

Semiconductor Intellectual Property (IP) Market: By Design IP (Interface IP, Memory IP and Processor IP); By IP Source (Licensing, Royalty and Servicing); By Application (Consumer Electronics, Telecom, Automotive, Aerospace, Healthcare, Agriculture, and Others); and Region – Analysis of Market Size, Share & Trends for 2014 – 2019 and Forecasts to 2030

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Abstracts

Product Overview

Semiconductor intellectual property (IP), also referred to as IP cores, are the reusable design components. Semiconductor IP is used to build advanced integrated circuits (IC's). These design elements are sold as rights for the design to be used and replicated and are thus referred to as intellectual property. These IP cores are combined to create chip-based systems (SoCs), application-specific integrated circuits (ASICs), and application-specific standard products (ASSPs). It is usually designed to be leased out to multiple vendors as a fundamental component for various chip designs and sophisticated applications. It is pre-verified and frequently has a license fee associated with its use. SIPs are commonly used for processors, peripherals, interconnections, and memory drives. Usually, they are produced as either individual soft IP blocks that can be synthesized according to any production process, or hard IP blocks that are used only for unique implementations.

Market Highlights

Semiconductor Intellectual Property (IP) Market is expected to project a notable CAGR of 5.7% in 2030.

Semiconductor Intellectual Property (IP) Market to surpass USD 9.8 billion by 2030 from USD 4.6 billion in 2018 at a CAGR of 5.7% throughout the forecast period, i.e., 2019-30.



Significant growth in the electronics industry across the globe is one of the main factors offering a favorable outlook for the market. Moreover, the widespread adoption of multicore technology for consumer electronics is increasing the industry's growth. Smartphones, laptops, and tablets run on dual-core or quad-core processors that need highly effective SIPs to provide error-free performance. In line with this, the rising demand for modern system-on-chip (SOC) designs is also contributing to market growth. Numerous technological advances, such as the integration of connected devices with the Internet of Things (IoT) and the use of graphene transistors, self-organizing molecular devices, and carbon nanotubes, are other growth-inducing factors. Other factors, including increased use of SIPs for superior driver interfaces and in-cabin entertainment systems in vehicles, are expected to push the market further.

Semiconductor Intellectual Property (IP) Market: Segments

Memory IP segment to grow with the highest CAGR during 2019-30

Semiconductor Intellectual Property (IP) Market is segmented by design IP as processor IP, interface IP, memory IP, and other IP. The greater market share in 2018 was accounted for by Processor IP and the dominance of the segment is attributed to the wide use of the processor IP in the consumer electronics and automotive sector. The memory IP segment is expected to record the highest CAGR per design IP during the forecast era. Nowadays the exponential growth in media streaming and social networking content has increased the demand for storage locally and within data centers vigorously. To design effective storage and processing devices has required IC designers to use memory IPs.

Automotive sector to grow with the highest CAGR during 2019-30 Semiconductor Intellectual Property (IP) Market is segmented by application into consumer electronics, telecom, automotive, aerospace, healthcare, agriculture, and others (government, hospitality, and more). It is estimated that the Consumer Electronics segment will hold the largest market share and has seen very strong demand in recent years. In any consumer electronic product, such as smartphones, laptops, and other devices, semi-conductor IPs are used. The demand for semiconductor IPs has increased due to the strong market demand for better and more advanced smartphones and tablets. The key driver of this market is the worldwide adoption of new consumer devices, the demand for smart devices, and the demand for advanced SOC designs. It is expected that new technologies such as embedded and programmable DSP IPs will further drive the demand in the future. During the forecast era, the automotive sector is projected to expand at the highest CAGR level. Increasing applications for microprocessor units (MPUs), sensors, microcontroller units, interfaces, and memory in autonomous and premium cars are due to the sector's development.



Semiconductor Intellectual Property (IP) Market: Market Dynamics Drivers

Rise in Demand for the Consumer Electronics

Different types of products include consumer electronics, such as TVs, cameras & camcorders, notebooks, audio/video equipment, smartphones & tablets, desktops, laptops, gaming consoles and accessories, home appliances, wearable electronics, etc. Demand for consumer electronics is growing especially in developing countries such as India, China, and more. In turn, the growth of the semiconductor IP market is expected to increase the adoption of mobile devices, smartphones, tablets, and other connected devices due to the growing demand for high-speed broadband connectivity and rampant advances in technology. Additionally, increased storage space, fast processing speed, larger displays, and higher resolution displays are also fueling the global mobile market's growth. Subsequently, this is expected to create a favorable environment for the global semiconductor IP market to develop.

New Technological Developments

The physical limits of historically established semiconductor technologies can theoretically be bypassed by emerging technologies such as graphene transistors, self-organizing molecular machines, carbon nanotubes, and quantum computing. Besides, such radical innovations are capable of replacing existing technologies, which could create ample opportunities for the IP semiconductor industry. The design and production of semiconductor IP are continuously decreasing. For example, due to reduced die size, scaling of the processes, heterogeneous integration, and multiple layers processed together, the use of monolithic 3D IC technology is projected to reduce the wafer cost. This cost reduction supplements the growth of the semiconductors IP market.

Restrain

Impact of IP thefts and counterfeit concern on the semiconductor IP market IP robberies, counterfeits, and disputes are major challenges facing the semiconductor IP industry; the impact of these problems has increased over the past few years. The shadow semiconductor supply chain is another big factor that generates a serious issue and fuels IP robberies, counterfeits, conflicts, and piracy. For the global semiconductor industry and manufacturers, intermediaries, and consumers, the counterfeit semiconductor chip supply chain, involving pirated semiconductor IP, is more devastating. IP counterfeiting, including the production of counterfeit components and IP core system-level designs, is the main economic challenge to existing business models that have been followed globally.



Semiconductor Intellectual Property (IP) Market: Key Players

ARM

Company Overview

Business Strategy

Key Product Offerings

Financial Performance

Key Performance Indicators

Risk Analysis

Recent Development

Regional Presence

SWOT Analysis

Synopsys

Imagination Technologies

Cadence

Ceva

Vermillion

eMemory Technology

Rambus

Lattice (Silicon Image)

Semiconductor Intellectual Property (IP) Market: Regions

Semiconductor Intellectual Property (IP) Market is segmented based on regional analysis into five major regions. These include North America, Latin America, Europe, APAC, and MENA.

Semiconductor Intellectual Property (IP) Market in North America held the largest market share in the year 2018 and it is expected to continue its market dominance in the future as well due to increasing investments by key players in the region. Besides, Asia has more production companies, and several major IDMs outsource wafer production to the Asia-Pacific region. In the semiconductor IP market, Asia Pacific is projected to be the fastest-growing region. As a global focal point for major investments and business expansion opportunities, the region has grown. Besides, due to low-cost labor and extraordinary demand for consumer electronics, the global semiconductor market is expected to unveil significant development in the APAC field. Many APAC semiconductor giants invest in the development of advanced electronic devices with features such as rapid processing speed, increased storage space, wireless networking, and RF-enabled capabilities. Semiconductor IP cores are needed by these semiconductor device manufacturers to bring new technologies to market. These factors set APAC's semiconductor IP market on a positive growth path.



Competitive Landscape:

Semiconductor Intellectual Property (IP) market, which is highly competitive, consists of several major players such as Arm Holdings (UK), Synopsys (US), Cadence Design Systems, Inc. (US) hold a substantial market share in the Semiconductor Intellectual Property (IP) market. Other players analyzed in this report are CEVA (US), Imagination Technologies (UK), Rambus Inc. (US), eMemory Technology Corporation (Taiwan), Mentor Graphics (US), and Lattice Semiconductor Corp. (US) among others.

The market competition has been stepped up by the availability of many players offering Semiconductor Intellectual Property (IP). For Instance, In February 2020, Synopsys launched a new DesignWare ARC communications IP subsystem for wireless narrowband IoT designs. The new ARC EM11D processor has almost zero latency and quickly adapts to rapidly changing wireless standards.

Semiconductor Intellectual Property (IP) Market is further segmented by region into: North America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United States and Canada

Latin America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – Mexico, Argentina, Brazil, and Rest of Latin America

Europe Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United Kingdom, France, Germany, Italy, Spain, Belgium, Hungary, Luxembourg, Netherlands, Poland, NORDIC, Russia, Turkey, and Rest of Europe

APAC Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – India, China, South Korea, Japan, Malaysia, Indonesia, New Zealand, Australia, and Rest of APAC MENA Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – North Africa, Israel, GCC, South Africa, and Rest of MENA

Semiconductor Intellectual Property (IP) Market report also contains analysis on: Semiconductor Intellectual Property (IP) Market Segments:

By Design IP:

Processor IP

Interface IP

Memory IP

Other IP

By IP Source:

Licensing

Royalty

Servicing



By Application:

Consumer Electronics

Telecom

Automotive

Aerospace

Healthcare

Agriculture

Others

Semiconductor Intellectual Property (IP) Market Dynamics

Semiconductor Intellectual Property (IP) Market Size

Supply & Demand

Current Trends/Issues/Challenges

Competition & Companies Involved in the Market

Value Chain of the Market

Market Drivers and Restraints



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- **2. ARM**
- 3. SYNOPSYS
- 4. IMAGINATION TECHNOLOGIES
- **5. CADENCE**
- 6. CEVA
- 7. VERISILLICON
- 8. EMEMORY TECHNOLOGY
- 9. RAMBUS
- 10. LATTICE (SILICON IMAGE)
- 11. SONICS

Consultant Recommendation

**The above-given segmentation and companies could be subjected to further modification based on in-depth feasibility studies conducted for the final deliverable.



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