Advancements:

The semiconductor industry has been significantly impacted by technological development and its integration in the new digital environment. Today's integrated circuit (IC) designs incorporate more system functionality into single chips (System on Chip). Pre-designed IP blocks and cores are increasingly important in these SoC designs. Because most SoC designs use a standard microprocessor, a lot of system functionality is standardized and can be reused across different designs. Moreover, semiconductor memory IP has been directly impacted by the demand for high-performance memory systems. The development of increasingly complicated semiconductors that can support intensive memory operations is being driven by the desire for quicker and more effective memory solutions. Overall, dependence on IP solution providers is growing, which drives huge investments in the Saudi Arabia semiconductor market. The Saudi Arabia semiconductor market is also exploring new

materials and technologies to reduce the environmental impact of semiconductor production. For instance, researchers are developing new materials that are more environmentally friendly than traditional materials. This includes materials made from renewable sources, such as wood or plant-based polymers. In addition, technologies such as 3D printing are being used to produce more efficient and sustainable semiconductor components.

Rising Investments and Collaborations

Semiconductor and related device manufacturing companies are increasingly collaborating with many industrial manufacturing and technology companies. For instance, in March 2022, Advanced Electronics Company, one of the leading electronics and information technology companies in Saudi Arabia, announced the signing of a Memorandum of Understanding (MoU) with Saudi Aramco and Yokogawa during the Future of Semiconductors Forum held in King Abdulaziz City for Science and Technology. The MoU will help accelerate the enablement of AEC to localize the fabrication of semiconductors and manufacturing of digital products. The signed MoU aims to contribute to increasing value of manufacturing localization to the national GDP. It will also increase the self-reliance of the local industry and help mitigate the current challenges associated with semiconductors' global supply-chain, by localizing and transferring technology to the Kingdom. Furthermore, in August 2021, Saudi Arabia unveiled its first locally made smart chip and announced a slew of new high-tech initiatives worth USD 1.07 billion in partnership with 10 global tech giants to improve its technological process. The new initiatives in Riyadh aim to boost innovation and the digital capabilities of the kingdom and produce one programmer out of every 100 Saudi nationals by 2030. In addition, the Arab world's largest economy has tied up with leading technology giants that include IBM, Microsoft, Cisco, and Trend Micro.

The Rise of Artificial Intelligence, Machine Learning and IoT

Semiconductor technologies are used to create everything from bomb detectors to smart glasses. Semiconductor chip manufacturers are constantly working to meet the needs of AI and IoT, which is expected to drive Semiconductor market trends and demand. The Internet of Things is the next generation of computing devices embedded in everyday objects that can send and receive data, including wearable devices, smart home devices, and factory equipment. AI and machine learning add the most value to the manufacturing process by lowering costs, increasing throughput, and increasing yields. Furthermore, AI and machine learning help semiconductor companies improve accuracy by utilizing metrology readings and tool-sensor data, that enables machine

learning. Therefore, with the rise of Artificial Intelligence, Machine Learning and IoT, there is an increase in Saudi Arabia semiconductor market.

Rapid Acceleration Toward Industry 4.0 and Penetration of Industry 5.0

Industry 4.0 has enormous potential to increase productivity, reduce waste, improve product quality, increase manufacturing flexibility, lower operating costs, and unleash a slew of efficiencies. One of the most important developments in Industry 4.0 is vision equipment, which uses data analytics technologies to access large data sets to detect and assess issues in defective products. Industry 5.0 enable even more customization to meet customer needs and signal the end of the traditional one-size-fits-all manufacturing approach. Automation advances manufacturing capabilities by allowing manufacturers to overcome design complexities and better integrate customer expectations into the design process. Industry 5.0 is the next stage of human-machine collaboration, combining human intelligence and advanced cognitive computing to ensure the highest levels of efficiency, safety, and environmental protection in manufacturing. These elements would propel the development of machine vision systems in the semiconductor industries.

Complex Design and Multiple Firms and Activities

Semiconductor design is divided into two categories: Hardware Design and Software Development. Product definition and specification, system design, integrated circuit design, and post-silicon validation are all part of the hardware design process. As design grows more complex, it becomes an increasingly iterative process, especially for leading players.

Market Segments

Saudi Arabia semiconductor market is segmented into component, application, type, material type and region. Based on component, the market is segmented into memory devices, microprocessors, analog IC, sensors, discrete power devices, and others. Based on application, the market is segmented into IT & telecom, automotive, consumer electronics, and other industries. Based on type, the market is segmented into extrinsic semiconductors and intrinsic semiconductors. Based on material type, the market is segmented into silicon, germanium, and gallium arsenide. Based on region, the market is segmented into northern & central, eastern, western, and southern.

Market Players

Saudi Arabia Semiconductor Market players include Atlas Copco Saudi Arabia, SAMI Advanced Electronics, WIKA Saudi Arabia LLC, Hitachi Energy Ltd., Hon Hai Precision Industry Co., Ltd.

Report Scope:

In this report, Saudi Arabia Semiconductor Market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

Saudi Arabia Semiconductor Market, By Component:

Memory Devices

Microprocessors

Analog IC

Sensors

Discrete Power Devices

Others

Saudi Arabia Semiconductor Market, By Application:

IT & Telecom

Automotive

Consumer Electronics

Other Industries

Saudi Arabia Semiconductor Market, By Type:

Extrinsic Semiconductor

Intrinsic Semiconductor

Saudi Arabia Semiconductor Market, By Material Type:

Silicon

Germanium

Gallium Arsenide

Saudi Arabia Semiconductor Market, By Region:

Western

Eastern

Southern

Northern & Central

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in Saudi Arabia Semiconductor Market.

Available Customizations:

Saudi Arabia Semiconductor Market with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

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