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Creating Winning Business Solutions

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17 October 2025

The Board of Directors
SkyeChip Berhad
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Dear Sirs and Madams

Independent Assessment of the IC Design Industry

We are an independent business consulting and market research firm based in Malaysia, established in 1993. We offer consulting services, including business plans, opportunity evaluations, commercial due diligence, feasibility studies, financial and industry assessments, and market research. Since 1996, we have been involved in corporate exercises such as initial public offerings (IPO), reverse takeovers, chain listings, transfers to the Main Market, and business regularisations for publicly listed companies on Bursa Malaysia Securities Berhad (Bursa Securities). Our corporate exercise services encompass business overviews, independent industry assessments, management discussions and analyses, and business and industry risk assessments for prospectuses, shareholders' circulars and information memorandums.

We have been engaged to provide an independent assessment of the IC Design industry for inclusion in the prospectus of SkyeChip Berhad for its IPO and listing of its shares on the Main Market of Bursa Securities. This report has been prepared independently and objectively, with all reasonable due care taken to ensure its accuracy and completeness.

We believe the report provides a true and fair assessment of the industry, considering the limitations of timely and available information, and analyses based on secondary and primary market research as of the report date. However, it should be noted that our assessment pertains to the industry as a whole and may not reflect the performance of any specific company. We accept no responsibility for the decisions or actions of readers based on this document. This report should not be construed as a recommendation to buy, not buy, sell, or not sell the securities of any company.

Our report may include disclosures, assessments, opinions, and forward-looking statements subject to hitherto unknown or undisclosed information, uncertainties, and contingencies. These statements are based on secondary information and primary market research. Despite careful analysis, the industry is influenced by various known and unforeseen factors that could cause actual outcomes and future results to differ materially from these statements.

Yours sincerely

Wooi Tan
Managing Director

Wooi Tan holds a Bachelor of Science from the University of New South Wales and a Master of Business Administration from the University of Technology, Sydney. He is a Fellow of the Australian Marketing Institute and the Institute of Managers and Leaders, Australia. With over 30 years of experience in business consulting and market research, he has also assisted companies in their IPOs and listing of their shares on Bursa Securities.

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Date of Report: 17 October 2025

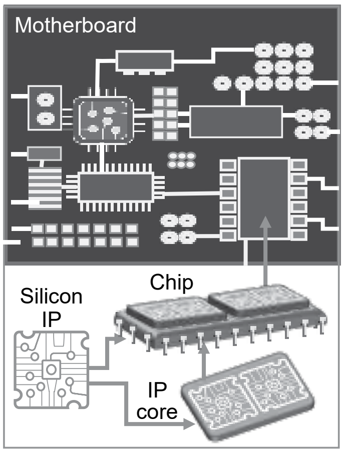
INDEPENDENT ASSESSMENT OF THE INTEGRATED CIRCUIT DESIGN INDUSTRY

1. OVERVIEW OF SKYECHIP GROUP'S BUSINESS AND REPORT PARAMETERS

- SkyeChip Berhad, together with its subsidiaries (SkyeChip Group), are involved in integrated circuit (IC) design, specialising in silicon intellectual property (IP) and silicon products, including custom application-specific integrated circuits (ASICs). As an original IC design company, SkyeChip Group owns the IP rights to its designs. The Group primarily operates in Malaysia, and has a presence in Vietnam to carry out research and development activities. It mainly serves customers in China and Taiwan, with plans to expand its market to the United States of America (USA) and Japan. The above will form the focus of this report. This report discusses global trends in IC design, highlighting the international scope of IC design companies. The technologies they create are integrated into consumer and industrial products used globally.

2. OVERVIEW OF THE IC DESIGN INDUSTRY

2.1 Overview of IC, IP core and Silicon IP



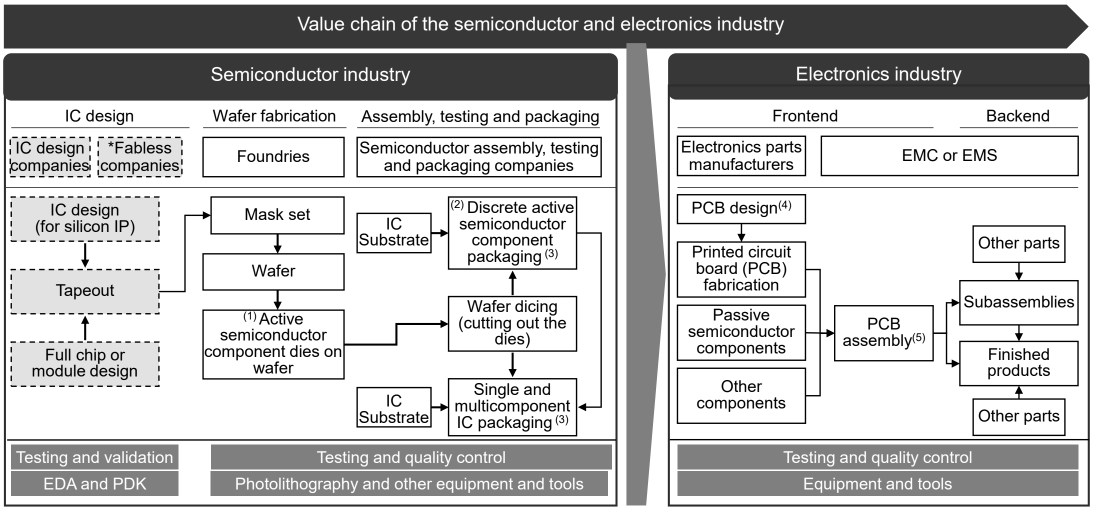
- Silicon IP (Intellectual Property) refers to pre-designed, reusable components or building blocks that can be integrated into chips (also known as integrated circuits, or ICs) to speed up the design process. For chip designers, rather than building everything from scratch, they can license these blocks or Silicon IPs and incorporate them into their overall IC design, ensuring faster development and greater reliability.

- Silicon IP plays a critical role in the creation of electronic products. An electronic product, such as a smartphone or computer, relies on chips to perform various tasks. These chips are mounted on a motherboard, the central circuit board that connects and supports the components within the device. The chips themselves are integrated circuits that process data and carry out the functions necessary for the device to operate.

- Each chip contains functional units called IP cores, which handle specific tasks, such as processing data or managing memory. An IP core can contain one or more Silicon IPs. While Silicon IPs are individual circuit designs, IP cores are the final functional blocks that are integrated into a chip. Examples of Silicon IPs include memory interfaces and internal interconnects. By using Silicon IP, chip designers can focus on the unique aspects of their product while relying on reliable, pre-tested components to handle standard tasks. This approach speeds up development and improves chip performance, making it essential for semiconductor design.

- SkyeChip Group designs and develops silicon IP and silicon products, including the following:
  - **ASIC** (Application-Specific Integrated Circuit): A custom-designed IC product tailored to perform a specific application or set of functions, rather than serving general-purpose computing needs. ASICs are optimised for superior performance, power efficiency, and compact chip area, making them ideal for industries such as telecommunications, automotive systems, and consumer electronics.
  - **Memory interface**: A silicon IP that contains the circuitry responsible for managing data transfer between memory devices (e.g., random access memory) and system components such as the central processing unit (CPU) or graphics processing unit (GPU). It is critical for optimising bandwidth, reducing latency, and improving power efficiency, making it essential for high-performance computing.
  - **Internal interconnect**: A silicon IP that contains the circuitry that defines the data communication pathways within an IC or System-on-Chip (SoC), connecting multiple functional units, such as CPU cores, cache, memory controllers, hardware accelerators, and peripherals. These interconnects enable efficient data transfer, maintain coherence, and ensure synchronisation between components.

2.2 IC design within the value chain of the semiconductor and electronics industry



EDA** = Electronic design automation. They are software tools used in IC design, verification, and testing to automate and optimise semiconductor development; **PDK** = Process design kit. A set of files provided by foundries that define manufacturing rules, design constraints, and device models to ensure IC designs are manufacturable, meet performance requirements, and comply with foundry specifications; **EMC** = Electronics manufacturing companies. Companies that manufacture electronic products by assembling semiconductors, components, and other parts into final devices; **EMS** = Electronics manufacturing service companies. Companies that provide contract-based electronic manufacturing, including PCB assembly, testing, and system integration, for original equipment manufacturers (OEMs). Notes: **(1)** Active semiconductor components require an external power source to function and include devices such as processors, memory chips, diodes, and transistors. **(2)** They are active semiconductor components separated and packaged individually. They include transistors, diodes and voltage regulators. **(3)** Packaging includes die attach, wire or flip-chip bonding, encapsulation and final testing. **(4)** This activity may also be carried out by others such as fabless semiconductor companies or PCB designers. **(5) Common assembly methods include surface-mount technology (SMT) and through-hole technology (THT).

SkyeChip Group operates within this segment

* SkyeChip Group is also a fabless company as it has contracts for the design and development of custom application-specific IC (ASIC).

- **IC design** is a critical part of the semiconductor and electronics industry value chain, positioned at the **frontend** of the process. IC designs are ultimately incorporated into finished electronic products such as servers, processors, automotive systems, smartphones, and wearables. Key players in the semiconductor and electronics industry value chain include:
  - **IC design companies**: Develop circuit architectures and IC designs that can be integrated into larger ICs (chips) or commercialised through silicon IP licensing.
  - **Fabless companies**: Design ICs by integrating various silicon IP cores into complex chips, work with semiconductor foundries for fabrication, and manage marketing and sales of the finished semiconductor products.
  - **Foundries**: Manufacture semiconductor wafers and process them into individual dies based on designs provided by fabless companies or integrated device manufacturers (IDMs).
  - **Semiconductor assembly, testing and packaging (ATP) companies**: Separate individual dies from wafers, assemble them into packaged chips, and conduct testing to ensure quality before shipment.
  - **Electronics part manufacturers:** Produce essential electronic components, such as capacitors, resistors, connectors, and printed circuit boards (PCBs), required for use in final electronic products.
  - **Electronics manufacturing companies (EMCs)/Electronics Manufacturing Services (EMS) Providers**: Assemble semiconductors, electronic components, and other parts into fully functional electronic products.

- The semiconductor and electronics industry value chain, including IC design, is a complex global process comprising multiple stages and specialised expertise. It relies on advanced infrastructure, equipment, tools, and significant technological capabilities, often distributed across various countries and regions.

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2.3 Development of the IC design industry

- The IC design industry has evolved rapidly, driven by the growing demand for smaller, faster, and more power-efficient electronic devices, as well as processing-intensive applications such as artificial intelligence (AI) and machine learning (ML). This growth is fuelled by innovations across a broad range of electronic applications, all requiring complex, high-performance, and power-efficient ICs. Key demand drivers include:
  - **Consumer electronics**: ICs are fundamental to devices such as smartphones, tablets, laptops, servers, processors, digital televisions, and gaming consoles. They enable core functions including processing, memory storage, and multimedia capabilities.
  - **AI and ML**: ICs facilitate highly efficient parallel processing for training and running machine learning models, as well as AI inference and generative tasks. Dedicated AI accelerators, such as neural processing units (NPUs) and tensor processing units (TPUs), significantly enhance performance in these applications.
  - **High-performance computing (HPC)**: ICs are essential for high-speed data processing and complex computations required by large-scale simulations, big data analytics, and scientific research. CPUs, GPUs, and memory chips in processors, servers and networking equipment commonly used in large data centres enable these systems to handle high workloads.
  - **Wired and wireless communication systems**: ICs power high-speed data transmission and reception in network infrastructure components, including routers, modems, and 5G/6G communication systems, ensuring fast, reliable, and low-latency connectivity.
  - **Automotive electronics**: ICs are essential for engine control units (ECUs), advanced driver assistance systems (ADAS), infotainment systems, and in-vehicle networking, enhancing vehicle performance, safety, and user experience.
  - **Industrial automation**: ICs power programmable logic controllers (PLCs), industrial sensors, robotics, and automation systems, enabling real-time monitoring, control, safety, and optimisation.
  - **Security systems**: ICs provide hardware-level encryption, decryption, and authentication, ensuring secure communication, data protection, and transactions.

- Some of the key developments in the IC design industry are as follows:
  - **Advances in semiconductor technologies**: The industry continues to advance by packing more functionality into smaller spaces, leading to more powerful and efficient chips. This is achieved by using smaller and smaller process nodes, ranging from micrometre (micron)-scale to nanometre (nm)-scale, and integrating different types of chips into a single package.
  - **Higher data rates**: The increasing demand for rapid data processing and transfer drives the development of high-speed connections within and between chips. This is crucial for applications such as high-speed networking, AI, and real-time data analytics.
  - **Efficient power usage**: Managing power consumption is essential as chips become more compact and complex. Innovations in power management ensure that devices operate efficiently and avoid overheating, which is essential for mobile devices and large data centres.

- Despite these advancements, IC design companies face several key challenges:
  - **Increasing design complexity**: Modern ICs incorporate millions to billions of transistors, requiring precise layout, verification and fabrication to ensure optimal functionality, power efficiency, and performance.
  - **Thermal management**: As IC density and processing power increase, heat generation becomes a critical issue. Without effective cooling and power optimisation, excessive heat can degrade chip performance and reduce lifespan.
  - **High R&D costs**: IC design necessitates substantial upfront investment in intensive research, EDA tools, verification and prototyping. These high innovation costs pose a

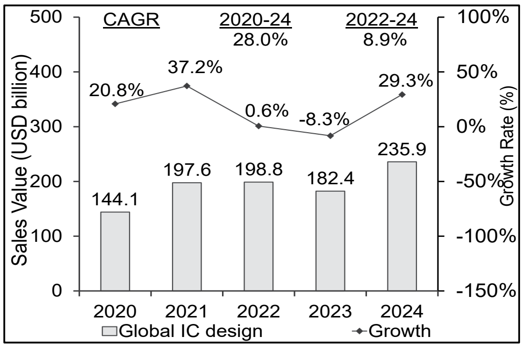
challenge for companies seeking to remain competitive and avoid technological obsolescence.

- **Geopolitical and supply chain disruptions**: Global semiconductor supply chains are disrupted by trade tensions, export restrictions, and deglobalisation trends, such as the USA-China trade war. Tariffs, sanctions, and limitations on technology access affect sourcing strategies, forcing companies to explore alternative supply chain solutions, including domestic manufacturing and regional supply chains. These shifts have the potential to reshape the global semiconductor industry in both the short and long term.

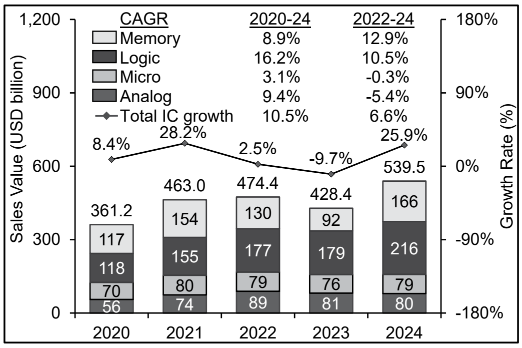
3. GLOBAL IC DESIGN INDUSTRY

- As SkyeChip Group is export-oriented, this section focuses on global trends in IC design. Between 2020 and 2024, global IC design revenue grew at a CAGR of 28.0%, reaching USD235.9 billion in 2024. In 2024, global IC design revenue grew by 29.3%, aligning with the increase in global IC sales. In 2024, ICs were the leading semiconductor products globally, accounting for 85.6% of global semiconductor sales. The remaining were contributed by optoelectronics, discrete semiconductors, and sensors, which accounted for 6.5%, 4.9%, and 3.0%, respectively. *(Source: Vital Factor analysis)*

Global IC design revenue



Global IC sales

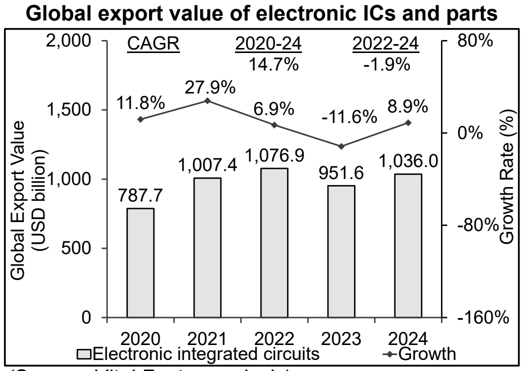


CAGR = compound annual growth rate. Note: Above data is converted based on Bank Negara Malaysia (BNM) exchange rate in the respective years. (Source: Vital Factor analysis)

- Between 2020 and 2024, the global IC sales grew at a CAGR of 10.5% to USD539.5 billion in 2024. In 2024, global IC sales grew by 25.9%, primarily due to a 79.3% increase in memory components, 20.8% growth in logic components, and a 3.0% increase in micro components. The global IC sales was mainly driven by logic (34.2%), memory (26.2%), analogue (12.6%) and micro (12.5%) components. In 2025, global IC sales are estimated to increase by 13.4% to USD611.6 billion compared to 2024, primarily driven by stronger performance in memory and logic components. *(Source: Vital Factor analysis)*

- In 2024, the global export value of electronic ICs and parts increased by 8.9%, in tandem with the global IC sales. In 2024, the top three exporters for electronic ICs and parts were Hong Kong, China, and South Korea, accounting for 21.2%, 15.4%, and 11.6% of the total global export value, respectively.

Global export value of electronic ICs and parts



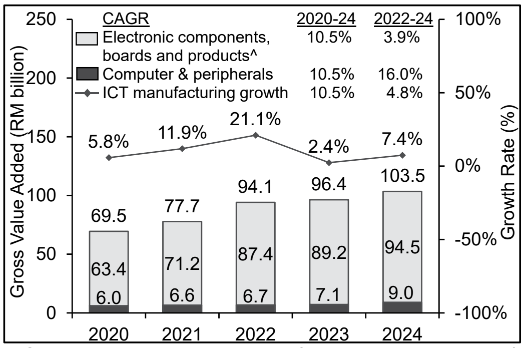
(Source: Vital Factor analysis)

4. IC DESIGN INDUSTRY IN MALAYSIA

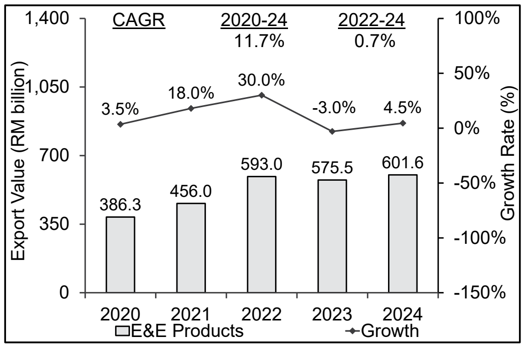
- Gross value added (GVA) measures the value of output produced by information and communications technology (ICT) economic activities, excluding the value of intermediate inputs. The

ICT industry is further divided into ICT services, ICT manufacturing, ICT trade, and content and media products, which contributed 40.1%, 38.5%, 15.4%, and 6.1% of the total GVA of the ICT industry, respectively, in 2024. *(Source: Department of Statistics Malaysia (DoSM))* Overall, the GVA of ICT manufacturing grew at a CAGR of 4.8% between 2022 and 2024. In 2024, electronic components, boards, and products were the main segment of the ICT manufacturing segment, representing 91.3% of the GVA of ICT manufacturing, while computers and peripherals contributed the remaining 8.7%.

GVA of ICT manufacturing by activity



Malaysia's export of E&E products



** Others include e-commerce from other industries; ^ Electronic products include communication equipment and consumer electronics (Source: DoSM)*

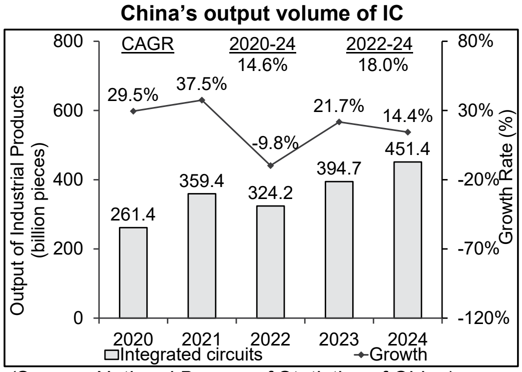
- The E&E sector continues to be Malaysia's major export contributor, accounting for 39.9% of gross exports in 2024. In 2024, Malaysia's E&E exports were RM601.6 billion, with electronic integrated circuits accounting for 52.0% of the total E&E exports. Malaysia's semiconductor strength primarily lies in its back-end services, such as assembly, packing and testing. A key strategic development of the New Industrial Master Plan 2030 (NIMP 2030) is to elevate Malaysia's position within the E&E value chain by shifting towards front-end activities such as IC design, advanced packaging, and expanding wafer fabrication capabilities. *(Source: DoSM, Malaysian Investment Development Authority (MIDA))*
- In 2024, the four largest export destinations for Malaysia's E&E products were the USA, Singapore, Hong Kong, and China, contributing 20.0%, 18.7%, 12.2%, and 11.3% of the total export value of E&E products, respectively. The USA emerged as Malaysia's largest export destination for E&E products in 2024, mainly due to the higher demand for semiconductor devices and integrated circuits *(Source: DoSM, Malaysia External Trade Development Corporation (MATRADE)).*
- In the first half (H1) of 2025, Malaysia's E&E exports increased by 16.3% to RM328.1 million compared to H1 2024 *(Source: DoSM).*

5. IC DESIGN INDUSTRY IN FOREIGN COUNTRIES

5.1 China

- Between 2022 and 2024, China's output volume of ICs grew at a CAGR of 18.0%. The decline in 2022 was partly attributed to the global shortage of semiconductors, coupled with containment measures imposed within China, which only eased in November 2022. In 2023 and 2024, China's output volume of ICs grew by 21.7% and 14.4% respectively, reaching 451.4 billion pieces in 2024.

China's output volume of IC



(Source: National Bureau of Statistics of China)

- Between 2019 and 2023, China's R&D expenditure on ICs grew at a CAGR of 27.5% to CNY57.1 billion (RM36.8 billion) in 2023, which accounted for 1.7% of China's total R&D expenditure. *(Source: National Bureau of Statistics of China, BNM)*

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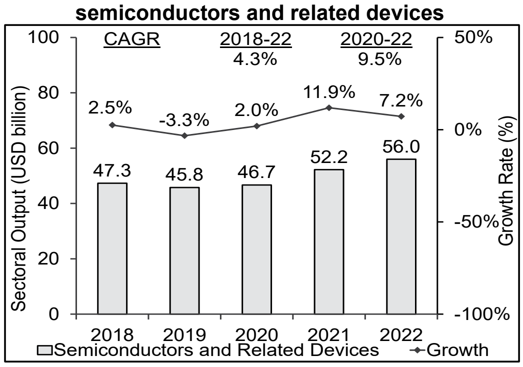
5.2 Taiwan

- Between 2022 and 2024, Taiwan's IC design industry revenue grew at a CAGR of 1.6%. In 2024, Taiwan's IC industry revenue grew by 22.4% to approximately TWD5.3 trillion (RM757.7 billion), contributed by IC manufacturing, IC design, IC packaging, and IC testing, which accounted for 64.3%, 23.9%, 8.0%, and 3.8% of the total revenue, respectively. The growth of 22.4% in 2024 was mainly attributed to the increase of 30.1% in foundry revenue, driven by high demand for advanced 3nm and 5nm process nodes for high-performance computing and smartphones. In H1 2025, Taiwan's IC industry increased by 26.7% compared to H1 2024. Between 2019 and 2023, Taiwan's R&D expenditure on the high technology industry grew at a CAGR of 11.6% to TWD639.8 billion (RM93.7 billion) in 2023, which accounted for 68.3% of Taiwan's total R&D expenditure. *(Source: Vital Factor analysis, National Science and Technology Council, Taiwan, BNM)*

5.3 USA

USA Sectoral output of semiconductors and related devices



Note: 1 USD = RM4.4011 as the average for 2022. Latest data available. (Source: USA Bureau of Labor Statistics; BNM)

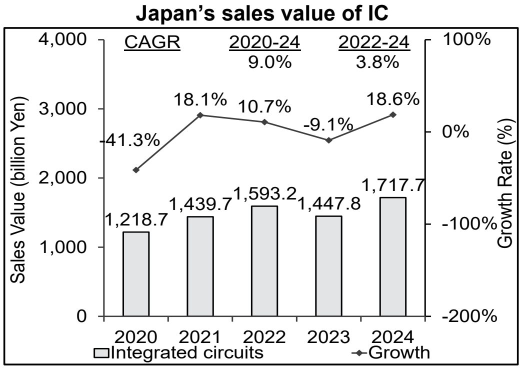
- Sectoral output refers to an industry's gross output, which includes sales, receipts, other operating income, commodity taxes, and changes in inventories. However, it excludes the transactions between establishments within the same industry.

- Between 2018 and 2022, the sectoral output of semiconductors and related devices (such as ICs, diodes, transistors, solar cells, and other optoelectronic devices) grew at a CAGR of 4.3% to USD56.0 billion (RM246.4 million). In 2024, the sectoral output of semiconductors and other electronic components grew by 2.0% to USD99.3 billion (RM422.5 billion). *(Source: USA Bureau of Labor Statistics, BNM)*

- Between 2020 and 2024, the R&D expenditure on the semiconductor industry grew at a CAGR of 12.3%. In 2024, the total R&D expenditure on the semiconductor industry grew by 18.0% to USD70.0 billion (RM320.3 billion). *(Source: Vital Factor analysis, BNM)*

5.4 Japan

Japan's sales value of IC



Note: 100 Yen = RM3.0234 as the average for 2024. (Source: Statistics Bureau of Japan, Vital Factor analysis, BNM)

- Between 2022 and 2024, Japan's sales value of ICs grew at a CAGR of 3.8%. In 2024, the country recorded a sales value of 1.7 trillion Yen (RM51.9 billion) for ICs. Nevertheless, the sales quantity declined at an average annual rate of 17.4% between 2022 and 2024. The decline was mainly attributed to the decrease in standard linear, non-standard linear, and standard logic ICs. In the first half (H1) of 2025, the sales value and quantity of ICs both increased by 4.3% and 7.7% respectively, compared to H1 2024. *(Source: Statistics Bureau of Japan, Vital Factor analysis, BNM)*

- Between 2018 and 2022, Japan's R&D expenditure on scientific research, professional and technical services, funded by enterprises, grew at a CAGR of 0.5% amounting to JPY957.9 billion (RM32.2 billion). The small growth was mainly attributed to the economic impact of the COVID-19 pandemic in 2020, which led to reduced R&D expenditure. Nevertheless, the R&D expenditure on engineering and technology, funded by non-profit institutions and public organisations, and universities and colleges, grew at a CAGR of 2.9% amounting to JPY1.6 trillion (RM54.0 billion). *(Source: Statistics Bureau of Japan, BNM)*

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5.5 Vietnam

- Between 2019 and 2023, Vietnam's export of semiconductor devices grew at a CAGR of 1.5% to USD12.2 billion (RM55.9 billion) in 2023. In 2023, Vietnam's top four destinations for semiconductor device exports were China, Hong Kong, the USA, and the Netherlands, with exports valued at USD5.7 billion (46.3%), USD3.1 billion (25.1%), USD759.4 million (6.2%), and USD505.0 million (4.1%), respectively. *(Latest available information. Source: Vital Factor analysis, BNM).*

6. COMPETITIVE LANDSCAPE

- The global IC design industry is dominated by established silicon IP providers with substantial resources, advanced R&D, and broad portfolios of silicon IP and silicon products. In Malaysia, IC design primarily involves designers who utilise silicon IP from third-party silicon IP providers. While most Malaysian designers rely on third-party silicon IP, some develop their own or collaborate with other providers.

- Some of the players in the industry are provided in the table below. The selection criteria for IC design companies in **Malaysia** include having operations in Malaysia, being involved in the design of ICs, and the availability of recent financial information. The selection criteria for Silicon IP providers in **foreign countries** include publicly listed companies, those providing, among others, memory interface and/or internal interconnect IPs, and the availability of recent financial information. They are listed in descending order of revenue in the respective categories and the list is not exhaustive:

Country*	Company	C	FYE[1]	Rev[2] (RM mil)	GP[2] (RM mil)	GP margin	PAT/(LAT)[2](RM mil)	PAT/(LAT) margin
IC design companies in Malaysia								
MY	**SkyeChip Group**	√	**Mar-25**	**119.5**	**50.3**	**42.1%**	**36.0**	**30.1%**
MY	Oppstar Berhad[3]	√	Mar-25	64.0	0.4	0.7%	(12.4)	(19.3%)
MY	Tenasic Technology[4]	√	Dec-24	41.5	n.a.	n.a.	3.5	8.4%
MY	Key ASIC Berhad[5]	√	May-25	14.9	5.2	34.5%	(6.7)	(45.0%)
MY	Infinecs Systems[6]	n.a.	Dec-24	11.0	2.6	23.9%	0.6	5.4%
Silicon IP providers in foreign countries								
UK	Arm Holdings plc[7][8]	√	Mar-25	18,337.7	17,784.0	97.0%	3,624.5	19.8%
Taiwan	Global UniChip Corp.[9][10]	√	Dec-24	3,570.0	1,155.7	32.4%	491.9	13.8%
USA	Rambus Inc.[7][11]	n.a	Dec-24	2,547.3	2,043.5	80.2%	822.9	32.3%
Taiwan	Faraday Technology Corp.[9][12]	√	Dec-24	1,577.3	720.1	45.7%	152.8	9.7%
UK	Alphawave IP Group plc[7][13]	√	Dec-24	1,407.7	828.7	58.9%	(194.6)	(13.8%)
China	Brite Semiconductor[14][15]	√	Dec-24	692.8	n.a.	n.a.	38.8	5.6%
Taiwan	Egis Technology Inc.[9][16]	√	Dec-24	683.5	269.2	39.4%	(197.0)	(28.8%)
USA	Silvaco Group, Inc.[7][17]	√	Dec-24	273.1	218.0	79.8%	(180.3)	(66.0%)
USA	Arteris, Inc.[7][18]	√	Dec-24	264.2	236.9	89.7%	(153.9)	(58.3%)
Taiwan	M31 Technology Corp.[9][19]	√	Dec-24	211.1	211.1	100.0%	18.1	8.6%

**refers to country of incorporation; C = Has customers in China and/or Taiwan; FYE = financial year ended; Rev = revenue; mil = million; GP = gross profit; PAT = profit after tax; LAT = loss after tax; MY = Malaysia; UK = United Kingdom; n.a. = information not available.*

Notes:
(1) *Latest available audited financial information from annual reports, financial reports, and SkyeChip Group. Brite Semiconductor (Shanghai) Co. Ltd. was based on 12-month unaudited figures for the FYE 31 December 2024 as published on the Shanghai Stock Exchange on 28 February 2025.* ***(2)*** *May include other business activities, products or services in addition to IC design and/or silicon IP design.* ***(3)*** *Mainly involved in the provision of IC design services, post-silicon validation services, software and engineering solutions, R&D on engineering and technology, provision of sales and marketing services, technical support and other related services.* ***(4)*** *Tenasic Technology Sdn Bhd. Formerly known as StarFive Technology International S/B. Mainly involved in R&D activities on engineering and technology.* ***(5)*** *Mainly involved in the business of turnkey ASIC design services, providing data processing, data management, disk-based backup solutions, telecommunications, office automation, network infrastructure and intelligent storage network support.* ***(6)*** *Infinecs Systems Sdn Bhd. Mainly involved in engineering design services, information service activities, R&D on engineering services and information communication technology.* ***(7)***

*Conversion from USD to RM based on BNM's exchange rate of USD1 = RM4.5764 for 2024. **(8)** Mainly involved in the business of licensing, marketing, R&D of CPU design IP, graphics processors, system IP, physical IP, market optimised platform IP, and associated software, tools and other related services. **(9)** Conversion from TWD to RM based on BNM's exchange rate of TWD100 = RM14.2547 for 2024. **(10)** Mainly engaged in R&D, production, testing and sales of embedded memory and logic components, cell libraries, and EDA tools for various application ICs, as well as customisation, design, technical support and licensing of IP. **(11)** Mainly involved in R&D, design, sale and marketing of memory interface chips and silicon IP solutions, as well as other related services. **(12)** Fabless ASIC vendor and silicon IP and system platform provider. **(13)** Mainly involved in the development of compute IP, ASICs, ICs and chiplets. **(14)** Brite Semiconductor (Shanghai) Co. Ltd. Conversion from CNY to RM based on BNM's exchange rate of CNY1 = RM0.6358 for 2024. **(15)** Custom ASIC and IP solutions provider. **(16)** Fabless company mainly involved in the provision of silicon IP and chiplet design services. **(17)** Technology computer aided design software, EDA software and semiconductor IP provider. **(18)** Semiconductor system IP provider, including interconnect and other IP technology. **(19)** Mainly involved in providing silicon IP design services.*

7. BARRIERS TO ENTRY

- The barriers to entry in advanced IC design technologies are significant, especially for designs targeting advanced process nodes between 2 nanometres (nm) and 5nm. These barriers also extend to specialised functional areas, such as high-performance and high-bandwidth memory interface IPs, including low-power double data rate (LPDDR)4, LPDDR4x, high-bandwidth memory (HBM)3, HBM3E, and HBM4. While barriers to entry for less advanced IC design technologies are comparatively lower, they remain substantial.

- The main barriers to entry in the IC design industry are as follows:

    - **Specialised technical expertise**: IC design, verification, and testing require highly specialised technical skills. New entrants must have a strong foundation in semiconductor physics, circuit theory, and advanced design methodologies. Keeping pace with rapid technological advancements demands continuous learning and a sustainable pipeline of skilled engineers, both of which pose significant challenges.

    - **Access to Process Design Kits** (PDKs): Access to PDKs from foundries is critical. PDKs are crucial for bridging the gap between IC design and manufacturing. Without them, developing functional, efficient, and manufacturable chips becomes difficult. Geopolitical considerations can further restrict PDK availability, adding complexity for new entrants.

    - **Access to Electronic Design Automation (EDA) tools**: Access to EDA tools presents a barrier to entry for new IC design companies. High licensing costs, complex agreements, potential export restrictions, and the need for continuous updates and technical support create both financial and operational barriers. Vendor restrictions linked to foundry partnerships or geopolitical issues can also limit accessibility for newcomers.

    - **Intensive research and development** (R&D): Ongoing innovation is essential to remain competitive amid rapid technological changes, miniaturisation, and evolving user needs. The significant financial commitment required for sustained R&D represents a major barrier to entry.

    - **Extended development cycles**: IC development can take several years from concept to commercialisation. This long lead time heightens the risk of technological obsolescence and can reduce returns on investment.

- Fabless companies seeking to internalise some IC design activities would face barriers, including the need for specialised technical expertise, a sizable and skilled workforce, significant R&D investment, and high development costs.

- There are no significant licensing or regulatory barriers to entry in the IC design industry. Although initial capital requirements for hardware and software are relatively low, operating costs, particularly for highly skilled labour, are substantial. Considerable time and effort are required for R&D, testing, and validation before a product reaches the market. Long-term success depends on maintaining consistent sales, establishing a proven track record, competing effectively with domestic and global IC design houses, and fostering strong relationships with foundries to secure PDK access.

- In Malaysia, it is estimated that there are fewer than 10 companies engaged in IC design, covering both older and advanced technologies. Globally, as of the date of this report, it is estimated that 354 IC design IP providers offer one or more IP blocks, including 26 for double data rate (DDR) memory, 8 for high-bandwidth memory (HBM), and 9 for Network-On-Chip (NoC) IPs, which are areas in which SkyeChip Group is involved. *(Source: Vital Factor analysis)*

8. INDUSTRY SIZE AND SHARE

- SkyeChip Group operates in the global market, mainly serving foreign markets.

2024 – Global	Industry size [(a)] (RM billion)	SkyeChip Group	
		Revenue (RM million) [(b)]	Market share
IC design revenue	1,079.4[(1)]	119.5[(2)]	Less than 1% [(3)]

Source: (a) Vital Factor analysis; (b) SkyeChip Group. (1) Based on the global sales value of IC design in 2024, converted based on BNM exchange rate. (2) SkyeChip Group's revenue for the financial year ended 31 March 2025 is used as a proxy for calendar year 2024. (3) ((2) divided by (1)) x 100%.

- The large global IC design market creates opportunities for Malaysian and foreign IC design companies.

9. INDUSTRY OUTLOOK AND PROSPECTS

The outlook for the IC design industry is shaped by a combination of technological trends, market dynamics, policy support, and geopolitical factors. Key factors include the following:

Operational landscape

- **Technological advancements**: Rapid technological progress is a defining feature of the IC design industry. Design complexity has grown dramatically, moving from 3-micron nodes in 1987 to 2nm nodes in 2025, with ongoing R&D on technologies below 2nm. This requires extensive verification and testing to ensure design reliability. Achieving reliability at such advanced nodes requires extensive verification and testing, supported by advanced EDA tools, PDKs from foundries, and validated IP libraries to accelerate development. Continued advancements will enable a broader range of applications in consumer electronics, industrial automation, AI, autonomous vehicles, and IoT, driving sustained demand for sophisticated and advanced IC designs.

- **Shifting market dynamics**: Automation, AI, edge computing, and IoT are reshaping IC design requirements, creating strong demand for custom chips such as ASICs and for higher-speed interfaces to support data-intensive applications. The rollout of 5G, offering speeds up to 20 times faster than 4G, and the emergence of 6G deployments are accelerating the need for high-performance ICs with greater bandwidth efficiency and lower power consumption. Increasing adoption of generative AI and large-scale data analytics further drives demand for specialised accelerators and memory interfaces.

- **Government incentives in Malaysia**: Malaysia's IC design industry benefits from multiple policy initiatives and funding programmes:
  - In March 2025, Malaysia announced a 10-year collaboration worth USD250 million (approximately RM1.1 billion) with ARM Holdings Plc for IP licensing, including seven ARM Compute Sub System (CSS) and 25 ARM Flexible Access (AFA) tokens, and to train 10,000 engineers. This is aimed at developing domestic AI chip capabilities and establishing a comprehensive semiconductor ecosystem spanning from front-end IC design to back-end assembly. *(Source: Ministry of Economy)*
  - In 2024, there were some State governments' initiatives to promote and accelerate the growth of the semiconductor industry, particularly IC design. These include the establishment of IC Design Park by Selangor Information Technology and Digital Economy Corporation, as well as the Penang Silicon Design @5km+ initiative launched by Penang State Government *(Source: MIDA)*.
  - Budget 2026 allocated RM5.9 billion for cross-ministry research, development, commercialisation, and innovation activities *(Source: Ministry of Finance (MoF))*.

- National Semiconductor Strategy (NSS) aims to attract RM500 billion in investments, focusing on domestic IC design, advanced packaging, and foreign investment in wafer fabrication. Under Budget 2026, RM500 million loan funds will be provided to support high-value-added activities under NSS, such as R&D activities *(Source: MoF)*.
- MIDA encourages companies in the E&E sector to engage in IC design, offering tax exemptions for eligible activities.
- New Industrial Master Plan 2030, launched in 2023, focuses on strengthening IC design capabilities and growth in sectors like electric vehicles, renewable energy, and AI.

- **Global government support for IC industry development**: Some technology-related policies and expenditures in foreign countries are also driving the global IC industry, which are as follows:
  - **China**: The Chinese government aims to achieve greater semiconductor self-sufficiency, particularly in response to increasing USA export controls. Between 2022 and 2024, national expenditure on science and technology in China grew at a CAGR of 7.1%, reaching CNY1.2 trillion (RM731.4 billion) in 2024 *(Source: National Bureau of Statistics of China)*.
  - **Taiwan**: The Taiwanese government is promoting the development of a "Silicon Valley" in Southern Taiwan. Government expenditure on education, science, and culture grew at a CAGR of 10.4% from 2022 to 2024, reaching TWD538.1 billion (RM76.7 billion) in 2024 *(Source: MoF Taiwan)*.
  - **USA**: The CHIPS and Science Act, passed in 2022, provides substantial federal funding for semiconductor manufacturing and research. Federal R&D expenditure grew at a CAGR of 8.2% between 2021 and 2023, reaching USD172.3 billion (RM786.0 billion) *(Source: National Center for Science and Engineering Statistics, USA)*.
  - **Japan**: The Japanese government has introduced strategies to revitalise its semiconductor industry, including plans to produce next-generation 2nm chips. In 2023, the government allocated 1.85 trillion JPY (RM60.1 billion) for semiconductor-related capital expenditures, R&D investment, and the development of advanced materials and components *(Source: Ministry of Economy, Trade, and Industry, Japan)*.
  - **Vietnam**: In September 2024, Vietnam announced a strategy for developing its semiconductor industry through 2030, with a vision for 2050. The strategy focuses on chip development, specialised electronics, and talent cultivation. Government investment in professional, scientific, and technical activities declined at an average annual rate of 3.5% from 2022 to 2024, amounting to VND22.2 trillion (RM4.1 billion) in 2024 *(Source: Ministry of Science and Technology Vietnam; General Statistics Office Vietnam)*.

Threats and challenges

- As IC design is a digital, knowledge-based service, much of the design process can be performed remotely from anywhere with reliable internet access. This creates a highly competitive global marketplace, where companies in lower-cost regions may compete on price and turnaround time.
- However, the industry is affected by geopolitical tensions, including trade restrictions imposed by various countries. These restrictions, covering high-end chip exports and advanced fabrication equipment (such as extreme ultraviolet lithography systems), have an impact on access to advanced technologies and disrupt the global supply chain for advanced-node ICs. Trade barriers and sanctions can restrict market access for IC design companies in certain countries, creating uncertainty in cross-border collaborations.
- Shortage of experienced IC design engineers, particularly in advanced-node specialisations and high-speed interface design, is a critical bottleneck. Recruitment, training, and retention of skilled personnel are challenging, especially as global demand for semiconductor talent rises.
- Continuous innovation requires sustained investment in EDA tools, IP licensing, and prototype validation. Escalating costs, especially for advanced design and specialised verification tools, can erode margins for smaller players.