

8. INDEPENDENT MARKET RESEARCH REPORT



22 February 2026

The Board of Directors
SQ Advanced Interconnect Berhad
No. 99, Lebuhraya Kampung Jawa
Bayan Lepas Industrial Estate
11900 Bayan Lepas
Penang

Dear Sirs and Madams

Independent Industry Assessment of the Manufacturing of Flexible Printed Circuit Boards and Integrated Circuit Substrates

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 industry assessment of the manufacturing of flexible printed circuit boards and integrated circuit substrates for inclusion in the prospectus of SQ Advanced Interconnect 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.

Please be aware that our report may include disclosures, assessments, opinions, and forward-looking statements that are subject to hitherto unknown or undisclosed information, uncertainties, and contingencies. These statements are based on secondary information and primary market research, and 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 IPO and listings of their shares on Bursa Securities.

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Date of Report: 22 February 2026

INDEPENDENT INDUSTRY ASSESSMENT OF THE MANUFACTURING OF FLEXIBLE PRINTED CIRCUIT BOARDS AND INTEGRATED CIRCUIT SUBSTRATES

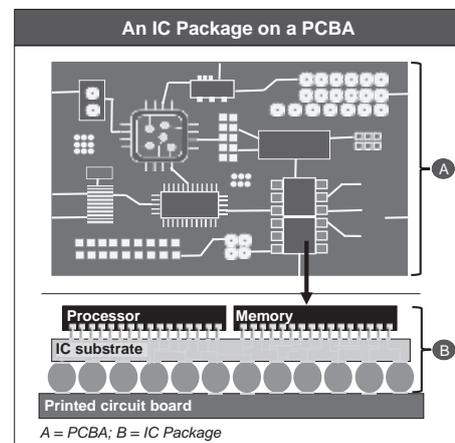
1. OVERVIEW OF SQAI GROUP'S BUSINESS AND REPORT PARAMETERS

- SQ Advanced Interconnect Berhad, together with its subsidiaries (SQAI Group), is principally involved in the flexible printed circuit board (FPC) manufacturing and assembly, as well as integrated circuit (IC) substrate manufacturing. The Group has manufacturing facilities in Malaysia and Chinese Mainland, primarily serving customers in the communication devices, semiconductors, medical devices, consumer electronics, automotive electronics, and industrial equipment manufacturing industries. The top four markets based on product shipment destinations of SQAI Group are Malaysia, Chinese Mainland, Japan, and the United States of America (USA). These shall form the focus of this report.

2. INDUSTRY OVERVIEW

2.1 Overview of IC, IC Substrate, and Printed Circuit Board

- A printed circuit board (PCB) is the base that provides mechanical support for the placement of electronic components, including packaged semiconductor devices, and establishes electrical connections between them. A PCB that has been populated with and electrically connected to these components is a PCB assembly (PCBA). A PCBA functions as an integrated electronic subsystem that performs specific control, processing, power, or communication tasks and serves as a fundamental building block in electronic products across consumer, industrial, automotive, medical, and computing applications.



- PCBs are generally classified into the following:
 - **Rigid PCB**, which is made from a solid laminate material, commonly a glass-fibre-reinforced epoxy, that does not bend. They are widely used in applications where mechanical stability and structural support are critical, such as computers and industrial equipment.
 - **Flexible PCB (FPC)** uses a bendable substrate, such as polyimide, allowing it to conform to compact and irregular shapes or be subject to constant bending. They are commonly used in wearable devices, smartphones, cameras, and medical equipment.
 - **Rigid-flex PCB** combines both rigid and flexible materials into a single circuit board. This combination reduces interconnects and provides greater design flexibility for complex, high-density electronic applications.

Note: SQAI Group manufactures FPC and rigid-flex PCB.

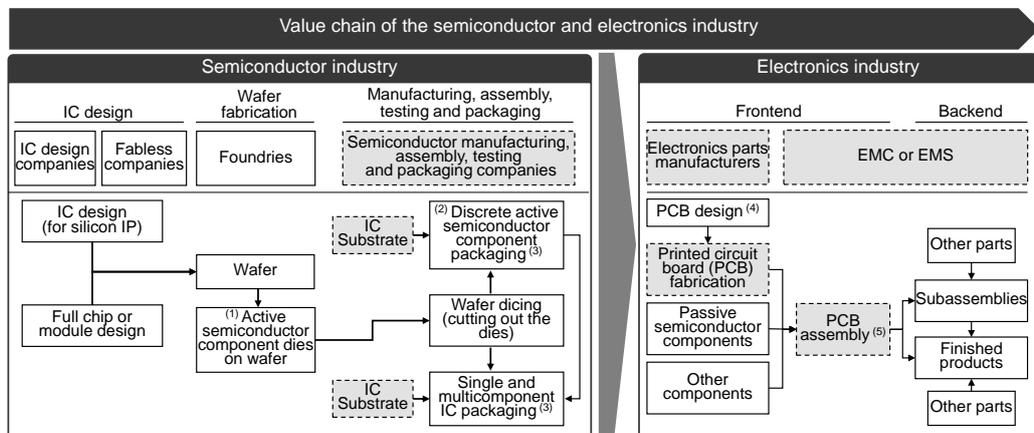
- PCBs are manufactured by laminating one or more copper layers onto an insulating substrate, which can be rigid or flexible. These copper layers undergo photolithography to define the circuit pattern, followed by an etching process to remove excess copper. The remaining patterned copper traces serve as conductive pathways routing electrical current between the electronic components. Electronic components are then mounted onto the PCB using surface-mount technology (SMT), through-hole technology (THT), or a combination of both, to form a PCBA.
- Integrated circuits (ICs), also known as chips, are the key semiconductor devices found on most PCBs. They perform functions such as processing data, amplifying signals, or storing information. An IC is fabricated by integrating millions, and in modern devices often billions, of transistors along with other tiny components such as resistors and capacitors, onto a small piece of semiconductor material, typically silicon. These components are precisely connected to form functional circuits within a very compact area. The silicon piece on which the circuits are built is called a die.

8. INDEPENDENT MARKET RESEARCH REPORT (CONT'D)



- Before ICs can be mounted onto a PCB, they undergo IC packaging. The IC die is first attached to a **substrate** or lead frame, which provides mechanical support and converts the die's tiny input/output (I/O) pads into a layout suitable for external connections. The assembly is then encapsulated within a protective package that shields the IC from physical damage and environmental factors while maintaining electrical connectivity. This entire process, from die attachment to substrate to encapsulation, forms the IC packaging process. **Note:** SQA I Group manufactures IC substrates.
- Advances in IC packaging technologies further enhance device performance, miniaturisation, and integration. These techniques enable the integration of multiple dies or components, improve electrical and thermal characteristics, and optimise space utilisation, supporting the development of modern high-speed, compact, and highly functional electronics.

2.2 Value Chain of the Semiconductor and Electronics Industry



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).

SQA I Group operates within these segments.

- IC substrates are essential input materials for semiconductor assembly, testing, and packaging (ATP) companies, positioned at the backend of the semiconductor industry value chain. FPC manufacturers are positioned at the frontend of the electronics industry.
 - **IC design companies:** Develop circuit architectures and IC designs that can be integrated into larger ICs 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.
 - **Semiconductor manufacturing and ATP companies:** This includes companies that are involved in manufacturing IC substrates and those that are involved in separating individual dies from wafers, assembling them into packaged chips, and conducting testing to ensure quality before shipment.
 - **Electronics part manufacturers:** Produce essential electronic components, such as capacitors, resistors, connectors, and PCBs (including FPCs), required for use in final electronic products.
 - **EMC/EMS Providers:** Assemble semiconductors, electronic components, and other parts into fully functional electronic products.

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3. GLOBAL TECHNOLOGY ADVANCEMENTS

- The semiconductor and electronics industry is rapidly evolving due to the demand for smaller, faster, and more energy-efficient devices, alongside the rise of artificial intelligence (AI) and machine learning (ML) applications. This growth is driven by several key factors:

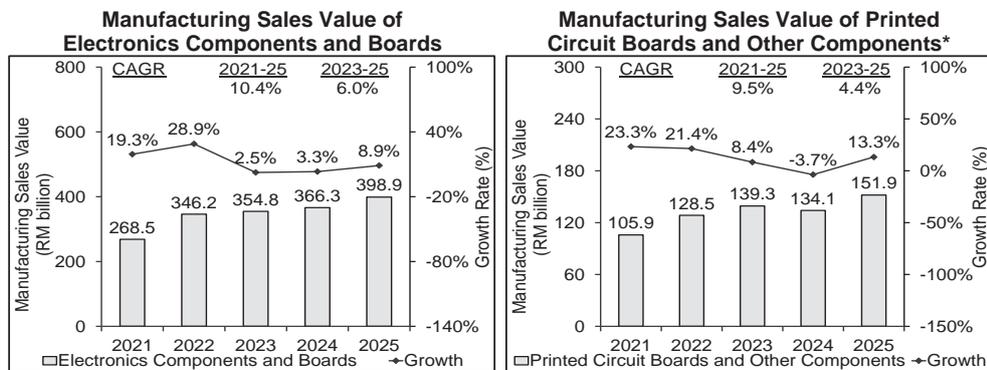
Consumer electronics:	FPCs and IC substrates are vital to devices such as smartphones, wearables, and laptops, providing electrical pathways and enabling compact designs for improved performance.
AI and ML:	They rely on high-density interconnects and multi-layer FPCs/IC substrates to integrate AI accelerators, ensuring fast, efficient power delivery for AI tasks.
High-performance computing (HPC):	Advanced IC substrates with high interconnection density and thermal management capabilities are essential for handling heavy HPC system workloads.
Communication systems:	FPCs and IC substrates support high-speed signal transmission in routers, modems, and 5G/6G stations, maintaining signal integrity and low latency.
Automotive electronics:	In electric vehicles (EVs) and automotive systems, FPCs and IC substrates enable reliable electrical connections, compact layouts, and resistance to mechanical/thermal stresses.
Industrial/medical equipment:	These technologies are used in automation, robotics, IoT, and medical devices, ensuring stable, reliable interconnections for long-term performance.

- Key developments in the FPC and IC substrate manufacturing include the following:
 - Miniaturisation and high-density interconnect (HDI):** The semiconductor and electronics industry is moving towards smaller, more compact designs with finer circuitry, smaller vias, and higher layer counts. This supports increased I/O density, faster data rates, and smaller form factors. Achieving this requires advanced patterning techniques, microvias, and high-performance substrate materials.
 - Advanced packaging:** FPCs and IC substrates are being designed to support advanced packaging methods like flip-chip, fan-out, system-in-package, and heterogeneous integration. These technologies allow multiple dies with different functions and materials to be integrated into a single package. This increases demand for substrates with high routing density, low electrical loss, and precise dimensional control.

4. SEMICONDUCTOR AND ELECTRONICS MANUFACTURING INDUSTRY PERFORMANCE

4.1 Malaysia

- SQAI Group manufactures FPC and IC substrates in Malaysia. PCBs, including FPCs, are part of the broader category of electronics components and boards. Hence, the performance of Malaysia's semiconductor and electronics manufacturing industry is a critical indicator of the FPC and IC substrate manufacturing segment.



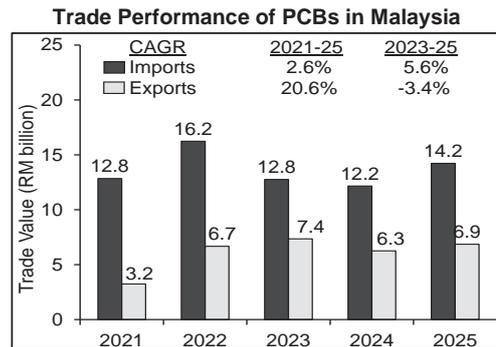
(Source: Department of Statistics Malaysia (DoSM)) **Note:** No further segmentation is available. * Other components include electrical capacitors and resistors, as well as display components.

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- Between 2023 and 2025, the manufacturing sales value of electronics components and boards in Malaysia grew at a compound annual growth rate (CAGR) of 6.0%. The growth was in line with the 22.6% increase in global semiconductor sales during the same period (Source: Vital Factor analysis). In 2025, the manufacturing sales value of electronic components and boards increased by 8.9% to RM398.9 billion, primarily driven by growth in PCBs and other components, which expanded by 13.3%, followed by the largest segment, diodes, transistors, and similar semiconductor devices, as well as electronic IC micro-assemblies, which rose by 8.3%. (Source: DoSM)

- In terms of trade performance, Malaysia's PCB imports grew at a CAGR of 5.6% between 2023 and 2025, while PCB exports declined at an average annual rate of 3.4% over the same period. Malaysia has remained a net importer of PCBs for the past five years, with the trade deficit reaching RM7.4 billion in 2025. Chinese Mainland was the largest contributor to PCB imports into Malaysia, accounting for 49.4% of total imports. In contrast, Chinese Mainland and Singapore were the top two destinations for Malaysia's PCBs in 2025, each accounting for 23.3% and 22.4%, respectively. (Source: DoSM) This deficit is largely attributable to Malaysia's strategic role in the downstream segment of the semiconductor and electronics industry, particularly in PCBA, which relies heavily on PCBs as key input material.

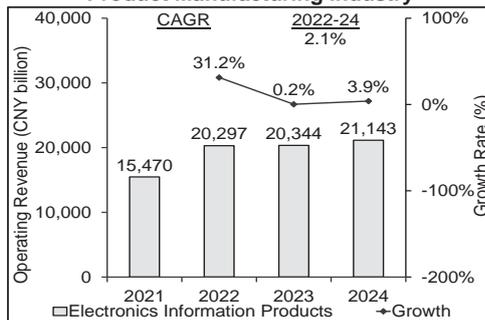


(Source: DoSM)

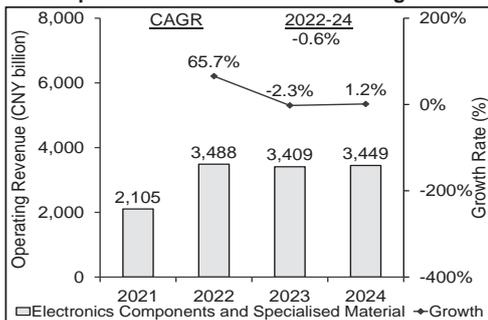
4.2 Chinese Mainland

- Chinese Mainland is a major market for semiconductors and electronics due to its large domestic consumption. SQAI Group has a FPC manufacturing facility in Chinese Mainland. Between 2022 and 2024, operating revenue in Chinese Mainland's electronics information product manufacturing industry grew at a CAGR of 2.1%, mainly driven by a 6.2% growth in the communication equipment manufacturing sector's operating revenue. (Source: MIIT, the People's Republic of China (PRC))

Operating Revenue of Electronics Information Product Manufacturing Industry



Operating Revenue of Electronics Components and Specialised Material Manufacturing Sector



(Source: Ministry of Industry and Information Technology (MIIT), PRC) Notes: (1) Electronics components and specialised material manufacturing sector is part of the broader electronics information product manufacturing industry. (2) Latest available data.

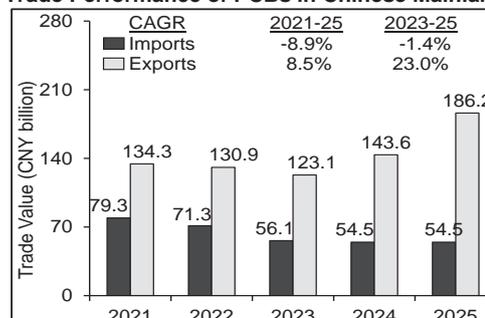
- In Chinese Mainland, FPC manufacturing is categorised as part of the electronics components and specialised material manufacturing sector. Between 2022 and 2024, the operating revenue of this sector declined at an average annual rate of 0.6%, partly due to the high base effect in 2022, when operating revenue surged by 65.7% compared to 2021. In 2024, the operating revenue of the electronics components and specialised material manufacturing sector grew by 1.2% to CNY3.4 trillion (RM2.2 trillion at CNY1 = RM0.6358). (Source: MIIT and Bank Negara Malaysia (BNM))
- Chinese Mainland has been a net exporter of PCBs over the past five years. Between 2023 and 2025, the import value of PCBs declined at an average annual rate of 1.4%, while the export value of PCBs increased at a CAGR of 23.0%. In 2025, the trade balance of PCBs remained surplus at

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CNY131.7 billion (RM78.5 billion at CNY1 = RM0.5958). Imports whose products originally came from Chinese Mainland accounted for the largest share at 24.2%, followed by Japan and Taiwan at 22.3% and 21.1%, respectively. In terms of exports, Hong Kong, Vietnam, and Taiwan were Chinese Mainland's top three destinations for PCBs, each accounting for 29.0%, 16.2%, and 15.1%, respectively. (Source: GACC, PRC and BNM)

Trade Performance of PCBs in Chinese Mainland



(Source: General Administration of Customs of the People's Republic of China (GACC), PRC)

5. DEMAND AND DEMAND DEPENDENCIES

- SQAI Group primarily ships its products to Malaysia, Chinese Mainland, Japan, and the USA, across several sectors, including communication devices, semiconductors, medical devices, consumer electronics (primarily photographic equipment), and automotive electronics manufacturing. As such, the performance of these end-user industries in respective locations affects the demand.

5.1 Malaysia

Manufacturing Sales Value of Selected E&E Products and Motor Vehicles

RM million	Irradiation* and medical equipment	Communication equipment	Photographic^ equipment	Semiconductors@	Motor vehicles
2021	7,829	14,469	1,682	154,125	38,540
2022	5,147	14,515	2,249	206,533	43,437
2023	5,382	20,566	2,794	200,443	49,965
2024	5,746	25,357	3,197	209,293	51,272
2025	6,161	24,384	4,052	226,605	44,471
2021-25 CAGR	(5.8%)	13.9%	24.6%	10.1%	3.6%
2023-25 CAGR	7.0%	8.9%	20.4%	6.3%	(5.7%)

(Source: DoSM) **Notes:** No further segmentation is available. * Include non-medical purpose irradiation equipment. ^ Include optical instruments, magnetic, and optical media. @ Include diodes, transistors, and other semiconductor components, as well as electronic ICs and micro assemblies.

- Malaysia represents the major market of SQAI Group. In 2025, the manufacturing sales value of photographic equipment grew the most, up by 26.7%. This was followed by the manufacturing sales value of semiconductors at 8.3%, and irradiation and medical equipment at 7.2%, while the manufacturing sales value of communication equipment and motor vehicles declined by 3.8% and 13.3%, respectively. (Source: DoSM)

5.2 Chinese Mainland

- Chinese Mainland is SQAI Group's largest market after Malaysia. Between 2022 and 2024, the operating revenue of companies manufacturing communication equipment and electronic devices increased at CAGRs of 6.2% and 4.1%, respectively. In contrast, operating revenue of audio-visual equipment manufacturers reduced at an average annual rate of 0.5% over the same period. In 2024, operating revenue of the communication equipment, audio-visual equipment, and electronic devices manufacturing sectors grew by 9.6%, 4.2%, and 13.7%, respectively (Source: MIIT, PRC).

Operating Revenue of Selected Electronics Information Product Manufacturing Sectors

CNY billion	2021	2022	2023	2024	'22-'24 CAGR (%)
Communication Equipment	4,142.8	4,239.4	4,362.4	4,780.1	6.2
Audio-Visual Equipment*	754.6	699.9	665.8	693.5	(0.5)
Electronic devices^	2,966.5	3,369.9	3,211.9	3,652.5	4.1

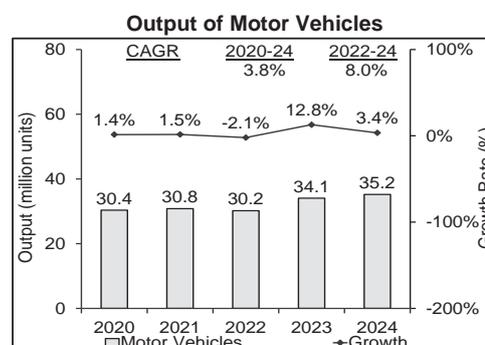
(Source: MIIT, PRC) **Notes:** (1) No further segmentation is available. (2) Latest available data.

* Photographic equipment is part of this broader category. ^ Include semiconductors, integrated circuits, and others

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- In 2024, the sales revenue of new products in the medical equipment industry increased by 1.4% to CNY534.2 billion (RM339.6 billion at CNY1 = RM0.6358) (Source: National Bureau of Statistics of China, PRC and BNM). The sales revenue of new products refers to revenue generated by products that are newly developed or significantly improved within a reference period. This may imply commercialisation efficiency and sustained innovation momentum in Chinese Mainland's medical equipment manufacturing industry.
- SQAI Group also serves automotive makers in Chinese Mainland. Between 2022 and 2024, motor vehicle output increased at a CAGR of 8.0%. In 2024, motor vehicle output reached 35.2 million units.



(Source: National Bureau of Statistics of China, PRC) **Note:** Latest available data.

5.3 Japan

- In 2025, the production value of ICs in Japan increased by 10.6%, followed by motor vehicles by 0.9%. In contrast, the production value of communication equipment and medical equipment declined by 14.9% and 6.9%, respectively in 2025.
- In terms of digital cameras, in 2023 (latest complete information), the production value of digital cameras increased by 14.2% to JPY124.1 billion (RM4.0 billion at JPY100 = RM3.2501) compared to the previous year. (Source: Ministry of Economy, Trade and Industry (METI), Japan, and BNM)

Production Value of Selected E&E Products and Motor Vehicles

JPY billion	Medical equipment [^]	Communication equipment	Digital cameras	Integrated circuits	Motor vehicles [@]
2021	234.8	919.1	103.8	1,268.1	17,746.3
2022	244.6	667.5	108.7	1,343.6	19,381.7
2023	251.0	626.5	124.1	1,197.1	36,581.3
2024	238.4	683.0	67.9*	1,555.1	37,656.0
2025	222.0	581.1	87.3**	1,719.8	38,003.3
2021-25 CAGR	(1.4%)	(10.8%)	n.a.	7.9%	21.0%
2023-25 CAGR	(6.0%)	(3.7%)	n.a.	19.9%	1.9%

(Source: METI, Japan) [^] Includes X-ray equipment, ultrasound machines, and measuring instruments. * Data ranges from January 2024 to July 2024 only, as data from August 2024 to December 2024 is not available. ** Data ranges from July 2025 to December 2025 only, as data from January 2025 to June 2025 is not available. n.a. = not available due to incomplete information. [@] Data for 2023 onwards includes EVs.

5.4 USA

- SQAI Group also ships its products to the USA, and hence, the sectoral output of the end-user industries it supplies to indicates demand for its products. Sectoral output measures the value of goods and services produced by an industry, excluding transactions within the same industry.

Sectoral Output of Selected E&E Products and Motor Vehicles

USD million	Electronic instruments*	Communication equipment	Photographic and other [^] equipment	Semiconductor and electronic components	Motor vehicles
2020	147,121	30,144	22,556	81,166	294,803
2021	151,644	31,444	26,135	89,091	315,308
2022	162,241	38,864	29,838	96,976	385,715
2023	164,628	41,098	31,722	97,359	417,401
2024	169,165	44,222	32,625	99,286	411,169
2020-24 CAGR	3.6%	10.1%	9.7%	5.2%	8.7%
2022-24 CAGR	2.1%	6.7%	4.6%	1.2%	3.2%

(Source: Bureau of Labor Statistics, USA) **Notes:**(1) No further segmentation is available. (2) Latest available data. * Electromedical equipment and apparatus are part of this broader category. [^] Includes commercial and service-sector machinery and equipment.

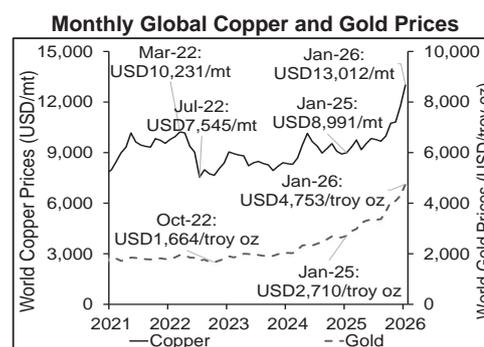
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- Between 2022 and 2024, sectoral output of the electronic instruments, communication equipment, photographic and other equipment, semiconductor and electronic components, and motor vehicles increased by 2.1%, 6.7%, 4.6%, 1.2%, and 3.2%, respectively. In 2024, sectoral output of communication equipment increased by 7.6%, making it the fastest-growing segment in the table above. This was followed by electronic instruments, and photographic and other equipment, both at 2.8%, while semiconductor and electronic components were at 2.0%. In contrast, motor vehicle sectoral output in the USA declined by 1.5% in 2024. (Source: Bureau of Labor Statistics, USA)

6. SUPPLY AND SUPPLY DEPENDENCIES – GLOBAL COPPER AND GOLD PRICES

- Copper-clad laminates are the main substrates used in the manufacture of FPC, while gold-plating is commonly applied as a surface-finishing treatment for FPCs and IC substrates. As such, SQAI Group is exposed to volatility in gold and copper prices.



(Source: Vital Factor analysis) **Note:** The data ranges from January 2021 to January 2026.

- Global copper prices were volatile between 2021 and 2025. The price surged to USD10,231 per metric tonne (/mt) in March 2022, primarily due to supply restrictions from containment measures taken on the COVID-19 pandemic and increased copper demand in Chinese Mainland. Subsequently, the global copper price fell by 26.3% to USD7,545/mt in July 2022 as fears of a global recession spread, coupled with interest rate hikes. Since then, the global copper price has been on an upward trend, peaking at USD13,012/mt in January 2026, indicating a 44.7% premium compared with January 2025. This was primarily due to mining outages in several countries, including Chile and Indonesia, which tightened global supply. (Source: Vital Factor analysis)
- Global gold prices have trended upward between 2021 and 2025. In January 2026, prices surged to USD4,753 per troy ounce (oz), representing a 75.4% increase from January 2025. This sharp rise was partly reflecting ongoing policy uncertainty and financial market dynamics. (Source: Vital Factor analysis)

7. COMPETITIVE LANDSCAPE

- The following companies operate within a similar business environment as SQAI Group, sorted in decreasing order of total revenue. The selection criteria for FPC (including rigid-flex) manufacturers include having manufacturing facilities in Malaysia or Chinese Mainland. Chinese Mainland's manufacturers are publicly listed on the domestic stock exchanges with revenue exceeding RM3 billion. IC substrate manufacturers must have production facilities in Malaysia. This list is not exhaustive:

Company	FYE ⁽¹⁾	Rev ⁽²⁾ (RM mil)	GP/(GL) ⁽²⁾ (RM mil)	GP/(GL) ⁽²⁾ margin	PAT/(LAT) ⁽²⁾ (RM mil)	PAT/(LAT) ⁽²⁾ margin
SQAI Group	May-25	367.7	120.0	32.6%	80.2	21.8%
FPC manufacturers in Malaysia						
MFS Technology (M) S/B ⁽³⁾	Dec-24	358.1	48.4	13.5%	14.9	4.2%
Denshi Maruwa Industries (M) S/B ⁽⁴⁾	Sep-24	12.9	(3.8)	(29.7%)	(6.6)	(51.1%)
FPC manufacturers in Chinese Mainland ⁽⁵⁾						
Suzhou Dongshan Precision ⁽⁶⁾	Dec-24	23,376.9	n.a.	n.a.	689.8	3.0%
Avary Holding (Shenzhen) C/L	Dec-24	22,340.6	n.a.	n.a.	2,300.8	10.3%
Shennan Circuits C/L	Dec-24	11,384.7	n.a.	n.a.	1,194.4	10.5%
Shenzhen Kinwong Electronic C/L	Dec-24	8,048.2	n.a.	n.a.	737.6	9.2%
Victory Giant Technology (HuiZhou) C/L	Dec-24	6,822.6	n.a.	n.a.	733.9	10.8%
Suntak Technology C/L	Dec-24	3,990.7	n.a.	n.a.	192.6	4.8%

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Company	FYE ⁽¹⁾	Rev ⁽²⁾ (RM mil)	GP/(GL) ⁽²⁾ (RM mil)	GP/(GL) ⁽²⁾ margin	PAT/(LAT) ⁽²⁾ (RM mil)	PAT/(LAT) ⁽²⁾ margin
Xiamen Hongxin Electronics ⁽⁷⁾	Dec-24	3,735.1	n.a.	n.a.	70.6	1.9%
Shenzhen FastPrint Circuit Tech C/L	Dec-24	3,698.4	n.a.	n.a.	(337.5)	(9.1%)
Guangdong Goworld C/L	Dec-24	3,659.7	n.a.	n.a.	164.2	4.5%
Olympic Circuit Technology C/L	Dec-24	3,192.8	n.a.	n.a.	405.5	12.7%
IC substrate manufacturers in Malaysia						
Ibiden Electronics Malaysia S/B ⁽⁸⁾	Mar-25	358.6	71.2	19.8%	8.7	2.4%
Sustio S/B ⁽⁹⁾	Dec-24	136.5	(261.7)	(191.7%)	(260.7)	(191.0%)
AT&S Austria Technologie ⁽¹⁰⁾	Mar-25	15.0	(101.8)	(677.3%)	(247.1)	(1644.4%)

FYE= Financial Year Ended; Rev= Revenue; GP= Gross Profit; GL= Gross Loss; PAT= Profit After Tax; LAT= Loss After Tax; mil= million; S/B= Sendirian Berhad; C/L= Company Limited; n.a.= not available.

(1) Latest audited financial data from the Companies Commission of Malaysia, annual reports, and SQA Group. (2) It may include other business activities, products or services at the group or company level. (3) A subsidiary of Victory Giant Technology (HuiZhou) C/L, a listed entity on the Shenzhen Stock Exchange. (4) On 21 February 2025, the shareholders of the company entered into a Sale and Purchase Agreement to dispose of their entire shareholding to Vital Alliance Global Limited, a subsidiary of Yan Tat Group Holdings Limited, which is listed on the Hong Kong Stock Exchange. Upon completion, Vital Alliance Global Limited will assume full control of the company. (5) Conversion from CNY to RM based on BNM's exchange rate of CNY1 = RM0.6358 for 2024. (6) Suzhou Dongshan Precision Manufacturing C/L. (7) Xiamen Hongxin Electronics Technology Group Inc. (8) A subsidiary of Ibiden Co., Ltd, a listed entity on the Tokyo and Nagoya Stock Exchange. (9) A subsidiary of Simmtech Holdings Co., Ltd, a listed entity on the Korea Stock Exchange. (10) AT&S Austria Technologie & Systemtechnik (Malaysia) S/B. A subsidiary of AT&S Austria Technologie & Systemtechnik Aktiengesellschaft, a listed entity on the Vienna Stock Exchange. The company commenced business operations on 1 December 2024.

- Ichia Technologies Malaysia SB, a subsidiary of Ichia Technologies Inc., listed on the Taiwan Stock Exchange, is also engaged in the manufacturing of FPCs. As the company commenced operations in October 2025, its most recent financial statements for the year ended 31 December 2024 do not reflect any operating revenue.

8. BARRIERS TO ENTRY

- The barriers to entry for IC substrate manufacturing are high, especially for Ajinomoto-Build-up Film (ABF) based substrates used in advanced packaging for high-performance semiconductors (mainly used at advanced process nodes with 7 nm and below). For FPCs, the barriers to entry are also high, especially for multi-layer, rigid-flex, and FPCs targeting HDI applications (those in mobile phones and wearables). SQA Group manufactures IC substrates, including ABF-based substrates for advanced packaging. It also manufactures single-layer, double-layer, rigid-flex, and HDI FPCs.
- Some of the barriers to entry for FPC and IC substrate manufacturing are as follows:
 - **High capital intensity:** Establishing IC substrate manufacturing facilities requires significant upfront investment in advanced equipment such as high-precision laminating machines, photolithography equipment, and semiconductor-grade cleanroom facilities. While the capital requirements for FPC manufacturing are comparatively lower, they remain substantial due to the need for cleanroom environments, photolithography equipment, and specialised processing lines equipped with laser drilling, lamination, and precision imaging technologies.
 - **Specialised technical expertise:** FPC and IC substrate manufacturing demands highly specialised design and process capabilities, including ultra-fine line patterning, HDI architecture, precise layer-to-layer alignment, and tight electrical and thermal tolerances, to meet growing customer specifications.
 - **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 barrier.
- There are no significant licensing or regulatory barriers to entry in the FPC and IC substrate manufacturing industry. Long-term success depends on securing long-term customer contracts, establishing a proven track record, and competing effectively with domestic and global suppliers.

8. INDEPENDENT MARKET RESEARCH REPORT (CONT'D)



9. INDUSTRY SIZE AND SHARE

- Some relevant industry statistics and market share of SQAI Group are estimated below:

2024	Industry size ^(a) (RM billion)	SQAI Group	
		Revenue (RM million) ^(b)	Market share ⁽³⁾
Malaysia: Printed circuit boards and other components	134 ⁽¹⁾	212 ⁽²⁾	Less than 1%
Chinese Mainland: Electronics components and specialised materials	2,193 ⁽⁴⁾	156 ⁽⁵⁾	Less than 1%

Source: (a) DoSM and MIIT, PRC; (b) SQAI Group. (1) Manufacturing sales value of printed circuit boards, electrical capacitors and resistors, and display components in 2024. No further segmentation is available. (2) SQAI Group's revenue from Malaysia's operation for the financial year ended 31 May 2025 is taken as a proxy for 2024. (3) $\frac{(b)}{(a)} \times 100\%$. (4) Operating revenue of electronics components and specialised material manufacturing sector in 2024. (5) SQAI Group's revenue from Chinese Mainland's operation for the financial year ended 31 May 2025 is taken as a proxy for 2024.

10. INDUSTRY OUTLOOK AND PROSPECTS

Operational landscape and opportunities

- As the E&E industry operates within a global value chain, **global E&E export** performance directly affects demand for FPCs and IC substrates. In 2024, the global E&E exports increased by 1.6% to USD3,942.8 billion. Chinese Mainland, Hong Kong, the USA, South Korea, and Singapore together accounted for 55.4% of exports (Source: Vital Factor analysis). This concentration of exports indicates a sustained demand base for semiconductor and electronic components, including FPC and IC substrates, from manufacturers serving these countries.
- Global IC sales** are a key indicator of IC substrate demand. Between 2022 and 2024, the global IC sales grew at a CAGR of 6.6% to USD539.5 billion, with 2024 recording a 25.9% increase. In 2025, global IC sales are estimated to increase by 13.4% to USD 611.6 billion, primarily driven by stronger performance in memory and logic components. (Source: Vital Factor analysis) The continuing growth in global IC sales will drive demand for IC substrates.
- The global transition toward **5G** and the early **6G** development are driving structural growth in demand for advanced interconnect solutions with higher bandwidth efficiency, lower signal loss, and superior radio frequency performance. This shift is creating opportunities for IC substrate and FPC manufacturers with proven capabilities in advanced technologies such as ABF, semi-additive processes, coreless architectures, and high-performance FPC and rigid-flex solutions. **Note:** SQAI Group is involved in the above-mentioned FPC and IC substrate capabilities and technologies.
- Rapid expansion of **generative AI** and **data-centre** workloads is accelerating demand for high-layer-count, thermally optimised IC substrates and high-current FPCs. As compute density and power consumption continue to rise, advanced substrates and interconnects are critical for performance and reliability, benefiting manufacturers with scalable HDI platforms, power-delivery integration, and thermal management capabilities. **Note:** SQAI Group manufactures single- and double-layer FPCs, and incorporates HDI features in selected FPCs and IC substrates.
- Shifting market dynamics** driven by automation, AI, edge computing, and high-value IoT applications are increasing the technical complexity of IC substrates and FPCs. These applications require finer line and space geometries, higher interconnect density, and advanced materials to support higher I/O, faster data rates, compact form factors, and improved power and thermal performance. As a result, value is increasingly concentrating among manufacturers with strong process technology, capital discipline, and the ability to meet demanding customer qualification standards, creating a structurally favourable environment for advanced manufacturers.
- Government policies** supporting the semiconductor and electronics industries are expected to drive growth in the FPC and IC substrate manufacturing industries.

8. INDEPENDENT MARKET RESEARCH REPORT (CONT'D)



Malaysia

- The **New Industrial Master Plan 2030** aims to elevate Malaysia's position within the E&E value chain by emphasising front-end activities such as IC design, wafer fabrication, and advanced packaging (*Source: Ministry of Investment, Trade and Industry (MITI)*). Increased activity at the front end of the semiconductor value chain will benefit IC substrate manufacturers, while broader growth in electronics will benefit FPC manufacturers.
- The **National Semiconductor Strategy (NSS)** targets RM500 billion in investments, focusing on domestic IC design, advanced packaging, and foreign investment in wafer fabrication. Under Budget 2026, RM500 million in loan funds will support high-value-added activities under the NSS, including R&D (*Source: Ministry of Finance (MoF)*). The NSS is expected to directly benefit IC substrate manufacturers.
- The Malaysian government actively promotes **local EV** assembly, production, and parts localisation, with a plan to offer a range of localisation incentives to enhance competitiveness in the EV supply chain. These initiatives strengthen domestic manufacturing and provide opportunities for local parts suppliers. (*Source: MITI*)

PRC

- **Made in China 2025** is a national industrial strategy designed to transform PRC into a global leader in advanced manufacturing while reducing reliance on foreign technologies. The initiative prioritises sectors such as next-generation information technology, which includes semiconductors. It encourages localisation of critical materials and equipment, promoting higher-precision and advanced production processes. (*Source: MIIT, PRC*). Local manufacturers, including SQAI Group, are likely to benefit from the localisation of semiconductor and electronics products.
- The **Fourteenth Five-Year Plan (2021-2025)** reinforces PRC's focus on technological self-sufficiency and enhanced manufacturing capabilities, targeting strategic emerging industries to contribute over 17% of GDP by 2025. This framework provides sustained support for advanced electronic components, smart manufacturing, and supply-chain resilience, aligned with sectors such as consumer electronics, electric vehicles, and communication networks. (*Source: National Development and Reform Commission, PRC*)
- **Technological advancements**, from 3-micron nodes in 1987 to 2nm in 2025, combined with electronics miniaturisation and the need for HDIs, have significantly increased manufacturing complexity. These developments are driving wider adoption across consumer, industrial, medical, AI, autonomous vehicle, communications, HPC, and IoT applications, sustaining demand for advanced ICs, FPCs, and IC substrates as critical interconnects.

Threats and challenges

- As of the date of this report, the USA imposes a 19% reciprocal **tariff** on most goods imported from Malaysia, although certain semiconductor products are exempted. Exports from Chinese Mainland to the USA, including PCBs and related electronics, remain subject to cumulative tariff measures. Depending on product types, effective duty rates may range from approximately 20% to over 50%. While exemptions exist for 2-layer and 4-layer rigid PCBs, they do not extend to FPCs or IC substrates. On 20 February 2026, the USA announced a temporary 10% global tariff, effective 24 February 2026 for 150 days, with a subsequent proposal to increase the rate to 15%. The extent to which this temporary tariff will operate, considering existing country-specific tariff measures, remains unclear as of the date of this report. These tariffs may reduce the price competitiveness of manufacturers from Malaysia and Chinese Mainland exporting to the USA.
- Ongoing **technological advancements** compel manufacturers to make significant investments in R&D and advanced manufacturing infrastructure to stay at the forefront of innovation. Manufacturers that fail to keep pace risk losing their competitive edge. Sustaining this advantage requires continuous investment in both equipment and skilled personnel.
- Volatility in key **input material prices**, such as copper and gold, poses operational risks for manufacturers. Ongoing price fluctuations, driven by supply constraints, global economic and geopolitical uncertainties, and financial markets, are expected to increase cost pressures for those who rely on these materials.