



Apacer Technology Inc.

2024 Annual Report

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<https://www.apacer.com>

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N/A
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One. Letter to Shareholders

Dear Shareholders:

Looking back to 2024, the global economy was facing many challenges during the recovery process, and political factors had a significant impact on the economic situation. In view of the global market, inflation and geopolitical conflicts continued to undermine the supply chain and increased the cost of business operation. The political turmoil in some countries, the U.S. Fed's interest rate cuts and the U.S. dollar's volatility have all made the global trade market extremely volatile, which in turn affected the recovery of individual markets or product demands, and forced enterprises to reduce procurement scale or defer their needs. Therefore, although the market for memory products has boomed in the second half of the year, customers' reducing needs in the industrial control field resulted in falling profits for the whole year.

The 2024 operating revenue of the Group was NT\$7.84 billion; the gross operating profit of the Group was NT\$1.30 billion; the consolidated net profit after tax was NT\$290 million and the earnings per share after tax was NT\$2.18. The following is an outline of the operating performance as well as operation and research results in FY 2024 and the operational plan for FY 2025:

I. Consolidated operating performance in 2024:

Unit: NT\$ thousand

Item	2024	2023	Gain (Loss)
Group's operating revenue	7,837,159	7,631,446	205,713
Group's gross operating profit	1,301,205	1,778,642	(477,437)
Group's net operating profit	306,911	710,534	(403,623)
Group's net non-operating revenue	42,101	37,855	4,246
Group's net profit after tax	291,950	604,712	(312,762)
Attributable to owners of the parent company	278,956	553,046	(274,090)
Attributable to non-controlling interests	12,994	51,666	(38,672)
Earnings per share after tax (NT\$)	2.18	4.51	(2.33)

II. 2024 operation and research results:

The recognitions for the Company's operation and brand are summarized as follows:

1. The Company was recognized by the 10th Corporate Governance Appraisal and ranks in the top 5% of companies with a market value between NT\$5 billion and NT\$10 billion.
2. Apacer's technology products have won the EE Awards Asia Product Award for three consecutive years.
3. The Company was shortlisted for the Best Taiwan Global Brands.
4. Again, we won the "Golden Award" under the "Corporate Sustainability Report of TCSA" category for seven consecutive years.
5. The Company was awarded the Commonwealth Talent Sustainability Award.

In terms of research and development, we were constantly dedicated to developing product solutions and technologies that meet market needs. As of the end of 2024, Apacer has received or filed a total of 235 patents and applications in Taiwan and other countries. For the security of the embedded system, the Company developed the Write Once Read Many (WORM) technology; launched dedicated CAMM2 and DDR5 UDIMMs and SODIMMs designed for AI PCs; continued to refine technologies such as CoreRescue and CoreSnapshot Series which are designed for data protection; and, in consideration of various applications, launched a variety of products that meet military vibration and impact certification standards. In addition, the overall performance of the smart IoT solutions was excellent, covering diverse solutions such as ESG energy/environmental monitoring management, active smart disaster prevention system and smart mobility testing equipment. Many customers recognized the one-stop service of the automatic inspection from software development, mechanism design and assembly to production line integration.

In 2024, we continued to participate in local community's care activities and subscribe to the coffee produced by coffee farmers in the friendly environment of Gukeng. In order to contribute to the preservation of traditional culture, we have sponsored photographers to capture and record the beauty of traditional art for many years. In addition to participating in the activities of the OneSong Orchestra to promote Taiwanese classical music, we raised funds for improvement of medical care in remote areas in response to the invitation of the South-Link Medical Foundation.

III. 2025 business plan:

(I) Operational strategy

Uphold the "Access the best" brand spirit and continue to promote the four major operational thrusts: **focus on key areas, deploy of future technologies, operate digital transformation, and form alliances with strategic partners** to develop the brand's sustainable competitiveness. Realize the vision of becoming a leader in the integration of technology-based information services with digital storage at the core.

(II) Development strategies

The focus of the Company's annual development strategy is "refining industrial control" and "expanding opportunities for sales channels." The main focus of the industrial control products is applications in the fields of IoT, server, network communication, and national defense solidification. The focus in the consumer product field is enhancement and expansion of specific regional consumer channels to increase the market share. In addition, we will continue to work with strategic partners to deploy high value-added products and applications and maintain and deepen cooperation connections.

(III) Core policies on production and sale

We make use of our competitive advantages in the comprehensive supply chain management and high-efficiency digitalized operations to ensure that we will satisfy the needs of customers for a stable supply in spite of market fluctuation, and keep flexible in the adjustment of our production resources.

In terms of sales, we will develop key applications and customers with customized products and value-added technologies, actively increase the number of European and American consumer channels with high-end storage products while optimizing the marketing benefits of the Group by increasing the exposure on social media and

implementing comprehensive marketing data management with the hope of creating synergistic benefits and achieve our annual goals through the triple strategy of products, business and marketing.

Looking ahead to 2025, the overall market and the political and economic situation are full of uncertainties. We will implement the annual business plan based on the brand's core value of “Becoming Better Parters” under “Act on What We Say, Persist in Better Results, Develop Together with Partners” to improve the operating performance and pursue the ESG goals continuously. We hope to share our results with all stakeholders, including shareholders and strategic partners, and strive for excellence together.

Chairman



Managerial officer



Accounting Manager



Two. Corporate Governance Report

I. Information about directors, supervisors, president, vice president, assistant managers, and supervisors of the branches and offices

(I) Director

March 24, 2025

Title	Nationality or country of registration	Name	Date of election	Gender Age	Term	Date of first election	Shares held at time of election		Current shares held		Current shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in Apacer or other companies	Other supervisors, directors or supervisors in a spousal relationship or within the second degree of kinship	
							Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Relation
Chairman	Republic of China	Austin Chen	2024.05.31	Male 75-79 years old	3 years	2001.04.30	1,525,633	1.50%	1,525,633	1.19%	450,268	0.35%	0	0.00%	Apacer Technology Inc., President Acer Inc., Vice President M.B.A., Department of Management Science, National Chiao Tung University	Apacer Technology Inc., Chairman and CSO Apacer Technology (BVI) Inc. Director OIO Photonics Inc., Representative of Legal Person as Director JoinUp Technology Inc., Representative of Legal Person as Director Darwin Precisions Corp., Independent Director	None	None
Vice Chairman	Republic of China	Chen Ming-Ta	2024.05.31	Male 60-64 years old	3 years	2024.05.31	1,990,040	1.55%	1,990,040	1.55%	400,000	0.31%	200,000	0.16%	Apacer Technology Inc., Senior Vice President Most I & T Corporation, President VIA Labs, Inc., Vice Sales President ADATA Technology Co., Ltd., Vice President Silicon Motion, Inc., Vice President UCLA of Ph.D. Master's in Aerospace Engineering, National Cheng Kung University Bachelor's, Department of Aeronautics and Astronautics, National Cheng Kung University EcoLumina Technologies Inc., Director	Apacer Technology Inc., Vice Chairman & President UD Info Corp., Chairman & President FM MEDIA TECHNOLOGY CO., LTD., Director Killion International Limited, Chairman	None	None
Director	Republic of China	Teddy Lu	2024.05.31	Male 70-74 years old	3 years	2008.09.02	5,699,906	5.60%	5,699,906	4.43%	0	0.00%	0	0.00%	Formosa21, Inc., Director iD SoftCapital Inc., Director Stans Foundation, Director Dragon Investment Fund Co., Ltd., Director's Representative YODN Lighting Corp., Chairman Acer Inc., Operation and Investment Management Division, General Manager of Operations M.S. of Electrical Engineering and M.B.A., University of California	Apacer Technology Inc., Director Cyber Power Systems, Inc., Director RDC Semiconductor Co., Ltd., Director YODN Lighting Corp., Director	None	None

Title	Nationality or country of registration	Name	Date of election	Gender Age	Term	Date of first election	Shares held at time of election		Current shares held		Current shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in Apacer or other companies	Other supervisors, directors or supervisors in a spousal relationship or within the second degree of kinship		
							Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
															B.S., Department of Electrophysics, National Chiao Tung University				
Director	Republic of China	Chang Chia-Kun	2024.05.31	Male 55-59 years old	3 years	2012.06.13	196,825	0.19%	471,642	0.37%	145,558	0.11%	0	0.00%	Apacer Technology Inc., President Apacer Memory America Inc., President Baruch College CUNY of M.B.A. NYU Polytechnic School of M.E.E.	Apacer Technology Co., Ltd., Director & CEO Apacer Technology B.V., Director Apacer Technology Japan Corp., Director Apacer Electronic (Shanghai) Co., Ltd., Representative of Legal Person as Director UD info Corp., Representative of Legal Person as Director	None	None	None
Director	Republic of China	George Huang	2024.05.31	Male 75-79 years old	3 years	2018.05.30	1,207,041	1.19%	1,207,041	0.94%	0	0.00%	0	0.00%	Acer Inc., Chairman Acer Inc., CFO Acer Inc., Co-founder PChome Online Inc., Independent Director B.S., Department of Communications Engineering, National Chiao Tung University	BIONET Corp., Independent Director Apacer Technology Inc., Director Les emphants Co. Ltd., Director Motech Industries Inc., Director	None	None	None
	Republic of China	Victor Chien		Male 55-59 years old	3 years	2024.05.31	11,928,000	9.27%	11,928,000	9.27%	0	0.00%	0	0.00%	Zenitron Corporation, Assistant Manager Double Bachelor's Degree in Control Engineering and Management Science, National Chiao Tung University	Acer Inc., President AOPEN INC., Chairman AOPEN SMARTVISION INCORPORATED, Chairman Anxin Tuo Co., Ltd., Chairman AVerMedia Technologies, Inc., Independent Director Apacer Technology Inc., Representative of Legal Person as Director AVerMedia Technologies, Inc., Representative of Legal Person as Director	None	None	None
	Republic of China	Representative: Acer Corporation		N/A	3 years	2024.05.31	0	0.00%	0	0.00%	0	0.00%	0	0.00%	N/A	N/A	N/A	N/A	N/A

Title	Nationality or country of registration	Name	Date of election	Gender Age	Term	Date of first election	Shares held at time of election		Current shares held		Current shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in Apacer or other companies	Other supervisors, directors or supervisors in a spousal relationship or within the second degree of kinship		
							Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Independent Director	Republic of China	Max Wu	2024.05.31	Male 65-69 years old	3 years	2012.06.13	68,325	0.07%	68,325	0.05%	0	0.00%	0	0.00%	Acer America Corp., president Hua Nan Management Consulting Co., Chairman InvestStar Capital, Inc., Partner Spring Foundation of NCTU, Chairman B.S., Department of Electronics Engineering, National Chiao Tung University	Gigastone Corp., Independent Director Apacer Technology Inc., Independent Director Harvatek Corporation, Independent Director YODN Lighting Corp., Director Anec, Inc., Director Cruise10 Co., Ltd., Chairman Birch Venture Capital, Inc., Chairman Allxon Inc., Director			
Independent Director	Republic of China	Philip Peng	2024.05.31	Male 70-74 years old	3 years	2018.05.30	527	0.00%	527	0.00%	0	0.00%	0	0.00%	Acer Inc., Senior vice President/CFO M.B.A., Department of Business Administration, National Chengchi University	Apacer Technology Inc., Independent Director AU Optonics Corp., Independent Director Wistron Corporation, Director Wistron NeWeb Corp., Director Wistron ITS Corp., Director ZIGONG ART SHARING CO., LTD., Director Allxon Inc., Supervisor Cruise10 Co., Ltd., Director SmartStar Technology Inc., Chairman			None
Independent Director	Republic of China	Cathy Han	2024.05.31	Female 60-64 years old	3 years	2021.07.14	0	0.00%	0	0.00%	0	0.00%	0	0.00%	CDIB Capital Group, Department of Business Development, Executive Vice President China Development Industrial Bank, Department of Planning, Executive Vice President China Development Industrial Bank, Department of Principal Investment, Senior Vice President Macroblock Inc., Independent Director MBA, University of Connecticut, USA	Wiwynn Corporation, Independent Director Apacer Technology Inc., Independent Director AU Optonics Corp., Independent Director			None

(II) Major shareholders of the corporate shareholders:

April 2, 2024

Name of corporate shareholders	Major shareholders of the corporate shareholders
Acer Inc.	<p>Yuanta Taiwan High-yield Leading Company Fund Account (4.72%)</p> <p>Hong Rong Investment Co., Ltd. (2.42%)</p> <p>Taipei Fubon Commercial Bank Co., Ltd. is entrusted as custodian of Fuh Hua Taiwan Technology Dividend Highlight ETF Securities Investment Trust Fund Account (2.40%)</p> <p>Stan Shih (1.15%)</p> <p>Labor pension fund under the new system (1.09%)</p> <p>JPMorgan Chase Bank N.A. Taipei Branch is entrusted as custodian of the Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds (1.01%)</p> <p>JPMorgan Chase Bank N.A. Taipei Branch is entrusted as custodian of the J.P. Morgan Securities LLC Investment Account (0.96%)</p> <p>Citibank Taiwan is entrusted as custodian of the ACER Overseas Depository Receipts (0.91%)</p> <p>Citibank Taiwan is entrusted as custodian of Singapore Government Fund Account (0.65%)</p> <p>JPMorgan Chase Bank N.A. Taipei Branch is entrusted as custodian of the Vanguard Emerging Markets Stock Index Fund Account (0.63%)</p>

(III) Major shareholders of the juristic persons which are major shareholders of the corporate shareholders:

April 2, 2024

Name of corporate shareholders	Major shareholders of the corporate shareholders	Shareholding ratio
Hong Jung Investment Co., Ltd.	Tsu-Hua Yeh	20.13%
	Stans Foundation	1.60%
	Suan-Jung Shih	17.25%
	Suan-Hue Shih	26.09%
	Suan-Lin Shih	17.16%
	Fen-Chen Shih	8.93%
	Ching-Yu Yeh	8.84%

(IV) Information on directors

1. Professional qualifications of directors and the disclosure of the Independent Directors' independence:

Qualifications Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
Austin Chen Director	<ul style="list-style-type: none"> Education: M.B.A., Department of Management Science, National Chiao Tung University Experience: Apacer Technology Inc., Chairman & CSO; Apacer Technology Inc., President; Acer Inc., Vice President; Apacer Technology (BVI) Inc. Director; OIO Photonics Inc., Director's Representative; JoiiUp Technology Inc., Director's Representative; Darwin Precisions Corp., Independent Director. None of the circumstances under Article 30 of the Company Act applies to the director. 	-	1
Chen Ming-Ta Director	<ul style="list-style-type: none"> Education: PhD, Aerospace Engineering, University of California, Los Angeles, California, USA. Experience: Apacer Technology Inc., Vice Chairman & President; Apacer Technology Co., Ltd., Senior Vice President; UD info Corp., Chairman & President; FM MEDIA TECHNOLOGY CO., LTD., Director; Killon International Limited, Chairman; Most I & T Corporation, President; VIA Labs, Inc., Vice Sales President; ADATA Technology Co., Ltd., Vice President; Silicon Motion, Inc., Vice President None of the circumstances under Article 30 of the Company Act applies to the director. 	-	0
Teddy Lu Director	<ul style="list-style-type: none"> Education: M.S. of Electrical Engineering and M.B.A., University of California; B.S., Department of Electro-physics, National Chiao Tung University 	-	0

Qualifications Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
	<ul style="list-style-type: none"> Experience: YODN Lighting Corp., Director; Acer Inc., Operation and Investment Management Business Section, General Manager; Dragon Investment Fund Co., Ltd., Director's Representative; Apacer Technology Inc., Director; Cyber Power Systems, Inc., Director; RDC Semiconductor Co., Ltd., Director; JoiiUp Technology Inc., Director; EcoLumina Technologies Inc., Director; Formosa21, Inc., Director; iD SoftCapital Inc., Director; Stans Foundation, Director. None of the circumstances under Article 30 of the Company Act applies to the director. 		
Chang Chia-Kun Director	<ul style="list-style-type: none"> Education: M.B.A., Baruch College, CUNY; M.E.E., NYU Polytechnic School Experience: Apacer Technology Inc., CEO; Apacer Technology Inc., President; Apacer Memory America Inc., President; Apacer Technology Inc., Director; Apacer Technology B.V., Director; Apacer Technology Japan Corp., Director; Apacer Electronic (Shanghai) Co., Ltd, Director's Representative; UD info Corp., Representative of Legal Person as Director None of the circumstances under Article 30 of the Company Act applies to the director. 	-	0
George Huang Director	<ul style="list-style-type: none"> Education: B.S., Department of Communications Engineering, National Chiao Tung University. Experience: Acer Inc., Chairman; Acer Inc., CFO; Acer Inc., Co-founder; PChome Online Inc., Independent Director; BIONET Corp., Independent Director; Apacer Technology Inc., Director; Les enphants Co. Ltd., Director; Motech Industries Inc., Director. None of the circumstances under Article 30 of the Company Act applies to the director. 	-	1

Qualifications Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
Victor Chien Director Representative: Acer Corporation	<ul style="list-style-type: none"> Education: Double Bachelor's Degree in Control Engineering and Management Science, National Chiao Tung University. Experience: Acer Inc., President; AOPEN INC., Chairman; AOPEN SMARTVISION INCORPORATED, Chairman; Anxin Tuo Co., Ltd., Chairman; AVerMedia Technologies, Inc., Independent Director; Apacer Technology Inc., Representative of Legal Person as Director; AVerMedia Technologies, Inc., Representative of Legal Person as Director None of the circumstances under Article 30 of the Company Act applies to the director. 	-	1
Max Wu Independent Director	<ul style="list-style-type: none"> Education: B.S., Department of Electronics Engineering, National Chiao Tung University Experience: Birch Venture Capital, Inc., Chairman; Acer America Corp., President; Hua Nan Management Consulting Co., Chairman; InveStar Capital, Inc., Partner; Spring Foundation of NCTU, Chairman; Gigastone Corp., Independent Director; Apacer Technology Inc., Independent Director; Harvatek Corporation, Independent Director; Cruise10 Co., Ltd, Director; Allxon Inc., Supervisor; YODN Lighting Corp., Director; Antec, Inc., Director. None of the circumstances under Article 30 of the Company Act applies to the director. 	<ul style="list-style-type: none"> The independent director of the Company has completed the Statement of Independent Director upon inauguration, and the Company has reported the independent director qualification checklist (upon election) of the independent director to the competent authority. The independent director meets the Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies. For the independent director qualification form, please refer to (2) Independence of the Board of Directors. 	2
Philip Peng Independent Director	<ul style="list-style-type: none"> Education: M.B.A., Department of Business Administration, National Chengchi University. Experience: SmartStar Technology Inc., Chairman; Acer Inc., Senior Vice President/CFO; Apacer Technology Inc., Independent Director; AU 	<ul style="list-style-type: none"> The independent director of the Company has completed the Statement of Independent Director upon inauguration, and the Company has reported the independent director qualification checklist (upon election) of the independent director to the competent authority. 	1

Qualifications Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
	<p>Optonics Corp., Independent Director; Wistron Corp., Director; Wistron NeWeb Corp., Director; Wistron ITS Corp., Director; ZIGONG ART SHARING CO., LTD., Director; Cruise10 Co., Ltd, Chairman; Allxon Inc., Supervisor.</p> <ul style="list-style-type: none"> • The independent director is the Senior Vice President and CFO of Acer Inc., which satisfies the requirement that at least one of the Audit Committee members shall have the financial/accounting background. • None of the circumstances under Article 30 of the Company Act applies to the director. 	<ul style="list-style-type: none"> • The independent director meets the Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies. For the independent director qualification form, please refer to (2) Independence of the Board of Directors. 	
Cathy Han Independent Director	<ul style="list-style-type: none"> • Education: M.B.A., University of Connecticut, USA. • Experience: CDIB Capital Group, Department of Business Development, Executive Vice President; China Development Industrial Bank, Department of Planning, Executive Vice President; China Development Industrial Bank, Department of Principal Investment, Senior Vice President; Wiyynn Corporation, Independent Director; Apacer Technology Inc., Independent Director; Macroblood Inc., Independent Director; AU Optonics Corp., Independent Director. • The independent director is the Executive Vice President of the Department of Business Development, CDIB Capital Group, which satisfies the requirement that at least one of the Audit Committee members shall have the financial/accounting background. • None of the circumstances under Article 30 of the Company Act applies to the director. 	<ul style="list-style-type: none"> • The independent director of the Company has completed the Statement of Independent Director upon inauguration, and the Company has reported the independent director qualification checklist (upon election) of the independent director to the competent authority. • The independent director meets the Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies. For the independent director qualification form, please refer to (2) Independence of the Board of Directors. 	2

2. Diversification and Independence of the Board of Directors

(1) Diversification of the Board of Directors:

A. Policy of diversification for the formation of the Board of Directors

A policy of diversification for the formation of the Board of Directors has been established based on Chapter 3 “Enhancement of the Function of the Board of Directors” in the Company's “Corporate Governance Best Practice Principles”.

The Company's Board of Directors shall be responsible for the shareholders’ meetings, and all the operations and arrangements of the corporate governance system shall ensure that the Board of Directors complies with the laws and regulations, the Articles of Incorporation, or the resolutions of shareholders’ meetings during the exercising of its authority.

The structure of the Company’s Board of Directors shall be determined by choosing an appropriate number of directors based on the business development scale, the shareholdings of major shareholders, the practical operational needs, and the Articles of Incorporation of the Company.

Diversity shall be considered for the formation of the Board of Directors. An appropriate policy of diversification shall also be devised based on the Board’s operations, type of business and development requirements. This should include but not be limited to the standards in the two following general aspects:

- i. Basic requirements and values: Gender, age, nationality, culture, etc.
- ii. Professional knowledge and skills: Professional background (e.g., law, accounting, industry, finance, marketing, or technology), professional skills, and industry experience, etc.

All members of the Board shall possess the knowledge, skills, and competence necessary to perform their duties. To achieve the ideal goal of corporate governance, the Board of Directors shall, on the whole, possess the following abilities:

- i. Ability to make operational judgments.
- ii. Ability to perform accounting and financial analysis.
- iii. Ability to conduct business management.
- iv. Ability to handle the crisis.
- v. Industrial knowledge.
- vi. International market perspective.
- vii. Ability to lead.
- viii. Ability to make policy decisions.

B. Specific management objectives and implementation of the diversification for the formation of the Board of Directors

The Company’s Board of Directors consists of nine directors (inclusive of three independent directors) with rich experience in various professions, including one female independent director (accounting for 11.11% of all the directors). A candidate nomination system is applied to the nomination and election of directors in accordance with the Articles of Incorporation of the Company. The directors shall be elected at the

shareholders' meeting from the roster of nominees. The 10th Board of Directors of the Company was fully re-elected on May 31, 2024. Therefore, at the time of the re-election, it was still not in compliance with the requirement that one-third of the seats on the Board of Directors be held by directors of the same gender as set out in the revised Guidelines for Matters to be Recorded in the Annual Reports of Public Companies on August 1, 2024 after the re-election. The Company will actively seek a talent pool for directors in the future and strive to increase the possibility of gender diversity among directors.

The members of the Company's Board of Directors come from professional backgrounds in business management, accounting, finance and engineering technology. With different professional backgrounds, they supervise the Company's major decisions in consideration of the international situation, market observation and financial evaluation. Through the professional judgments, they protect the shareholders' equity, enhance the business performance, carry out the functions of independent directors, strengthen the risk management, and ensure the information transparency. With the principle of recusal due to conflict of interest also taken into account, the interests of all the Company's stakeholders are effectively guaranteed. These members help the Company implement the strategies for management and future development properly.

Core items for diversification Name of director	Basic qualifications		Professional background	Industrial experience				
	Nationality	Gender		Accounting and financial analysis	Business management	Venture investment	Engineering technology	Leadership and decision-making skills
Austin Chen	Republic of China	Male	Management		√		√	√
Chen Ming-Ta	Republic of China	Male	Engineering, management		√		√	√
Teddy Lu	Republic of China	Male	Engineering, management		√	√	√	√
Chang Chia-Kun	Republic of China	Male	Engineering, management		√		√	√
George Huang	Republic of China	Male	Engineering, finance	√	√	√	√	√
Acer Inc. Representative: Victor Chien	Republic of China	Male	Engineering, management		√		√	√
Max Wu	Republic of China	Male	Engineering		√	√	√	√
Philip Peng	Republic of China	Male	Management, finance	√	√	√		√
Cathy Han	Republic of China	Female	Management, finance	√	√	√		√

(2) Independence of the Board of Directors:

A. Number and qualifications of the independent directors

The Company appointed three independent directors (accounting for 33.33%) according to the Articles of Incorporation with the candidate nomination system adopted. The candidate qualifications are assessed based on the Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies. The independent directors are elected at the shareholders' meeting from the roster of nominees, and the qualifications of independent directors are shown as follows:

Independent Director Qualifications Form

Name of Independent Director	Max Wu	Philip Peng	Cathy Han
Independent director qualifications			
I. The independent director has any of the following professional qualifications, and experience of more than 5 years:			
1. Lecturer or higher position at a public or private university/college in the department of commerce, law, finance, accounting or any other fields related to our business.			
2. Judge, public prosecutor, attorney, certified public accountant, or any other professional or technical specialists who have passed a national examination and received a certificate in a profession necessary for our business.			
3. Work experience in commerce, law, finance, accounting or any other fields necessary for our business.	√	√	√
II. None of the following circumstances applies:			
1. The independent director meet or met any of the requirements specified in Article 30 of the Company Act.	None	None	None
2. The independent director was, as a government agency or a juristic person or a representative of any of them, elected pursuant to Article 27 of the Company Act.	None	None	None
III. The independent director was or is not any of the following during the two years before being elected:			
1. An employee of the Company or any of its affiliates.	None	None	None
2. A director or supervisor of the Company or any of its affiliates.	None	None	None
3. A natural-person shareholder who held or holds shares, together with those held by his/her spouse, minor children, or held by the person in others' names, in an aggregate amount of one percent or more of the total issued shares of the Company or was or is ranked as one of the top-ten shareholders.	None	None	None
4. A spouse, relative within the second degree of kinship or lineal relative within the third degree of kinship, of a managerial officer under Item 1 or any of the persons under Items 2 and 3.	None	None	None
5. A director, supervisor or employee of any corporate shareholder that directly holds at least 5% of the total shares issued by the Company, or that is ranked as one of the top-five shareholders of the Company, or that has appointed a representative as a director or supervisor of the Company pursuant to Article 27, Paragraph 1 or 2 of the Company Act.	None	None	None
6. If a majority of the Company's director seats or voting shares and those of any other company are controlled by the same person: a director, supervisor, or employee of that other company.	None	None	None
7. If the chairperson, general manager, or person holding an equivalent position of the Company and a person in any of those positions at another company or institution are the same person or are spouses: a director, supervisor, or employee of that other company or institution.	None	None	None
8. A director, supervisor, managerial officer, or shareholder holding five percent or more of the shares, of a specified company or institution with any of the following (1)~(4) conditions that has a financial or business relationship with the Company.	None	None	None
(1) It holds 20 percent or more and no more than 50 percent of the total number of issued shares of the Company.	None	None	None
(2) It holds shares, together with those held by any of its directors, supervisors, and shareholders holding more than 10 percent of the total number of shares, in an aggregate total of 30 percent or more of the total number of issued shares of the Company, and there is a record of financial or business transactions between it and the Company. The shareholdings of any of the aforesaid persons include the shares held by the spouse or any minor child of the person or by the person under others' names.	None	None	None

Name of Independent Director		Max Wu	Philip Peng	Cathy Han
Independent director qualifications				
(3)	It and its group companies are the source of 30 percent or more of the operating revenue of the Company.	None	None	None
(4)	It and its group companies are the source of 50 percent or more of the total volume or total purchase amount of principal raw materials (those that account for 30 percent or more of total procurement costs, and are indispensable and key raw materials in product manufacturing) or principal products (those accounting for 30 percent or more of total operating revenue) of the Company.	None	None	None
9.	A professional individual who, or an owner, partner, director, supervisor, or managerial officer of a sole proprietorship, partnership, company, or institution that, provides auditing services to the Company or any affiliate of the Company, or that provides commercial, legal, financial, accounting or related services to the Company or any affiliate of the Company for which the provider in the past 2 years has received cumulative compensation exceeding NT\$500,000, or a spouse thereof; provided, this restriction does not apply to a member of the remuneration committee, public tender offer review committee, or special committee for merger/consolidation and acquisition, who exercises powers pursuant to the Act or to the Business Mergers and Acquisitions Act or other applicable laws and regulations.	None	None	None
IV.	The number of other public companies where the member also serves as an independent director does not exceed three.	None	None	None
V.	Two or more independent directors have been appointed as per the regulations or the Articles of Incorporation, with no less than one-fifth of the director seats held by the independent directors.	√	√	√

B. Independence among the members of the Board of Directors:

The circumstances set forth in Paragraphs 3 and 4, Article 26-3 of the Securities and Exchange Act do not apply to any member of the Company's Board of Directors.

(V) Information of the President, Vice President, Assistant Manager, and supervisors of departments and branches

March 24, 2025

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relationship
Chairman and CSO	Republic of China	Austin Chen	Male	2012.06.13	1,525,633	1.19%	450,268	0.35%	0	0.00%	Apacer Technology Inc., Chairman & CSO Apacer Technology Inc., President Acer Inc., Vice President M.B.A., Department of Management Science, National Chiao Tung University	Apacer Technology (BVI) Inc. Director OIO Photonics Inc., Representative of Legal Person as Director JoiUp Technology Inc., Representative of Legal Person as Director Darwin Precisions Corp., Independent Director	None	None	None
Director & CEO	Republic of China	Chang Chia-Kun (Note 1)	Male	2014.04.01	471,642	0.37%	145,558	0.11%	0	0.00%	Apacer Technology Co., Ltd., CEO Apacer Technology Inc., President Apacer Memory America Inc., President Baruch College CUNY of M.B.A. NYU Polytechnic School of M.E.E.	Apacer Technology Inc., Director Apacer Technology B.V. Director Apacer Technology Japan Corp. Director Apacer Electronic (Shanghai) Co., Ltd. Representative of Legal Person as Director UD info Corp., Representative of Legal Person as Director	None	None	None
Vice Chairman & President	Republic of China	Chen Ming-Ta (Note 2)	Male	2022.08.01	1,990,040	1.55%	400,000	0.31%	200,000	0.16%	Apacer Technology Inc., President Apacer Technology Inc., Senior Vice President Most I & T Corporation, President VIA Technologies, Inc., Sales Vice President ADATA Technology Co., Ltd., Vice President UCLA of Ph.D.	UD info Corp., Chairman & President	None	None	None
Vice President	Republic of China	Luo Rong-Fa	Male	2020.07.01	141,885	0.11%	0	0.00%	0	0.00%	Apacer Technology Inc., Vice President Apacer Technology Inc., Special Assistant to the President's Office JoiUp Technology Inc., Chairman Master of Graphic Arts and Communications, National Taiwan Normal University	Apacer Technology Japan Corp. Director	None	None	None

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relationship
Vice President	Republic of China	Huang Mei-Hui	Female	2018.08.01	74,491	0.06%	0	0.00%	0	0.00%	Apacer Technology Inc., Vice President of the Sales & Marketing Center Apacer Technology Inc., Senior Head of the Sales & Marketing Center Apacer Technology Inc., Head of the Vertical Market Application BU Apacer Technology Inc., Head of the Asia-Pacific and Taiwan Sales & Marketing Division B.B.A., Department of Business Administration, Tunghai University	UD info Corp., Representative of Legal Person as Director	None	None	None
Vice President	Republic of China	Luo Xue-Ru	Female	2018.08.01	90,552	0.07%	0	0.00%	0	0.00%	Apacer Technology Inc., Vice President of the Fulfillment Center Apacer Technology Inc., Senior Head of the Fulfillment Center Apacer Technology Inc., Head of the Consumer Market Application BU Apacer Technology Inc., COO of the General Operational Resource Division EMBA, National Chengchi University	Kingdom Corporation Ltd., Representative of Legal Person as Director	None	None	None
CTO	Republic of China	Li Jun-Chang	Male	2020.07.01	122,852	0.10%	15,340	0.01%	0	0.00%	Apacer Technology Inc., CTO of the RD & Technical Center Apacer Technology Inc., Senior Head of the RD & Technical Center Apacer Technology Inc., Senior Manager of the R&D Division Apacer Technology Inc., Manager of the Hardware Development Department M.S., Department of Mechanical Engineering, National Taiwan University of Science and Technology	—	None	None	None

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relationship
CFO	Republic of China	Lai Zi-Wen	Female	2013.07.14	54,048	0.04%	0	0.00%	0	0.00%	Apacer Technology Inc., Chief Corporate Governance Officer Apacer Technology Inc., CFO and Spokesperson Apacer Technology Inc., Senior Manager of the Financial Management Division Apacer Technology Inc., Manager of the Accounting Department Taiwan Cement Co., Ltd., Project Leader Teapo Electronic Co., Ltd., Assistant Financial Manager M.B.A., Department of Business Administration, National Cheng Kung University	Apacer Technologies Pvt. Ltd., Director Apacer Electronic (Shanghai) Co., Ltd, Representative of Legal Person as Director Shenzhen Qijing Technology Co., Ltd., Representative of Legal Person as Director Kingdom Corporation Ltd., Representative of Legal Person as Director UD info Corp., Supervisor	None	None	None
Senior Head	Republic of China	Yin Hua-Jun	Female	2020.07.01	110,000	0.09%	0	0.00%	0	0.00%	Apacer Technology Inc., Senior Head of the PM Center Apacer Technology Inc., Senior Manager of the Global Purchasing Division Funtwist Technology Inc., Purchasing Assistant Manager SANDISK TAIWAN LIMITED, Purchasing Assistant Manager FIU of Management Bachelor	—	None	None	None
Senior Head	Republic of China	Yu Yao-tse	Male	2022.01.01	43,144	0.03%	0	0.00%	0	0.00%	Apacer Technology Inc., Senior Head of the Manufacturing & Quality Center Apacer Technology Inc., Head of the Manufacturing & Quality Center Apacer Technology Inc., Senior Manager of the Manufacturing Service Division Apacer Technology Inc., Senior Manager of the Quality & Customer Service Division Apacer Technology Inc., Manager of the After-Sales Service Department Micro-Star International Co., Ltd., Assistant Manager of the After-Sales Service Department Royal Roads University of EMBA	—	None	None	None

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relationship
Accounting manager	Republic of China	Huang Yi-cheng	Male	2022.02.23	11,582	0.01%	0	0.00%	0	0.00%	Apacer Technology Inc., Manager of the Accounting Department Apacer Technology Inc., Assistant Manager of the Accounting Department KPMG Taiwan, Manager Deloitte Taiwan, Assistant Manager B.B.A., Department of Accounting, National Cheng Kung University	—	None	None	None

Note 1: Chang Chia-Kun was promoted to CEO on April 1, 2024 to bear the ultimate management responsibilities continuously.

Note 2: Chen Ming-Ta was promoted to President on April 1, 2024.

(VI) Remuneration for directors, supervisors, President and Vice Presidents in the most recent year

1. Remuneration to directors and independent directors

[illegible]

Note 1: For details regarding the policies, systems, standards, and structure for the remuneration of Independent Directors, as well as the description of the relationship between responsibilities, risks, time devoted, and the amount of remuneration to be paid, please see page 23~24.

Note 2: The remuneration received in the most recent FY by the Company's directors for providing services (e.g. Serving as the consultant but not the employee of the parent company/any of the companies specified in the financial report/invested business, etc.) other than the remunerations disclosed above: None.

Note 3: Chen Ming-Ta took up the post of Vice Chairman on May 31, 2024.

Note 4: Haydn Hsieh was relieved of duty as a director on May 31, 2024.

Note 5: Phison Electronics Corp. was relieved of duty as a director on May 31, 2024.

Note 6: Victor Chien. took up the post of Director on May 31, 2024.

Salary Range Table

Salary range for directors of Apacer	Name of director			
	The total amount of the first four remuneration items (A+B+C+D)		The total amount of the first seven remuneration items (A+B+C+D+E+F+G)	
	Apacer	All companies in financial report	Apacer	All companies in financial report
Less than NT\$1,000,000				
NT\$1,000,000 (incl.)-NT\$2,000,000 (excl.)	Chen Ming-Ta, Teddy Lu, Haydn Hsieh, Phison Victor Chien	Chen Ming-Ta, Teddy Lu, Haydn Hsieh, Phison Victor Chien	Teddy Lu, Haydn Hsieh, Phison, Victor Chien	Teddy Lu, Haydn Hsieh, Phison, Victor Chien
NT\$2,000,000 (incl.)-NT\$3,500,000 (excl.)	Austin Chen, Chang Chia-kun, George Huang, Max Wu, Philip Peng, Cathy Han	Austin Chen, Chang Chia-kun, George Huang, Max Wu, Philip Peng, Cathy Han	George Huang, Max Wu, Philip Peng, Cathy Han	George Huang, Max Wu, Philip Peng, Cathy Han
NT\$3,500,000 (incl.)-NT\$5,000,000 (excl.)				
NT\$5,000,000 (incl.)-NT\$10,000,000 (excl.)				
NT\$10,000,000 (incl.)-NT\$15,000,000 (excl.)			Chen Ming-Ta	Chen Ming-Ta
NT\$15,000,000 (incl.)-NT\$30,000,000 (excl.)			Austin Chen, Chang Chia-kun	Austin Chen, Chang Chia-kun
NT\$30,000,000 (incl.)-NT\$50,000,000 (excl.)				
NT\$50,000,000 (incl.)-NT\$100,000,000 (excl.)				
NT\$100,000,000 or above				
Total	11 people	11 people	11 people	11 people

Note : The legal representative is Acer Corporation.

2. Remuneration for supervisors: N/A

3. Remuneration for President and Vice President

Unit: NT\$

Title	Name	Salary (A)		Retirement pension (B)		Bonus and special allowance (C)		Employee remuneration (D)				The total amount of A, B, C and D, and the percentage in net income after tax		Remuneration from reinvestment businesses other than subsidiaries
		Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Cash amount	Share amount	All companies in financial report	Share amount	Apacer	All companies in financial report	
CEO	Chang Chia-Kun (Note 1)													
President	Chen Ming-Ta (Note 2)													
Vice President	Luo Rong-Fa	13,674,000	15,183,000	497,808	497,808	23,785,000	25,295,000	3,545,000	-	4,035,000	-	41,501,808 14.88%	45,010,808 16.14%	-
Vice President	Huang Mei-Hui													
Vice President	Luo Xue-Ru													

Note 1: Chang Chia-Kun was promoted to CEO on April 1, 2024 to bear the ultimate management responsibilities continuously.

Note 2: Chen Ming-Ta was promoted to President on April 1, 2024.

Salary Range Table

Salary range for the President and Vice President of Apacer	President and Vice President name	
	Apacer	All companies in financial report
Less than NT\$1,000,000	-	-
NT\$1,000,000 (incl.)–NT\$2,000,000 (excl.)	-	-
NT\$2,000,000 (incl.)–NT\$3,500,000 (excl.)	-	-
NT\$3,500,000 (incl.)–NT\$5,000,000 (excl.)	Chen Ming-Ta, Luo Rong-Fa	Luo Rong-Fa
NT\$5,000,000 (incl.)–NT\$10,000,000 (excl.)	Huang Mei-Hui, Luo Xue-Ru	Chen Ming-Ta, Huang Mei-Hui, Luo Xue-Ru
NT\$10,000,000 (incl.)–NT\$15,000,000 (excl.)	-	-
NT\$15,000,000 (incl.)–NT\$30,000,000 (excl.)	Chang Chia-Kun	Chang Chia-Kun
NT\$30,000,000 (incl.)–NT\$50,000,000 (excl.)	-	-
NT\$50,000,000 (incl.)–NT\$100,000,000 (excl.)	-	-
NT\$100,000,000 or above	-	-
Total	5 people	5 people

4. Names of the managers distributing employee remunerations and the distributing status

Unit: NT\$

	Title	Name	Share amount	Cash amount	Total	The total amount in net income after tax (%)
General Manager	Chairman & CSO	Austin Chen	0	7,700,0000	7,700,0000	2.76%
	Director & CEO	Chang Chia-Kun (Note 1)				
	Vice Chairman & President	Chen Ming-Ta (Note 2)				
	Vice President	Luo Rong-Fa				
	Vice President	Huang Mei-Hui				
	Vice President	Luo Xue-Ru				
	CTO	Li Jun-Chang				
	CFO	Lai Zi-Wen				
	Senior Head	Yin Hua-Jun				
	Senior Head	Yu Yao-tse				
	Accounting manager	Huang Yi-cheng				

Note 1: Chang Chia-Kun was promoted to CEO on April 1, 2024 to bear the ultimate management responsibilities continuously.

Note 2: Chen Ming-Ta was promoted to President on April 1, 2024.

5. Comparison and analysis of the total remuneration as a percentage of net income stated in the financial report of Apacer or individual financial reports and paid by Apacer and all the companies in the consolidated report to each of Apacer's directors, supervisors, President, and Vice President in the most recent 2 fiscal years, and description of the policies, standards, and portfolios for payment of the remuneration, the procedures for determining the remuneration, and the association with the operational performance and future risk exposure.

Title	Ratio of total remuneration in 2024 to net income after tax	Ratio of total remuneration of all the companies in the consolidated statements in 2024 to net income after tax	Ratio of total remuneration in 2023 to net income after tax	Ratio of total remuneration of all the companies in the consolidated statements in 2023 to net income after tax
Directors and Independent Directors	3.95%	3.95%	2.96%	2.96%
President and Vice President	14.88%	16.14%	9.79%	10.41%

(1) Rules Governing the Payment of Remuneration to the Company's Independent Directors

To ensure the robust supervisory functions and strengthen the

management capability, the Company's Board of Directors has established the two functional committees: Audit Committee and Remuneration Committee, as per the "Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies." The committees consist of the independent directors based on the Corporate Governance Evaluation indicators, and the remuneration for the functional committee members is determined with reference to the standards of the industry in Taiwan and overseas. The remuneration can be categorized as that to the convener and that to a general member based on the responsibilities, risks and devoted time of the member.

(2) Rules Governing the Payment of Remuneration to the Company's Directors and Managers

A. Director remuneration

The remuneration to the Company's directors is subject to Article 16-1 of the Company's Articles of Incorporation: The Board of Directors is authorized to determine the remuneration proposed by the Remuneration Committee for the directors in consideration of the extent of their involvement in and the value of their contribution to the operations of the Company and the industry average in Taiwan and abroad regardless of whether the Company has profits or losses. Where there is any profit in a fiscal year, no more than 1.4% of the profit shall be appropriated as remuneration to directors. Where the Company has any accumulated loss, the remuneration must be appropriated from the balance after such accumulated loss has been covered. The criteria for allocation of the remuneration must be recommended by the Remuneration Committee to the Board of Directors for approval.

B. Manager remuneration

The remuneration to the Company's managers is subject to Article 20 of the Company's Articles of Incorporation: Where there is any profit in a fiscal year, 4% or more of the profit shall be appropriated as remuneration to employees. Where the Company has any accumulated loss, the remuneration must be appropriated from the balance after such accumulated loss has been covered. The employees' remuneration referred to in the previous paragraph may be distributed in the form of cash or stock. The employees eligible for the distribution may include the employees of the affiliated companies who meet the requirements specified by the Board of Directors.

(3) Rules Governing the Payment of Compensation of the Remuneration to the Company's Directors and Managers

A. Director remuneration

When determining the remuneration to the Company's directors, not only are the Company's overall business performance, the future

operating risks and development trends in the industry, and the industry average in Taiwan and abroad taken into account to provide reasonable remuneration, but also the director's involvement in and contribution to the Company's operations. Relevant performance evaluations and the reasonableness of the remuneration shall be reviewed by the Remuneration Committee and the Board of Directors, and the compensation system is also reviewed from time to time according to actual operations and relevant laws to ensure a balance with the Company's sustainable operation results.

B. Manager compensation

The compensation to the Company's managers includes a fixed salary (a base pay, additional pay, allowances), variable rewards (bonuses, remuneration, stocks) and benefits. The fixed salary is determined based on the educational background, work experience, job description and industry average; the variable rewards are decided according to the Company's business performance and the manager's performance and contribution.

The contents of the Company's performance indicators are mainly related to the performance of annual business targets, including the achievement rate, profit margin, growth rate or business results, and supplemented by weight adjustments. The performance indicators are established according to global development trends, internal and external market environments, and government regulations and policies every year. The Company conducts performance evaluations and interviews every six months to carry out necessary response and adjustment measures for the Company's relevant business activities to achieve the business targets. Managers' contributions to the Company's performance results shall be first assessed and reviewed by the Remuneration Committee and then reported to the Board of Directors for approval.

II. Corporate governance

(I) Operation status of the Board of Directors

The Board of Directors held 6 meetings in 2024. The presence and attendance of the directors are described below:

Title	Name	Actual number of persons present (attended)	Number of meetings attended by proxy	Actual attendance rate (%)	Remarks
Chairman	Austin Chen	6	0	100%	Inaugurated on May 31, 2024 for another consecutive term.
Vice Chairman	Chen Ming-Ta (Note 1)	4	0	100%	Inaugurated on May 31, 2024.
Director	Teddy Lu	5	1	83.33%	Inaugurated on May 31, 2024 for another consecutive term.
Director	Chang Chia-Kun	6	0	100%	Inaugurated on May 31, 2024 for another consecutive term.
Director	Haydn Hsieh (Note 2)	2	0	100%	Resigned on May 31, 2024.
Director	George Huang	6	0	100%	Inaugurated on May 31, 2024 for another consecutive term.
Director	Victor Chien Representative: Acer Corporation (Note 1)	3	1	75%	Inaugurated on May 31, 2024.
Director	Phison Electronics Corp. Representative: Weng Wen-Jie (Note 2)	2	0	100%	Resigned on May 31, 2024.
Independent Director	Max Wu	6	0	100%	Inaugurated on May 31, 2024 for another consecutive term.
Independent Director	Philip Peng	6	0	100%	Inaugurated on May 31, 2024 for another consecutive term.
Independent Director	Cathy Han	6	0	100%	Inaugurated on May 31, 2024 for another consecutive term.

Note 1: The Company's tenth Board of Directors has held four meetings in total after the election.

Note 2: A new election for the Company's ninth Board of Directors was completed on May 31, 2024. There were two Board of Directors meetings in total convened before the re-election in 2024.

Other matters to be specified:

I. Where any of the following circumstances occurs to any meeting of the Board of Directors, the date, term and proposal of the meeting as well as the opinions of all the independent directors and actions taken by the Company on the opinions shall be specified:

- (I) The matters referred to in Article 14-3 of the Securities and Exchange Act: are not applicable since the Company has established the Audit Committee.
- (II) In addition to the matters mentioned above, any resolution of the Board of Directors for which dissent or reservation has been expressed by any independent director and recorded in the minutes or any written statement: None.

II. Where the implementation status of recusal bearing on the interest of a director is involved, the name of the director, proposal, reasons for the recusal, and participation in the voting shall be described:

Date	Meeting	Proposal	Resolution
2024.02.23	1st meeting in 2024	Proposal for distribution of the remuneration for employees and directors in FY 2023 was adopted.	The proposal was approved by a resolution of the directors, excluding Austin Chen and Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests. This was done in accordance with the consultation with the independent directors present at the meeting of the Board of Directors.
2024.02.23	1st meeting in 2024	Proposal for transfer of the Company's managers was adopted.	The proposal was approved by a resolution of the directors, excluding Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests. This was done in accordance with the consultation

			with the independent directors present at the meeting of the Board of Directors.
2024.10.28	5th meeting in 2024	Proposal for adjustment of salary for managers in 2024 was adopted.	The proposal was approved by a resolution of the directors, excluding Austin Chen, Chang Chia-Kun, and Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests. This was done in accordance with the consultation with the independent directors present at the meeting of the Board of Directors.
2024.12.19	6th meeting in 2024	Proposal for distribution of the performance bonus for managers in 2024 was adopted.	The proposal was approved by a resolution of the directors, excluding Austin Chen, Chang Chia-Kun, and Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests. This was done in accordance with the consultation with the independent directors present at the meeting of the Board of Directors.
2024.12.19	6th meeting in 2024	Proposal for distribution of the remuneration for managers in 2024 was adopted.	The proposal was approved by a resolution of the directors, excluding Austin Chen, Chang Chia-Kun, and Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests. This was done in accordance with the consultation with the independent directors present at the meeting of the Board of Directors.
2024.12.19	6th meeting in 2024	Proposal for distribution of the Employee Stock Ownership Trust for managers in FY 2025 was adopted.	The proposal was approved by a resolution of the directors, excluding Austin Chen, Chang Chia-Kun, and Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests. This was done in accordance with the consultation with the independent directors present at the meeting of the Board of Directors.

III. The Company resolved at the ninth meeting of the eighth Board of Directors held on 12.17, 2019 to establish the “Guidelines for Evaluating the Performance of the Board of Directors”. The evaluation procedure is described as follows:

Self-evaluation				
Interval of evaluation	Period of evaluation	Scope of evaluation	Method of evaluation	Items of evaluation
Annual	Evaluation of the performance of the Board of Directors from Jan. 1 to Dec. 31, 2024	Evaluation of the performance of the Board of Directors, (self or peer) evaluation of the performance of directors, and evaluation of the performance of functional committees	Self-evaluation of the Board of Directors, directors and functional committees	<ol style="list-style-type: none"> Evaluation of the performance of the Board of Directors <ol style="list-style-type: none"> Involvement in the Company’s operation Improvement of the quality of decision-making by the Board of Directors. Composition and structure of the Board of Directors. Election and continued education of directors. Internal control. (Self- or peer) evaluation of the performance of directors <ol style="list-style-type: none"> Understanding of the objectives and missions of the Company. Knowledge of the responsibilities of directors. Involvement in the Company’s operation Internal relationship management and communication. Professional knowledge and continued education of directors. Internal control. Evaluation of the performance of functional committees <ol style="list-style-type: none"> Involvement in the Company’s operation Knowledge of the responsibilities of functional committees. Improvement of the quality of decision-making by functional committees. Composition and election of the members of functional committees. Internal control.

External evaluation				
Interval of evaluation	Period of evaluation	Scope of evaluation	Method of evaluation	Items of evaluation
Once every three years	November 1, 2023 to October 31, 2024	Board of Directors	Self-evaluation questionnaire and on-site interviews	The Taiwan Investor Relations Institute was commissioned to conduct an external performance evaluation of the Board or Directors in five aspects of the composition and professional development of the Board of Directors, the quality of the Board of Directors' decision-making, the effectiveness of the Board of Directors' operations, internal control and risk management, and the level of the Board of Directors' participation in corporate social responsibility.

Self-evaluation results :

Evaluation Items	Achievement Rate	Evaluation Result
1. Board Performance Evaluation (Overall)	over 90%	Exceeding the standard
2. Board Member Self-Assessment	over 90%	Exceeding the standard
3. Functional Committee Performance Evaluation (Overall)	over 90%	Exceeding the standard

For the results of self-evaluation and external evaluation, please refer to the official website of the Company (<https://www.apacer.com/zh-tw/html/board-of-directors>).

IV. Evaluation of the goals (e.g. establishment of the Audit Committee, improvement of information transparency, etc.) and implementation with respect to enhancement of the function of the Board of Directors in the current and most recent year:

(I) In order to implement corporate governance and improve the functions of the Board of Directors, we perform an evaluation of the performance of the Board of Directors and the functional committees every year. In 2024, the performance evaluation was conducted by the board members themselves.

(II) More information transparency: The Company is committed to transparent operations and pays attention to the rights and interests of its shareholders. On the Company's website, related information is provided in Chinese and English under "Investor Relations", "Corporate Sustainable Development" and "Corporate Governance". Important decisions of the Board of Directors are published regularly, and investor conferences are held on a periodical basis.

(III) Director liability insurance: To protect the directors and managers from the risks they bear when conducting business, the Company purchases directors and managers' liability insurance for the directors and managers annually, and regularly reviews the insurance policies to ensure certain insurance limits and coverage requirements. In this regard, the Company regularly reports to the Board of Directors.

(IV) The Audit Committee and Remuneration Committee are formed by all the independent directors of the Company to assist the Board of Directors in performing its supervisory duties. The chairpersons of the committees report regularly to the Board of Directors regarding their operations.

(V) Continuing education of directors: The Company encourages continuing education of the directors and regularly recommends courses for the directors to keep gaining new knowledge. The total education hours of the directors in 2024 were 69.

(II) Operation status of the Audit Committee or participation of supervisors in the Board of Directors

The Audit Committee held four meetings in 2024. The attendance of its members is described below:

Title	Name	Actual number of persons present (attended)	Number of meetings attended by proxy	Actual attendance rate (%)	Remarks
Chairperson	Max Wu	4	0	100%	Inaugurated on May 31, 2024 for another consecutive term
Member	Philip Peng	4	0	100%	Inaugurated on May 31, 2024 for another consecutive term
Member	Cathy Han	4	0	100%	Inaugurated on May 31, 2024 for another consecutive term

The annual work focuses of the Audit Committee:

- (I) The Audit Committee operates mainly for the purpose of overseeing the following matters:
1. Fair presentation of the Company's financial statements.
 2. Appointment (dismissal) of CPAs and evaluation of their independence.
 3. Effective implementation of the Company's internal control system.
 4. The Company's compliance with the relevant regulations and rules.
 5. Control of the Company's existing or potential risks.
- (II) The matters to be reviewed by the Audit Committee mainly include:
1. The internal control system and related policies and procedures.
 2. Audit of financial statements, and accounting policies and procedures.
 3. Acquisition or disposal of material assets, or derivative transactions, and related policies and procedures.
 4. Major loans of funds, endorsement or guarantees.
 5. Matters involving the personal interest of directors.
 6. Offering, issuance or private placement of equity securities.
 7. Appointment or dismissal of CPAs or evaluation of their independence and remuneration.
 8. Appointment/dismissal of the financial or accounting manager or chief internal auditor.
 9. Business reports and proposal for profit distribution or loss compensation.
 10. Other important matters specified by the Company or competent authorities.

Other matters to be specified:

- I. Where any of the following circumstances occur to the operation of the Audit Committee, the date, term and proposal of the Audit Committee meeting as well as the dissent, reservation or major suggestion of any independent director, the Audit Committee resolution, and how the Company manage the Committee's opinions shall be described:

- (I) The matters referred to in Article 14-5 of the Securities and Exchange Act:

Date	Meeting	Proposal	Audit Committee Resolution	The Company's action on the Committee's opinion
2024.02.23	1st meeting in 2024	Jason Yin and Steven Shih, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company's financial statements, and the evaluation of their independence and competence as well as the resolution of their remuneration were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2024.02.23	1st meeting in 2024	The business report and self-prepared financial statements of FY 2023 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2024.02.23	1st meeting in 2024	Proposal to issue the "Declaration on the Internal Control System" of FY 2023 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2024.02.23	1st meeting in 2024	Proposal for issuance of new shares for cash capital increase by way of private placement was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2024.04.17	2nd meeting in 2024	Proposal for amendment to the Company's "Criteria for Handling Acquisition and Disposal of Assets" and "Regulations on	Approved by all of the Audit Committee members	Approved by all of the directors present

		Engaging in Commercial Foreign Exchange Risk Management Related Financial Products” was adopted.		
2024.04.17	2nd meeting in 2024	Proposal for amendment to the “Internal Control System” and “Rules for Implementation of the Internal Audit System” for the “Production Cycles” of the Company was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2024.07.26	3rd meeting in 2024	The quarterly consolidated financial statements for the second quarter of FY 2024 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2024.07.26	3rd meeting in 2024	Proposal for establishment of the “Internal Control System” for the “Procedure for Preparation and Filing of Sustainability Reports” of the Company was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2024.10.28	4th meeting in 2024	The internal audit plan of FY 2025 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present

(II) In addition to the matters mentioned above, any resolution approved by more than two-thirds of all the directors but not approved by the Audit Committee: None.

II. Where the implementation status of recusal bearing on the interest of an independent director is involved, the name of the independent director, proposal, reasons for the recusal, and participation in the voting shall be described: None.

III. Communication of independent directors with the chief internal auditor and CPAs (including important matters, methods and results with respect to communication of the company finances and operation status):

(I) Communication of the independent directors with the chief internal auditor

Date	Audit Committee meeting	Communications with the chief internal auditor	Results
2024.02.23	1st meeting in 2024	Review of the internal audit report	Acknowledged with no other suggestions.
		Review of the Declaration on the Internal Control System	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2024.04.17	2nd meeting in 2024	Review of the internal audit report	Acknowledged with no other suggestions.
2024.07.26	3rd meeting in 2024	Review of the internal audit report	Acknowledged with no other suggestions.
2024.10.28	4th meeting in 2024	Review of the internal audit report	Acknowledged with no other suggestions.
		Review of the internal audit plan for FY 2025	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2024.12.19	Communication of individual independent directors with the chief auditor	Review of the internal audit report Report on information security, inventory and accounts receivable	1. Review and suggestion on information security 2. Continue to optimize the internal control of subsidiaries

(II) Communication of the independent directors with the CPAs

Date	Communications with the CPAs	Results
2024.02.23	1. Independence 2. Responsibility of auditors for the audit of financial reports 3. Audit scope and method 4. Audit findings 5. Major deficiencies and reminders of the internal control system of the OTC (emerging stock) company in the most recent inspection conducted by the competent authority 6. Communication of the quality management system with the CPA firm 7. Update of important accounting standards or interpretations, laws and regulations related to securities supervision and taxation	Acknowledged with no other suggestions.
2024.12.19	1. Independence 2. Responsibility of the reviewer for review of the interim financial report 3. Review scope and method 4. Review findings 5. Annual audit plan 6. Implementation of IFRS Sustainability Disclosure Standards 7. Important updates of regulations and standards	Acknowledged with no other suggestions.

(III) Corporate governance and differences from the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
I. Has your company established and disclosed its corporate governance best practice principles pursuant to the “Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies”?	V		We have established the “Corporate Governance Best Practice Principles” pursuant to the “Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies” and disclosed these on our website.	No difference
II. Shareholding structure and shareholder’s equity				
(I) Does your company have an internal procedure and act accordingly for handling shareholders’ suggestions, doubts, disputes, and lawsuits?	V		(I) To protect the interests of the shareholders, we have designated personnel to deal with suggestions, doubts and disputes of the shareholders. We may accept suggestions and we deal with disputes depending on the type of the problem, and act according to the procedure.	No difference
(II) Does your company have lists of the major shareholders who actually control the company and the persons who have ultimate control of the major shareholders?	V		(II) We have lists of the major shareholders who actually control the Company and the persons who control the major shareholders to ensure the stability of the business management rights.	No difference
(III) Does your company have a firewall mechanism in place to control the risks between the company and its affiliates?	V		(III) We have internal “Regulations Governing the Transactions among Related Parties”, “Subsidiary Management Regulations”, “Procedures for Endorsements/Guarantees”, “Procedures for Loaning Funds to Others”, and “Procedures for Acquisition or Disposal of Assets” to establish appropriate risk control mechanism and firewall. The auditors supervise the implementation on a regular basis.	No difference
(IV) Does your company have internal regulations to prohibit insiders of the company from using undisclosed information in the market to trade securities?	V		(IV) We have established the internal control regulations of “Management Procedures for Handling Material Inside Information and Prevention of Insider Trading” and “Procedures for Ethical Management and Guidelines for Conduct” to prohibit insiders of the company from using information not open to the market to trade securities. Promotions are executed to the insiders and employees of the company.	No difference
III. Responsibilities of the Board of Directors and its formation				
(I) Are a policy of diversification and specific management objectives established and implemented by the Board of Directors?	V		(I) Our “Corporate Governance Best Practice Principles” specifies a policy of diversification for the composition of our Board of Directors. The relevant principles are disclosed on our website: 1. The members of our Board of Directors have diverse professional backgrounds and experience, which help us achieve the objectives of improving our operating performance and the overall benefits of shareholder values	No difference

Item	Description		Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	
			<p>2. To ensure a diverse composition of our Board of Directors, its members consist of nine directors with rich experience in various professions, as well as three independent directors (accounting for 33.33%). The members come from professional backgrounds in business management, accounting, finance, and engineering technology. With diverse professional backgrounds, they possess skills in accounting and financial analysis, business management, venture investment, engineering technology, leadership, and decision-making that demonstrate both diversity and complementarity. Such professional backgrounds and industrial experience have made it possible for us to effectively implement the above-mentioned strategies for management and future development.</p> <p>3. Since the Company puts great emphasis on the diversity of the Board of Directors, we require that the members thereof shall possess at least three different professional backgrounds and work experience in two different industries and that at least a female director shall be appointed to achieve the management objectives for diverse formation of the Board of Directors. There was a female independent director (accounting for 11.11% of all the directors) in the Board of Directors as of 2024, thereby achieving the goal of board members with diverse backgrounds/experience.</p> <p>4. As for the implementation of the diversification policy for the composition of the Board of Directors, please see page 13.</p>
(II) Does your company voluntarily establish other functional committees similar to the Remuneration Committee and Audit Committee set up pursuant to the relevant laws and regulations?	V	(II)	<p>In addition to the Remuneration Committee and the Audit Committee, we have the "Articles of Association of Special Committee on Mergers and Acquisitions" as a basis for the establishment of a special Merger and Acquisition Committee in the future. We also have a Sustainable Development Committee to report its implementation and results to the Chairman and CEO on a regular basis.</p>
(III) Does your company have guidelines for evaluating the performance of the Board of Directors and conduct regular performance evaluation every year? Does your company submit the results of the performance evaluation to the Board of Directors? Are the results used as the basis for the remuneration and nomination for re-election of individual directors?	V	(III)	<p>To implement corporate governance, improve the functions of the Board of Directors, set performance goals, and strengthen the operational efficiency of the Board, the Company resolved at the board meeting held on December 17, 2019, to formulate the "Guidelines for Evaluating the Performance of the Board of Directors" and include the evaluation of the performance of functional committees in the Guidelines. The performances of the Board of Directors and functional committees shall be evaluated annually for the period from January 1 to December 31 of the current year, in accordance with the requirements of the Guidelines. The report of the evaluation results shall be completed by the end of the first quarter of the following year.</p> <p>In 2024, the achievement rates of the performance evaluations for the Board of Directors, Audit Committee, and Remuneration Committee were higher than 90%, and the results were reported at the board meeting held on February 20, 2025, as well as at the meetings of the functional committees.</p>
			<p>Assessment of the necessity for additional functional committees with reference to the business operation status and scale in the future.</p> <p>No difference</p>

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
(IV) Does your company assess the independence and competency of the CPAs on a regular basis?	V		<p>(IV) The Company's Audit Committee assesses the independence and competency of CPAs on a yearly basis and submits the results to board meetings for discussion.</p> <p>We assess CPAs for their independence based on the "Declaration of Independence" provided thereby every year and with reference to the Norm of Professional Ethics for Certified Public Accountant of the Republic of China No. 10. The latest assessment was approved by the Audit Committee on February 20, 2025 and submitted to the Board of Directors for approval. Important assessment items are listed below:</p> <ol style="list-style-type: none"> 1. There is no direct or material indirect financial interest or significant close business relationship between the CPAs or any audit team members and the Company. 2. None of the CPAs and audit team members is currently, or was within the recent two years, a director, supervisor, or managerial office of the Company, or receives or received a fixed salary for performing routine work. 3. None of the CPAs and audit team members has any inappropriate interest with the Company. 4. The names of the CPAs are not used by others. 5. None of the CPAs and audit team members holds any shares of the Company, engages in borrowing and lending of money, and is in a joint venture or profit sharing relationship. 6. Neither CPAs nor any audit team members have a relationship of spouses, direct relatives by blood, direct relatives by marriage, or collateral relative by blood within the second degree of kinship with the Company's directors, supervisors, responsible persons or managerial officers. 7. No former partner acts as a director, supervisor, or managerial office of the Company or is in a position to exert significant influence on audit engagement within one year after he/she left his/her office. The replacement of our CPAs is conducted pursuant to relevant regulations. <p>Starting from 2023, the Company's Audit Committee not only takes the audit professional fees, services and independence into account, but also includes the audit quality as the primary consideration for competency when making the annual assessment of the commissioned CPAs. Based on the five aspects—professionalism, quality control, independence, monitor and creativity—covered in the "Description of Audit Quality Indicators" annually provided by the CPAs, we assessed the CPAs in an objective manner and concluded that their audit quality could maintain and enhance the level of assurance of the latest assessment the second financial statements. The most recent assessment was approved by the Audit Committee on February 20, 2025 and submitted to the Board of Directors for approval.</p>	No difference
IV. Does your TWSE/TPEx-listed company designate competent corporate governance personnel in an appropriate number along with a chief corporate governance officer responsible for related matters (including but not limited to providing information	V		<p>We established the "CSR Committee" in 2015, which was further renamed to the "Sustainable Development Committee" in 2021. It has a subordinate "Working Group on Corporate Governance" headed by the CFO, who was further appointed by the Board of Directors on October 30, 2022 to be the chief corporate governance officer responsible for the affairs related to corporate governance, such as planning and implementing corporate governance matters, providing information required for the directors to perform their duties, assisting the directors to observe laws and regulations, and handling matters related to the Board of Directors and shareholders' meetings in accordance with the laws.</p>	No difference

Item	Description		Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	
required for directors and supervisors to perform their duties, assisting directors and supervisors in compliance, handling matters related to the Board of Directors and shareholders' meetings and preparing minutes of the Board of Directors and shareholders' meetings)?			<p>The implementation of work in FY 2024 includes the following matters:</p> <p>(I) Regular arrangement of further education for directors and provision of information required for directors to perform their duties and related to the latest legal development relevant to operation of the Company to help directors observe laws and regulations.</p> <p>(II) Assisting with the meeting procedure of the Board of Directors and the shareholders and compliance matters of the resolutions.</p> <p>(III) Assisting in the communication between the independent directors, chief internal auditor and CPAs at Audit Committee meetings.</p> <p>(IV) Maintaining investor relations.</p> <p>(V) Publishing important information related to the material resolutions of the Board of Directors and shareholders' meetings in accordance with the relevant laws.</p> <p>(VI) Arranging for the "Ethical Corporate Management Implementation Unit" to report on the implementation status and plans related to the promotion of ethical management in the current year at the board meeting on December 19, 2024, to ensure the fulfillment of the Ethical Corporate Management Best-Practice Principles.</p> <p>(VII) Arranging for the "Sustainable Development Committee" to report on the implementation and results related to the Sustainable Development Best-Practice Principles at the board meeting on December 19, 2024 to ensure the fulfillment of the Sustainable Development Best-Practice Principles.</p> <p>(VIII) Assisting in full re-election of directors due to expiration of the current term.</p> <p>(IX) Reviewing the implementation of corporate governance evaluation on a quarterly basis.</p> <p>(X) Other matters referred to in the Articles of Incorporation or contracts.</p>
V. Does your company establish channels for communication with stakeholders (including but not limited to shareholders, employees, customers, and suppliers), design special web pages for the stakeholders on the website, and appropriately respond to important CSR issues concerned about by the stakeholders?	V		No difference
VI. Does your company commission a professional registrar to deal with matters related to the shareholders' meeting?	V		No difference
VII. Disclosure of information (I) Does your company have a website to disclose the financial	V		No difference

Item	Description		Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	
and corporate governance information of the company? (II) Does your company adopt other information disclosing methods (such as building an English website, designating a person for collection and disclosure of information, implementing a spokesperson system, and publishing the process of investor conferences on the website)?	V	(II) governance on our website. We have a website to provide relevant information in Chinese and English as a reference for shareholders and stakeholders. Our CFO, Ms. Lai Zi-Wen, serves as the spokesperson, while our CEO, Mr. Chang Chia-Kun, acts as the deputy spokesperson. The Global Marketing Division is responsible for communication with the media, while IR is responsible for communication with corporations and shareholders. At least one investor conference is held every year, and the process is published on our website. All important information that may affect shareholders and stakeholders is disclosed appropriately and in a timely manner. The "Management Procedures for Handling Material Insider Information and Prevention of Insider Trading" is formulated to regulate the procedures for handling internal material information, and is made known to all the employees, managerial officers and directors.	No difference
(III) Does your company publish and file its annual financial report within two months after the end of a fiscal year? Does your company publish and file the Q1, Q2 and Q3 financial reports and monthly operating performance before the required time limit?	V	(III) Our financial reports and monthly operating performance are published and filed within the required time limits in accordance with Article 36 of the Securities and Exchange Act. Our 2024 financial report was published and filed on February 27, 2025, and our 2024 Q1, Q2 and Q3 financial reports and monthly operating performance were published and filed before the required time limit.	No difference
VIII. Does your company have additional important information that is helpful to understand the operation of the corporate governance (including but not limited to the interests and care of employees, investor relationship, supplier relationship, rights of stakeholders, further education of directors and supervisors, and implementation of risk management policies and measurement criteria)?	V	(I) Interests and care of employees: In addition to formation of the Supervisory Committee of Labor Retirement Reserve and arrangement of labor insurance, national health insurance and group insurance, we have an Employee Welfare Committee to complete employee welfare measurements and ensure the retirement system. Existing welfare measures include marriage allowance, maternity allowance, funeral allowance, consolatory hospitalization bonus, birthday bonus, and subvention for the clubs and recreational activities of the employees. We have always paid attention to the rights and interest of our employees, and therefore, in addition to ensuring the compliance of our management systems with the relevant laws, all the regulations and implementation information related to corporate governance are published on the Company's website for our employees' reference. We guarantee to perform social responsibilities and protect our employees' rights and interests. In addition, we have become a member of the Responsible Business Alliance (RBA) and strictly followed related regulations to incorporate our concern for human rights in every dimension of our daily operation so as to fulfill the employer's duty of employee care. (II) Investor relationship: We have a spokesperson, a deputy spokesperson, and a designated unit for investor relations. The contact information of the unit is made public and investors can give feedback at any time. The	No difference

Item	Description		Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons																																																									
	Yes	No																																																										
	Summary																																																											
		<p>communication between us and our investors is enhanced and the transparency of our financial status and cooperate governance is improved to create a better image of the Company.</p> <p>(III) Supplier relationship: The Company deals with our suppliers based on mutual trust and benefit in the hope to achieve growth and a win-win outcome together with them.</p> <p>(IV) Rights of stakeholders: Stakeholders can communicate with us and give us advices.</p> <p>(V) Continuing education of directors:</p> <table><tr><th>Title</th><th>Name</th><th>Course date</th><th>Organizer</th><th>Course</th><th>Education hours</th><th>Does the course meet requirements?</th></tr><tr><td>Chairman</td><td>Austin Chen</td><td>2024/08/06</td><td>Taiwan Stock Exchange Corporation</td><td>Creating a New Carbon Era with Sustainability Knowledge</td><td>6</td><td>Yes</td></tr><tr><td rowspan="2">Vice Chairman</td><td rowspan="2">Chen Ming-Ta</td><td>2024/11/05</td><td>Taiwan Corporate Governance Association</td><td>How to Map Out a Sustainable Development Roadmap for Enterprises</td><td>3</td><td>Yes</td></tr><tr><td>2024/11/18</td><td>Taipei Foundation of Finance</td><td>Corporate Governance – Sustainable Finance</td><td>3</td><td>Yes</td></tr><tr><td rowspan="2">Director</td><td rowspan="2">Chang Chia-Kun</td><td>2024/08/09</td><td>Taiwan Corporate Governance Association</td><td>Green Power, Certification and Sustainable Development – The Path Toward Net-Zero</td><td>3</td><td>Yes</td></tr><tr><td>2024/08/16</td><td>Taiwan Corporate Governance Association</td><td>Evolution of Data Centers – The Development Trend of Silicon Photonics and AI Servers</td><td>3</td><td>Yes</td></tr><tr><td rowspan="2">Director</td><td rowspan="2">Teddy Lu</td><td>2024/08/08</td><td>Accounting Research and Development Foundation</td><td>Practical Analysis of the Impact of Net-Zero Carbon Emissions on Financial Statements</td><td>3</td><td>Yes</td></tr><tr><td>2024/10/18</td><td>Securities and Futures Market Development Foundation</td><td>2024 Insider Trading Prevention Conference</td><td>3</td><td>Yes</td></tr><tr><td>Director</td><td>Victor Chien</td><td>2024/03/29</td><td>Taiwan Corporate Governance Association</td><td>The Relationship between the US and China and the</td><td>3</td><td>Yes</td></tr></table>	Title	Name	Course date	Organizer	Course	Education hours	Does the course meet requirements?	Chairman	Austin Chen	2024/08/06	Taiwan Stock Exchange Corporation	Creating a New Carbon Era with Sustainability Knowledge	6	Yes	Vice Chairman	Chen Ming-Ta	2024/11/05	Taiwan Corporate Governance Association	How to Map Out a Sustainable Development Roadmap for Enterprises	3	Yes	2024/11/18	Taipei Foundation of Finance	Corporate Governance – Sustainable Finance	3	Yes	Director	Chang Chia-Kun	2024/08/09	Taiwan Corporate Governance Association	Green Power, Certification and Sustainable Development – The Path Toward Net-Zero	3	Yes	2024/08/16	Taiwan Corporate Governance Association	Evolution of Data Centers – The Development Trend of Silicon Photonics and AI Servers	3	Yes	Director	Teddy Lu	2024/08/08	Accounting Research and Development Foundation	Practical Analysis of the Impact of Net-Zero Carbon Emissions on Financial Statements	3	Yes	2024/10/18	Securities and Futures Market Development Foundation	2024 Insider Trading Prevention Conference	3	Yes	Director	Victor Chien	2024/03/29	Taiwan Corporate Governance Association	The Relationship between the US and China and the	3	Yes	
Title	Name	Course date	Organizer	Course	Education hours	Does the course meet requirements?																																																						
Chairman	Austin Chen	2024/08/06	Taiwan Stock Exchange Corporation	Creating a New Carbon Era with Sustainability Knowledge	6	Yes																																																						
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Director	Victor Chien	2024/03/29	Taiwan Corporate Governance Association	The Relationship between the US and China and the	3	Yes																																																						

Item	Description						Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Summary						
	Yes	No					
						International Situation in the Future – Political Risks of Investment in China	
			2024/05/09	Taiwan Corporate Governance Association		Information Security and Risk Management	Yes
			2024/08/08	Taiwan Corporate Governance Association		Taxation Governance and Updates of Securities Regulations in the New Tax Environment	Yes
			2024/12/10	Taiwan Corporate Governance Association		The Attack and Defense Strategies of Non-Consensus M&A and Related Corporate Governance Issues	Yes
	Director	George Huang	2024/12/20	Taiwan Corporate Governance Association		Notice to Directors and Supervisors: Insight into How a Perpetrator Uses Non-Regular Transactions and Related Party Transactions	Yes
	Independent Director	Max Wu	2024/08/09	Taiwan Corporate Governance Association		How the Board of Directors supervises ESG Risks and Creates Sustainable Competitiveness for an Enterprise	Yes
			2024/08/09	Taiwan Corporate Governance Association		ESG-related Legal Issues that the Board of Directors Should Take into Account	Yes
			2024/07/03	Taiwan Stock Exchange		2024 Cathay Sustainable Finance and Climate Change Summit	Yes
	Independent Director	Philip Peng	2024/08/03	Taiwan Independent Director Association		How a Foreign Investor Holds ESG and Investment Responsibility	Yes
			2024/08/03	Taiwan Independent		Legal Planning and Risk Management for	Yes

Item	Description				Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons			
	Summary							
	Yes	No						
				Director Association	Multinational Mergers and Acquisitions			
			2024/09/20	Taiwan Corporate Governance Association	AI and Open Source Era – Analysis of Corporate Legal Risks	3		Yes
			2024/09/20	Taiwan Corporate Governance Association	Creating a Corporate Sustainable Competitiveness through DEI Culture	3		Yes
			2024/08/03	Taiwan Independent Director Association	Legal Planning and Risk Management for Multinational Mergers and Acquisitions	3		Yes
			2024/09/20	Taiwan Corporate Governance Association	AI and Open Source Era – Analysis of Corporate Legal Risks	3		Yes
			2024/09/20	Taiwan Corporate Governance Association	Creating a Corporate Sustainable Competitiveness through DEI Culture	3		Yes
	(VI) Managers and their participation in continuing education and training related to corporate governance:							

Title	Name	Course date	Organizer	Course	Education hours
Chairman and CSO	Austin Chen	2024/08/06	Taiwan Stock Exchange Corporation	Creating a New Carbon Era with Sustainability Knowledge	6
	CEO	Chang Chia-Kun	2024/08/09	Taiwan Corporate Governance Association	Green Power, Certification and Sustainable Development – The Path Toward Net-Zero
President			2024/08/16	Taiwan Corporate Governance Association	Evolution of Data Centers – The Development Trend of Silicon Photonics and AI Servers
		2024/11/05	Taiwan Corporate Governance Association	How to Map Out a Sustainable Development Roadmap for Enterprises	3
		2024/11/18	Taipei Foundation of Finance	Corporate Governance – Sustainable Finance	3
CFO	Lai Zi-Wen	2024/04/30	Taiwan Corporate Governance Association	Operation of the Sustainable Development Committee (Chief Sustainability Officer, Work Group)	3

Item	Description					Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons	
	Yes	No	Summary				
				2024/07/05	Taiwan Corporate Governance Association	The Latest Context of Corporate Governance from the Perspective of Corporate Governance Evaluation Indicators	3
				2024/08/09	Taiwan Corporate Governance Association	Green Power, Certification and Sustainable Development – The Path Toward Net-Zero	3
				2024/09/03	Taiwan Corporate Governance Association	The Full Launch of Corporate Innovation and Growth	3
			Huang Yi-cheng	2024/10/17–2024/10/18	Accounting Research and Development Foundation	Continuing Education Program for the Accounting Managers of Issuers, Securities Firms and Securities Exchanges	12
			Accounting Manager				
	(VII) Implementation of risk management policies and risk assessment standards: The Company's “Risk Management Policies and Procedures” were established on August 4, 2021 and approved by the Board of Directors to disclose the scope and organizational structure of risk management. We regularly reports to the Board of Directors on the status of risk management every year (at least once a year). The status in 2024 was reported to the Board on December 19, 2024. For more information, please visit the website of the Company.						
	(VIII) Implementation of customer policies: We and our subsidiaries greatly value the opinions of customers. Business review meetings are held with the customers to understand their opinions and questions regarding products so that stable and good relations can be maintained with the aim to generate profits for the Company.						
	(IX) Liability insurance coverage for directors and supervisors & social responsibility: The Company has our directors and supervisors ensured by the director liability insurance every year and reported the amount covered, insurance scope and insurance rate at the board meeting held on February 20, 2025.						
	IX. On the basis of the result of corporate governance evaluation released by TWSE's Corporate Governance Center in the most recent year, please describe the matters to which improvements have been made. Regarding the matters to which improvements have yet to be made, please list those which have been selected as priorities and the measures to be taken. The improvements in 2024 are as follows: 1. Performance evaluation of the Board of Directors: The Company has carried out the 2024 external evaluation and self-evaluation of the Board of Directors. The results of the external evaluation were reported to the Board of Directors on December 19, 2024 and the results of the self-evaluation were reported to the first board meeting in 2025. They will be used as a reference for the review and improvements. 2. The Company strengthened the risk management of cyber security and formulated relevant policies and specific response plans. The Company received the ISO 27001 certificate in 2024						

(IV) If your company has a remuneration committee, the composition, responsibilities and operation of the committee shall be disclosed:

1. Information of the members of the Remuneration Committee

The Company's Remuneration Committee consists of independent directors, and the information about the members are shown as follows:

March 24, 2025

Member type	Qualifications	Professional qualifications and experience	Independence	Number of other public companies where the member also serves in a remuneration committee	Remarks
	Name				
Independent Director	Max Wu	Please refer to the information on directors on page 10~11 for the relevant details.	Please refer to the information on directors on page 10~11 for the relevant details.	2	Convener
Independent Director	Philip Peng			1	
Independent Director	Cathy Han			1	

2. Duties of the Remuneration Committee

The main duties of the Remuneration Committee is to faithfully perform the following matters by exercising due diligence of a good administrator and submit its suggestions to the Board of Directors for discussion:

- (1) Establish and periodically review the Articles of Association of the Remuneration Committee, and submit correction suggestions.
- (2) Establish and periodically review the policy, system, standard and structure with respect to the long-term performance goals and remuneration for directors and managerial officers.
- (3) Periodically evaluate the achievement of the directors and managerial officers' performance goals and determine the contents and amount of their individual remuneration.

3. Information on the operation of the Remuneration Committee

- (1) Our Remuneration Committee is composed of three members.
- (2) The term of the current members: May 31, 2024 - May 30, 2027.
- (3) The Remuneration Committee held four meetings (A) in the most recent FY, and the attendance of its members are described below:

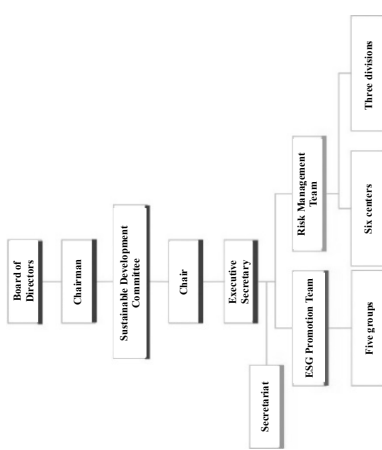
Title	Name	Number of meetings attended (B)	Number of meetings attended by proxy	Attendance rate (%) (B/A)	Remarks
Convener	Max Wu	4	0	100%	
Member	Philip Peng	4	0	100%	
Member	Cathy Han	4	0	100%	
Other matters to be specified:					
I. If the Board of Directors does not adopt or revise the suggestions of the Remuneration Committee, the date, term and proposal of the Board of Directors meeting, the Board of Directors resolution and actions taken by the Company on the Remuneration Committee's opinions shall be specified (if the amount of remuneration adopted by the Board of Directors is higher than that suggested by the Remuneration Committee, the differences and reasons must be indicated): None.					
II. For any resolution of the Remuneration Committee for which dissent or reservation is expressed by any of the members and recorded in the minutes or a written statement, the date, term and proposal of the Remuneration Committee meeting, opinions of all members and actions taken on such opinions shall be specified: None.					

(4) The proposals discussed and resolutions by the Remuneration Committee in the most recent year are as follows:

Date	Meeting	Remuneration Committee Proposal	Remuneration Committee Resolution	The Company's action on the Committee's opinion
2024/02/23	1st meeting in 2024	Proposal for distribution of the remuneration for employees and directors in FY 2023	Approved by all of the Committee members present	Approved by all of the directors present
2024/02/23	1st meeting in 2024	Proposal for transfer of the Company's managers	Approved by all of the Committee members present	Approved by all of the directors present
2024/02/23	1st meeting in 2024	Proposal for amendment to the regulations on shareholding of the managers	Approved by all of the Committee members present	Approved by all of the directors present
2024/02/23	1st meeting in 2024	Proposal for amendment to the Company's "Articles of Association of the Employee Stock Ownership Trust Management Committee"	Approved by all of the Committee members present	Approved by all of the directors present
2024/04/17	2nd meeting in 2024	Proposal for amendment to the Company's "Directions for Senior Management's Benefits"	Approved by all of the Committee members present	Approved by all of the directors present
2024/04/17	2nd meeting in 2024	Proposal of the amendment to the "Regulations Governing the Management of Appropriation for Talent Retention Fund"	Approved by all of the Committee members present	Approved by all of the directors present
2024/04/17	2nd meeting in 2024	Proposal for amendment to the "Regulations Governing Performance Bonuses for Employees"	Approved by all of the Committee members present	Approved by all of the directors present
2024/10/28	3rd meeting in 2024	Proposal for adjustment of the salary for managers in FY 2024	Approved by all of the Committee members present	The proposal was approved by a resolution of the directors present, excluding the Chairman and CSO Austin Chen, CEO Chang Chia-Kun, and President Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests.
2024/12/19	4th meeting in 2024	Proposal for distribution of the performance bonus for managers in FY 2024	Approved by all of the Committee members present	The proposal was approved by a resolution of the directors present, excluding the Chairman and CSO Austin Chen, CEO Chang Chia-Kun, and President Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests.
2024/12/19	4th meeting in 2024	Proposal for distribution of the employee remuneration for managers in FY 2024	Approved by all of the Committee members present	The proposal was approved by a resolution of the directors present, excluding the Chairman and CSO Austin Chen, CEO Chang Chia-Kun, and President Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests.

2024/12/19	4th meeting in 2024	Proposal for distribution of the Employee Stock Ownership Trust for managers in FY 2025	Approved by all of the Committee members present	The proposal was approved by a resolution of the directors present, excluding the Chairman and CSO Austin Chen, CEO Chang Chia-Kun, and President Chen Ming-Ta, who did not participate in the discussion and voting due to personal interests.
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(V) Implementation status of sustainable development, and the differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons:

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	
I. Does your company have a governance structure that promotes sustainable development, and does it have a special unit or designate an existing unit for the task of sustainable development promotion? Does the Board of Directors of your company authorize the management to handle relevant matters and supervise the board?	V		<p>The Company's "Sustainable Development Committee" has been appointed based on our sustainable development policy to be the highest body in charge of the ESG-related matters. Our Chairman and CEO act respectively as the chair and executive secretary of the Committee, and are responsible for the proposal and the implementation of the policy, system or related management strategies and the specific implementation plans related to sustainability. The organizational chart (https://www.apacer.com/zh-tw/pageguide/sustainable-operation) is as follows:</p>  <p>The Sustainable Development Committee is comprised of the "ESG Promotion Team" and the "Risk Management Team". The ESG Promotion Team has five working groups of "Corporate Governance", "Employee Care", "Customer & Supplier Care", "Environmental Care" and "Community Care", with the managers of the relevant departments acting as the responsible persons of the working groups. The head of the Integration and Communication Office is designated as the Committee's Secretary to communicate and coordinate with different departments. The Board of Directors takes reference from the development plan of the competent authority and safeguards the rights and interests of all shareholders to achieve the</p>

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons				
	Yes	No					
	Summary						
		<p>Company's sustainable development goals, and for this, it formulates a sustainable development strategy plan (https://www.apacer.com/zh-tw/pageguide/sustainable-operation). Each team of the Sustainable Development Committee sets annual work goals and implementation projects and holds regular meetings every quarter to review implementation progress, effectiveness, and improvement matters.</p> <p>The Sustainable Development Committee follows the sustainable development strategy plan, conducts a questionnaire survey, interviews, or analysis of stakeholders at the end of the year to identify the issues of concern to them, and formulates new annual development goals and work plans based on the results. For important work items such as greenhouse gas inventory, the progress is reported to the Board of Directors every quarter in accordance with laws and regulations.</p> <p>In addition, the Sustainable Development Committee holds periodical review meetings with the chair and executive secretary of the Committee quarterly to follow up on the progress of implementation, and the operation is reported to the Board of Directors (annually).</p> <p>The items of implementation and the results thereof reported to the Board of Directors in 2024 are as follows: (reporting date: December 19, 2024)</p> <table><tr><th>Reports</th><th>Results of implementation</th></tr><tr><td>Key ESG awards</td><td><div>1. Corporate Governance The Company was recognized by the 10th Corporate Governance Appraisal and ranked in the top 50% companies with a market value between NT\$5 billion and NT\$10 billion.</div><div>2. Best Taiwan Global Brands Certification of the “Emerging Brands” award</div><div>3. Corporate Sustainability Report of TCSA_Golden Award</div><div>4. Taiwan Excellence Awards (3 awards)</div><div>5. EE Award (EE Times)_EE Product Award</div><div>6. The Company was nominated as one of the Business Weekly’s Top 100 Corbon Competitive Companies (first time)</div><div>7. The Company was awarded the Bronze Award in the</div></td></tr></table>	Reports	Results of implementation	Key ESG awards	<div>1. Corporate Governance The Company was recognized by the 10th Corporate Governance Appraisal and ranked in the top 50% companies with a market value between NT\$5 billion and NT\$10 billion.</div> <div>2. Best Taiwan Global Brands Certification of the “Emerging Brands” award</div> <div>3. Corporate Sustainability Report of TCSA_Golden Award</div> <div>4. Taiwan Excellence Awards (3 awards)</div> <div>5. EE Award (EE Times)_EE Product Award</div> <div>6. The Company was nominated as one of the Business Weekly’s Top 100 Corbon Competitive Companies (first time)</div> <div>7. The Company was awarded the Bronze Award in the</div>	
Reports	Results of implementation						
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Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons								
	Yes	No									
		<table><tr><th colspan="2">Summary</th></tr><tr><td></td><td>category of CHR mittelstand enterprises from the Common Health Magazine (first time) 8. The Company was awarded the CommonWealth 2024 Talent Sustainability Award (first time)</td></tr><tr><td>Risk Management</td><td>Material risks, current control system and response strategies</td></tr><tr><td>Key ESG work items</td><td>1. Intellectual property management plan and implementation 2. Report on information security control progress 3. Report on greenhouse gas inventory progress 4. Report on the implementation of annual ESG goals</td></tr></table>	Summary			category of CHR mittelstand enterprises from the Common Health Magazine (first time) 8. The Company was awarded the CommonWealth 2024 Talent Sustainability Award (first time)	Risk Management	Material risks, current control system and response strategies	Key ESG work items	1. Intellectual property management plan and implementation 2. Report on information security control progress 3. Report on greenhouse gas inventory progress 4. Report on the implementation of annual ESG goals	
Summary											
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Risk Management	Material risks, current control system and response strategies										
Key ESG work items	1. Intellectual property management plan and implementation 2. Report on information security control progress 3. Report on greenhouse gas inventory progress 4. Report on the implementation of annual ESG goals										
II. Does your company conduct assessment on the environmental, social and corporate governance risks related to the operations of the company based on the materiality principle? Does your company have a risk management policy or strategy?	V	<p>(I) This disclosure covers the sustainable development performance of the headquarters from January to December 2024. The risk assessment boundary is based on the scope of the Company.</p> <p>(II) The Company's Sustainable Development Committee conducts analysis based on the materiality principle in the sustainability report. It communicates with internal and external stakeholders, and reviews and integrates the evaluation data of each department and subsidiary, in order to assess the material ESG topics, formulate effective identification, measurement, evaluation, supervision and control risk management policies, and take specific action plans to reduce the impact of related risks.</p> <p>(III) Based on the relatively material risk items acquired after the assessment, the Company established relevant risk management policies or strategies as follows:</p> <table><tr><th>Material issue</th><th>Risk assessment item</th><th>Description</th></tr><tr><td>Corporate governance</td><td>Supply chain management - Slow-moving materials</td><td>1. Reduce long-term unnecessary materials: In addition to being sold by the purchase unit, the Company provides data to the R&D unit to review whether it is possible to make substitute materials to increase</td></tr></table>	Material issue	Risk assessment item	Description	Corporate governance	Supply chain management - Slow-moving materials	1. Reduce long-term unnecessary materials: In addition to being sold by the purchase unit, the Company provides data to the R&D unit to review whether it is possible to make substitute materials to increase	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.		
Material issue	Risk assessment item	Description									
Corporate governance	Supply chain management - Slow-moving materials	1. Reduce long-term unnecessary materials: In addition to being sold by the purchase unit, the Company provides data to the R&D unit to review whether it is possible to make substitute materials to increase									

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	
			<div>Summary</div> <div> <p>commonality.</p> <p>2. Postpone or cancel unnecessary purchase orders/quantities: Based on the new order forecast data every month, request the purchasing unit to postpone the purchase or cancel unnecessary purchase orders.</p> <p>3. Regularly review overdue inventory and conduct scrapping.</p> <p>Adjust the ratio between outsourced and in-house production capacities and the product portfolio.</p> <p>Overcapacity</p> <p>US Entity List</p> <p>1. Establish the KYC system for counterparties.</p> <p>2. Subject counterparties to management and restriction.</p> </div>
III. Environmental issues (I) Does your company establish environmental management systems suitable for your industrial characteristics? (II) Is the Company dedicated to enhancing energy efficiency and using recycled materials with low impact on the environment?	V		<p>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.</p> <p>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.</p>

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies and reasons																		
	Yes	No																			
(III) Does your company assess the current and future risks and opportunities which climate change potentially brings to the company and take measures in response to climate-related issues?	V	(III) Please refer to page 52 for the Company's assessment of climate change related risks and opportunities and countermeasures.	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies.																		
(IV) Does your company make statistics of its greenhouse gas emissions, water consumption and total waste weight during the previous two years and have policies for energy saving and carbon reduction, reduction of greenhouse gas emissions, reduction of water consumption or management of other waste?	V	<p>(IV) We regularly maintain the greenhouse gas inventory, make statistics of water consumption and total waste weight, and implement measures for energy saving and carbon reduction, including climbing stairs, upgrading process equipment, replacing lighting devices with LED lamps, recycling packaging materials with the suppliers, and continuously adopting halogen-free electronic materials. We also have formulated short-term, medium-term and long-term strategies for energy saving, carbon reduction and advanced process in order to make contribution to the environment on a continuous basis. Please refer to pages 55~56 for the results of the greenhouse gas inventory and assurance. The statistics on the water consumption and the total weight of waste are as follows:</p> <p>Water consumption in the last two years</p> <table><tr><th>Year</th><th>2023</th><th>2024</th></tr><tr><td>Water consumption</td><td>9.12 million liters</td><td>10.51 million liters</td></tr></table> <p>The water consumption in 2024 increased compared to 2023 due to the replacement of water-cooled air compressors for process stabilization and the addition of new recycling items, which led to an increase in rinsing volume.</p> <p>Waste production in the last two years:</p> <table><tr><th>Year</th><th>2023</th><th>2024</th></tr><tr><td>Hazardous industrial waste</td><td>6.6 tons</td><td>9.4 tons</td></tr><tr><td>General business waste</td><td>37.7 tons</td><td>60.1 tons</td></tr><tr><td>Total</td><td>44.3 tons</td><td>69.5 tons</td></tr></table> <p>Note: The above data only counts Apacer headquarters.</p> <p>The amount of waste generated in 2024 increased compared to 2023 due to adjustments in the waste contractor's operational methods, which led to a</p>	Year	2023	2024	Water consumption	9.12 million liters	10.51 million liters	Year	2023	2024	Hazardous industrial waste	6.6 tons	9.4 tons	General business waste	37.7 tons	60.1 tons	Total	44.3 tons	69.5 tons	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies.
Year	2023	2024																			
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Total	44.3 tons	69.5 tons																			

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	
			revision in the waste output calculation method. For detailed information, please refer to Chapter 2 of the 2024 Sustainability Report. Please refer to the ESG section on the Company's website for relevant data. (https://www.apacer.com/zh-tw/pageguide/sustainable-operation)
IV. Social issues (I) Does your company have management policies and procedures in accordance with relevant regulations and international human rights conventions?	V		(I) The Company is in continuous compliance with the "Labor Standards Act" and the regulations of RBA (Responsible Business Alliance) in the procedures of employee recruitment, selection, training, appointment and retention. We have never employed any illegal and child workers. Also, we prohibit forced labor and do not allow any to perform dangerous work. In our supply chain management, every contractor has been asked to prohibit child labor in accordance with the regulations of the Responsible Business Alliance (RBA) and follow the labor laws, worker safety regulations and relevant labor rules of different regions. Due to the changes of labor law in recent years, we have regularly reviewed all of the systems and regulations and revised relevant provisions in accordance with the latest laws. Also, the related work rules have been published on the internal website for employees to read at any time.
(II) Does your company establish and implement reasonable employee benefit measures (including remuneration, leave and other benefits)? Is the operating performance or results properly reflected in the remuneration for employees?	V		(II) In 2017, Apacer integrated all existing welfare measures, conducted a comprehensive assessment based on three main aspects—work, family, and health—and promoted new welfare measures. The "A+ EAPs Employee Assistance Program" was accordingly introduced and won the 2018 Work-Life Balance Award from the Ministry of Labor, the 2022 HR ASIA Best Companies to Work for in Asia, the 2023 Happy Enterprise Award from 1111 Job Bank, the 2024 CommonWealth Talent Sustainability Award, and the 2024 Friendly Migrant Worker Company award from the Labor Affairs Department, New Taipei City Government. The Company has an even gender distribution of global employees. We provide our employees with the benefits they are entitled to in accordance with the Labor Standards Act. We also provide benefits that are better than what the Labor Standards Act requires, such as a number of leave days higher than that required by law, support and encouragement for childbearing, and subsidies for childrearing. Moreover, our operating performance is properly

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	
(III) Does your company provide a safe and healthy work environment to its employees and provide them with safety and health education?	V	<p>reflected in the remuneration for employees, and we allocate a certain proportion of our profit for the employees on an annual basis depending on the operating conditions.</p> <p>(III) We provide a safe and healthy work environment that has been certified by ISO 45001. In addition, we conduct annual health examinations, and all new and current employees must receive safety and health training.</p>	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies.
(IV) Does your company have effective programs for the development and training of employees' career skills?	V	<p>(IV) In 2014, we began to comprehensively implement HR development with position and competency as the core concerns. Education and training courses have been designed for employees in different positions to enhance their competencies. Since 2015, we have implemented the "Directions on Talent Supply Chain Management for Essential Positions" in all aspects and have continued to do so with the expectation that the potential of employees can be effectively increased. In 2020, our Apacer Academy was established with the CEO serving as the principal. Nine institutes have been set up based on the competencies, different functions, and professions to develop training plans for all new and current employees. We hope to provide our staff, from new employees to managers, with a transparent learning and development structure through the training courses offered by the institutes and further enhance their competence and competitiveness, so that the talent strategy goal of "attracting outstanding talents and developing future technologies to create a reliable employer brand" can be achieved.</p>	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies.
(V) With respect to the issues such as customer health and safety, customer privacy, marketing and labeling of products and services, does your company conform to the relevant regulations and international standards and establish the relevant rights protection policies and complaint procedures for the consumers or customers?	V	<p>(V) The Company ensures the quality of its products and services are in accordance with government regulations and industrial standards. Regarding the marketing, labeling and customer privacy for products and services, we follow the relevant regulations and international standards and strictly prohibit deceit, misguidance, fraud or any other act that damages the trust or rights of customers.</p> <p>(1) The company values the privacy of every customer and has established comprehensive procedures to protect customer privacy data. Measures include document access control, among others. For complete details, please refer to our Sustainability Report.</p>	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies.

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	
<p>(VI) Does your company have a supplier management policy that requires suppliers to comply with regulations concerning environmental protection, occupational safety and health or labor rights? What is the status of its implementation?</p>	V	<p>(2) To provide customers with high-quality products and meet their requirements, our company has implemented a quality management system (ISO 9001:2005).</p> <p>(3) The company places great importance on communication with customers and actively establishes smooth and diversified communication channels, such as customer service mailboxes, after-sales service websites, and customer satisfaction surveys, to gather feedback and opinions.</p> <p>(VI) In accordance with the standards of the Responsible Business Alliance (RBA), our component specifications and procurement procedures are all in compliance with standard written or fair contracts so that suppliers can focus on ethical management and offer the best quality and reasonable prices. Through influence on suppliers and cooperative relationships, we promote certain issues in its upstream supply chain, including RoHS, process and quality control, workers' rights, health and safety, and prohibition of child labor. We also have communication channels in place with suppliers to ensure they also follow the RBA policies to reduce risks of non-conformity with relevant regulations. This shows that we do put emphasis on CSR.</p> <p>(1) Supplier policies: We carry out the risk assessment based on overall performance of the supply quality (ISO 9001), delivery time, price, capability for green products (QC080000), implementation of RBA policy, etc. of the suppliers, purchase raw materials from the suppliers in different areas, and regularly make the supplier evaluation. These policies help ensure the stable supply quality of products and satisfy the customer needs as well as the hazardous substances free (HSF) requirements.</p> <p>(2) Supplier assessment: We have incorporated the RBA's five regulations regarding the labor, health and safety, environmental protection, ethical standards and management systems into the annual evaluation. During the beginning phase, the manufacturers that have factories with a certain scale and are able to observe our RBA requirements are the first ones to be accepted. We will continue to expand the scope of our evaluation to get in line with the international trend with the suppliers and gradually enhance the suppliers' sustainability management capability. For the</p>	<p>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies.</p>

Item of Implementation	Status of implementation		Differences with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	
			supplier evaluation and rating results, please refer to the Corporate Sustainability Report. (3) Supplier commendation: We hold an annual supplier conference to not only present our sustainable management philosophy and sustainability-related information but also commend the excellent suppliers for their great performance, thereby showing the spirit of "good partnership".
V. Does your company use internationally accepted standards or guidelines for preparation of reports as reference in preparing the Corporate Sustainability Report and other reports disclosing non-financial information of the company? Do the aforementioned reports receive assurance or guarantee opinions from any third-party verifying agency?	V		The Company considers domestic and foreign sustainability and industry trends and identifies issues of concern to stakeholders through materiality analysis to form the focuses of information disclosure in the report. At the same time, the report editor follows the eight reporting principles required by GRI Standards and uses the materiality, inclusivity, responsiveness and impact under the 2018 AA1000 Accountability Principles Standard (APS) as the basis for the preparation of the report. The 2023 Sustainability Report is verified by an independent and credible third party, British Standards Institution (BSI), in accordance with the AA1000AS v3 Assurance Standard (2008) and Type 1 assurance engagement in the 2018 Addendum. The result shows compliance with the moderate assurance standard and the assurance under GRI Standards. For BSI's third-party verification statement, please see the Independent Assurance Statement in the appendix of the Corporate Sustainability Report. https://www.apacer.com/zh-tw/normaldownload/download-report . The 2023 Sustainability Report was approved by the Board of Directors on July 26, 2024.
VI. In the event the company has established its own sustainable development principles in accordance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies, please describe the differences between the actual implementation and the company's sustainable development principles: The actual implementation of sustainable development in Apacer has been completely in line with our "Sustainable Development Best Practice Principles", and there have been no differences. The Board of Directors approved the establishment of the "CSR Best-Practice Principles" in April 2016, and amended the Principles in April 2020 to strengthen the implementation of our corporate social responsibility. In May 2023, the Company changed the title of the "CSR Best-Practice Principles" to the "Sustainable Development Best-Practice Principles" in line with the latest amendments of the "Corporate Sustainability Best-Practice Principles for TWSE/GTSM Listed Companies." The new version is used as a basis for the management of the Company's economic, environmental, and social risks and impacts, and for the implementation of improvements. There is no deviation up to now.			We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies.
VII. Other important information helpful for the implementation of sustainable development: For detailed information, please see our annual Corporate Sustainability Reports on our website: https://www.apacer.com/zh-tw/esgoverview/esg-overview			

(V-1) Climate-related information of listed companies

1. Implementation of climate-related information

Item		Status of implementation					
(I)	Describe board and management oversight and governance of climate-related risks and opportunities.	(I)	Sustainable Development Committee: This is Apacer’s highest climate change risk management organization with the Chairman acting as the chair. It reviews the implementation and planning of the work related to the climate every quarter, and reports to the Board of Directors every year.				
(II)	Describe how the identified climate risks and opportunities affect the Company's business, strategy and finances (short-term, medium-term, long-term).	(II)					
			Risk/ opportunity	Description	Financial impact level	Impact Statement	Response strategies
			Risk 1	Impact of typhoons or floods	Direct	Reduced production capacity, equipment damage, and increased costs may affect operational performance.	<ul style="list-style-type: none">● Emergency disaster response drills: Costs for personnel disaster preparedness and supply chain coordination exercises, as well as contingency plans for production or transportation.● Hardware and infrastructure optimization: Procurement of waterproof and flood-prevention equipment; building reinforcement and off-site data backups.
			Risk 2	Environmental regulations and carbon emission management	Direct	Compliance with regulations may lead to higher operational costs, such as upgrading equipment or using environmentally friendly materials; non-compliance may result in penalties.	<ul style="list-style-type: none">● Stay updated on international regulatory trends and adjust product processes and R&D to comply with relevant standards and technologies.● Regularly review operational equipment and evaluate appropriate timing for upgrades or implementation.
			Opportunity 1	Gaining cooperation and incentives	Indirect	Sustainability-related regulations are becoming increasingly	Participate in government subsidy programs, such as those for renewable energy enhancement or carbon offset initiatives, to gain

Item	Status of implementation				
	Opportunity 2	Market demand for the development of green products	Indirect	stringent, leading to higher production and operational costs.	benefits like tax reductions or preferential loans.
(III) Describe the impact of extreme climate events and transition actions on the finance.					
(IV) Describe how identification, assessment and management processes of climate risk are integrated into the overall risk management system.					
(V) If scenario analysis is used to assess the resilience to climate change risk, the scenarios, parameters, assumptions, and analysis factors used and the major impact on the finance shall be stated.					
(VI) If there is a transformation plan to manage climate-related risks, describe the contents of the plan, and the indicators and goals used to identify and manage physical and transition risks.					

Item	Status of implementation
<p>(VII) If internal carbon pricing is used as a planning tool, the basis for setting the price shall be stated.</p> <p>(VIII) If climate-related goals are set, the activities covered, the scope of greenhouse gas emissions, the planning schedule, annual achievement progress and other information shall be stated. If carbon offsets or renewable energy certificates (RECs) are used to achieve relevant goals, the information shall be stated. The source and quantity of offset carbon reduction credits or the quantity of RECs shall be stated.</p> <p>(IX) Greenhouse gas inventory and assurance, reduction goals, strategies and specific action plans.</p>	<p>(VII) There is no corresponding plan.</p> <p>(VIII) There is no corresponding plan.</p> <p>(IX) Please refer to 1-1 and 1-2 for details.</p>

1-1 Greenhouse gas inventory and assurance status in the most recent two years

1-1-1 Information of greenhouse gas inventory

Describe the greenhouse gas emissions (tCO ₂ e), intensity (tCO ₂ e/NT\$1 million) and data coverage in the most recent two years.				
The parent company on the individual financial statements shall be inventoried starting in 2026, and the subsidiaries on the consolidated financial statements shall be inventoried starting in 2027.				
The Company's greenhouse gas emission in the last two years is described as follows:				
	2022		2023	
	Emissions (tCO ₂ e)	Intensity (tCO ₂ e/NT\$ million)	Emissions (tCO ₂ e)	Intensity (tCO ₂ e/NT\$ million)
Category 1	125.2123		125.2509	
Category 2	1,816.0016		1,765.0064	
Total	1,941.2139	0.2207	1,890.2573	0.2477

1-1-2 Information of greenhouse gas assurance

Describe the assurance status in the most recent two years and up to the publication date of this annual report, including the scope, institution, criteria and opinion of the assurance.
<p>The parent company on the individual financial statements shall be assured starting in 2028, and the subsidiaries on the consolidated financial statements shall be assured starting in 2029.</p> <p>Assurance scope: APACER TECHNOLOGY INC. at No.32, Zhongcheng Rd., Tucheng Dist., New Taipei City 236, Taiwan R.O.C.</p> <p>Period covered by GHG emissions verification: January 1, 2022 to December 31, 2022</p> <p>Period covered by GHG emissions verification: January 1, 2023 to December 31, 2023</p> <p>Assurance institution: Bureau Veritas Certification (Taiwan) Co., Ltd.</p> <p>Assurance standards and assurance opinions: Based on the process and procedures conducted, we conclude that the GHG statement for Category 1 and 2 is materially correct and is a fair representation of the GHG data and information, and is prepared in accordance with the ISO 14064-1:2018. Levels of Reasonable Assurance in Compliance Verification Agreements.</p> <p>There is no evidence that the GHG statement for Category 3 is not materially correct and is not a fair representation of GHG data and information and has not been prepared in accordance with the ISO 14064-1:2018 Levels of Limited Assurance in Compliance Verification Agreements.</p> <p>It is our opinion that APACER TECHNOLOGY INC. has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of these GHG emissions for the stated period and boundaries</p>

1-2 Greenhouse gas reduction goals, strategies and specific action plans

Describe the base year for reduction of greenhouse gases and reduction data, reduction goals, strategies and specific action plans, and achievement status of the reduction goals.
<p>The base year for greenhouse gas reduction is 2022 when the first external inspection was conducted. The emissions in 2022 were 1,941.2139 tCO₂e (Category 1 and Category 2). The reduction target is 2.5% in three years (2025).</p> <p>Short-term carbon reduction targets: A reduction of 0.1% by 2025 compared to 2022, and a reduction of 0.2% by 2026 compared to 2022.</p> <p>Medium-term carbon reduction targets: From 2027 to 2029, a reduction of 0.2% annually.</p> <p>Long-term carbon reduction targets: From 2030 to 2035, a reduction of 0.2% annually.</p> <p>The Company's main source of emissions is electricity. Therefore, the current reduction strategy is to replace old, energy-consuming equipment. The specific action plan is to replace lighting devices, encourage more exercise to reduce the use of elevators and use electronic documents to reduce the use of printouts and paper. The Company's 2023 emissions were 1,890.2573 tCO₂e, indicating a reduction of 50.9566 tCO₂e, or 2.625%.</p>

(VI) Implementation status of ethical corporate management, deviations from the Ethical Corporate Management Best-Practice Principles for TWSE/TPEX Listed Companies, and reasons for such deviations:

Item for evaluation	Description		Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	
I. Development of ethical management policies and programs (I) Does your company establish ethical management policies adopted by the Board of Directors? Does your company clearly specify, in its regulations and external documents, the ethical management policies and practice and the commitment of the Board of Directors and the management to rigorous and thorough implementation of those policies?	V	(I) The Company's ethical management policies adopted by the Board of Directors, together with the programs of "Ethical Corporate Management Best Practice Principles" and "Procedures for Ethical Management and Guidelines for Conduct", have been established and disclosed on our intranet and extranet. Meanwhile, the Board of Directors and management have signed the commitment to implement the ethical management policies.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(II) Does your company establish a risk assessment mechanism against unethical conduct to analyze and assess, on a regular basis, business activities within its business scope which are at a higher risk of involving unethical conduct, and accordingly establish programs to prevent unethical conduct? Do such programs include at least measures to prevent the acts specified under Article 7, Paragraph 2 of the "Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies"?	V	(II) We have built effective systems for accounting and internal control; the auditors regularly examine the extent of compliance with these systems. Also, to prevent unethical conduct, the "Procedures for Ethical Management and Guidelines for Conduct" that include the preventive measures specified under Article 7, Paragraph 2 of the "Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies" have been developed.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.

Item for evaluation	Description		Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	
(III) Does your company specify, in the programs for prevention of unethical conduct, the operational procedures, code of conduct, punishment for violations and complaint systems? Have such programs been implemented and regularly reviewed and revised?	V	(III) We have formulated the “Procedures for Ethical Management and Guidelines for Conduct” to regulate unethical conduct and preventive measures. In addition, it is stipulated in our “Work Rules” that in the event of conclusive evidence showing any employee has “engaged in jobbery, embezzlement of public funds, or acceptance of bribes/commissions”, or “concurrently conducted any external business that is in conflict with our operations and affects our interests, with the circumstances deemed grave”, we may terminate the labor contract without prior notification. Thus, the Company implements relevant systems and regulations, and reviews the implementation status of the aforementioned programs through regular meetings.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
II. Implementation of ethical management (I) Does your company assess the past records of the counterparties regarding ethics? Do contracts between the company and the counterparties include clear clauses governing ethical conduct?	V	(I) The Company has become a member of the RBA (Responsible Business Alliance) since 2017. All the counterparties of the Company are required to sign the “Commitment to Compliance with RBA Standards”.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(II) Does your company have a special unit as subordinate to the Board of Directors for the implementation of corporate ethical management? Does the unit regularly report (at least annually) to the Board of Directors regarding the ethical management policies and unethical conduct prevention programs and the supervision and implementation thereof?	V	(II) Our talent development unit serves as the responsible unit for the implementation of corporate ethical management. It coordinates with each relevant unit to implement ethical management within the scope of the unit's functions, and regularly reports (at least once a year) to the Board of Directors on the supervision and implementation of ethical management policies and unethical conduct prevention programs. The Company's “Ethical Corporate Management Policies” were adopted at the board meeting held on November 5, 2020. The following implementation items of ethical management are reported at the board meeting on a regular basis every year according to Article 5 of the “Procedures for Ethical Management and Guidelines for Conduct”: <ul style="list-style-type: none"> • Incorporation of ethical management values into the Company's business strategy • Regular analysis of unethical conduct risks 	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.

Item for evaluation	Description		Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	
<p>(III) Does your company have policies against conflicts of interest and provide proper channels through which explanations may be given? Has the company implemented them?</p> <p>(IV) Does your company establish effective systems for accounting and internal control to ensure the implementation of ethical management? Do the company's internal auditing units formulate relevant audit plans based on the results of assessment on the risks of unethical conduct and accordingly audit the compliance with the unethical conduct prevention programs? Or are audits conducted by commissioned CPAs?</p> <p>(V) Does your company regularly hold internal and external education and training sessions regarding ethical management?</p>	V		<ul style="list-style-type: none"> Check-and-balance mechanisms for supervision of activities with higher unethical conduct risks Promotion and training with respect to ethical management policies Planning of a whistle-blowing system Assistance for the Board of Directors and management in the audit and assessment of preventive measure effectiveness Declaration of compliance with ethical management <p>(III) The Company has established the "RBA Handbook" and the "Code of Ethical Conduct" to clearly specify the provisions, standards, and policies for preventing the circumstances of conflicts of interest. Personnel are required to report to their immediate superiors, managers of the talent development unit, or the Board of Directors in the event that they have learned of or are facing similar circumstances.</p> <p>So far, we have not found any material violation.</p> <p>(IV) In accordance with the competent authority's updates of regulations, letters and directives, Apacer revises its accounting and internal control systems on a regular or ad hoc basis to meet operational requirements. The auditing units make audit plans and conduct audits accordingly as per the relevant regulations to check the implementation of the systems.</p>
	V		<p>(V) Our regulations governing ethical management have been included as part of the internal education and training for employees.</p> <p>In 2024, internal employees were provided with ethical management training sessions that covered labor, health and safety, environmental health, ethical standards, management systems, and other issues related to RBA and insider</p>
			In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
			In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
			In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.

Item for evaluation	Description		Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	
			Companies.
			trading prevention. The Chairman and CSO promoted the concept at the beginning of the in-person training, and the number of employees in the Group participating in the sessions totaled 527. A supplier conference for external suppliers was held to emphasize the importance of ethical management, addressing issues related to labor, health and safety, environmental health, ethical standards, management systems, and other RBA-related topics. A total of 86 participants attended the conference.
III. Functioning of the whistleblowing system (I) Does your company have concrete systems for whistleblowing and rewards? Does your company have convenient channels in place for whistleblowing and has it appointed appropriate personnel to deal with the persons who are the subject of whistleblowing? (II) Does your company establish standard operating procedures for investigation of matters reported by whistleblowers, measures to be taken following the conclusion of investigation and relevant mechanisms for confidentiality? (III) Does your company take any measures to protect whistleblowers from improper treatment as a result of their whistleblowing?	V	(I) We have established the “Whistleblowing System,” which clearly states whistleblowing and reward systems and stipulates that the managers of the auditing and talent development units are designated as the persons responsible for these matters. (II) The “Whistleblowing System” includes relevant investigation procedures, subsequent defect improvement measures and mechanisms for confidentiality. (III) The “Whistleblowing System” includes a clear list of whistleblower protection measures to prevent whistleblowers from being treated improperly as a result of whistleblowing. Any whistleblowing report is processed in accordance with the rules governing the system.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies. In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies. In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
IV. Strengthening disclosure of information Does your company disclose the contents of its ethical management principles and outcome of implementation on its website	V	The Company has disclosed the “Ethical Corporate Management Best-Practice Principles”, and the “Procedures for Ethical Management and Guidelines for Conduct” on the official website. Also, we turn the relevant results into quantitative data for	In compliance with the Ethical Corporate Management Best

Item for evaluation	Description		Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	
and the Market Observation Post System?			Practice Principles for TWSE/GTSM Listed Companies.
V. In the event your company has established its own ethical management best practice principles in accordance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies, please describe the differences between the implementation of ethical management and the company's own ethical management best practice principles: None.			
VI. Other important information helpful for understanding the implementation of your company's ethical management: (such as review and amendment of the company's own ethical management best practice principles)			
1. The Company continued to revise our "Ethical Corporate Management Best Practice Principles" and "Procedures for Ethical Management and Guidelines for Conduct" according to the updated government regulations and reported them to the shareholders' meeting in 2020 to achieve the goal of corporate governance and ethical management. Besides, we hold a supplier conference annually to clarify our policy of corporate ethical management to our suppliers and get their commitment to it.			
2. As of the board meeting held on December 19, 2024, we have not received any report regarding violation of the relevant codes and conduct guidelines.			

(VII) Other important information helpful for increasing understanding of the Company's corporate governance may be disclosed along with the above information:

1. As our business scale grows and the need for control and management of foreign subsidiaries arises, we have continued to review and establish relevant regulations, procedures and internal implementation rules to enhance operational performance and strengthen risk control, with the aim to achieve better implementation of corporate governance. In recent years, following the establishment or amendment of relevant laws and standards by the competent authority in charge of securities, and taking into account practical business needs, Apacer has established the following regulations:

- "Articles of Incorporation",
- "Rules of Procedure for Shareholders' Meetings",
- "Director Election Regulations",
- "Rules of Procedure for Board of Directors Meeting",
- "Procedures for Acquisition or Disposal of Assets",
- "Procedures for Endorsements/Guarantees",
- "Procedures for Loaning Funds to Others",
- "Regulations on Engaging in Commercial Foreign Exchange Risk Management Related Financial Products",
- "Regulations Governing the Transactions among Related Parties".

The following implementation rules have also been established as basis of all internal operations:

- "Rules Governing the Scope of Responsibilities of Independent Directors",
- "Regulations Governing the Management of Financial and Non-financial Information",
- "Regulations Governing the Management of Liabilities, Commitments and Contingencies",
- "Code of Ethical Conduct",
- "Ethical Corporate Management Best Practice Principles",
- "Procedures for Ethical Management and Guidelines for Conduct",
- "Management Procedures for Handling Material Insider Information and Prevention of Insider Trading",
- "Subsidiary Management Regulations",
- "Corporate Governance Best Practice Principles",
- "CSR Best Practice Principles",
- "Rules Governing the Whistleblowing System",
- "Guidelines for Evaluating the Performance of the Board of Directors,"
- "Risk Management Policies and Procedures,"
- "Regulations Governing the Management of Seals".

Internally, we notify all employees of the latest regulations and rules through announcement and publishes them on the internal website. They are simultaneously posted on our official website and can be searched for. The training of new employees also includes courses for the promotion of these regulations and

rules.

2. Our personnel responsible for financial information transparency have received certificates designated by the competent authority, as follows:

Certificate	No. of person(s)	
	Internal audit	Financial accounting
Certified Public Accountant (CPA) of the Republic of China (Taiwan)	1	2
Certified Internal Auditor (CIA)	2	0

(VIII) The status of the implementation of internal control systems shall include the disclosure of the following matter(s):

1. Declaration on the Internal Control System

Apacer Technology Inc.

Declaration on the Internal Control System

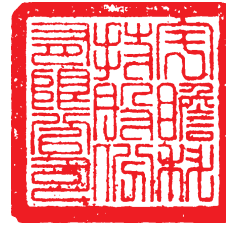
Date: February 20, 2025

Based on the result of self-inspection of Apacer's internal control system in 2024, we hereby declare the following:

- I. We acknowledge that the Board of Directors and managers are responsible for the establishment, implementation and maintenance of the internal control system. We have established such a system. The purpose of this system is to provide reasonable assurance in terms of the effectiveness and efficiency of operations (including profits, performance and protection of asset security), reliability, timeliness, transparency, and regulatory compliance of reporting, as well as the compliance with applicable laws, regulations and bylaws.
- II. Any internal control system has its inherent limitations. No matter how well an internal control system is designed, it can only provide reasonable assurance regarding the achievement of the above three objectives. Moreover, the effectiveness of an internal control system may be altered as a result of changes in the environment and circumstances. Our internal control system however includes a self-monitoring mechanism. Once a defect has been identified, corrective actions are immediately taken.
- III. We determine the effectiveness of the design and implementation of our internal control system by using the items specified in the Regulations Governing the Establishment of Internal Control Systems by Public Companies (hereinafter "the Regulations"). The aforementioned items in "the Regulations" divide an internal control system into five components based on the processes of management and control: 1. control environment, 2. risk assessment, 3. control activities, 4. information and communication, and 5. monitoring activities. Each component includes several elements. Please see the Regulations for the aforementioned items.
- IV. The Company has adopted the aforementioned items to examine the effectiveness of the design and implementation of our internal control system.
- V. Based on the result of the examination, we determined that, until December 31, 2024, the design and implementation of our internal control system (including supervision and management of subsidiaries) have worked well regarding the effectiveness and efficiency of operations, reliability, timeliness, transparency, and regulatory compliance of reporting, and compliance with applicable laws, regulations and by-laws, providing reasonable assurance that the above objectives have been achieved.
- VI. This Declaration is to be part of the main contents of our annual reports and prospectuses, and released to the public. In the event that the above public content includes false information or concealed certain information, the legal responsibilities under Articles 20, 32, 171 and 174 of the Securities and Exchange Act will be invoked.

VII. This Declaration was adopted by the Board of Directors meeting on February 20, 2025. All nine Directors present approved the content of this Declaration, and none of them expressed dissent. This information is declared as an addition.

Apacer Technology Inc.



Chairman: Austin Chen



signature

CEO: Chang Chia-Kun



signature

2. If review of the internal control system has been conducted by entrusted CPAs, the CPAs' review report must be disclosed: None.

(IX) Important resolutions of the Shareholders' Meeting and Board meetings during the most recent FY until the date on which the annual report was printed:

1. Important resolutions of the Shareholders' Meeting

Date of meeting	Meeting resolutions	Status of implementation
2024.05.31	Full re-election of directors due to expiration of the current term.	The proposal was adopted without revision. The changes were registered on July 19, 2024.
	The Company's 2023 business report and financial statements were adopted.	The proposal was adopted without revision.
	Proposal for amendment of the "Articles of Incorporation" was adopted.	The proposal was adopted without revision. The changes were registered on July 19, 2024.
	Proposal for amendment to the Company's "Criteria for Handling Acquisition and Disposal of Assets" and "Regulations on Engaging in Commercial Foreign Exchange Risk Management Related Financial Products" was adopted.	The proposal was adopted without revision.
	Proposal to exempt newly elected directors and their representatives from non-compete restrictions was adopted.	The proposal was adopted without revision.

2. Important resolutions of the board meetings

Term of the Board of Directors	Time	Proposal
1st meeting in 2024	2024.02.23	<p>(I) Proposal for distribution of the remuneration for employees and directors in FY 2023 was adopted.</p> <p>(II) Proposal for transfer of the Company's managers was adopted.</p> <p>(III) Proposal for the regulations on shareholding of the managers was adopted.</p> <p>(IV) Proposal for amendments to the Company's "Articles of Association of the Employee Stock Ownership Trust Management Committee" was adopted.</p> <p>(V) Jason Yin and Steven Shih, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company's financial statements, and the evaluation of their independence and competence as well as the resolution of their remuneration were adopted.</p> <p>(VI) The business report and self-prepared financial statements of FY 2023 were adopted.</p> <p>(VII) Proposal to issue the "Declaration on the Internal Control System" of FY 2023 was adopted.</p> <p>(VIII) Proposal for issuance of new shares for cash capital increase by way of private placement was adopted.</p> <p>(IX) Proposal for amendment of the "Articles of Incorporation" was adopted.</p> <p>(X) Proposal to hold a new election of the directors due to expiration of the current term was adopted.</p> <p>(XI) The list of candidates nominated for directors (including Independent Directors) after discussion</p>

Term of the Board of Directors	Time	Proposal
		<p>was adopted.</p> <p>(XII) Proposal to exempt newly elected directors and their representatives from non-compete restrictions was adopted.</p> <p>(XIII) Proposal to convene the annual general meeting of shareholders in FY 2024 was adopted.</p>
2nd meeting in 2024	2024.04.17	<p>(I) The quarterly consolidated financial statements for the first quarter of FY 2024 were adopted.</p> <p>(II) Proposal for distribution of the profit of FY 2023 was adopted.</p> <p>(III) The implementation status of the application for listing common stocks issued through initial private placement in 2023 and the proposal for no further issuance of the remaining unissued quota through private placement were adopted.</p> <p>(IV) Proposal for amendment to the Company's "Criteria for Handling Acquisition and Disposal of Assets" and "Regulations on Engaging in Commercial Foreign Exchange Risk Management Related Financial Products" was adopted.</p> <p>(V) Proposal for amendment of the "Regulations Governing the Transactions among Related Parties" and "Subsidiary Management Regulations" was adopted.</p> <p>(VI) Proposal for amendment to the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for the "Production Cycles" of the Company was adopted.</p> <p>(VII) Proposal for amendment to the "Directions for Senior Management's Benefits," "Regulations Governing the Management of Appropriation for Talent Retention Fund," and "Regulations Governing Performance Bonuses for Employees" was adopted.</p> <p>(VIII) Proposal for amendment of the "Code of Ethical Conduct" was adopted.</p> <p>(IX) Proposal for amendment to the "Ethical Corporate Management Best-Practice Principles" and "Procedures for Ethical Management and Guidelines for Conduct" was adopted.</p> <p>(X) Proposal for amendment to the "Management Procedures for Handling Material Insider Information and Prevention of Insider Trading," "Procedures Governing Application for Suspension and Resumption of Trading," "Corporate Governance Best-Practice Principles" and "Regulations Governing the Management of Seals" was adopted.</p> <p>(XI) Proposal for update of convening the annual general meeting of shareholders in FY 2024 was adopted.</p>
3rd meeting in 2024	2024.05.31	<p>(I) Proposal for election of Chairman and Vice Chairman was adopted.</p> <p>(II) Proposal to appoint the sixth session of the Remuneration Committee was adopted.</p>
4th meeting in 2024	2024.07.26	<p>(I) The quarterly consolidated financial statements for the second quarter of FY 2024 were adopted.</p> <p>(II) Proposal for establishment of the "Internal Control System" for the "Procedure for Preparation and</p>

Term of the Board of Directors	Time	Proposal
		Filing of Sustainability Reports” of the Company was adopted. (III) Proposal for the preparation of the Company’s 2023 Sustainability Report was adopted
5th meeting in 2024	2024.10.28	(I) Proposal for adjustment of salary for managers in 2024 was adopted. (II) The quarterly consolidated financial statements for the third quarter of FY 2024 were adopted. (III) The internal audit plan of FY 2025 was adopted. (IV) Proposal for amendment to the “Guidelines for Evaluating the Performance of the Board of Directors” was adopted.
6th meeting in 2024	2024.12.19	(I) The strategic development and operational plans of FY 2025 were adopted. (II) Proposal to apply for extending contracts with financial institutions concerning the credit line and transaction limit for hedging financial products in FY 2025 was adopted. (III) Proposal for distribution of the performance bonus for managers in 2024 was adopted. (IV) Proposal for distribution of the remuneration for managers in 2024 was adopted. (V) Proposal for distribution of the Employee Stock Ownership Trust for managers in FY 2025 was adopted. (VI) Proposal for amendment of the “Articles of Incorporation” was adopted. (VII) Proposal for amendment to the “Standard Operating Procedures for Processing Directors’ Requests” was adopted. (VIII) Proposal for amendment to the “Rules of Procedure for Board of Directors Meeting” was adopted. (IX) Proposal for amendment to the “Articles of Association of the Audit Committee” was adopted.
1st meeting in 2025	2025.02.20	(I) Proposal for distribution of the remuneration for employees and directors in FY 2024 was adopted. (II) Proposal for issuance of employee restricted stock in FY 2025 was adopted. (III) Jason Yin and Steven Shih, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company’s financial statements, and the evaluation of their independence and competence as well as the resolution of their remuneration were adopted. (IV) The business report and self-prepared financial statements of FY 2024 were adopted. (V) Proposal for distribution of the profit of FY 2024 was adopted. (VI) Distribution of cash from capital reserve of the Company was adopted. (VII) Proposal to issue the “Declaration on the Internal Control System” of FY 2024 was adopted. (VIII) Proposal for amendment to the “Internal Control System for Sustainable Information Management” for the “Other Management Control Cycles” was adopted. (IX) Proposal for amendment to the “Control procedure for Basic-Level Employee Reward Management” for

Term of the Board of Directors	Time	Proposal
		(X) the "Labor and Wage Cycle" was adopted. Proposal to convene the annual general meeting of shareholders in FY 2025 was adopted.

- (X) In the event that any director or supervisor expressed a dissenting opinion regarding any of the important resolutions adopted by the BoD during the most recent FY as of the date on which the annual report was printed, and that the opinion was recorded or delivered in writing, please describe its main content: None.

III. Information on CPA professional fees

- (I) Disclosure of the amounts of the audit and non-audit fees paid to CPAs, the CPAs' firm and any of its affiliates, and the details of the non-audit services:

Unit: NT\$ thousand

Accounting firm	Name of CPA	CPA's audit period	Audit professional fees	Non-audit professional fees (Note)	Total	Remarks
KPMG Taiwan	Jason Yin	2024	4,310	805	5,115	-
	Steven Shih					

Note: The non-audit services are services for the audit and certification of profit-seeking enterprise income tax returns and transfer pricing reports.

- (II) In the event that the accounting firm has been changed and that the amount of audit professional fees paid during the FY when the change occurs is lower than that paid during the previous FY, the amounts before and after the change and the reasons must be disclosed: N/A
- (III) In the event the amount of audit professional fees is reduced by at least 10% in comparison with the previous FY, the amount, percentage and reasons of the reduction must be disclosed: N/A.

IV. Information on change of CPAs

(I) On the predecessor CPAs:

Date of change	April 17, 2024			
Reasons and description of change	In line with the needs for adjusting the positions of the CPAs at KPMG Taiwan, and starting from Q1 of FY 2024, the original CPA team consisting of Philip Tang and Steven Shih was replaced by the team consisting of Jason Yin and Steven Shih.			
The commissioner or CPA terminates or declines the commission	Parties		CPA	Commissioner
	Circumstance			
	Commission was terminated on his/her initiative		N/A	N/A
	(Extension of) Commission was declined		N/A	N/A
Opinions and reasons for audit reports issued during the most recent two years, excluding those issued without reservations	None			
Any differences in opinions with the issuers?	Yes		Accounting principles or practice	
			Disclosure of financial reports	
			Scope or steps of audits	
			Other	
	None	V		
	Description			
Other matters for disclosure	None			

(II) On the successor CPAs:

Accounting firm	KPMG Taiwan
Name of CPA	CPAs Jason Yin and Steven Shih
Date of commissioning	April 17, 2024
Matters regarding which the successor CPAs were consulted, and which were related to the accounting treatment or accounting principles of specific transactions; matters regarding which the successor CPAs were consulted, and which were related to the opinions that might be issued on financial reports; results of these matters	None
Written opinions of the successor CPAs on matters regarding which the predecessor CPAs have expressed dissenting opinions	None

(III) Letters of reply from the predecessor CPAs: N/A.

V. The Company's Chairman of the Board, President, or any managerial officer in charge of finance or accounting operations who has, in the most recent year, held a position at the accounting firm of its CPA or its related companies: None.

VI. Change of shares transferred and pledged for directors, supervisors, managers and any shareholder holding more than 10% of the company's shares during the most recent FY as of the date on which the annual report was printed

1. Change of shares for directors, supervisors, managers and major shareholders

Unit: Share

Title	Name	2024		2025, as of March 24	
		No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged	No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged
Chairman & CSO	Austin Chen	-	-	-	-
Director & CEO	Chang Chia-Kun (Note 1)	55,000	-	-	-
Vice Chairman & President	Chen Ming-Ta (Note 2)	-	-	-	-
Director	Teddy Lu	-	-	-	-
Director	George Huang	-	-	-	-
Director	Haydn Hsieh (Note 3)	-	-	-	-
Director	Victor Chien (Note 4)	-	-	-	-
Director Representative	Acer (Note 4)	218,000	-	-	-
Director	Phison (Note 3)	-	-	-	-
Independent Director	Max Wu	-	-	-	-
Independent Director	Philip Peng	-	-	-	-
Independent Director	Cathy Han	-	-	-	-
Vice President	Luo Rong-Fa	98,000	-	1,000	-
Vice President	Huang Mei-Hui	-	-	-	-
Vice President	Luo Xue-Ru	4,000	-	-	-
CTO	Li Jun-Chang	1,480	-	-	-
CFO	Lai Zi-Wen	-	-	-	-
Senior Head	Yin Hua-Jun	(2,437)	-	-	-
Senior Head	Yu Yao-tse	12,597	-	10,000	-
Accounting manager	Huang Yi-cheng	-	-	-	-

Note 1: Chang Chia-Kun was promoted to CEO on April 1, 2024 to bear the ultimate management responsibilities continuously.

Note 2: Chen Ming-Ta was promoted to President on April 1, 2024.

Note 3: Haydn Hsieh and Phison was relieved of duty as a director on May 31, 2024.

Note 4: Victor Chien (Representative : Acer) took up the post of director on May 31, 2024.

2. Information on share transfer: None.

3. Information on share pledge: None.

VII. Information on the top-10 shareholders who are related parties to each other, in a spousal relationship or within the second degree of kinship:

March 24, 2025; Unit: Share; %

TOP 10 SHAREHOLDERS	NO. OF SHARES HELD		SHARES HELD BY SPOUSE OR MINOR CHILDREN		SHARES HELD IN THE NAME OF OTHERS		THE TITLE OR NAME AND RELATION IN CASE OF THE TOP 10 SHAREHOLDERS WHO ARE RELATED PARTIES TO EACH OTHER, IN A SPOUSAL RELATIONSHIP OR WITHIN THE SECOND DEGREE OF KINSHIP		REMARKS
	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Title (or name)	Relation	
Phison Electronics Corp.	12,554,580	9.75%	-	-	-	-	-	-	-
Acer Inc.	11,928,000	9.27%	-	-	-	-	-	-	-
Shanlin Investment Co., Ltd.	6,150,000	4.78%	-	-	-	-	-	-	-
Advantech Corporate Investment Ltd.	6,041,000	4.69%	-	-	-	-	-	-	-
Teddy Lu	5,699,906	4.43%	-	-	-	-	-	-	-
Chen Ming-Ta	1,990,040	1.55%	400,000	0.31%	200,000	0.16%	-	-	-
Austin Chen	1,525,633	1.19%	450,268	0.35%	-	-	-	-	-
Zhuang Zhong-Yu	1,432,000	1.11%	-	-	-	-	-	-	-
Standard Chartered Custody – Western Asset Emerging Markets High Dividend Fund	1,343,000	1.04%	-	-	-	-	-	-	-
Masa Chang	1,310,000	1.02%	-	-	-	-	-	-	-

VIII. Shares held by the Company and the directors, supervisors, managerial officers, and business that the Company directly or indirectly controls in the same invested business and their shareholding ratio

March 24, 2025; Unit: Share; %

Invested business	Company's investment		Investments of directors, supervisors, managers and directly or indirectly controlled business		Total investment	
	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio
Apacer Memory America Inc.	20,000	100%	-	-	20,000	100%
Apacer Technology B.V.	79,513	100%	-	-	79,513	100%
Apacer Technology Japan Corp.	200	100%	-	-	200	100%
Apacer Technology (BVI) Inc.	2,635,775	100%	-	-	2,635,775	100%
Kingdom Corporation Limited	5,000,000	100%	-	-	5,000,000	100%
Apacer Technolgies Private Limited	28,799	99.65%	100	0.35%	28,899	100%
Apacer Electronics (Shanghai) Co., Ltd.	Note 1	100%	-	-	Note 1	100%
Shenzhen Qinjing Technology Co., Ltd.	Note 2	99%	-	-	Note 2	99%
JoiUp Technology Inc.	750,000	10.35%	1,712,500	23.64%	2,462,500	33.99%
UD info Corp.	4,931,960	68.54%	2,264,220	31.46%	7,196,180	100%

Note 1: Amount of contribution USD 500,000.

Note 2: Amount of contribution RMB 4,985,714.

Three. Financing

I. Capital and share

(I) Capital sources

1. Capital sources

As of March 24, 2025
Unit: Share/NT\$ thousand

M/Y	price (dollar)	Authorized capital stock		Paid-in capital stock		Remarks		
		Number of shares	Amount	Number of shares	Amount	Capital sources	Property other than cash as substitute for share price	Approval date and document no.
2024/3	10	200,000,000	2,000,000	128,729,266	1,287,293	Note	None	2024.04.01 Jing-Shou-Shang-Zi No. 11330039570

Note: Issuance of new shares for cash capital increase by way of private placement in 2024.

2. Type of shares

Unit: Share

Type	Authorized capital stock				Remarks
	Outstanding shares		Unissued shares	Total	
	Issued	Private placement			
Common stock	111,688,266	17,041,000	71,270,734	200,000,000	

3. Information on the general declaration system: None.

(II) Major shareholders

March 24, 2025

Major shareholder	Share Number of shares held (share)	Shareholding ratio (%)
Phison Electronics Corp.	12,554,580	9.75%
Acer Inc.	11,928,000	9.27%
Shanlin Investment Co., Ltd.	6,150,000	4.78%
Advantech Corporate Investment Ltd.	6,041,000	4.69%
Teddy Lu	5,699,906	4.43%
Chen Ming-Ta	1,990,040	1.55%
Austin Chen	1,525,633	1.19%
Zhuang Zhong-Yu	1,432,000	1.11%
Standard Chartered Custody – Western Asset Emerging Markets High Dividend Fund	1,343,000	1.04%
Masa Chang	1,310,000	1.02%

(III) Dividend policy and implementation status

1. Apacer's dividend policy

Our earnings, if any, shown on the final annual account are distributed as follows:

- (1) Pay taxes.
- (2) Make up losses of previous years.
- (3) Appropriate 10% as legal earnings reserve, except when the legal reserve of the Company has already reached the total capital.

- (4) Appropriation or reversal of special reserve as required by law or the competent authority.
- (5) If there is any surplus left, a provision of retained earnings is made depending on the long-term development plans and the stability of the financial structure of the Company. The Board of Directors then draws up the proposal for the distribution of the surplus left in the current year in combination with the unpaid earnings of the previous years. Where the distribution is performed by issuing new shares, the distribution shall be subject to the resolution of the shareholders' meeting; where distribution is performed in cash, the distribution shall be subject to a resolution made by a majority of directors at a meeting at which more than two-thirds of the directors are present, and shall be reported to the shareholders' meeting. The Company shall not distribute dividends or bonuses when there is no profit, unless the distribution is made with the reserves pursuant to relevant laws and regulations.

The dividend policy of the Company must be established in consideration of the overall environment of the industry, development phase, demand for funds and financial supports in the future, and relevant plans. Earnings to be distributed may be paid using cash or stocks. The payment ratio is about 60%~90% of the earnings after tax if there are no important investment plans or any special circumstances. The cash dividend must not be less than 10% of the total amount of the dividend.

2. Dividend distribution proposed at the current shareholders' meeting:

The distribution of earnings in 2024 was approved by the Board of Directors on February 20, 2025. A cash dividend of NT\$251,022,069 will be distributed to the shareholders.

(IV) The influence of the stock grants proposed at the current shareholders' meeting on the operation performance and EPS of the Company: N/A

(V) Remuneration to employees and directors

1. Percentage or scope of the remuneration for employees and directors according to the Articles of Incorporation:

Where there is profit in any fiscal year, 4% or more of the profit must be appropriated as remuneration for employees. Where the Company has any accumulated loss, the remuneration must be appropriated from the balance after such accumulated loss has been covered. Employees' remuneration may be distributed in the form of cash or stock, and employees eligible for the distribution may include the employees of the affiliated companies who meet the requirements specified by the Board of Directors.

The Board of Directors is authorized to determine the compensation recommended by the Remuneration Committee for any director with reference to the extent of his/her involvement in and value of his/her contribution to the operation of the Company and the standards of the industry in Taiwan and overseas regardless of the Company's profits or losses. Where there is any profit in a fiscal year, no more than 1.4% of the profit shall be appropriated as remuneration to directors. Where the Company has any accumulated loss, the

remuneration must be appropriated from the balance after such accumulated loss has been covered. The criteria for allocation of the remuneration must be recommended by the Remuneration Committee to the Board of Directors for approval. The procedures for determining remuneration are evaluated in accordance with the “Regulations Governing the Distribution of Remuneration for Directors”.

2. The current estimation base of remuneration for employees and directors, calculation base for the distribution of compensation in stock, and methods for handling the difference between actually distributed and estimated amounts:

The amounts of the remuneration to the Company’s employees and directors are estimated by multiplying the Company’s net profit before tax of the current period prior to the deduction of the remuneration to the employees and directors with the respective percentages to be adopted by the Company for distribution of the remuneration. The remuneration is stated as the operating expenses of the current period. The difference, if any, between the actually distributed and estimated amounts is recognized as the loss/profit of the next year.

3. Information on the distribution of the remuneration to employees and directors in 2024 approved by the Board of Directors

Unit: NT\$

Disclosed Information	Amount
Remuneration to be distributed to employees - Cash	\$32,559,000
Remuneration to be distributed to employees - Shares	-
Remuneration to be distributed to directors	\$4,927,000
Number of shares to be distributed to employees as dividends and the percentage it occupies in surplus to capital increase	None
Imputation earnings per share after proposed distribution of remuneration to employees and directors	2.18 (basic) 2.17(diluted)

Note: Information related to the distribution of profit in 2024 can be accessed through the Market Observation Post System.

4. Actual distribution of the remuneration to employees and directors in 2023:

Distribution of the remuneration to employees and directors in 2023 was adopted at the shareholders’ meeting on February 23, 2024. The approved distribution was not different from the estimate. The details are described below:

Unit: NT\$

Profit Distribution for FY 2023	Actual distribution	Book estimation	Difference
Remuneration distributed to employees - Cash	70,405,000	70,405,000	-
Remuneration distributed to employees - Shares	-		
Remuneration distributed to directors	10,119,000	10,119,000	-

5. Names of the top-10 employees receiving the highest remuneration from the profit of 2023 and the distribution:

Unit: NT\$

Title	Name	Share amount	Cash amount	Total	The total amount in net income after tax (%)
Chairman & CSO	Austin Chen	-	17,844,000	17,844,000	3.23%
Director & CEO	Chang Chia-Kun				
Vice Chairman & President	Chen Ming-Ta				
Vice President	Huang Mei-Hui				
Vice President	Luo Xue-Ru				
CTO	Li Jun-Chang				
CFO	Lai Zi-Wen				
Senior Head	Yin Hua-Jun				
Senior Head	Yu Yao-tse				
Senior Head	Xie Zheng-Zhong				

(VI) Status of stock buyback by the Company: None.

II. Status of corporate bonds

None.

III. Status of preferred stock

None.

IV. Status of overseas depositary receipts

None.

V. Status of employee stock option certificates

None.

VI. Status of employee restricted stock

None.

VII. Status of new share issuance in connection with mergers and acquisitions

None.

VIII. Implementation status of financing plans

(I) Plan description:

The Company does not have any uncompleted financing plans for issuance or private placement of securities or any completed financing plans within the most recent three years with unrealized benefit.

The funds raised from the private placement of securities in 2022 and 2024 were all utilized by the Company; the planned benefits have been achieved.

(II) Implementation status:

With respect to funds usage under the plans referred to in the preceding subparagraph, the annual report shall (for the period as of the quarter preceding the date of publication of the annual report) analyze the status of implementation and compare actual benefits with expected benefits. Where implementation has failed to yield the expected progress or benefits, the annual report shall provide specific reasons

for such failure, explain any effect it might have upon shareholders' equity, and outline the plan for correcting the situation: N/A.

Four. Overview of Business Operation

I. Business activities

(I) Business scope

1. Major business
 - (i) Memory module
 - (ii) Flash memory
 - (iii) Others
2. Operating proportion

Unit: NT\$ thousand

Product	2024	
	Sales amount	Sales percentage
Flash memory	4,776,364	60.95%
Memory module	2,949,576	37.64%
Other	111,219	1.41%
Total	7,837,159	100.00%

3. Current product categories

- A. The RAM module covers the desktop, laptop and overclocking memory modules.
- B. Special memory modules for IPCs, servers, printers, network products, and routers.
- C. USB Disk Module (UDM)
- D. Industrial USB2.0 & USB3.1 flash drives
- E. PCIe / SATA/ATA Disk Module (E3.S /E1.S /M.2 /SDM / mSATA /ADM)
- F. PCIe / SATA/ATA Disk Chip (BGA SSD / SDC/ADC)
- G. PCIe U.2 / SATA3.0 2.5"/1.8" SSD
- H. CorePower SSD: Abnormal power failure protection SSD
- I. SLC-lite, SLC-liteX product line
- J. SSDWidget real-time monitoring hardware, CoreSnapshot quick backup-restore SSD. The CoreRescue technology enables quick triggering and implementation of SSD auto backup and recovery functions.
- K. Anti-vulcanization SATA / PCIe M.2 SSD (solid-state drive)
- L. PCIe CFx Card/Industrial CF Card/CFast Card/Embedded SD, microSD Card
- M. WORM (Write Once Read Many) Card & Drive
- N. Consumer and industrial eMMC
- O. SDHC/SDXC UHS-I U1 Card, High Speed U3 V30 SDHC/SDXC, UHS-II U3 V90 SDXC Card
- P. microSDHC UHS-I U1 card, high-speed UHS-I U3 V30 A1 and A2 microSDHC /SDXC card, microSD V30 A1 Gaming Card
- Q. USB 2.0 & USB 3.2 Gen 1 flash drive, USB3.2 Gen 1 Type-C mobile flash drive

- R. 2.5" SATAIII, mSATA, M.2 and PCIe interface SSD
- S. External SSD
- T. USB 3.2 Gen 1 mobile hard drive and military-grade shock-resistant mobile hard drive
- U. Rugged Systems PCIe U.2 SSD
- V. Enterprise SATA3.0 M.2, 2.5" SSD /PCIe U.2/U.3, M.2/M.3, E1.S SSD
- W. USB 3.0 SSD Module
- X. Anti-vulcanization memory module
- Y. Rugged DDR4 XR-DIMM Module
- Z. 32-Bits DDR4 SODIMM Module
- AA. DDR4 2933/3200 memory module
- BB. High speed DDR4 2666/2933/3200 wide-temperature memory module
- CC. DDR4 32GB UDIMM/SODIMM ECC DIMM ECC SODIMM memory module
- DD. Rugged DDR4 XR-LRDIMM Module
- EE. DDR5 4800/5600 UDIMM/SODIMM/ECC DIMM/ECC SODIMM memory module
- FF. DDR5 overclocking memory module/DDR5 RGB overclocking memory module
- GG. DDR5 6400 CUDIMM module
- HH. DDR5 5600 48GB UDIMM/SODIMM/ECC DIMM/ECC SODIMM memory module
- II. DDR5 5600 REG DIMM server memory module
- JJ. DDR5 5600 wide-temperature memory module
- KK. DDR5 Fully lead-free memory module
- LL. Luminance meter / Light meter / Stroboscope
- MM. Industrial IoT solutions (planning and building of smart active disaster prevention system, AI prediction/reporting system for smart factories, design and development of 2D/3D war room)
- NN. Smart healthcare solutions (smart environmental safety management system, smart personal safety protection system, LINE AI smart service cloud management system)
- OO. Smart automated solutions (customized AI+AOI optical inspection system, planning and building of smart automated defect inspection equipment and automated production line/packaging station, ODM design and development services for optical inspection equipment)
- 4. New products to be developed
 - (1) USB 3.2 Gen2 USB & USB4
 - (2) Storage SSDs used by servers: PCIe U.2, U.3 SSD / BGA SSD / M.3 module / EDSFF module
 - (3) Gen5 PCIe SSD RGB
 - (4) PCIe Gen5x4 SSD 、USB3.2 Gen 2x2 portable SSD
 - (5) All-In-One water cooling Dual Pump Solution

- (6) DDR5 6400 CSODIMM memory module
- (7) DDR5 6400 ECC CUDIMM/ECC CSODIMM memory module
- (8) DDR5 6400 REG DIMM server memory module
- (9) DDR5 CAMM2 memory module
- (10) DDR5 64GB CUDIMM/CSODIMM/ECC CUDIMM/ECC CSODIMM/REG DIMM memory module
- (11) DDR5 5600 64GB SODIMM/ECC DIMM/ECC SODIMM memory module
- (12) DDR5 5600 REG DIMM server memory module
- (13) DDR5 9000+MHz overclocking memory module
- (14) DDR5 6400 CKD UDIMM/SODIMM/ECC DIMM/ECC SODIMM memory module
- (15) DDR5 MRDIMM multi-access dual In line memory module
- (16) LPDDR5X CAMM2 server memory module
- (17) Cholesterol e-paper project

(II) Overview of the industry

Our major business includes manufacture and sale of DRAM modules and NAND flash products.

In the process of the memory modules, DRAM (Dynamic Random Access Memory) is bound onto a PCB according to a layout design. The PCB is then embedded in a motherboard for connection with other compatible functions to increase the processing speed and memory capacity of the computer. Regarding the cost structure, the price of DRAM occupies 80%-90% of the product on average (calculation based on 8GB PC standard module). Hence, the fluctuation of the DRAM market is in close relationship with the prosperity and recession of the memory module industry. The development trend of the DRAM market is the first factor to be understood for analyzing the status quo and feature of the memory module industry.

The flash memory is used in digital products for storage of information. Thanks to the non-volatile semi-conductor technology, flash memory can be used as a storage media for the information that needs permanent retention and amendment. For example, the programed instruction storage of the Set-top-box and EDRs as well as the applications for the storage of mass data for the digital cameras, smartphones, PC applications, SSDs, POSs and IoT applications are all in close relation with the flash memory.

Hence, the development trends in the DRAM and flash memory industries have an interlocking relationship with our main products of memory modules. The DRAM and memory module markets as well as the status quo of the flash memory industry are described below.

1. Overview of the DRAM market

(1) Market scale

According to the report of Gartner, a survey organization, in February 2025, the global semiconductor revenue reached US\$626 billion, with an annual growth rate of 18.1%, in 2024. Samsung surpassed Intel to regain its leading position.

Gartner points out that the key drivers of the semiconductor industry in 2024 was the GPU and AI processors for data centers. Driven by the growing demand for AI and GenAI, data centers have become the second largest semiconductor application market, with a scale of US\$112 billion, following the smartphone market.

According to the statistics of Gartner, the revenue from memory products grew strongly by 71.8% in 2024, accounting for approximately 25.2% of the overall revenue from the semiconductor products. Among them, High Bandwidth Memory (HBM) accounted for 13.6% of the DRAM revenue.

Gartner expects that the global semiconductor revenue will continue to grow in 2025, with a breakthrough of US\$700 billion to US\$750 billion. In 2025, the revenue of HBM will reach US\$19.8 billion, with an annual growth rate of 66.3%, accounting for 19.2% of the DRMA revenue.

According to the report of TrendForce Corp., the revenue of the DRAM industry in Q4 2024 was US\$28.6 billion, growing by 9.9% from the previous quarter. The contract price of Server DDR5 rose. This and the concentrated shipment of HBM products enabled the top-3 manufacturers to keep growing in their quarterly revenue.

Samsung's revenue reached US\$11.25 billion, with a quarterly growth rate of 5.1% and a decline of 1.8% in market share. However, the company still ranked first with a market share of about 39.3%. Samsung's quarterly sales price rose by approximately 20%, while shipments, measured in bits, fell by a low-teens% each quarter. This indicates that the shipment of HBMs primarily occurred at the end of the year, with the HBM3e, which had a high unit price, being the main product. The reduction of inventories among PC OEMs and mobile phone manufacturers affected the LPDDR4 and DDR4 products, which had low unit prices, and dramatically slowed down their shipments.

The revenue of SK hynix increased to US\$10.46 billion, with a quarterly growth rate of 16.9% and a 2.2% increase in market share in terms of revenue. The company ranked second in the world with a market share of 36.6%. The sales price of HBM3e products increased by about 10% quarter by quarter, and the shipment in terms of bits increased by mid-single % in the same period. This indicates that the shipment of the HBM3e products was further increased with an effect much more significant than the shipment shrinkage of the LPDDR4 and DDR4 products.

Micron's revenue increased to US\$6.4 billion with a quarterly growth rate of 10.8%. Its market share in terms of revenue was approximately 22.4% and ranking third. The sales price increased by 8% quarter by quarter, and the shipment in terms of bits increased by 3% in the same period, indicating that the shipment of the server DRAM and HBM3e products increased.

Nanya's shipment volume was down by high-single%, the ASP dropped by low-teens%, and the quarterly revenue decreased by 19.3% to US\$203 million, reflecting the weakened sales momentum of consumer DRAM products and the concentration of sales to a few suppliers in the market.

Winbond's shipment volume was down by high-teens%, the ASP dropped by low-single%, and the quarterly revenue decreased by 22.4% to US\$119 million, reflecting the weakened demand for consumer DRAM products.

The calculation of PSMC's revenue is mainly based on its own consumer DRAM products and does not include the OEM business. The production volume shrank and the quarterly DRAM revenue dropped by 37.9% to US\$11 million; when the OEM business is added, the quarterly decrease is 10%, reflecting the continuous purchase momentum of OEC customers. (See Table 1)

Benefiting from the booming development of various AI applications, the high-profit DDR5 Server DIMMs and HBM products experienced a quarterly increase in revenue. The overall profit rate of the OEM business in Q4 2024 decreased continuously. The contract price and demand for applications were inconsistent, causing varying profit rates among suppliers.

Samsung's operating income fell from 33% in the previous quarter to 30%, trailing behind two other manufacturers in the industry. Although the APS of HBMs rose, the increased R&D expenses and higher initial costs of mass production using advanced processes resulted in a decrease in profit. SK hynix's operating income increased from 50% in the previous quarter to 52%, while Micron's operating income (within the fiscal year) rose from 22% in the previous quarter to 29%. This reflects that they focused on the shipment of highly profitable DDR5, LPDDR5, and HBM products needed for data centers. The operating income of Nanya, a manufacturer in Taiwan, worsened from -30.8% in the previous quarter to -42.8%, reflecting the price decline and the loss from idle capacity due to further reductions in production. (See Table 2)

Unit: Millions of US\$

Ranking	Company	Revenue			Market Share	
		4Q24	3Q24	QoQ (%)	4Q24	3Q24
1	Samsung	11,250	10,700	5.1%	39.3%	41.1%
2	SK Hynix	10,458	8,945	16.9%	36.6%	34.4%
3	Micron	6,400	5,775	10.8%	22.4%	22.2%
4	Nanya	203	252	-19.3%	0.7%	1.0%
5	Winbond	119	154	-22.4%	0.4%	0.6%
6	PSMC	11	18	-37.9%	0.0%	0.1%
	Others	156	174	-10.0%	0.5%	0.7%
Total		17,464	13,480	29.6%	100.0%	100.0%

Note 1: 3Q24—USD 1 = KRW 1,355; USD 1 = NTD 32.3

Note 2: 4Q24—USD 1 = KRW 1,399; USD 1 = NTD 32.3

Source: TrendForce Corp., March 2025

Table 1 2024Q4 DRAM operating income ranking by brand

Company	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24
Samsung	-24%	-9%	-6%	10%	22%	37%	33%	30%
SK hynix	-50%	-2%	10%	23%	33%	45%	50%	52%
Micron	-55%	-36%	-27%	-18%	7%	13%	22%	29%
Nanya	-45%	-45%	-56%	-47%	-31%	-23%	-31%	-43%

Source: TrendForce Corp., February 2025

Table 2 2024Q4 DRAM operating income ranking by supplier

(2) Development of products

DRAM is an assistant of the processor chip, and is a temporary storage location for data that the processor is processing. It is mainly used in electronic products. DRAM is classified into different categories including Commodity DRAM, Server DRAM, Specialty DRAM and Mobile DRAM.

Commodity DRAM is the standard DRAM with PC related products as the major applications, such as DTs and NBs. Some low-end tablet PCs also use Commodity DRAM for price considerations.

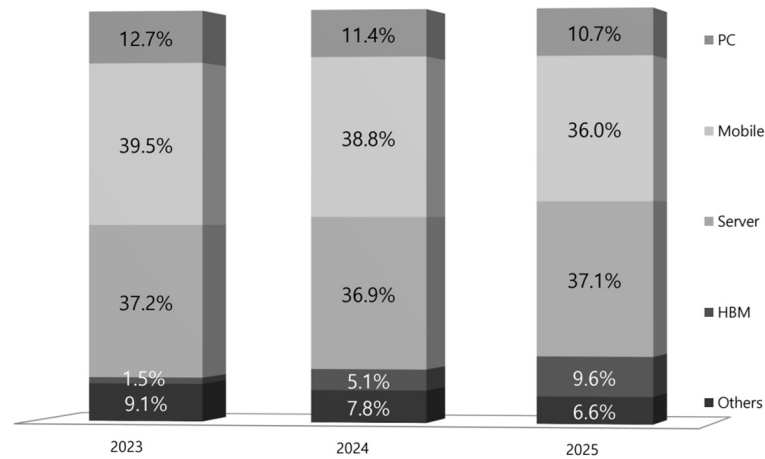
Server DRAM, usually used in servers, has benefited from demands for cloud computing, big data and IoT. The demand for servers or DRAM in standalone servers is growing year by year. Data center and server applications are the key markets where DRAM suppliers will actively make current and future investments. Driven by the simultaneous bit growth in shipment and DRAM in standalone servers as well as the growing AI demand in 2025, server applications will occupy the largest proportion in the 2025 global DRAM shipment.

Specialty DRAM is a niche DRAM with the distinctive features that it is directly embedded in end products and can be customized to according to different needs to solve memory-related product issues. Its application fields are very extensive, including (1) computers and related peripheral equipment,

such as tablets, monitors, printers, and projectors, as well as related adapters, connectors, optical disk drives, hard drives, solid-state drives (SSDs), and other products; (2) consumer electronics, such as televisions, multimedia and other consumer electronics products; the product also belongs to the application category of niche memory, including digital TVs, DVD players, set-top boxes, digital cameras, game consoles, smart speakers, and other products; (3) communication equipment connections, such as mobile communication devices, routers, modems, optical fiber networks, wireless access hotspots (Wi-Fi), base stations, power line communication networks, monitoring systems, the Internet of Things, online audio and video services (OTT) and other products; (4) automotive electronic equipment, such as in-car CDs, DVDs, navigation systems, instrument panels, audio systems, car cameras, driving assistance systems, and other products; and (5) industrial electronic equipment, including monitoring systems, POS systems, smart meters, human-machine interface (HMI) platforms, and other industrial electronic equipment, which also utilize niche memory.

Mobile DRAM is a mobile application primarily used in mobile device products. Most of the Mobile DRAM series use LPDDR4 and LPDDR5 to meet the low power consumption requirements of mobile device products. Smartphones and middle to high end tablets are the major applications of the Mobile DRAM. Some notebooks use this memory to meet their low power requirements. Most of the Apple MacBook series use Mobile DRAM instead of Commodity DRAM.

Mobile devices have played a role that drives the growth of the global semiconductor market in recent years, and their built-in functions have become more diversified. In addition, many brands of smartphones have emphasized the performance of the multi-camera function, therefore increasing the demand for low-power features. As a result, Mobile DRAM used in mobile devices has seen its demand rise greatly and it, along with Server DRAM, have become the two mainstream products for DRAM application. (See Fig. 1)



Source: inSpectrum, January 2025

Fig. 1 Estimated proportion of WW DRAM applications

In response to the rise of the HBM (High Bandwidth Memory), the DRAM manufacturers call the DRAM products other than HBM conventional DRAMs. The above-mentioned Commodity DRAM, Server DRAM, Specialty DRAM and Mobile DRAM are conventional DRAMs.

Benefiting from the AI demand, HBM has become an important driver of the DRAM industry. The HBM and its applications are described below:

A. What is High Bandwidth Memory (HBM)?

High Bandwidth Memory (HBM) is a 3D stacked memory technology. Multiple layers of DRAM chips are stacked vertically using the Through-Silicon Via (TSV) technology and combined with base logic dies to form a tight package of high bandwidth and low power consumption. Compared to conventional GDDR memory, the design of HBM provides a higher data transmission rate with lower power consumption, making it an ideal choice for high-performance computing (HPC), artificial intelligence (AI), graphics processing units (GPUs), data centers, and other high-computing applications.

B. The main applications of HBM include the following:

a. Graphic Processing Unit (GPU)

GPU is one of the earliest applications of HBM. As the demand for high-resolution 4K and 8K games, virtual reality (VR), and AI training grows, the conventional GDDR memory (such as GDDR5, GDDR6) is difficult to satisfy the needs in terms of bandwidth and performance. Therefore, AMD and Nvidia are the first two companies that apply HBM technology to high-end GPUs.

b. Artificial Intelligence (AI) and Machine Learning (ML)

As AI and machine learning models become more and more complex, the demand for calculation increases significantly. For example, the GPT model of OpenAI and AlphaFold of Google DeepMind require large-scale computing resources. HBM can provide extremely high bandwidth to improve the efficiency of AI training.

Currently, many AI training accelerators (such as Nvidia H100, AMD MI300, and Google TPU) use HBM technology to reduce memory obstacles and increase AI training and inference speed. The development of HBM3 and HBM4 will further increase the AI processing speed. This makes them an important component of AI supercomputing in the future.

c. High-Performance Computing (HPC)

High-Performance Computing (HPC) applications, such as weather forecasting, genetic research, financial analysis, and oil exploration, require high computing power and memory bandwidth. The conventional DDR and GDR memory may easily become performance obstacles in the HPC environment. The high-frequency bandwidth and low-latency characteristics of HBM can significantly improve computing efficiency. The low power consumption of HBM can help reduce the operating cost of the supercomputer and improve energy efficiency. This makes HBM the key memory technology for the HPC systems in the future.

d. Data Center and Cloud Computing

With the development of cloud computing and data centers, the demand for high-efficiency and low-consumption memories is growing. HBM can be used to accelerate servers and cloud AI services. For example,

Cloud platforms such as AWS, Google Cloud, and Microsoft Azure use the HBM to accelerate AI inference, data analysis, and visual calculations.

The database and the big data processing platforms (such as Oracle Exadata and SAP HANA) need HBMs to improve the query speed and data processing capability

The tight packaging design of HBM can reduce the space requirements of the data centers and increase server density. This makes HBM the ideal choice for cloud AI and big data analysis.

e. Network Communication and 5G/6G Infrastructure

With the development of 5G and future 6G networks, communication equipment needs to process a large amount of real-time data, and the high bandwidth of the HBM products can satisfy the needs of such applications. For example:

Base station equipment: 5G/6G base stations need to process high-speed data transmission. HBM can be used for signal processing and data storage.

Network switch: The HBM can increase the data center switch's packet processing capability and improve network performance.

The low power consumption of the HBM can help reduce the energy consumption of 5G devices, making them more in line with the green environmental protection trend.

f. Autonomous driving and Edge Computing

The autonomous driving must be able to process a large amount of data from cameras, radar, and LiDAR sensors in a real-time manner. The high

bandwidth of the HBM products can effectively enhance the AI calculation performance for vehicles.

Edge computing devices can use the HBM to increase their real-time data processing capability and be applied in smart factories, medical image analysis and other fields.

C. Future development of HBM:

With the advancement of the HBM3 and HBM4 technology, the applications of HBM will extend to be may other applications. The main development trends include:

Higher bandwidth: The estimated bandwidth of HBM3 is 1.2TB/s, and bandwidth of HBM4 is expected to exceed 2TB/s.

Lower power consumption: The new generation of HBMs uses advanced process technology (such as 3nm and 2nm) to reduce power consumption and improve performance.

More applications: In addition to the fields of HPC, AI, and autonomous driving, HBM can be introduced to the consumer market, such as high-end laptops and game consoles. Although HBM is still a high-cost memory technology, with the maturity of the manufacturing technology and the increase in demand, it is expected that HBM will become the mainstream memory standard for high-performance computing.

(3) Overview of major DRAM suppliers

A. Operating revenue in Q4 2024 and future development

Samsung: The mobile DRAM ratio declined for three consecutive quarters since the beginning of 2024, and decreased to 20% in the current quarter. This indicates that the growth of order volumes from mobile phone customers has not yet become significant and thus the proportion was crowded out by other applications. The Server DRAM ratio slightly declined to 33% without no significant changes. Other PC, consumer and graphics DRAMs accounted for approximately 47%, which was significantly higher than the share of 40% in the previous quarter. The main contribution to the increase was the growth of the HBM shipments. The product price in Q1 2025 will decline across the board. The shipment of HBM will not be supported in China market and thus a declined shipment volume is expected.

SK hynix: As the price of the mobile DRAM reversed, customers expected a lower price and thus did not purchase much. This made the proportion of the revenue drop from 17% in the previous quarter to 12%. The revenue of Server DRAM products declined from 37% to 34% in proportion. Although the revenue grew, the growth was less than that of HBM, resulting in a decline in the proportion. The proportion of other PC, consumer and graphics DRAMs increased significantly from 46% to 54%, mainly due to the increase in the shipment of HBM3e. In Q1 2025, the contract price declined and the demand in this quarter was weak. Although the HBM will

make partial contribution to the demand, the revenue is expected to drop slightly.

Micron: The proportion of server DRAM further increased from 49% in the previous quarter to 51%. The price of server DRAMs was negotiated fiercely. Particularly, the increase in the demand for high-capacity RDIMMs and the increased shipments after the successful certification of the products have continuously driven the growth momentum of the server revenue. In terms of mobile DRAMs, the revenue ratio declined from 36% to 23% mainly due to the priority of the smartphone manufacturers in reducing the inventory and thus placed fewer orders. The proportion of revenue from PC, consumer and graphics DRAMs increased from 15% to 25%. Since the server DRAM market was in a high base period in the first quarter of 2025, a further growing market is not expected and the revenue will decline as a result.

PSMC: The proportion of revenue from logic products slightly rose to 60% in the previous quarter. The DRAM business (including OEM) declined due to the decrease in shipments of the in-house products, resulting in a proportion of 33% in revenue. The proportion of the NAND flash products remained at 7%. Although the momentum of the spot market recovered in the first quarter of 2025, the demand recovered mainly in the category of the DDR5 products; this is inconsistent with the products of PSMC. The revenue is expected to decline slightly.

Nanya Tech: The consumer DRAM was still the main product of Nanya Tech and the proportion in revenue declined to a level of about 60%. The increase in other applications caused the proportion of consumer DRAM to decrease. PC DRAM remained at 10–15% and the server DRAM was about 5–10%. The proportion of new products from 1Bnm increased and the proportion of mobile DRAM products increased to 15%. DDR5 samples were provided in the first quarter of 2025, but are yet to be verified by customers. This results in limited shipment growth, and a more significant increase is not expected until the second quarter of 2025.

Winbond: The supply and demand in the flash industry were balanced and shipments grew steadily. With the launch of the new 45nm process, the company made some gains in the NOR Flash field and increased its share to around 65%. The share of the DRAM products slightly declined to 35% due to the sharp decline in the demand. In the first quarter of 2025, it was observed that the demand for network communication applications had recovered. In view of this and the low base period in the fourth quarter of 2024, the shipping performance is expected to end the decline; however, there are no signs of an increase in unit prices, which will hinder revenue growth.

CXMT: Due to the impact brought about by the new bans, more advanced processes below G3 cannot obtain support from American equipment manufacturers. However, the early procurement and related talent

recruitment may result in a limited impact on production. The mobile DRAM remained the main focus in the product weight. It is expected that the proportion of revenue will be about 70–80%. The main customers are mobile phone brands in China. The proportion of the PC and server DRAM products was about 5–15% while the proportion of the consumer DRAM was about 5–15%.

JHICC: The main product remained consumer DRAM with the network communication and TV applications in China and the supply to channels as the focus. However, it accounted for less than 1% of the global production volume. The expansion of production lines relies on Japanese, Korean and domestic equipment. Currently, the production capacity is slower and there is no significant increase in the production capacity. In addition, the process is lagging behind 25nm and DDR4 is the only product line, so the proportion of supply is difficult to increase.

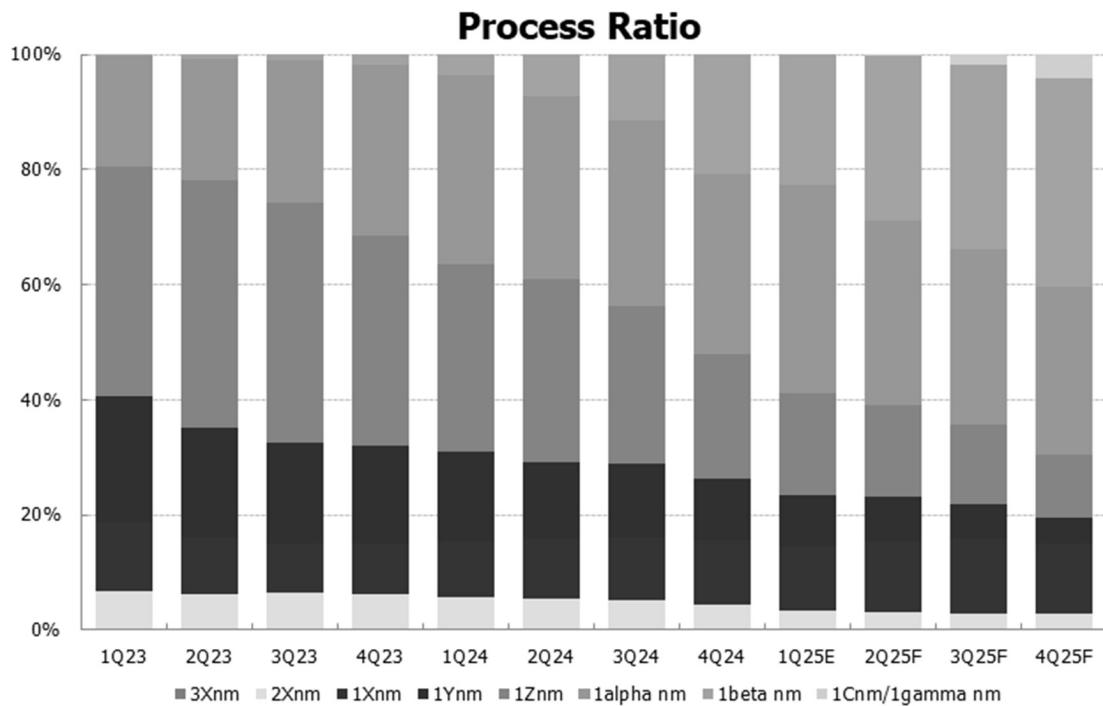
B. Process evolution of DRAM fabs

The schedule of mass production that uses advanced processes is inconsistent among DRAM fabs. However, the three major suppliers have slowed down or terminated 1ynm and 1zn products. The main processes of Samsung, SK hynix and Micron in 2024 were 1a/1nm. The 1b/1βnm process will be the main focus for mass production in 2025. DRAM fabs have begun to introduce the 1c nm or 1γ nm process. Samsung is expected to start mass production of 1cnm by May 2025. Micron's mass production of 1γnm is expected to start in 2025 using EUV. (See Table 3 and Fig. 2)

Company	Current Generation	Under Transition	Next Generation	Ready Schedule
Samsung	1Anm/1Bnm	1Bnm	1Cnm	2H25
SK Hynix	1Anm/1Bnm	1Bnm	1Cnm	2H25
Micron	1αnm/βnm	1γnm	1γnm	2H24
Nanya	20nm	1Xnm		4Q21
Changxin	10G3	10G4		2H25

Source: in Spectrum, January 2025

Table 3 Evaluation of the DRAM process



Source: TrendForce Corp., February 2025

Fig. 2 DRAM process ratio

C. Increase in HBM capital expenditure and capacity planning

SK hynix stated that the demand for high-end memory chips is increasing due to the emergence of GenAI, and this will be the main driver of its growth. The company expects the sales of HBM chips to double in 2025. HBM chips currently account for 40% of the DRAM revenue. The cooperation with the leading AI players, such as Nvidia, has enabled SK hynix to lead Samsung and Micron in the field of HBM technology. The growth rate of revenue in Q4 was 75%, reaching up to KOW 19.8 trillion. This reflects the leading position of SK hynix in the AI chip market.

Micron's capital expenditure is expected to be about US\$14 billion (±US\$500 million) in 2025, mainly for expansion of HBM processes and back-end operations, factory construction, and R&D.

Samsung and SK hynix are the leaders of the HBM production plan this year. Samsung plans to increase its total HBM capacity to about 130K (including TSV) by the end of this year, while SK hynix aims to increase its target to about 120K depending on the verification progress and customer orders.

2. Current status of the flash memory market

(1) Market scale

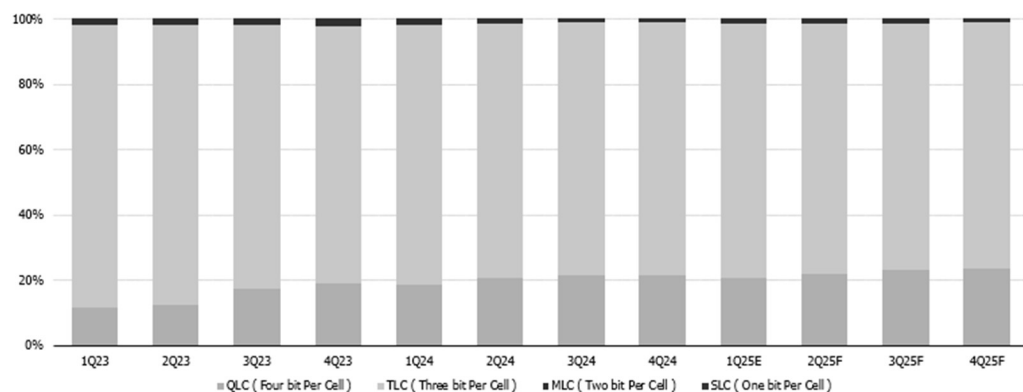
According to a report by Gartner, a survey organization, the NAND market is expected to reach US\$75.5 billion in February 2025, with an annual increase of 12% due to a decrease in supply and a moderate price environment. Looking back at 2024, the demand for consumer electronics was weak due to the increase in inventory at the PC and smartphone sectors,

sluggish sales in the market, and declining demand in China. As a result, the module manufacturers reduced their inventory. The weak performance of the consumer electronics market was significantly different from that of previous peak seasons. The inventory level is high. The buyer's primary goal is to reduce inventory. The supplier is forced to adjust its pricing strategy. The order level in 2024 was not as good as expected. The stocking requirements have been reduced since the second quarter. The investment in AI drives the soaring demand for enterprise SSD products. The server customers are increasing their purchase of large-capacity products. The technology firms actively invest in the development of AI and LLM. The server field becomes the largest beneficiary. CPSs accelerate the construction of AI servers and large-scale language models, and this continuously increases the demand for enterprise SSD products. The suppliers also accelerate the deployment of large-capacity products to meet market demand. In contrast, smartphones and PCs are affected by economic uncertainty and the consumers' demand is not significantly increased. Although the brands launch AI models to attract market attention, they are not able to effectively stimulate sales and slow inventory turnover occurs as a result. Due to the factors mentioned above, the annual order growth of NAND Flash suppliers was lower than expected. The market became oversupplied in the fourth quarter, and the prices of the terminal products began to decline. As the suppliers have recovered their production capacity in the second half of the year, market competition has intensified. The orders from the module makers were reduced, and the contract price of the wafer was the first to be affected. The price declined in the third quarter. The smartphone manufacturers stood in opposition to the rising NAND Flash prices. The transaction volume shrank, while the price remained stable in the third quarter. The PC manufacturers were facing the challenges of the peak season. The price of client SSDs in the third quarter increased by 3–8%. The demand for AI servers drove the price of enterprise SSDs to rise by 15–20%. The supply and demand gap widened in the fourth quarter. The price of PCs and smartphones dropped, and the willingness to negotiate for price cuts at the server end declined. Therefore, the price of enterprise SSDs rose slightly by 0–5%, while other products fell by 5–15%. Looking ahead to the first quarter of 2025, due to the traditional weak season, the demand in the NAND Flash market will further weaken and the price is expected to be cut by 15–20%.

In 2025, the support of the localization policy by suppliers in China will actively expand their production and this is expected to a narrower growth space for other suppliers in the China market. In addition, as the demand for consumer products is weak, major suppliers have re-evaluated the growth strategy in terms of bits in 2025: Samsung's output of 2025 will be the same as that in 2024. The upgrade of the Xianan Plant to the 236-layer process significantly reduces the capacity of the 128-layer process. The increase

schedule of the 28X-layer production is postponed slightly. The production capacity of SK hynix and Solidigm was reduced to 145K and 85K, respectively. Considering that Solidigm has turned to the mass production of the 176-layer PCIe 5.0 SSD, the production of 144-layer TLC may be reduced in 2025. Kioxia/SanDisk (formerly WD) is actively expanding its 218-layer production capacity. The K2 plant is mainly engaged in R&D of new processes. Micron is expected to reduce the production scale to avoid loss. It is estimated that the output in terms of bits in 2025 will grow by 5% - 10%. YMTC is expanding its 2G 160-layer (X4) production line. The production capacity increased to 130K in the fourth quarter of 2024. In 2025, the focus will be on the improvement of the yield rate of the X4 products. It is expected that the output of bits will increase by 50% in 2025. In conclusion, the above-mentioned growth rate of output in 2025 is expected to be 9.7%.

For product structure, SLC applications focus on demandable embedded SSDs for servers and industrial control and MCP high-performance applications of smart mobile devices, network communications products, set-top boxes, smart speakers, and vehicle devices. Market demand is relatively stable. Kioxia, Micron, and Macronix, a Taiwan-based manufacturer, are providers of SLC. The proportion of global SLC in NAND Flash bit output has increased significantly due to 3D output, up to about 0.03%, and MLC accounts for about 1.1%. TLC will occupy a proportion of about 75% in 2025. In addition, QLC is applied to high-capacity data centers and some high-capacity, low-cost consumer SSD products. It is expected that the proportion of QLC may reach about 23% by the end of 2025. (Fig. 3)



Source: TrendForce Corp., February 2025

Fig. 3 Global NAND flash production analysis by product structure

According to the operating revenue of NAND Flash manufacturers in 4Q 2024 (See Table 4):

Samsung: Although the demand for SSDs in North America was strong in the third quarter of 2024, the shipment of smartphone products declined, and this resulted in a decrease of shipments in bits. However, the revenue was flat compared to the second quarter thanks to the increase in ASP. In the fourth quarter, the revenue declined by 9.7% due to the weak demand for

consumer electronics. In 2025, in the face of the decline in the price of NAND Flash products, Samsung will flexibly adjust its production to respond to market changes. The upgrade of technology is still the core of enhancing competitiveness. Therefore, reducing production and maintaining profitability will become the key strategies. In order to maintain profitability and avoid loss, Samsung reduces its capital expenditure on NAND Flash again, strengthens its profitability-oriented strategy, and focuses on the R&D of enterprise SSDs. In addition to promoting the 236-layer NAND Flash technology, the company expands the production of its 176-layer products to meet the needs of the storage solutions with a capacity of more than 60TB.

In terms of product deployment, Samsung is actively improving the penetration rate of high-speed transmission technology. UFS 4.0 and PCIe 5.0 are the focuses of future development.

Kioxia: Kioxia has been listed on the Tokyo Stock Exchange since December 2024. Benefiting from the smartphone production boom in the US and the increase in the shipment of enterprise SSD products, the shipment in bits and the ASP in Q3 2024 grew compared to Q2. Although the demand for smartphones and PCs in Q4 was weak, the growth of enterprise SSD shipments in Q4 helped offset the impact. So, Kioxia's revenue in Q4 decreased slightly by 0.2% compared to the previous quarter, and the performance was relatively stable. Looking ahead to 2025, Kioxia will continue to upgrade the 218-layer NAND Flash technology and expand its production capacity, while focusing on optimizing the production cost of the 112-layer products to improve price competitiveness. In addition, the existing 112-layer NAND Flash products are expected to be upgraded to 120-layer in 2026. This not only increases the number of layers, but also the transmission speed. This strategy shows that suppliers no longer consider stacking as the primary goal, but maintain competitiveness through cost management and adjustment of production capacity.

Western Digital/SanDisk: Western Digital/SanDisk announced that it has completed its business splitting with Western Digital (WD) and formally become an independent listed company. It began to trade on the NASDAQ on February 24, 2025. The shipping performance in Q3 2024 was better than expected and the shipment in bits grew compared to the previous quarter. However, the proportion of the low-end products increased and thus resulted in a decrease in the ASP. The shipment of consumer electronics in Q4 was better than expected with a 9% growth rate of shipment in bits. Although the price of the NAND Flash products declined, the revenue remained unchanged in comparison with the third quarter. The San Disk (formerly WD) plans to satisfy the market demand with existing processes in 2025 to optimize the benefits of the capital expenditure. As NVIDIA launched Project Digi and AI PC to drive the significant increase in the demand for PCIe 5.0 client SSDs, the revenue of the company is expected to increase. The company will

actively expand its SSD product line. In addition to the mass production of the high-performance 5.0-CEC products, it plans to start the mass production 64TB TLC SSDs and automotive SSDs to improve the revenue performance.

Micron (USA): Although the revenue from enterprise SSDs was outstanding, the overall revenue declined by 9.3% in Q4 of 2024 due to the weak consumer demand. In the face of oversupply in the market, Micron expresses that it is necessary to reduce production before consumer electronics demand rises significantly. Therefore, the capital investment in NAND Flash will be reduced in 2025, and the upgrade of the 276-layer NAND Flash technology will be postponed. The focus will be on the market of products with more than 60TB capacity to improve profitability.

SK Hynix & Solidigm: Although the shipment of smartphones and PC products declined in the third quarter of 2024, the strong growth of demand for enterprise SSDs drove its profit. The fourth quarter was affected by a decline in market orders, which prevented shipments from reaching the preset growth target. As a result, the revenue declined by 6.6% from the third quarter. In 2025, SK Group will take profitability as the core continuously. It will adjust production capacity flexibly to meet market demand and maintain the highest profitability. In terms of technology development, Solidigm has mass-produced 192-layer QC enterprise SSDs using the 120TB Floating Gate process. SK hynix announced the production of 120TB products using the 321-layer QC NAND Flash process to demonstrate its competitiveness in the AI storage market. The Group does not have the construction plan for new NAND Flash fabs in 2025. It will invest in the research and development of products with a high unit price and be dedicated to the improvement of profitability. The Group will actively join the AI ecological system through HBM, DRAM, and enterprise SSD products to expand the AI application market.

Unit: Millions of US\$

Company	Revenue		Market Share (%)	
	4Q24	QoQ (%)	4Q24	3Q24
Samsung	5,600.0	-9.7%	33.9%	35.2%
SK Group (SK hynix + Solidigm)	3,391.9	-6.6%	20.5%	20.6%
WDC	1,876.0	-0.4%	11.4%	10.7%
Kioxia	2,657.6	-0.2%	16.1%	15.1%
Micron	2,275.0	-9.3%	13.8%	14.2%
Others	721.1	-0.5%	4.4%	4.1%
Total	16,521.6	-6.2%	100.0%	100.0%

Note 1: 3Q24 average exchange rate: USD/JPY exchange rate: 1:149.1; USD/KRW exchange rate: 1:1,355.5

Note 2: The average exchange rate for 4Q24 was: USD against JPY: 1:152.4; USD against KRW: 1:1,397.8.

Source: TrendForce Corp., February 2025

Table 4 2020 Q4 global NAND Flash brand manufacturers ranking by operating revenue

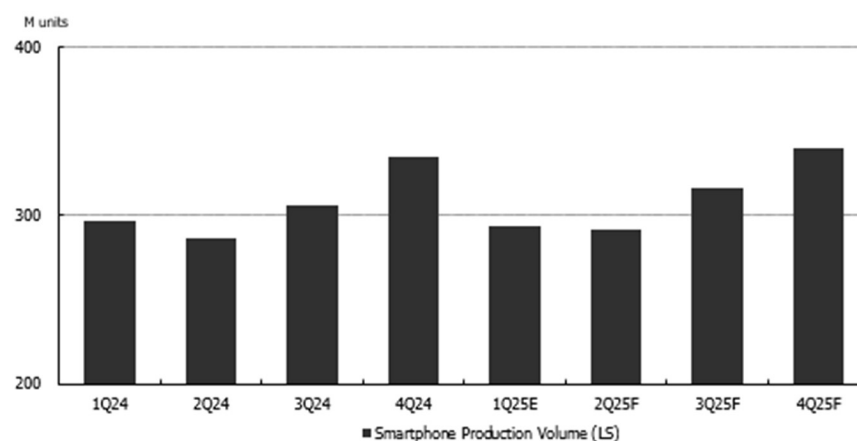
(2) Development of products

Flash memory is generally used in ordinary consumer electronics such as smartphones, notebooks, tablets, flash drives, memory cards and SSDs. As the process technology of NAND Flash continues evolving and the unit capacity cost keeps declining, its use has become widespread in smartphones, embedded devices and industrial control applications. In recent years, demand for SSDs used in big data storage and notebooks has gone up, and the use of 5G communication technologies and smart devices has grown fast. Furthermore, applications of and demand for data storage has greatly increased in smart homes, smart appliances, smart speakers, smart digital signages, in-vehicle recorders, vehicle navigation systems, smart wearable devices, drones, automated ordering systems, self-checkout systems, reality technologies (VR/AR/SR/MR), future AI, big data, edge computing and cloud storage.

Main applications:

A. Smartphones:

The global smartphone market grew by 7.1% in 2024, which has been the highest growth rate since 2021, and exceeded the original forecast of 1.21 billion units. This shows that the market has recovered from the trough in 2023. It is expected that the market will continue to grow in 2025, but the growth speed may slow down due to the prolonged replacement cycle and the gradual depletion of the need for inventories; however, it will not return to the trough in 2023. Although the main markets of Chinese brands are still in China and Asia, the strong performance of entry-level and mid-level models is accelerating the expansion of the European and African markets. In addition, as consumers are not interested in foldable phones, manufacturers have gradually transferred their R&D resources to other fields. As AI is widely used in various devices, especially in high-end products, the introduction of GenAI has made the big brands prioritize the development of AI technology, rather than continuing to invest in the market of foldable phones. (See Fig. 4)

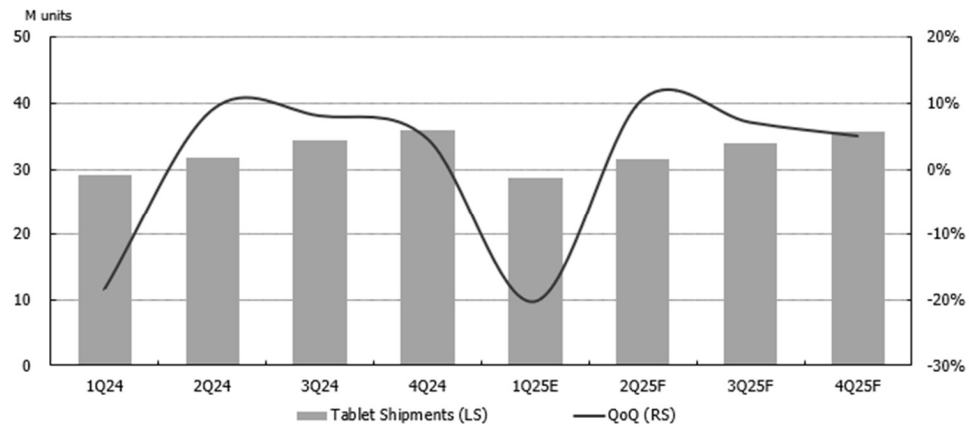


Source: TrendForce Corp., February 2025

Fig. 4 2024–2025F global smartphone shipment volume

B. Tablet PC:

According to the report, global tablet PC shipments reached 148 million units in 2024, with an annual growth rate of 9.2%, showing a steady recovery. In addition to North America, all other regions have achieved growth. In terms of brands, Apple's shipment growth in Q4 2024 was 14%, with an annual growth rate of 5.3%. Samsung ranked 2nd in the world, with 7.1 million units shipped in Q4 2024 and an annual growth rate of 3.9%. The full year growth rate was 8.2%. The annual shipment growth rate of Huawei was 29% in 2024 and ranked 3rd in the world. Lenovo ranked fourth in the world with 10 million units shipped, up by 12% year-over-year. Meanwhile, the shipment of Xiaomi grew by 73% year-over-year to the fifth place in the world. As the PC market enters the tablet replacement cycle in 2025, the demand for tablet PCs will gradually recover. According to the survey conducted by Canalys, 52% of the commercial tablet distribution channel operators expect to grow in 2025, 32% expect no change, and only 16% anticipate a decline. The investment in IT is expected to rebound and drive the growing demand for the replacement of tablets in various industries. In addition, Chinese brands continue to expand overseas markets and promote expansion strategies; Apple has strengthened its market deployment in India and opened up new opportunities. Overall, the outlook of the tablet market in 2025 is optimistic, but the tariffs in the US may affect the demand. (Fig. 5.)



Source: TrendForce Corp., February 2025

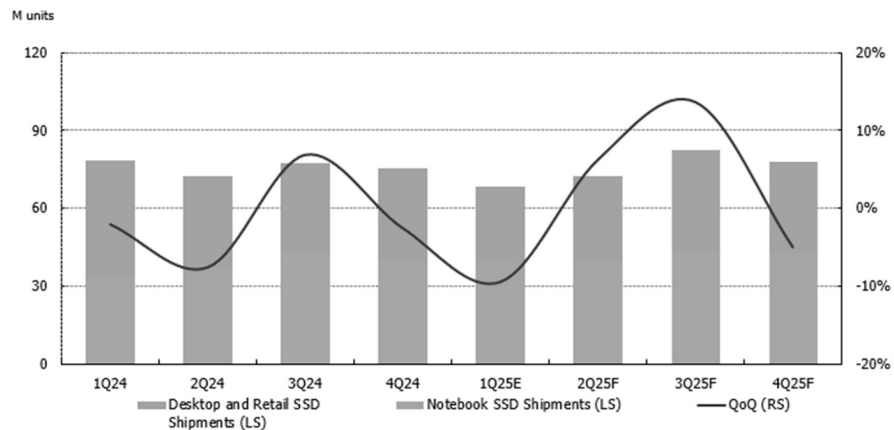
Fig. 5 2024–2025F global tablet PC shipment

C. SSD:

The NAND Flash price surge in 2024 limited the average capacity growth of the PC client SSD. As there is no clear capacity standard for AI PCs and Microsoft's loyalty strategy affects the use of SSDs with a capacity of 1TB or more, the average capacity in 2024 only increased by 3%. A single-digit growth rate will remain in the next two years. As HDDs are gradually withdrawn from the NB market, SSDs accounted for nearly 100% of the market share in 2024. They are expected to occupy the entire market in lieu of HDDs. As for the product interface, the performance of PCIe 5.0 is better than that of PCIe 4.0, but the penetration rate is difficult to increase in a short time due to the price and NB thermal problems. With the development of AI, more manufacturers have introduced low-price PCIe 5.0 products to the market and improved their heat dissipation technology. TrendForce forecast that the penetration rate of PCIe 5.0 in the NB market will increase from 0.6% to 10% by 2026.

As the difference in costs between the QLC and TLC products with the same capacity increases, manufacturers are accelerating the development of QLC products to improve profitability. In consideration of the limited capital expenditure, expansion of QLC shipments has become the primary strategy. The rising penetration rate of QC client SSDs has become the focus in the market. Micron plans to launch 276-layer QC PC client SSDs in the second half of 2025 to demonstrate its advantage in multi-layer technology. Samsung continues to focus on 176-layer QC PC client SSDs, and the development of this strategy is observable. After the integration of Solidigm and SK hynix, the company no longer launches 144-layer QC PC client SSDs but switches to 321-layer technology to demonstrate its commitment to high-end products. KIOXIA and SanDisk (formerly WDC) are developing 162-layer QC client SSDs, but the schedules differ. SanDisk (formerly WDC) has introduced its products to the market, while Kioxia is expected to launch

its 218-layer QCs in 2025 to improve capacity density. YMT launched its 128-layer TLC client SSDs in 2024. It will introduce the QLC products in 2205 when the 232 process becomes mature. (Fig. 6)

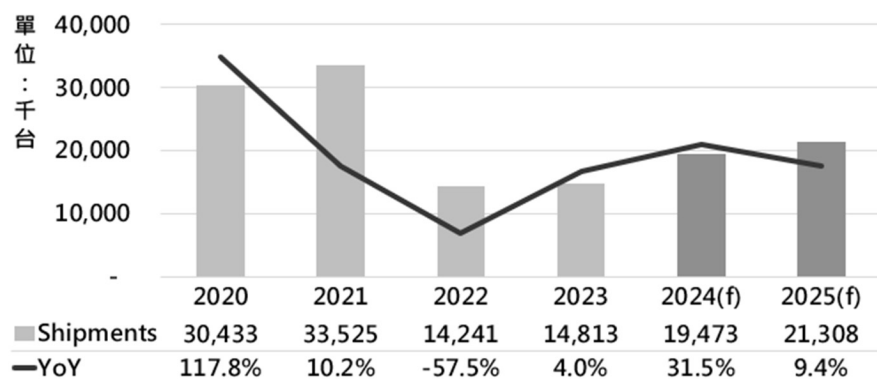


Source: TrendForce Corp., February 2025

Fig. 6 2024–2025F global Client SSD shipment volume

D. Chromebook and tablet-like NB Chromebook:

Due to the weak demand in the PC market, the shipment of Chromebooks in 2023 remained at the level of 19.20 million units. Although the inventory of NBs has recovered to the normal level, the shipment of Chromebooks in 2024 decreased to 18.6 million units. However, after three years of decline, it is expected that the demand for PC products will rebound in 2025. The education projects of the governments will be launched one after another to drive the shipment of 20 million units of Chromebooks. The NEXT GIGA project in Japan will be the main driver of growth, with expectations that 1 to 1.5 million units of Chromebooks will be purchased in 2025. In addition, the education and procurement plans in the emerging Asian markets and the cooperation between Google and iTEQ to launch mid-to-high-end models with more powerful AI computing functions will further drive market growth. The shipment is expected to reach 22.9 million units in 2025 with an annual growth rate of more than 20%. (See Fig. 7)



Source: DIGITIMES research, November 2024

Fig. 7 2024–2025 global Chromebook shipment volume and growth rate

E. Game console:

The demand for game consoles surged during the Covid-19 pandemic. The shipment of game consoles in 2020 reached 48.70 million units with an annual growth rate of 17%. However, the market demand slowed down from 2021 to 2022 due to the limited new models, and only the Xbox Series X and the PS5 were introduced to the market in the second half of 2020. In 2023, Sony PS took the lead in the market with a share of 48%, followed by Nintendo occupying 36% of the market and Xbox with a market share of 16%. Although the new Xbox and PS5 Pro models were launched in the second half of 2024, the global shipments dropped by 27% YoY during the period from January to October 2024 because the existing models had entered the final period of the product cycle. However, it is said that the Switch 2, set to be launched in 2025, will be helpful for the recovery of the game console market. With the support of the Nvidia Ampere T239 chips, the memory of this new model has been increased to 12GB, the storage space expanded to 256GB, and both the screen and battery life upgraded. It adopts the magnetic Joy-Con and new button designs, is compatible with Switch games, and can help game developers adapt to the new platform. Microsoft may launch a new Xbox by the end of 2026 and Sony is expected to launch PS6 in 2027–2028. These may further drive the growth of the market. (See Fig. 8)

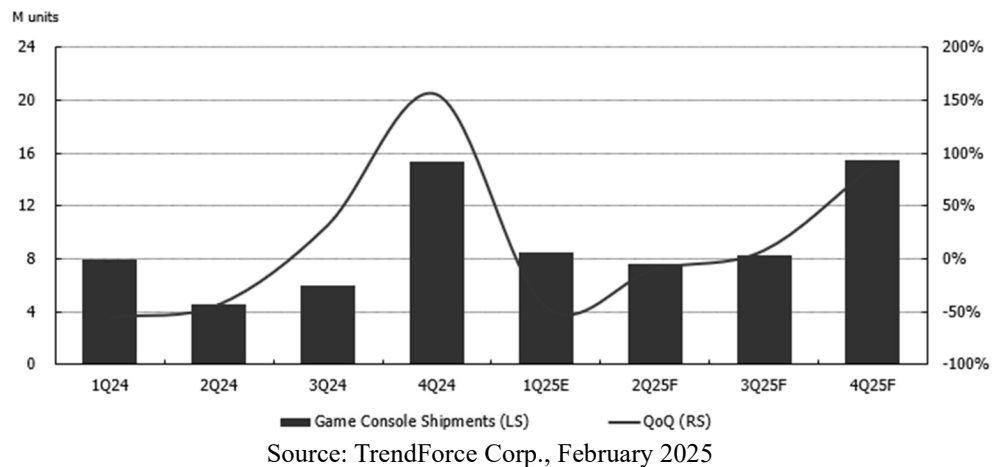
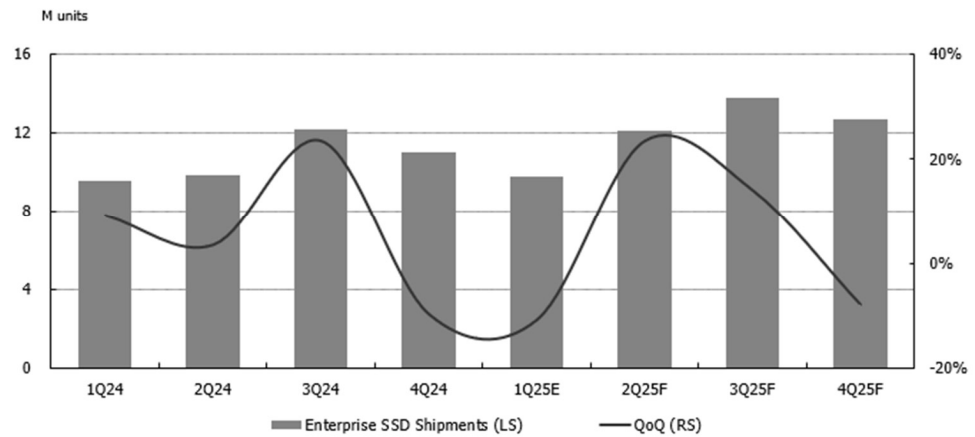


Fig. 8 2024-2025F global game console shipment volume

F. Enterprise SSD (collectively referring to the SSD installed in the server):

Since 2024, OEM server customers have started to adopt enterprise SSDs of more than 16TB to support AI inference applications. Although some orders were delayed in delivery in the second half of 2024, the demand for large-capacity SSDs will continue to grow in 2025, and it is expected to upgrade to 60TB and 120TB. In addition, the demand for high-performance storage solutions has increased to perform AI training tasks and, as a result, 4TB and 8TB enterprise SSDs have become the mainstream. This trend drives the average capacity of enterprise SSDs to increase by nearly 20% in the next few years, and up to 5.8TB by 2025.

As for the product interface, the rapid development of AI servers will accelerate the penetration of the PCIe interface. It is expected that the penetration rate will reach 90% in the future. Since PCIe 4.0 can be used in AI applications in lieu of HDD, the decline of its proportion in the shipment will slow down. In addition, China's cloud service providers (CSP) have begun to introduce the PCIe 5.0 SSD in general servers, while the US CSPs are expected to increase the adoption in the second half of 2025. Therefore, TrendForce expects that shipments of PCIe 5.0 products in Q4 2025 will account for more than 50%. (See Fig. 9)

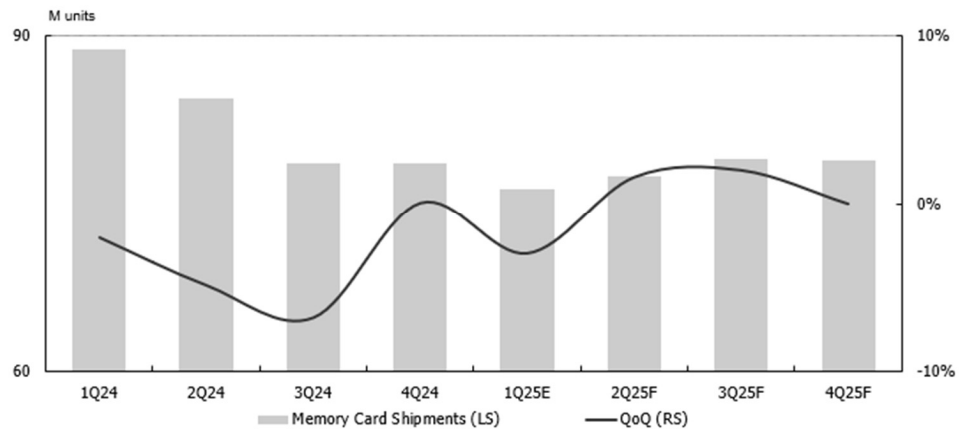


Source: TrendForce Corp., February 2025

Fig. 9 2024-2025F global Enterprise SSD shipment volume

G. Memory card:

As the expansion card slot is gradually removed from the smartphone and the market of camera equipment is a niche market, the shipment of memory cards declines continuously. The high-definition video drives the demand for large capacity; consequently, module manufacturers have successively launched new high-speed products, and memory capacity has been continuously upgraded. However, the overall market demonstrates a recessionary trend. The average memory card capacity grew by nearly 10% in 2024. It is expected that the global memory card market will reach US\$650 million by 2030. The compound annual growth rate from 2024 to 2030 will be 2.5%. (See Fig. 10)

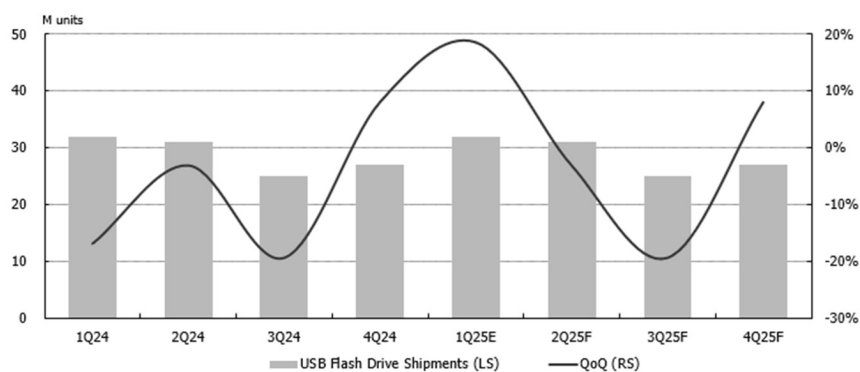


Source: TrendForce Corp., February 2025

Fig. 10 2024–2025F global memory cards shipment volume

H. USB flash drive:

The shipment of USB flash drives in Q3 2024 only declined by 3% due to the low base period. However, the market continued to shrink due to the popularization of cloud services and changes in the habit of use. The shipment in Q4 declined by 19%. Currently, the USB market relies on the growth of the capacity. USB 3.0 accounts for half of the market share, but the USB 4.0 suffers a slow upgrade progress. TrendForce forecast that the annual shipment of USB flash drives in 2024 will decrease by 18% and the average capacity will grow by 8%. Looking ahead to 2025, though the sales of smartphones have not yet recovered, the continuous upgrade of camera functions will drive the demand for external high-speed transmission products. The market scale of the USB 3.0 is expanded and the capacity will continue to increase. In addition, the price advantage of the 2Tb QLC chips is expected to further stimulate the growth of the demand for external connection products. Although USB 2.0 is gradually replaced, the decline in its demand is slow due to the high demand for low-end products in emerging markets . (See Fig. 11)



Source: TrendForce Corp., February 2025

Fig. 11 2024–2025F global flash drive shipment volume

I. Automobile market:

The global auto memory chip market reached US\$4.76 billion in 2023. With the high level of autonomous driving technology, the market is expected to grow to US\$10.25 billion in 2028. The automotive storage market has become an important high growth field for the semiconductor industry. In 2023, automotive memories accounted for approximately 8–9% of the automotive semiconductors. They are expected to increase to 10–11% by 2028. This is mainly due to technological innovation, which has enabled the use of advanced memory chips in automotive applications at a faster rate. Currently, NAND Flash is widely used in ADAS, IVI and CID for storage of continuous data. As the automotive electronic architecture shifts to a five-domain integration structure, the NAND storage demand for each vehicle may exceed 2TB in the next 3 to 5 years, providing the main growth momentum for automotive central computing. In addition, the modern digital cockpit needs efficient storage solutions to cope with massive data requirements and ensure compliance with regulatory standards. Thanks to the high-speed transmission, low latency, and flexible expansion of PCIe technology, it has gradually become popular in the automotive industry. Compared to UFS, the sequential and random read/write performance of PCIe is more advantageous, making it more and more popular in the next generation of IVI automotive platform. In addition, the PCIe interface protocol is more efficient than other technologies. It has error detection and reporting functions and can improve data transmission stability. The scalable link width of the PCIe (x1 - x16) allows the vehicle manufacturer to shorten the development time more flexibly and accelerate the time to market. The autonomous driving technology and high-end ADAS require data from 20 sensors, including cameras, radars, and optical sensors. The low latency and high computing power of PCIe technology play a key role in processing massive data and aiding the development of smart driving technology.

According to the latest statistics from TrendForce, the global sales of new energy vehicles (BEV, PHEV, and HFCEV) in 2024 reached 16.29 million units, with an annual growth rate of 25%. The proportion of the China market increased to 67%. It is expected that the global sales of new energy vehicles will grow by 18% in 2025. The China market will continue to grow, and the changes in the US policy may affect the market trend. TrendForce estimates that the new energy vehicle market will reach 19.2 million units in 2025. Benefiting from the continued subsidy for the replacement of old cars in China, the market will continue to grow. However, local car makers are facing challenges such as sales competition, increased development costs in overseas markets, and intensified competition in technology. Some brands have begun to merge under these circumstances. It is expected that the trend of mergers will

become fiercer in 2025. The market in the US is more uncertain. If the President, Trump, withdraws the text credit of US\$7,500 for new energy vehicles and this policy is supported by the Congress, the global annual growth rate may drop from 18% to 16%. However, the timing of the policy implementation, the subsidies in each state, and the strategy of the car manufacturers may affect the market growth, too. (See Table 5)

BEV & PHEV sales ranking and market share in 2024

Rank	BEV	Market Share	PHEV	Market Share
1	Tesla	17.6%	BYD	37.7%
2	BYD	17.2%	Li Auto	8.0%
3	SGMW	6.3%	AITO	6.2%
4	Volkswagen	4.1%	Changan	2.9%
5	GAC Aion	3.7%	Volvo cars	2.9%
6	BMW	3.6%	Mercedes-Benz	2.8%
7	Zeckr	2.2%	BMW	2.7%
8	Leapmotor	2.2%	Lynk & Co	2.6%
9	Hyundai	2.1%	Deepal	2.5%
10	Mercedes-Benz	2.0%	Geely Galaxy	2.5%

Note: Brands are used as the statistical basis and some data are estimates.

Source: TrendForce, Feb. 2025



Source: TrendForce, February 2025

Table 5 BEV & PHEV sales ranking and market share in 2024

(3) Main flash memory suppliers' status

A. Process transfer schedule of flash memory

2D NAND Flash will be stuck at 14–15 nanometers. Due to the difficulty in miniaturizing the subsequent production process, manufacturers will not continue 2D NAND Flash miniaturization. Manufacturers prioritized upgrading their production process techniques and accelerating mass production of 3D NAND. In 2024, the proportion of 1XX layer products was 40–45%, the proportion of 1YY layer products was 30–35%, and the proportion of the 2XX layer was nearly 20%. Looking ahead to 2025, the production capacity of 1Y and 2X is expected to grow. In terms of output, 2X will account for nearly 45% in Q4 of 2025, 1X will account for a smaller proportion of 21%, and 1Y will account for nearly 30%. (For detailed description of the 2D/3D product technologies of manufacturers, see Fig. 12)

- a. Samsung will focus on V8 (176 layers) products and accelerate the mass production of V9 (28X layers). V8 is mainly used in enterprise (PCIe 5.0) and smartphones (UFS 4.0) while V9 is designed for 120TB or more enterprise SSD applications. As the momentum to place orders is expected to weaken in 2025, Samsung further reduces the capital expenditure of NAND Flash in 2025 to ensure profitability. The supply in bits is expected to be the same as that in 2024. In terms of production, the production capacity of the Line 12

Plant will be maintained in 2025 due to the stable demand for automotive products. The production capacity of the Xian Plant will be reduced to 140K in 2025 due to the downturn of the consumer market in China. It will be upgraded to 236 layers in the second quarter. The production capacity of P1L to P3L in the Korean factory will be slightly revised downward. P4L is expected to start trial production in the fourth quarter of 2025.

- b. The future investment of Kioxia/SanDisk (formerly WD) will focus on cost optimization rather than improving process technology. In addition to expanding the production capacity of the 218-layer process, the company plans to strengthen the cost control strategy for the 112-layer process. SanDisk (formerly WD) is actively expanding its SSD product line. In addition to the high-performance PCIe 5.0 SSD, it will start the mass production of the 64TB TLC SSD and invest resources in the production of automotive SSDs to improve profitability. Thanks to the investment support of the Japanese government and the significant profit growth in 2024, KIOXIA and SanDisk (formerly WD) plan to fully upgrade to 218 layers in 2025. Considering the limited growth of orders in China, both companies have reduced the capacity at the same time. It is estimated that the annual growth rate of output in 2025 will be only 7%.
- c. SK Hynix is focused on enterprise SSD investment. Its 321-layer QC will replace the Solidigm 192-layer floating gate process. The company will adopt a conservative capacity strategy. Looking ahead to 2025, the company will continue to invest in HBM and DRAM, and the NAND Flash process will be upgraded to 321 layers continuously. However, the actual production scale will be slightly adjusted downward. It is expected that the annual growth rate of the output in bits will be only 0–5% in 2025.
- d. Micron focuses on the development of high-speed transmission products. After the mass production of 232-layer PCBs in 2024, the company will launch 276-layer client SSDs in 2025. The production scale in 2024 was reduced by 15% mainly due to the decrease in output of 176-layer products. Looking ahead to 2025, due to the impact of reduced capital expenditure, the migration speed of Micron's process nodes will slow down and the expansion of the 276-layer production capacity will be delayed slightly.
- e. In order to satisfy the orders of 120TB QLC enterprise SSDs, Solidigm will upgrade to the 192-layer process in 2025, but the monthly production capacity will remain unchanged. The annual growth rate of the output in bits is estimated to be 15–20%.
- f. In 2024, YMTC adopted the non-US equipment for mass production

in the 160-layer (X4) process Looking ahead to 2025, the goal is to upgrade X4 to 260 layers and improve the yield continuously. It is estimated that the annual growth rate of the supply in bits will exceed 50% and the possibility of further increase in production capacity will not be ruled out.

Vendors	2022		2023		2024		2025	
	1H	2H	1H	2H	1H	2H	1H	2H
SAMSUNG	14nm (MLC/TLC)							
	176L (TLC/QLC)		236L (TLC) ★				28XL (TLC/QLC)	
SK hynix	14nm (MLC/TLC)							
	176L (TLC/QLC) ★		238L (TLC/QLC)				321L (TLC/QLC)	
SOLIDIGM	144L FG (TLC/QLC) ★		192L FG (QLC)					
KIOXIA	15nm (MLC/TLC)							
	112L (TLC/QLC) ★		162L (TLC/QLC)				218L (TLC/QLC)	
SANDISK™	16nm (MLC/TLC)							
micron.	176L (TLC/QLC)		232L (TLC/QLC) ★				276L (TLC/QLC)	
	128L (TLC/QLC)		232L (TLC/QLC)		160L (X4) ★		260L (X4)	
MXIC	19nm (SLC/MLC) ★							
	48L (TLC)		96L (TLC)		192L (TLC)			

Note: ★ indicates the supplier's current primary technology.

2D NAND<48L92/96L1XX L1YY L2XX L2YY L3XX L

Source: TrendForce Corp., December 2024

Fig. 12 NAND Flash 2D/3D product technologies of manufacturers

B. Supply-demand development of the industry

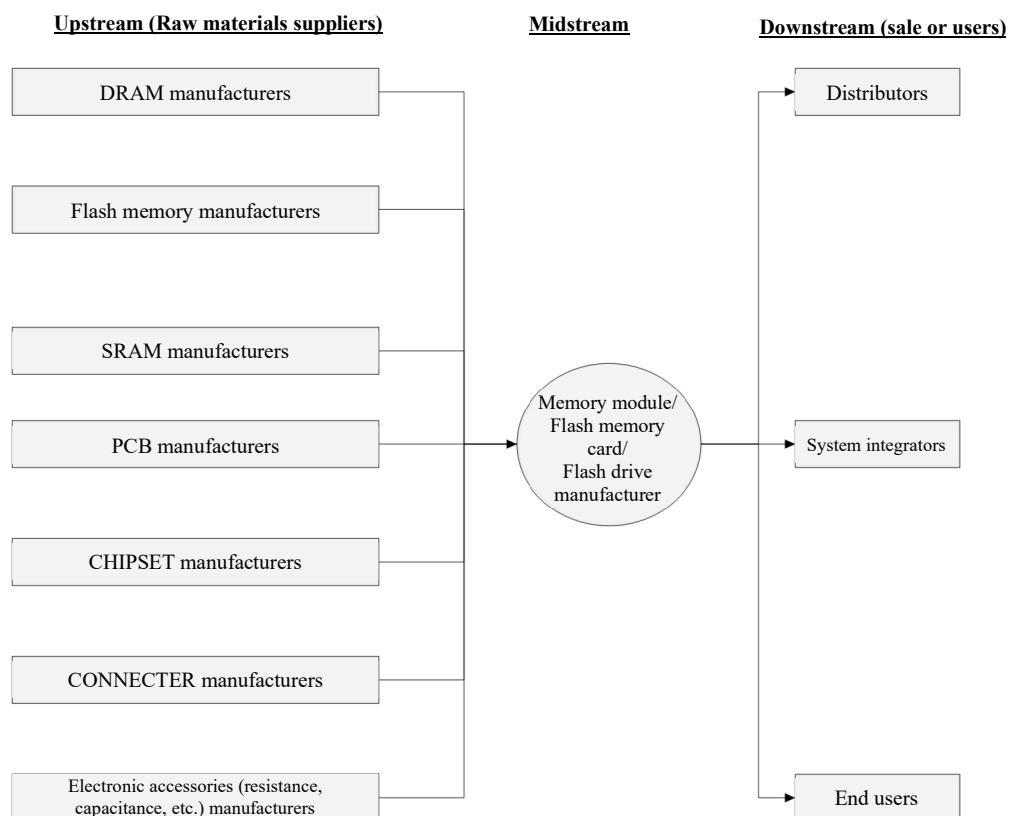
In 2024, Samsung and Micron will actively promote the 2XX-layer production capacity. The focus of other suppliers will be 1XX and 1Y and the proportion of 2XX will increase. In the fourth quarter of 2024, the total of 2XX/1YY-layer products accounted for 58% and the 1Y-layer products dropped slightly to 30%. The 1XX layer remained between 35 and 40%. In addition, Solidigm increased production and Samsung expanded its QLC deployment. Major suppliers also accelerated the promotion of QLC applications. The proportion of QLC output exceeded 20% in Q4 of 2024.

In the third quarter of 2024, the response of the smartphone manufacturers to the high price of NAND Flash caused a significant shrinkage in the transaction volume, resulting in a decrease in the inventory of the manufacturers. Finally, the price was the same as the second quarter. PC manufacturers are actively preparing for the shopping season in Q4 and the price of the client SSD increased by 3–8%. In addition, the demand for AI servers drove the growth of servers, and the price of enterprise SSDs rose by 15–20%. The supply-demand imbalance of the NAND Flash continued to worsen in the fourth quarter. Since the inventory pressure on the manufacturers continued to rise, the bargaining power of the buyers increased. PC and smartphone manufacturers demanded further price cuts, and the willingness to raise the price of the enterprise SSD at the server end became more conservative. Overall, only the price of the enterprise SSD rose slightly by 0–5% thanks to the demand for AI servers. The price of the rest products

declined by 5–15% and the decline of wafer products was 20%–25%.

Looking ahead to 2025, the output of major foundries was reduced. SanDisk (formerly WD) further reduced its output target in the first quarter, resulting in a 10% decrease in the number of 12-inch wafers. In terms of technology upgrades, Samsung and Kioxia are accelerating the shift to 2xx-layer production capacity and reducing the production of 1xx-layer products, resulting in a significant increase in the proportion of 1Y and 2Y products. TLC will remain mainstream in the market. Its proportion will be more than 75% for the entire year.

2. The relationship between up, middle and downstream in the industry



3. The development trend of each product

(1) The development trend of memory modules

With the rapid development of technology, the performance, capacity, power, and technological structure of memory modules continue to evolve to meet the needs of artificial intelligence (AI), cloud computing, 5G, and the Internet of Things (IoT). The following is the main development trend of memory modules:

A. Continuous improvement of capacity and density

As the semiconductor process technology advances, the density of memory chips continues to increase. For example, the DRAM process has advanced from 20nm to 10nm with more advanced nodes, which

allows a single module to accommodate more memory units. Currently, the capacity of consumer-grade single module has reached 64GB and the capacity of server-grade DRAM has reached 256GB or even higher. In the future, the capacity may exceed 512GB for the applications of AI training, big data processing, etc.

B. Popularity of DDR5 and subsequent standard development

When entering the market in 2021, DDR5 memory offer higher bandwidth (up to over 8400 MT/s), lower power consumption, and better power management capabilities than DDR4 and DDR5. As DDR5 gradually becomes the mainstream of the market, the industry begins to plan the DDR6 standards. Its bandwidth may exceed 12,800 MT/s to meet the needs of future high-performance computing.

C. More demand for LPDDR low power-consumed memory

The demand for low power-consumption memory is increasing for mobile devices, IoT, and edge computing devices. This gives rise to the continued development of the LPDDR series (such as LPDDR5X and LPDDR6). This type of memory has lower voltage requirements and high-performance. It is suitable for smartphones, notebooks, autonomous driving AI systems, etc.

D. HBM (High Bandwidth Memory) has become a key component of AI and HPC (High-Performance Computing)

The technology of HBM (High Bandwidth Memory) improves the bandwidth of memory using a 3D stacking approach. The product is applicable to high-performance applications such as AI, HPC and data centers. HBM3 has entered the market and HBM4 is under development. They are expected to provide higher bandwidth, lower latency and better energy efficiency to meet the needs of AI model training and cloud computing.

E. Memory structure reform led by CXL technology

Compute Express Link (CXL) is an emerging memory expansion technology. It enables heterogeneous computing units such as CPU, GPU and FPGA to share memory resources. CXL allows the memory module to expand from the conventional DIMM interface to the PCIe interface, thereby improving the system's flexibility and performance. In the future, CXL will change the structure of servers and cloud memory architectures, and will realize more efficient allocation of computing resources.

F. The rise of AI and compute-in-memory technology

The conventional memory is only used for storing data, but AI training and inference require a large amount of data to be computed, and this frequently leads to data transmission delays and power consumption problems. To address these challenges, the industry is developing Compute-in-Memory (CIM) technology, allowing memory

to store and calculate simultaneously, thereby improving AI computing efficiency and reducing power consumption.

The development trend of memory modules covers higher capacity, higher bandwidth, lower power consumption, and a more flexible framework to ensure coping with the challenges brought about by AI, high-performance computing, and cloud technology in the future. With the advancement of DDR5, HBM, CXL and AI memory technologies, we will enter an era of more powerful and efficient computing.

(2) The development trend of flash memory

- A. Compared to PCIe 4.0, the PCIe 5.0 has better performance in terms of efficiency, but is still limited by the high cost and NB heat dissipation challenges. Hence, the increase of the penetration rate is limited in the coming years. However, with the development of AI, the market has gradually introduced more cost-effective PCIe 5.0 products and actively improved heat dissipation technology. According to Micron's observation, it is estimated that the proportion of PCIe Gen5 will reach 10% by 2026 in terms of its introduction in PCs. In addition, the cost gap between QLC and TLC is increasing at the same capacity, so manufacturers are accelerating their deployment of QLC products. The shipment of QLC client SSDs is projected to account for 35% in 2025 and further increase to 43% in 2026. This will gradually become the mainstream of the market.
- B. As the shipment of Nvidia's Blackwell series of SSDs increased, the demand for AI training servers with 8TB SSDs has also risen. This, along with the fact that China's DeepSeek is increasing the deployment of its AI servers, is expected to drive the demand for SSDs in 2025. The trend of using enterprise SSDs with a capacity of more than 30TB will continue. The mainstream capacity is expected to be upgraded to 60TB in the first half of the year. These will drive the average capacity of enterprise SSDs to increase to 5.8TB. Due to the advantage of transmission speed, the market share of the enterprise SSDs will continue to grow. According to TrendForce, by 2025 Q4, the shipment of the PCIe 5.0 interface products is expected to exceed 50%.
- C. According to a survey conducted by Counterpoint Research, the penetration rate of mobile phones with AI is expected to reach 43% by 2027 thanks to the rapid development of AI technology, and more than 1 billion devices will be used in the world. This trend will accelerate the innovation of memory technology and promote market demand. The introduction of AI technology has transformed smartphones from entertainment devices into a multi-functional platform that can provide productivity. Users can generate briefings and graphics through voice commands, or make a reservation using the AI assistant. Although AI computing relies on the cloud, the demand for high-efficiency memory

will gradually increase thanks to the increasing sophistication of the models. From the view of memory specification, the memory capacity of a mobile phone was about 4GB to 8GB in the past. However, GenAI mobile phones have significantly increased their requirements for memory capacities. Apple believes that the memory capacity should be more than 8GB and Google suggests 12GB or more. Therefore, the memory capacity of the mobile products made in recent years has been increased. For example: Only the Pro series of the iPhone 15 is equipped with AI functions mainly due to the limited memory capacity. However, the entire iPhone 16 series has been upgraded to 8GB. Google Pixel 8 is equipped with 8GB and Pixel 9 is upgraded to 16GB. At least a 14GB memory is required to run an AI model with 7 billion parameters. To meet higher storage requirements, mobile phone brands are actively increasing their storage capacity. However, this also drives the hardware costs. It has been reported that Apple may adopt QLC NAND Flash memory in the model with a storage capacity of 1TB or more to balance the performance and cost.

- D. Taken all together, the biggest demand in NAND Flash servers, such as the promotion of the capacity of smart phones, tablet PCs and SSD. The IoT trend is leading a rapid growth of intelligent devices, and with the increasing demands and applications for data storage for 5G deployment, smart robots, smart appliances, smart speakers, and wearable devices, Internet of Cars, vehicle navigation systems, smart wearable devices, drones, big data computing, edge computing, and future AI devices, the growth of NAND Flash applications is something to look forward to.

(3) Techniques and research development status

1. The R&D expenses in the recent years and as of the date on which the annual report is printed

Unit: NT\$ thousand

Year	2023	2024
R&D expenses	188,773	180,702

2. R&D status of Apacer

Devoted to applications of memory and storage technologies, Apacer's memory module and SSD technologies and products cater to the consumer, commercial, and industrial markets. We are accumulating storage technologies and capabilities, developing a deep understanding of the demand for memory storage applications, and continuing to invest resources in the R&D of hardware, software, firmware, institutions, and design. In particular, we are innovating SSD storage modules for industrial applications. Moreover, based on our comprehensive knowledge of the firmware and structure of SSD storage, we can swiftly provide customized storage solutions to meet the practical requirements

of our customers and expedite the progress of their projects. Based on the development of the firmware and core storage technologies, we upgrade product stability and reliability and help customers solve difficult system and data storage issues, such as the firmware technology of the new generation that the Company continues to develop this year for second-level multi-backup and quick restoration of the entire system. Based on trends in the development of storage interfaces, we are more actively devoted to developing PCIe (PCI Express) SSD storage technology to meet the requirements for the transmission interfaces of the next generation.

Strategies for developing new technologies and products include the integration and innovation of memory and SSD applications. With these, we actively satisfy our customers' applications and provide them with thorough solutions, invest resources, and cooperate with internationally leading companies to develop automated optoelectronic testing equipment, proactively establish IIoT and intelligent IoT platforms, and promote these in relevant industrial application fields. R&D of technologies in new fields is implemented toward the development of green products, including the application products related to electronic paper, to provide full-color displays and various innovative products.

In addition to designing and developing formats with higher compatibilities to meet different requirements, we are also devoted to developing strategies for mobile SSD storage and the development of products related to mobile digital storage applications. We brought out many kinds of high-speed flash drives, external hard drives, and multi-purpose flash drives.

As for R&D, we have been granted 199 approved patents for our products in Taiwan and other countries. 36 patent applications are currently pending.

3. R&D outcomes

Year	R&D outcomes
2024	<ol style="list-style-type: none"> 1. The Company won the 2025 Taiwan Excellence Award. We developed the brand new CoreRescue technology and combined this with our exclusive CoreSnapshot quick backup-restore SSD firmware technology to perform remote rescue via fast and reliable system rescue technology, helping enterprises to solve system or machine problems as soon as possible to reduce risks and losses due to equipment failure and improve overall operational efficiency. The CoreRescue series currently provides six solutions: CoreRescue ASR, CoreRescue Button, CoreRescue Touch sensor, CoreRescue Hall sensor, CoreRescue USB, and CoreRescue OOB. Customers can choose the optimal cloud or on-premises solution depending on the actual application needs. In the future, we will continue to satisfy various scenarios of data backup modes in different fields. 2. The Company won the 2025 Taiwan Excellence Award. With the awareness of continuous innovative and environmental protection, Apacer has led the market trend and launched the unique "Fragrant SSD module" that integrates digital storage technology and aesthetic perfection in a breakthrough way. We also pay attention to the value of ESG and recycling. The product uses environmentally friendly and renewable materials, which greatly reduce the carbon emissions of the manufacturing process, and achieve the goal of carbon reduction to realize the firm commitment of Apacer to the environment. 3. The Company won the 2025 Taiwan Excellence Award. With the unique DataDefensive™

Year	R&D outcomes
	<p>Plus software and hardware integration technology, we assist the high-end industrial control application market with the real-time monitoring of the voltage at the host end. This function can actively alert when there is a voltage anomaly. It can help users analyze how the terminal equipment is used to improve the data protection capability of the industry SSDs.</p> <ol style="list-style-type: none"> 4. Apacer's exclusive patented technology "CoreSnapshot" continues to improve data storage backup and recovery technology. These include: "CoreSnapshot Lite" for one-time backup and restoration, "CoreSnapshot 2" for multiple backups and restorations, and "CoreSnapshot 3" that provides multiple backups in combination with multiple restorations and selection of specific restoration points, allowing users to set the current status as the latest backup point at any time. The product series is diversified and can support a capacity from 60GB to 960GB to meet the high customization requirements of the industrial market and different applications in various fields. Apacer adheres to the spirit of continuous improvement in R&D and continues to develop relevant industrial applications. 5. The CoreRescue ASR includes the SATA and PCIe series. The watchdog concept is adopted to develop AutoSR firmware + AutoSR software that can perform detection automatically. When the SSD has a problem, the automatic restoration system, Apacer CoreSnapshot (TM), can be used in combination to ensure that your system can run online at any time. 6. Apacer CorePower is equipped with a tantalum capacitor. It can write the data in the cache back to NAND when an abnormal power interruption occurs to prevent data loss and ensure data integrity. 7. Enterprise PCIe SSD has booting and data storage functions, and can be used according to the needs of the enterprise client. It focuses on the four major characteristics of large capacity, high performance, low latency, and high reliability, and performs consistently in conjunction with QoS (Quality of Service), IOPS (Input / Output Operations Per Second) and DWPD (Drive Writes Per Day) to ensure that the multi-functions can meet the needs of high-speed and massive transmission. The Company develops a dedicated Enterprise series SSD Widget for enterprise clients to monitor the SSD health status at any time. 8. Apacer has made significant advancements in the industrial control field. We have launched a series of CET (Commercial Extended Temperature) products and provided storage devices that can operate normally at temperatures ranging from -25°C to 85°C. From product design, testing, and verification to the production process, storage devices undergo a series of rigorous temperature tests. All of them meet the requirements for durability, reliability, and performance, providing enterprises with an additional option among extended temperature and ambient temperature products. 9. To meet the demands of mobile phone video recording, storage space is becoming increasingly large. Apacer's ultra-lightweight magnetic external SSD, the AS725, ensures that storage capacity can be easily expanded by simply attaching the product to a smartphone using the magnetic suction function. The product passes the military-grade drop test and has a read and write speed of up to 1,000 MB/s, which can greatly save transmission time and meet the needs of audio and video users who shoot and store data on the go. We provide four capacity options of 256GB/512GB/1TB/2TB. 10. In the face of the global sustainability trend and ESG policy, Apacer announced the mass production of the latest industrial DDR5-6400 CUDIMM and CSODIMM memory modules. We are the first company that uses the full lead-free resistor design and is exempted from the lead-free exclusion clause of the EU RoHS. 11. The fully lead-free SSD uses all-lead-free resistor devices and is exempted from the lead-free exclusion clause of the EU RoHS in line with the global ESG standards. 12. Apacer is launching anti-sulfurization storage device SSDs. These are the best choice for indoor and outdoor monitoring, 5G base stations, petrochemical minerals, and edge computing applications to resist against harsh polluted environments. Harsh environments and severe air sulfide pollution have a significant negative impact on electronic components, affecting the lifespan and reliability of electronic products. Anti-sulfurization storage devices will become mainstream in promoting ESG protection issues in the future. 13. iKeeP QuizSlide 2.0 is equipped with a 4.3-inch capacitive large touchscreen with an easy-to-use and user-friendly interface. The product offers users an interactive experience that is easy to use. Its voice learning function ensures simultaneous learning through the built-in speaker or USB headset, helping users improve their learning efficiency. 14. Apacer Rugged Systems strengthens the security of the SATA SSD products with the additional NTS Erase, MIL Erase (NSA9-12), Instant Keychange, and destroy (SW command, HW: Connector pin or pin head) Write protection (SW command and HW: Switch), and TCG Opal 2.0 to meet the high product security requirements of the industrial market. 15. The Apacer TCG SV240 series supports the OPAL 2.0 protocol. The TCG OPAL can be set up with the Pre-boot authentication and locking range. The AES-XTS encryption function

Year	R&D outcomes
	<p>can prevent unauthorized alteration of data and improve the product security defense functions.</p> <ol style="list-style-type: none"> <li data-bbox="499 264 1433 349">16. Apacer SLC-liteX supports industrial control wide temperature 3D NAND SSD to achieve the highest 100K P/E cycles in the industry, about 33 times more than traditional flash memory. <li data-bbox="499 349 1433 546">17. Apacer provides storage and memory modules and customized value-added services for AI servers. Apacer uses AI computing service solution, Ai DAPTIV+, and develops value-added technologies and services for AI SSD and AI edge computing servers based on its computing architecture. Value-added technologies developed in the design-in scenario, such as a comprehensive set of AI service solutions – including cooling, extension of read/write life, and cloud management – allow clients to have more customized options while ensuring closer alignment with the needs of edge computing system integrators for AI applications. <li data-bbox="499 546 1433 792">18. Apacer's R&D team has deeply engaged in the development of lead-free technology solutions and successfully overcome the lead-containing problem of resistor components that currently still rely on the RoHS 7(c)-I lead exemption clause. Apacer launches fully lead-free memory modules. Our memory products have fully achieved the last mile of the EU RoHS standard. The early introduction of fully lead-free memory modules is particularly important for industries such as healthcare, data centers, network telecommunications, AI and edge computing servers. Apacer assists enterprise clients in leading deployment, strengthening competitive advantages in product differentiation, and demonstrating sustainable action strength to improve brand image. <li data-bbox="499 792 1433 958">19. Apacer's full range of embedded solutions provides the brand-new Write Once Read Many (WORM) technology for the security of embedded systems. It allows each data record to be written only once, and no further changes can be made once the data is written. The main purpose is to prevent improper deletion, alteration, override, or falsification data, thereby providing customers with a more comprehensive solution for information security protection. <li data-bbox="499 958 1433 1043">20. Apacer's FIPS 140-2 (Federal Information Processing Standards) certified SSD series provides the best solution for the industries that plan to cooperate with US federal agencies or require higher security. <li data-bbox="499 1043 1433 1267">21. Net-zero carbon emissions are a global concern. Apacer's R&D unit achieves a green display with our electronic paper display technology. With the color advantage of cholesterol e-paper, Apacer has developed and designed a 13.3-inch full-color e-paper digital signage solution, offering various options for customers. In the display market, customers value colorfulness and are increasingly paying attention to environmental sustainability. The full-color e-paper digital signage can be placed for a long time without being plugged into the mains socket. When fully charged, it can be used for more than one thousand page flipping operations in line with the ESG trend of environmental sustainability and energy saving. <li data-bbox="499 1267 1433 1433">22. Apacer's industrial-grade DRAM module uses strong fixing belts with a three-point fixing design to provide higher stability and is suitable for all motherboards. The fixing belt is made of highly flame-retardant polysiloxane and can withstand temperatures up to 200°C. It is highly elastic and flexible without the risk of short circuits on the motherboard. Even in the low temperature environment, Apacer's strong fixing belt can maintain lasting elasticity and flexibility to ensure reliability in a variety of extreme environments. <li data-bbox="499 1433 1433 1680">23. Apacer's intelligent optical inspection equipment: Apacer has been highly recognized by international manufacturers in the current hot trend of AR/VR glasses. We have practical experience in testing, calibration, and other customized facilities. Apacer started out as an optical instrument manufacturer and later moved into the automation equipment field. We have the ability to integrate various optical instruments with automated human-machine interfaces. We can customize production testing procedures. Whether it involves panel materials such as glass, film materials, backlight modules, and panel semi-finished products, or various panel product applications, we have the ability to design exclusive testing machines. <li data-bbox="499 1680 1433 1904">24. Apacer ECM equipment: In addition to ECM equipment, we provide new solutions for special structures and high-hardness alloys that are difficult to process using traditional processing methods. What we provide is a non-contact and stress-free processing method that can be applied to cutting-edge processes in the high-precision processing industries such as aerospace, automobile manufacturing, semiconductors, and precise medical devices. In addition to removing materials and forming accurately and quickly, this technology can directly produce smooth surfaces without stress residue or burrs, and is suitable for mass production. <li data-bbox="499 1904 1433 1989">25. Apacer ESG IoT solution: The IoT solution is not limited by brands and equipment, and can integrate old machines without an IoT. Data are collected using external sensors and iBox. Through the IIoT, the information and electricity usage data of various production lines are

Year	R&D outcomes
	comprehensively visualized and managed, and the construction of the war room can be assisted to achieve the forecast and proactively control, thereby helping enterprises establish a high-efficiency smart factory.
	26. Apacer achieves mass production of the latest industrial-grade DDR5-6400 CUDIMM and CSODIMM memory modules. We are the first company using full lead-free resistor design and are exempted from the lead-free exclusion clause of the EU RoHS. The selected dual-core technology of the industrial-grade Client Clock Driver (CKD) components and Transient Voltage Suppressor (TVS) is designed for high-performance computing (HPC) and artificial intelligence (AI) applications. This ensures ultimate stability and security in extreme industrial environments requiring high-performance computing, thereby providing enterprises with reliable, environmentally friendly, and high-performance solutions.

(4) Long-term and short-term business development plans

1. Short-term business development plan

The Company's overall business will be based on the two major business strategies of "active promotion" and "maintaining achievements and profit." The implementation directions for the two fields of industrial control and consumer application are defined separately. The focus and goal of this year is "in-depth industrial control" and "increase of sales channels." The details are as follows:

(1) Active promotion:

- A. R&D and innovative application solutions: R&D of products and technologies in the application field to develop more diverse customer groups and increase the adhesion of customers with highly customized product and value-added technology combinations. For example, with the solid-state, transportation, and enterprise SSD applications, we will create suitable products and value-added technologies to solve customer problems. We also keep track of new memory specifications and plan new product lines in line with to new specifications such as CAMM, MRDIMM, and BiCS8.
- B. Make good use of data and maximize brand benefits: Examine the data benefits of all marketing activities, and transform them into reference indicators for developing potential customers, and plan to strengthen advertisement planning for target customers and markets; at the same time, return to the B2B international exhibition – COMPUTEX, hoping to expand the international visibility of the brand, strengthen the brand image, and explore new customers.
- C. Actively expand the distribution channel in Europe and the US: Apacer has been operating consumer products and industrial control products at the same time. This is an unusual business model among the competitors. As product specifications change, high-end storage products such as portable SSDs and high-capacity flash drives still have a strong market presence in Europe and the US. We expect to actively promote these

products.

- D. Develop customers in specific fields: In response to the aforementioned products and technologies developed in the application fields, the goal is to develop customers in specific fields to improve operational efficiency and brand awareness.

(2) Maintaining achievements and profits

- A. Continue to strengthen product portfolio: Apacer has more than 20 years of experience in the memory module industry. We can satisfy customers' needs for standard products or customized solutions. We will continue to optimize product quality and develop more diversified specifications to increase the completeness of product lines. For customers who need to cooperate with the European Union, the Company has developed the first full lead-free DRAM products in the world to meet the RoHS requirements.
- B. Increase exposure to social media: The influence of social media is not limited by time or space. We will optimize the content and check the data on social media channels that can create benefits, such as LinkedIn and YouTube, to attract a potential audience, enhance the brand image, and indirectly promote possible cooperation opportunities.
- C. Strengthen the deployment of consumer channels in the Asia Pacific: Our consumer products are well known in the Asia Pacific market. So, we will continue to strengthen our market presence in this region to increase our market share. In addition, the growth of the Indian market has been eye-catching in recent years. We have been implementing the MII (Make in India) project since 2024 and have cooperated with partners to engage in local manufacturing. Currently, the cooperation model is stable. We will continue to develop greater market demand.
- D. Strengthen existing customer cooperation: Due to the high customization of industrial control products, it is difficult to replace suppliers once there is a cooperation relationship. However, as the memory specifications continue to upgrade, how to maintain stable transactions is a major challenge. Therefore, we will ensure our competitive advantage and meet customer needs by optimizing our products and updating the specifications. We will continue to expand the scope of cooperation with strategic partners, such as Advantech and Acer, in products and technologies, enhance product recognition and development projects, and work with them to expand overseas markets in Europe and America.

(3) Accelerating the growth and transforming operational benefits

In recent years, Apacer has continued to invest in new domains and has established the Emerging Application Division and the Electronic Paper Business Division. The Emerging Application Division primarily focuses on the two major special applications of IIoT and intelligent equipment. The IIoT service items include smart disaster prevention systems and ESG equipment testing programs. The latter combines optical testing and development-related equipment to provide integrated services from design planning to equipment manufacturing. Currently, the focus is on the Taiwan market and we will continue to develop to meet customer demands. Electronic paper is the future trend. We enter the market with environmentally friendly and energy-saving products and plan to expand partnerships in the e-paper ecosystem. At the same time, we develop energy-saving signages for the transportation, medical, and retail industries.

(4) Cultivation of outstanding talents and accumulation of growth capital

As the era of great labor shortage arrives, how to manage and retain talents has become a major challenge for companies. Apacer will continue to promote the A+EAPs Employee Assistance Program and satisfy employees' needs from food and clothing to accommodation and entertainment through diversified programs. In addition, we provide suitable job training, talent supply chains, and succession classes for employees to plan their careers. We also provide a friendly workplace environment, promote the concept of sports clubs, and cultivate the awareness of health and physical well-being among the employees in order to retain outstanding employees, recruit talents, and accumulate long-term human resources capital for the Company.

2. Long-term business development plan

To meet the long-term business needs and cultivate sustainable competitiveness, Apacer takes the four major operational trusts of focus on key areas, deployment of future technologies, executing digital transformation, and formation of alliances with strategic partners as the main strategic development cores of the Company. Meanwhile, we support the trend of sustainable development. The Sustainable Development Committee formulates ESG (Environmental, Social, Governance) policies and annual implementation goals in combination of the four focuses to provide indicators for long-term business development. The key points of the plan are as follows:

(1) Continuous investment in sustainable actions

Apacer has established the Sustainable Development Committee, with the Chairman serving as the chair and the CEO as the secretary. There is also an ESG implementation group and a risk management group. Sustainability reports in Chinese and English are published regularly each year. The ESG Promotion Team plans annual implementation goals and regularly reviews performance from five aspects: corporate governance, employees, environment, customers and suppliers, and communities, and reports to the board of directors at the end of the year. Risk management is to achieve the purpose of sustainable operations by regularly checking possible operational risks and proposing plans to mitigate/eliminate the risks. In addition, in response to the direction of future regulations, Apacer will establish a climate change risk and opportunity team to assess the impact of possible risks and opportunities caused by climate change on corporate finance and seek response plans.

(2) Focus on key areas

Whether it is the consumer or industrial control product line, Apacer provides corresponding solutions based on the application scenarios. In the industrial control sector, we develop corresponding products and technical solutions for seven key areas, from factory automation, defense applications, medical care to servers and network communications, in order to develop high-value target customers in Europe and the United States. For the applications in which high C/P value is a concern, such as educational laptops, slim computers, and POS machines, we work with partners to continue to expand our market presence in Europe and Asia. For consumer electronics, the focus is on e-sports gaming, and the product line from low to high price can satisfy the needs.

(3) Deployment of future technologies

R&D technology is an important moat for corporate competitiveness. Apacer is committed to cultivating and recruiting R&D talent. In order to accumulate R&D capacity, we encourage employees to develop patent ideas every year. Over the years, we have accumulated hundreds of patents in the three major fields of embedded, innovative and consumer products (including Taiwan, China and the United States). We pay close attention to the latest technological developments in the DRAM or NAND Flash fields. We are able to keep pace with the times and launch products that meet new specifications. Apacer has invested resources in the development of automated optical inspection technology and equipment, professional technologies such as artificial intelligence that combine the Internet of Things with smart applications, and full-

color electronic paper display applications, in the hope of implementing early deployment of development momentum for the future.

(4) Digital transformation of operations

With the AI application, the operation of enterprises is also becoming AI-based. In consideration of this and the information security issues that have received attention in recent years, Apacer has continued to invest in software and hardware upgrades and system development since 2018. In addition to optimizing information security, we have laid the foundation for digital transformation. It is increasingly important to introduce suitable AI tools into the enterprise and construct an internal AI knowledge management system to assist in improving operational efficiency.

(5) Strategic partner alliance

In 2022, Apacer incorporated UD info Corp. as a subsidiary by exchanging the shares, and won Acer as another partner. Advantech joined the ranks of private placements in 2024. Then, we have three partners in private placement, including Phison, which joined as a partner in the early days. This alliance provides Apacer with more diverse operational perspectives and competitiveness and becomes a growth driver for the Group's operations. In the future, we will keep on looking for suitable strategic partners to create ecosystems based on the strategy of forming alliances and extend the benefits of partnership in the industrial value chain.

II. Market and production and sales status

(I) Market analysis

1. Sales region for major products

Unit: NT\$ thousand

Year Region		2023		2024	
		Sales amount	%	Sales amount	%
Domestic sales		1,239,570	16.24%	1,483,721	18.93%
International sales	America	1,155,916	15.15%	890,189	11.36%
	Europe	1,926,820	25.25%	1,302,740	16.62%
	Asia	3,231,584	42.35%	4,094,562	52.25%
	Other	77,556	1.01%	65,947	0.84%
	Subtotal	6,391,876	83.76%	6,353,438	81.07%
Total		7,631,446	100.00%	7,837,159	100.00%

2. Market share

The Company engages in the production and sales of memory modules and flash memory products. There are many companies engaging in these products. Due to the fact that the production scales of these companies are different, there

are no professional and comprehensive industry ranking statistics. Apart from us, domestic companies engaging in the production and sales of DRAM products with a certain scale include ADATA, Transcend, Team Group, Silicon Power, and Innodisk. The revenues and market shares of the Company and aforementioned companies are listed in the following table. The ratio of operating revenues of the Company to the operating revenues of the aforementioned companies in 2024 was 8.59%.

Unit: NT\$ thousand

Name of Company	Net Operating Revenues	Market Share
Apacer	7,837,159	8.58%
ADATA	40,178,516	43.98%
Transcend	10,083,525	11.04%
Team Group	19,938,459	21.83%
Silicon Power	4,398,659	4.81%
Innodisk	8,915,642	9.76%
Total	91,351,960	100.00%

Source: All companies' 2024 consolidated or individual financial reports that have been certified by CPAs

3. Market supply and demand status and growth in the future

(1) Market supply and demand status and growth of DRAM in the future

A. Supply and demand status:

From the perspective of DRAM suppliers, the first quarter of 2025 is still in a low season. Therefore, all three suppliers believe that the shipment in bits will show a seasonal decrease. Overall, the DRAM inventory levels of the suppliers are still high. SK hynix is the best supplier among the three major original suppliers in terms of DDR5 shipments. Due to the recovery of the gaming notebook market, its products are widely accepted by PC OEMs and the spot market. In addition, the launch of HBM3e mass production after the second quarter of 2025 will position SK hynix as the DRAM supplier with the fastest inventory liquidation in the future.

From the perspective of PC OEMs, some PC OEMs have a high inventory level. Therefore, we are actively adopting a reduction in inventory strategy in the first quarter of 2025. The results are a slight decline in the inventory level in this sector. Some PC OEMs have a healthy 9-week inventory level. Looking ahead to the second quarter of 2025, if the NB market continues to improve, the purchasing momentum from PC OEMs will increase slightly.

From the perspective of the module makers, the attitude is the same as that of the PC OEMs. An inventory reduction strategy will be adopted in the first quarter of 2025. Although the transaction volume in the spot market continues to shrink, the inventory level declines slightly, and the pressure from inventory is reduced. In recent years, it can be observed

that module manufacturers no longer cut prices and sell off products in the spot market, thereby making a contribution to the stability of the spot price.

From the perspective of hyperscalers, the US CSPs continued to increase their purchases of high-capacity DDR5 servers in the first quarter of 2025, especially the 96GB RDIMMs for the new platforms GNR and Turin. In addition, with the increased installation of H200 and B200 AI servers, the demand for 128GB RDIMs grows simultaneously. In comparison, the procurement attitude of the Chinese CSPs is more conservative, and only one company is placing additional orders while other companies remain conservative and sidelined. In the second quarter of 2025, as suppliers transfer DDR4 production capacity back to DDR5 servers, there will generally be an oversupply after the production capacity is released. This will make the contract price of both DDR4 and DDR5 decline. simultaneously In addition, considering that the high-capacity modules, DDR5 96GB and 128GB, have a higher premium, the OEMs may improve shipment and business performance by implementing the profit-sharing strategy.

From the perspective of enterprise server OEMs, server OEMs' procurement volume was less than that of the CSPs in the first quarter of 2025. They shifted their purchasing focus to DDR5 and accelerated the liquidation of DDR4 inventory, making the inventory level drop from the previous quarter. It is expected that the procurement strategy of the server OEMs will remain conservative in the second quarter of 2025 to ensure greater inventory adjustment flexibility. The overall demand will still be less than the CSPs

B. Growth potential of DRAM applications in the future

DRAM is the key component for the smart applications of electronic products. The launch of different smart consumer electronics in the future, in conjunction with 5G, AI, smart cities and smart factories, will stimulate a wider diversity of DRAM applications. In 2024, in addition to automotive electronics, AI is bound to be a core topic, especially various edge AI applications, including the two mainstream new products AI PC and AI mobile phone, which will be the main battlefield for offense and defense.

The global server shipments grew by 5.0% in 2024, recovering from the sharp decline in 2023. The main reason is that the LLM continued to develop, and purchases of high-end AI servers by large cloud service providers increased exponentially. The demand for generative AI applications drove the need for general computing and storage, leading to a slight increase in the demand for general servers.

The shipment of servers is expected to grow by 4.2% in 2025. The growth will be lower than that in 2024 mainly due to the low growth rate

of high-end AI servers, which account for a smaller market share, in comparison with that in 2024. The increase in investment in AI applications and the unclear economic prospects will slow down the update speed of general servers. (See Table 6)

Server DRAM		1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2024F	2025F
Average Content	GB	672.6	703.9	743.5	773.2	803.0	829.7	855.2	885.9	725.4	844.4
	YoY	16.6%	19.2%	22.9%	24.9%	19.4%	17.9%	15.0%	14.6%	21.4%	16.4%
Server Shipment (Mn)		1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2024F	2025F
Inventec	Unit	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.9	3.1	3.3
	YoY	-5.2%	2.0%	9.3%	16.5%	10.5%	4.5%	2.5%	3.1%	5.4%	5.0%
Wistron	Unit	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	1.9	1.9
	YoY	23.2%	-4.8%	17.4%	-12.9%	3.7%	9.3%	4.0%	-5.1%	3.1%	2.6%
Foxconn	Unit	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	2.2	2.3
	YoY	-8.6%	-0.4%	7.0%	27.2%	10.4%	5.4%	2.5%	3.1%	5.4%	5.2%
Quanta	Unit	0.5	0.5	0.6	0.6	0.6	0.5	0.6	0.6	2.2	2.3
	YoY	-17.8%	-12.8%	20.8%	34.3%	7.8%	4.4%	0.1%	0.6%	2.9%	3.1%
Mitac	Unit	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	1.3	1.4
	YoY	7.5%	6.7%	3.9%	4.7%	9.3%	5.6%	1.5%	2.4%	5.6%	4.6%
Others	Unit	1.0	1.1	1.1	1.2	1.1	1.1	1.1	1.2	4.4	4.6
	YoY	-8.3%	12.1%	10.0%	11.7%	7.8%	6.2%	2.0%	2.0%	6.1%	4.4%
Total	Unit	3.5	3.7	3.9	4.1	3.8	3.9	3.9	4.1	15.1	15.8
	YoY	-5.0%	1.4%	11.2%	12.7%	8.3%	5.8%	2.1%	1.3%	5.0%	4.2%

Source: inSpectrum, January 2025

Table 6 WW Server Shipment & Content

In the fourth quarter of 2024, the global smartphone shipments grew by 2.4% year-over-year. After two years of challenging decline, the global smartphone shipments have grown for six consecutive quarters. The annual growth rate of 6.4% in 2024 demonstrated a strong recovery of the smartphone sector. According to the forecast of inSpectrum, the market will continue to grow in 2025. However, the growth speed may slow down due to the continuous growth in terms of the replacement cycle and the gradual depletion of the need for inventories.

As DC points out, despite the overall economic challenges, the worries of foreign exchange in the emerging markets, the persistent inflation, and the tepid demand, the strong growth in 2024 demonstrates the recovery capability of the smartphone market. Suppliers successfully adjust strategies to drive growth, including focusing on promotional activities, introducing products in different price ranges, interest-free financing programs, and aggressive trade-in programs. These are helpful for the promotion of high-end products and the improvement of low-end equipment, especially in China and emerging markets. Although we remain optimistic about continuous growth in 2025, the new tariff threat from the US administration worsens uncertainty for the entire industry, prompting some manufacturers to seek preventive measures to reduce risks. However, so far, the impact has been insignificant. (See Table 7)

Mobile DRAM		1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2024F	2025F
PoP	GB	8.3	8.5	8.6	8.6	9.1	9.3	9.8	9.8	8.5	9.5
	YoY	15.2%	11.8%	6.9%	7.2%	9.8%	9.4%	13.4%	13.9%	9.8%	12.1%
xMCPs	GB	7.0	7.1	7.3	7.3	7.8	7.9	8.5	8.4	7.2	8.2
	YoY	16.6%	12.4%	8.7%	9.0%	11.3%	10.9%	15.7%	16.1%	11.3%	13.5%
Average Content	GB	7.4	7.5	7.7	7.7	8.1	8.3	8.8	8.8	7.6	8.5
	YoY	3.5%	2.4%	2.1%	-0.3%	6.1%	1.9%	6.1%	0.5%	11.0%	12.8%
Smartphone Shipment (Mn)		1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2024F	2025F
Samsung	Unit	59.6	53.2	57.2	52.3	57.9	55.7	56.8	54.7	222.3	225.0
	YoY	-0.8%	0.7%	-2.7%	-2.1%	-2.8%	4.6%	-0.7%	4.5%	-1.3%	1.2%
Apple	Unit	51.9	47.8	49.2	69.3	49.8	46.8	47.7	68.9	218.2	213.2
	YoY	-3.8%	3.8%	0.8%	-5.8%	-4.0%	-2.0%	-3.1%	-0.6%	-1.9%	-2.3%
OPPO	Unit	35.2	34.2	42.8	39.6	36.5	36.8	39.4	40.5	151.7	153.2
	YoY	1.3%	-7.2%	3.0%	15.0%	3.6%	7.7%	-7.9%	2.4%	2.8%	1.0%
Vivo	Unit	22.0	25.8	26.7	26.2	23.8	25.8	27.3	27.0	100.8	103.8
	YoY	6.8%	20.7%	17.4%	7.2%	8.0%	0.0%	2.1%	3.0%	12.9%	3.1%
Huawei	Unit	12.4	11.7	12.9	14.7	14.0	14.2	14.3	14.3	51.7	56.8
	YoY	88.9%	33.5%	11.4%	14.5%	12.8%	21.0%	10.8%	-2.6%	30.1%	9.8%
Honor	Unit	16.2	15.0	15.1	17.8	15.9	16.4	17.4	18.6	64.1	68.2
	YoY	42.6%	16.4%	-6.0%	3.2%	-1.9%	9.1%	14.8%	4.8%	11.3%	6.5%
Xiaomi	Unit	40.1	42.9	43.1	44.3	42.9	44.6	45.4	48.2	170.4	181.0
	YoY	32.0%	29.4%	4.3%	5.5%	6.9%	3.9%	5.1%	8.8%	16.1%	6.2%
Lenovo	Unit	15.8	13.1	12.9	13.6	13.2	14.4	14.6	15.2	55.4	57.4
	YoY	39.5%	14.4%	-3.6%	-4.0%	-16.8%	10.0%	13.7%	11.9%	10.1%	3.7%
Transsion	Unit	28.3	25.4	25.3	26.9	27.0	27.5	27.6	29.0	105.9	111.1
	YoY	81.3%	4.6%	-1.6%	-4.4%	-4.6%	8.5%	9.0%	7.9%	13.0%	5.0%
Other	Unit	13.7	15.8	19.6	18.2	17.6	17.7	20.0	20.1	67.2	75.4
	YoY	-36.5%	-20.3%	6.8%	-11.1%	28.4%	12.4%	2.3%	10.4%	-16.1%	12.2%
Total	Unit	295.1	284.9	304.9	322.7	298.4	299.9	310.6	336.5	1,207.7	1,245.3
	YoY	10.9%	6.5%	2.2%	0.7%	1.1%	5.3%	1.8%	4.3%	4.8%	3.1%

Source: inSpectrum, January 2025

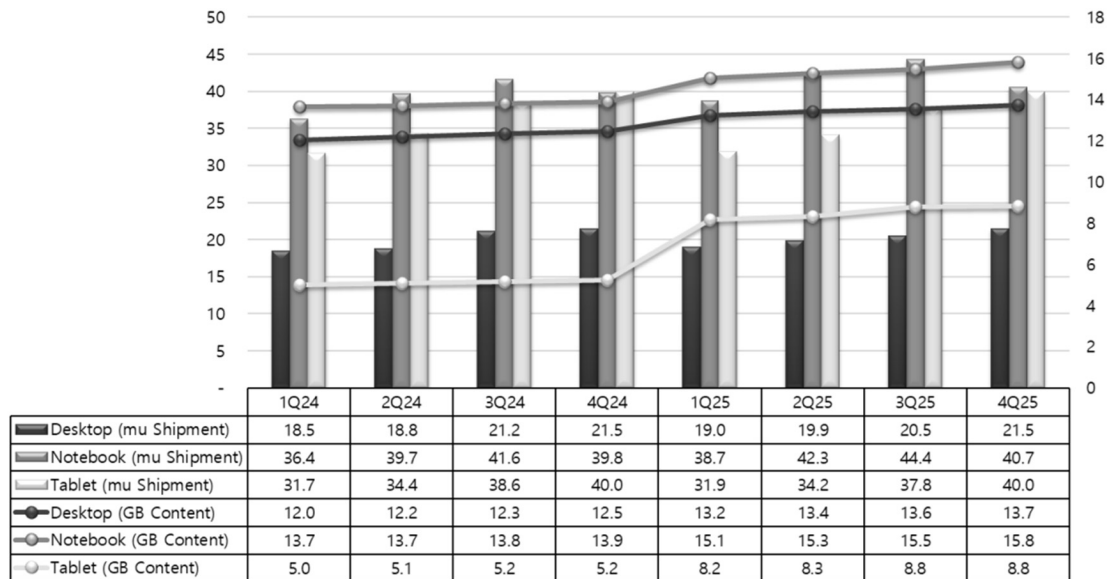
Table 7 WW Smartphone Shipment & Content

In the fourth quarter of 2024, the shipment of PCs grew by 1.8% compared to that of 2023. In 2024, the shipment of PCs grew by 1% compared to that of 2023. Looking ahead to 2025, PC players will face different obstacles and support, making market prospects unclear and demand planning difficult.

IDC indicated that even though the market recovers at a slower pace, it still grew in the fourth quarter as the government subsidies in China will make the consumer market better than expected. In addition, the United States and some European countries will enjoy strong growth because of the year-end promotion activities and the continuous upgrade of hardware before the support for Windows 10 ends in October 2025.

The threat of new tariffs and the rising existing tariffs imposed by the US government will increase the level of concern for the entire industry. Some brands are trying to respond to this uncertainty as early as possible. According to the research at the supply end, there were some early purchases in December 2024 mainly from the brands other than those in China with limited manufacturing capabilities. This may be an

attempt to prevent the United States from imposing tariffs on the products made in China. However, up to now, the scale of such movement is relatively limited. (See Fig. 13)



Source: inSpectrum, January 2025

Fig. 13 WW PC/NB/Tablets Shipment & Content

Looking ahead to 2025, the three major DRAM manufacturers are committed to expanding the production capacity of HBM products. Although doing so will squeeze DDR5 output and supply, it remains to be seen whether cloud operators can maintain the rapid and strong investment momentum demonstrated in the past two years. This will be a test of GenAI's actual monetization capabilities. However, the HBM price will remain strong and may even continue to rise at a double-digit rate.

However, the traditional DRAM market is expected to face a completely different situation. The decline in price has been ongoing since the fourth quarter of 2024. As the Chinese memory companies make significant efforts during the HBM trial production phase, memory module manufacturers are deeply concerned about whether DDR5 can avoid the impact of disturbances caused by inferior products.

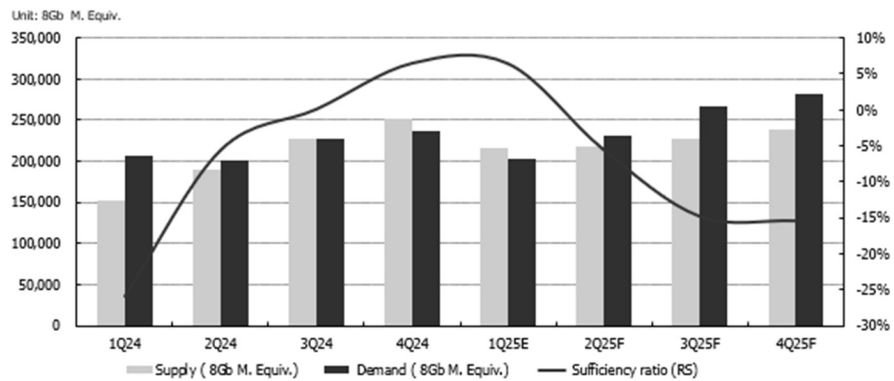
(2) Market supply and demand status and growth of NAND flash in the future

A. Supply and demand status:

The traditional low season entered in the first quarter of 2025. Due to the impact of the Chinese Dragon Boat Festival, the number of workdays was decreased. In addition, some companies completed the preparation and shipment in advance in the fourth quarter of 2024 to avoid the risk of tariff increases in the US. This further reduced the demand in the first quarter of 2025. The delay of shipment from Nvidia has also reduced the momentum of the orders for enterprise SSDs,

making the suppliers face greater price pressure. Although the market for personal computers and smartphones experienced growth in 2024, the primary goal as of the first quarter of 2025 was still to reduce inventory. The various conservative inventory strategies prompted the suppliers to actively respond to the situation of oversupply. The output target in bits has been revised downward since the first quarter of 2025. Suppliers have significantly reduced prices to stimulate transactions, resulting in a 15–20% decline in the average price of NAND Flash.

Looking ahead to the second quarter of 2025, the loss from the sales of NAND Flash products will occur and the OEM's output reduction effect will emerge. The inventory of consumer products will be cleared faster than expected. This will be positive for the demand. After three quarters of inventory adjustment, the demand for inventory replenishments is expected in the second quarter of 2025, with a quarterly increase of 13.8% in terms of bits. (See Fig. 14)



Source: TrendForce Corp., February 2025

Fig. 14 2024–2025F NAND flash Sufficiency

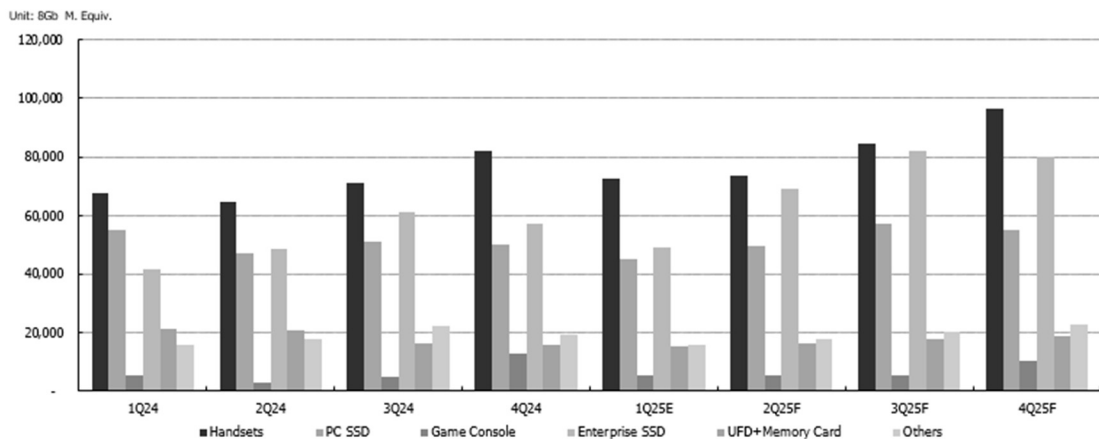
B. The growth potential for NAND FLASH application in the future

The rapid development of AI, Big Data, Internet of Things (IoT), 5G communication, and autonomous driving technologies has led to an increasing demand for high-efficiency storage solutions. Enterprise SSDs are widely used in data centers, cloud computing, and big data analysis applications. They are the main driver of the growth in the NAND Flash market. These applications require extremely high storage capacity, speed, and stability and will drive long-term market demand. With the driving momentum of DeepSeek in 2025, CSPs will actively develop lower-cost, self-owned ASIC solutions and shift their focus from AI training servers to AI inference servers. Enterprise SSDs play a key role in AI inference servers. They can optimize AI models and update data in real time to improve the accuracy of the inference. In addition, a large number of images and video data are generated during the AI inference process, which further significantly increases the storage demand. The large-capacity enterprise SSDs with a TLC/QLC capacity of 16TB or more have become the primary products to meet the high-performance

computing needs of AI models. According to TrendForce, AI servers will continue to drive the demand for enterprise SSDs in the coming years. It is estimated that the annual growth rate will exceed 60%. The market share of AI SSDs will continue to rise in the NAND Flash market starting in 2024.

CSPs have completed the construction of server infrastructure for AI training in 2024 and are expected to further expand this construction to edge AI, develop small LLM models, and install edge AI servers in 2025 to promote the application of AI in manufacturing, finance, medical care, and commercial sectors. As the AI PC and AI server have similar architecture, both have certain computing power and can run small-scale LLMs and GenAI applications. They are expected to become a key bridge between cloud AI and edge AI for CSPs. According to TrendForce, the upgrade of AI technology makes it capable of handling more complex tasks and increasing productivity. In 2025, consumer demand for smart terminals will grow rapidly, driving the AI notebook penetration rate to 20.4%. In addition, NVIDIA launched its Project Digits with a 4TB SSD at the CES exhibition. This is expected to accelerate the penetration of AI at the PC end and drive demand for the capacity of PC SSDs. Launching AI PCs or AI workstations will help integrate AI into daily life and drive the long-term growth of PC SSD (client SSD) capacity.

In addition, the launch of DeepSeek significantly reduces the demand for computing power, increases AI applications in smartphones, and facilitates the application of QLC technology in mobile phones. An increasing demand for mobile phone storage capacity is expected. (See Fig. 15)



Source: TrendForce Corp., February 2025

Fig. 15 2024–2025F NAND Flash demand analysis by application

4. Competitive niches

(1) Global deployment to help business promotion

We market products around the world with our own brand of “Apacer”. The headquarters is located in Taiwan, and eight other subsidiaries are located in the United States, China, Japan, India, Europe, and Taiwan to provide local customers with unobstructed services. We expand our customer base through large-scale international exhibitions, which we combine with our marketing and business strategies. We combine online marketing resources, such as social media and video/audio communication, with offline channels, such as local road shows. In addition to delivering consistent brand messages, we can reach more potential customers to ensure that our business promotion is not constrained by geography, time, or space.

(2) Development of new businesses to provide momentum of growth

In order to achieve sustainable development, we develop business lines that are different from our core memory module business: Emerging Application Division and Electronic Paper Business Division. The main services of the Emerging Application Division are planning of intelligent equipment in combination with optical testing, and planning of Internet of Intelligence systems developed for various smart security management systems. We also develop electronic paper products with respect to environmental protection and energy saving issues and promote them in the transportation, medical care, retail advertising, and other sectors. In addition to timely adjustments to ensure stable profitability, we hope that the new business developed can become a driving force for our innovation and growth.

(3) Deployment of patented technology for competitiveness

Patented technology is the moat of an enterprise. The Company has a patent development committee, which formulates patent output reward methods, encourages employees to innovate and come up with ideas, and conducts internal invention reviews through the patent review team to ensure the uniqueness of creative ideas and assess the possibility of commercialization. We apply for patents in Taiwan, China, and the United States, and enter the commercialization process in accordance with the planning of the PM Center.

(4) Planning of sustainable supply chains to meet requirements

Sustainable supply chains are one of the key foundations for long-term business operations. In recent years, geopolitical risks have become a core issue of concern for many overseas customers. Our major suppliers for DRAM chips are from major DRAM suppliers around the world. We have diversified our procurement sources for flash memory chips and strategically adjusted the inventory level in order to prevent losses caused by market fluctuations. Other components have different primary and secondary sources to respond to possible supply chain risks at any time. In recent years, green packaging materials, green manufacturing, environmental friendliness,

energy conservation, and carbon reduction have become sustainability issues that many brands attach importance to. For these, Apacer continues to review the list of Tier 1 & Tier 2 suppliers and establishes a long-term supply chain management mechanism. We cultivate good relationships with important suppliers at home and abroad and ensure that our partners comply with various regulations at the supply end and have the ability to operate sustainably. We join the supplier assessments that are valued by many international brands, such as RBA (Responsible Business Alliance Code of Conduct) and EcoVadis (Global Supply Chain Sustainability Assessment), as appropriate to ensure that our corporate operations meet customer's standards.

(5) Complete international certification to ensure compliance

In recent years, due to issues with supply chain sustainability, customers have required suppliers to hold qualified certifications. In addition to the basic ISO 9001, ISO 14001, ISO 45001, and IECQ QC 080000 certifications, we have conducted an ISO 14064-1 organizational greenhouse gas inventory since 2023. We obtained ISO 27001 information security management certification in 2014 and received certifications under other international standards in areas ranging from product management and environmental safety and health to greenhouse gas inventory and information security management. In the future, we will continue to maintain the validity of our certification and strive for additional certifications in accordance with regulations and development requirements to ensure the sustainable competitiveness of the Company.

(6) Creation of corporate culture and core value

Apacer has been established for more than 20 years and created the corporate culture starting from brand spirit and core value. We always stick to our core brand value of "good partnership", namely "Act on What We Say, Persist in Better Results, Develop Together with Partners". A partnership concept of accountability and common good is encouraged in order to create an environment where our partners, customers and employees are mutually beneficial. In light of the significant fluctuations in the memory module industry, Apacer adheres to a philosophy of prudent management and operates two major product lines – industrial control and consumer businesses – to achieve a balanced profit model. A sustainable development committee has been established to focus on sustainable development issues. Moving forward, we will continue to invest in sustainable actions, hoping to create benefits for all stakeholders in addition to corporate profits.

5. Favorable and unfavorable factors of development and countermeasures

(1) Favorable factors

A. Simultaneous operation of three businesses to promote operational development

Unlike other competitors that focus on consumer or industrial control businesses, we operate these two businesses simultaneously. The

main purpose is to balance the price gap of the memory sector and ensure profitability by taking advantage of the difference between different industry sectors. In the meantime, we are developing a new business line, intelligent applications, to break away from the memory module business model and seek diversified profit sources, with the hope that it will become a key product line contributing to operating revenue in the future.

B. Continuous research and development for patents to boost commercialization capability

In addition to accumulating more than 200 patents over the years, We continue to develop new patents every year. There is also full-time staff to assist in the review of patents to ensure that they are not infringed upon. We assess the possibility of commercialization from the patent, establish the uniqueness of the products, combine highly customized services, and transform these into competitiveness.

C. Stricter sustainability requirements and observance of international standards

The global sustainability standards have become increasingly diverse. Brand manufacturers face pressure and require their midstream and upstream suppliers to meet specific standards before proceeding with procurement. For this, companies must constantly review international standards and provide the corresponding certifications required in different regions. For example, many customers now require suppliers to comply with the RBA (Responsible Business Alliance) Code of Conduct. This is a standard recognized by many electronic manufacturers. We continue to uphold the effectiveness of this certification to ensure that our brands and products possess greater sustainable competitive value beyond price.

D. Strategic alliances with partners to develop new markets jointly

Apacer's main strategic partners are Phison, Acer and Advantech. They play different roles as suppliers and buyers. Phison Electronics purchases components and exchanges experiences in product and technology. Acer helps increase the export channels of Apacer's products and the market share through its deployment in the global market. As for Advantech, we hope to strengthen the deployment of industrial control channels through the design-in collaboration model. In the future, we will continue to look for more high-quality strategic partners, hoping to drive operational performance while promoting shareholder benefits.

(2) Unfavorable factors and countermeasures

A. International political risk and geopolitical risk impact

Due to the ongoing Russia-Ukraine war, and the impact of the Israeli-Palestinian conflict, and geopolitical confrontations, customers are concerned about the suppliers in Taiwan. In addition to actively developing the database of Tier 2 suppliers and stabilizing the existing

supply chain, we collaborate with local manufacturers in India to produce memory modules. Although the focus is mainly on local demand in India, it has the potential to become the production base for the Asia Pacific or even European markets.

B. Price fluctuations of main raw materials and their impact on the stability of profits

The Company's main raw materials are DRAM particles and NAND Flash particles. In recent years, external factors have led to price fluctuations and in turn affected the operating performance. Our response measures are as follows:

- a. We persist in the policy of operating industrial control and consumer businesses simultaneously, adjusting the inventory and selling price in a timely manner to reflect the cost, and maintaining the stability of the operations.
- b. The Company strengthens the sensitivity and judgment of market price trends through research institutions, market information mastery, and first-hand information sharing from overseas subsidiaries.
- c. By analyzing the data from the global marketing posts and enhancing our inventory management and estimated sales, we increase the production and shipping speed in order to lower our price fluctuation risks.
- d. We develop new business entities, such as the Emerging Application Division, and cultivate them into business units that can contribute to operating revenue.

C. Price competition and its impact on the profitability

The market price of the memory module have shown an M-shaped trend. Price competition can be seen everywhere. The Company's response measures are:

- a. We develop specific product lines for the sector requiring large quantities and high C/P value, such as notebooks for the education industry or cash registers.
- b. We assess the deployment of localized e-commerce channels to reach more potential consumers through an online sales model.
- c. For high unit price groups, such as e-sports players and camera users, products that meet the needs are introduced to distinguish them from the low-price product competition.
- d. Adjust the price with reference to the real-time information and reduce inventory through sales.

D. Exchange rate fluctuation risks

Owing to the high export dependence of our Company, exchange rate fluctuations have a certain impact on our profits. Apacer keeps close and stable relationship with banks to effectively grasp the status of exchange rate fluctuations in time. We also assign personnel to collect

exchange rate fluctuation information and prepare research report in order to control the timeliness of exchange rate fluctuation and adjust our foreign currency asset and liability positions. Meanwhile, we use financial instruments to effectively respond to the impacts caused by exchange rate fluctuations.

(II) Important uses and production processes of our main products

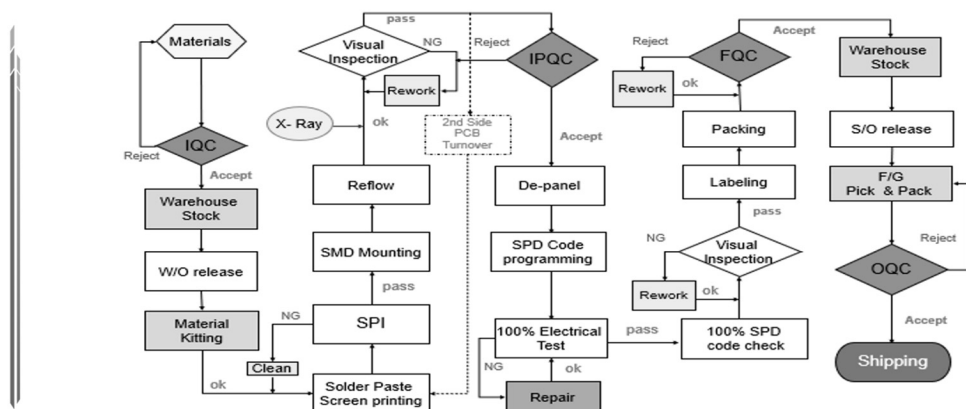
1. Important uses of the main products

Main products	Main uses
Memory module	Memory modules are various types of DRAMs printed on a circuit board via a circuit design, which are embedded in computer main boards and which are compatible with the computer functions, to expand the data processing capacity of the computer and accelerate data processing. They are widely used in industrial computers, automated equipment, gaming machines or consumer electronics such as personal computers, notebooks, servers, and workstations.
Flash memory	<p>(1) Applied as information storage in portable digital products. Flash memory is the product of nonvolatile semiconductor technology and a modifiable storage medium that can be used permanently. Thanks to its small size, large capacity, easy portability, and high reliability, it is used in SSDs, smart phones and tablets.</p> <p>(2) Applied in embedded systems to replace traditional hard disks in industrial applications such as Thin Clients, medical devices, POS machines, surveillance systems, or military equipment. Consumer applications such as set-top boxes, game consoles, satellite navigation systems, etc.</p>

2. Production processes

Apacer

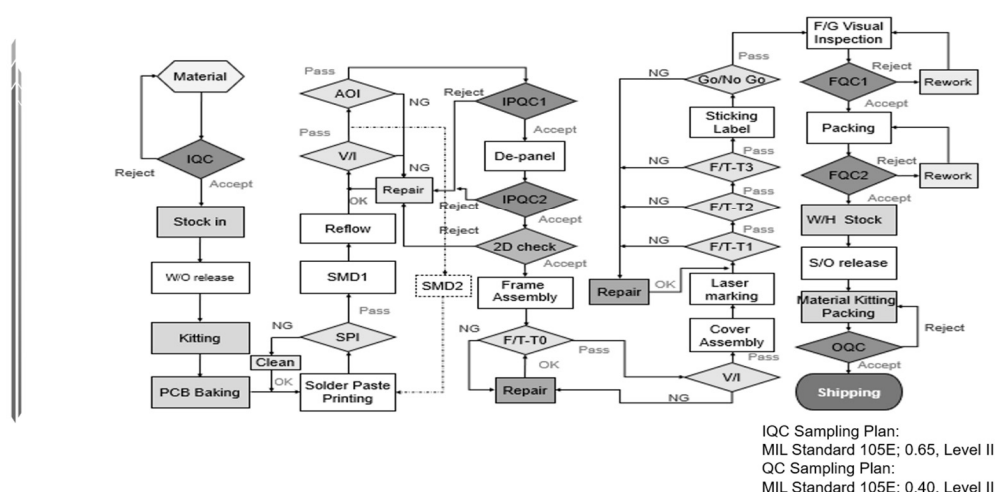
DRAM Module Production Flow



FQC Sampling Plan:
MIL Standard 105E; 0.40, Level II

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Embedded Flash Product Production Flow



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(III) Main raw material supply

Product name	Main raw material	Major suppliers	Supply situation
Memory modules, flash memory and related products	DRAM 、Flash	Samsung, Phison Electronics Corp., World Peace International Group, among others	Normal

(IV) List of major suppliers and customers

- List of suppliers accounting for more than 10% of total procurement in either of the last two years:

Unit: NT\$ thousand

2023				2024			
Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer	Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer
A	1,333,729	21.52	Note	A	1,362,679	22.15	Note
B	747,267	12.06	-	-	-	-	-
C	677,159	10.93	-	-	-	-	-
Other	3,439,645	55.49	-	Other	4,790,602	77.85	-
Net procurement amount	6,197,800	100.00		Net procurement amount	6,153,281	100.00	

Note: They are related parties of the Company before May 31, 2024.

- List of customers accounting for more than 10% of total procurement in either of the last two years: None.

III. Personnel information over the last two years

(I) Talent cultivation and career development

In response to the rapidly changing environment in and around our industry, our company provides education and training to its staff to develop the competencies

needed to achieve our organizational goals and business strategies, to enhance their professional capabilities, and to boost their knowledge and energy, in order to respond to the challenges in our work. We deploy a range of hard skills and soft skills training for various positions and roles of our staff members in alignment with the organization's goals and strategies. Besides inviting external instructors and outstanding internal managers to teach, discuss, hold experience camps and share their experiences, we also regularly upgrade and assess the skill sets of our technicians. In addition, our staff is also encouraged to participate in public training courses organized by external professional organizations as another enriching avenue for continuous learning. In 2024, the total number of training hours for personnel was 11,441 hours.

(II) Number of employees, average years with our company, average age, and degree distribution ratio

Year		2023	2024	2025 as of February 28
Number of employees	Direct personnel	172	163	162
	Indirect personnel	364	371	369
	Total	536	534	531
Average age		40	40	40
Average years with our company		8	9	8
Distribution of degrees	Doctoral degree	2	3	4
	Master's degree	98	101	100
	(Associate's) Bachelor's degree	348	340	339
	Senior high (vocational) school	84	86	84
	Below senior high (vocational) school	4	4	4

Note: The numbers indicated in the table above are those of Taiwan, included subsidiary UD info Corp.

(III) Training structure and efficacy

1. Training structure

In 2020, our Apacer Academy was established with the CEO serving as the principal. Nine institutes have been set up based on the competences, different functions and professions to develop training plans for all new and current employees. We hope to provide our staff, from new employees to managers, with transparent learning and development structure through the training courses of the institutes and further enhance their competency and competitiveness, so that the talent strategy goal of “attracting outstanding talents and developing future technologies to create a reliable employer brand” can be achieved.

The R&D and Technology Institute, Product and Project Management Institute, Sales and Marketing Institute, Planning Institute, Manufacturing and Quality Institute, Finance Management Institute, and Administration Management Institute were built in 2021, and the planning of the Leadership and Future Institute and the General Institute also started in the same year. In addition, the learning

maps for all institutes and departments were established and linked to KPIs to meet the requirements of each institute. The “induction training” and “in-service training” courses were designed and the training results were reviewed on a regular basis. These results were linked directly to personal performance, bonus, and remuneration in the hope to systematically improve the competency and development of employees and increase their learning effectiveness and willingness.

2. Training course

Employees are the source of growth and competitive strength of the Company. We provide various educational training courses to improve the professional capabilities of employees and meet the challenges of the industry’s rapidly changing external environment.

To design courses that can meet the requirements more effectively, the talent development unit will interview the heads and employees of the departments and conduct satisfaction surveys after the courses. During the annual training survey, the department heads may put forward educational training requirements with regard to the learning map of each institute of the Apacer Academy to help employees achieve the business and development goals of the Company and ensure that the competency and learning requirements are met more effectively.

The education training courses can be classified into induction training, general employee training, talent training (including management training), RBA and ethical management training, and ESG training. In addition to external instructors, the Company invites internal professional employees to act as instructors to pass on their experience.

3. Training effectiveness

The 2024 training results are as follows:

Course type	Number of participants	Total man-hours	Total cost (NT\$)
New staff training (including Induction occupational safety and health for new staff)	293	521	\$1,935,967
General training (including law-related training)	5,129	8,015	
Talent Training (including management training)	851	1,063	
External professional training	133	1,245	
RBA & ethical management training & insider trading prevention training (Note 1) (including in-service occupational safety and health)	527	566	
ESG training	45	31	
Total	6,978	11,441	

Note 1: Including subsidiaries.

(IV) Diversified learning and development

Every employee can enhance their professional capabilities through various channels. Inside in the Company there is on-the-job training, job coaching, job transfer, seminars, online learning, reading clubs, etc. Outside the Company they can participate in study activities of professional organizations, short-term training courses of well-known domestic and foreign universities and training institutes, etc.

(V) Corporate sustainability report

We continuously strive, through its mission, philosophy, beliefs, employees' value judgments and codes of conduct, to integrate internal and external resources of the Company and practices energy-saving, environmental-friendly and healthy living. We pursue sustainability and profitability, while also fulfilling our social responsibility.

(VI) Employee Code of Conduct and Code of Ethics

In its system of rules, we clearly set forth the rights and obligations of employer and employees in order to build a management system, improve organizational functions, and improve work efficiency. We have norms to regulate employees' professional conduct in the work place and deepen their ethics through internal announcements and training.

1. Implementation of hierarchical management

We have adopted a "Decision making authority table", "Principles for managerial titles and grades at all levels of the organization" and "Grade/title system list", which set forth the rules and specifications of jobs across the Company in order to clarify the various levels, ensure smooth operations, and offer employees a career development blueprint.

2. Compliance with government laws and regulations

We strictly abide by all government laws and decrees as well as regulations formulated by the competent authorities. In addition to safeguarding employees' rights and interests, these also regulate employees' behavior and professional ethics.

3. Employees' code of conduct

(1) Avoidance of Conflict of Interest: According to the Company's "Integrity Code of Conduct" and "Integrity Management Procedures and Behavior Guidelines," employees are strictly required to avoid actual or potential interference from personal interests with the Company's overall interests. In addition, a report is presented to the Board of Directors regarding the implementation of ethical management.

In 2024, we organized ethical management training sessions (including labor, health and safety, environmental health, ethical standards, management systems and other RBA-related issues), which were attended by 566 persons.

(2) In accordance with the norms of the "Internal Important Information Handling Operation Procedures," we regularly remind and require our employees to abide by these codes of conduct. The legal, audit, finance, information, and administrative departments also remind their staff from time to time of the key points of these behaviors, including norms relating to

intellectual property rights protection and information security.

- (3) The “Work Rules” set forth clear norms for employees’ conduct and codes, along with sanctions that may include termination of the employment relationship in serious cases such as:
- A. Where the employee misrepresents any fact at the time of signing a labor contract and thus causes the Company to suffer damage or fear thereof.
 - B. Where a worker commits a violent act against or grossly insults the Company’s responsible person, his/her family member, a manager at any level, or a fellow employee.
 - C. Where the employee has been sentenced to temporary imprisonment, and is not granted a suspended sentence or permitted to commute the sentence to payment of a fine.
 - D. Where the employee deliberately damages or abuses any machinery, tool, raw materials, product, or other property of the Company, or deliberately discloses any technical or operational confidential information of the Company thereby causing serious damage to the Company.
 - E. Where the employee is, without good cause, absent from work for three consecutive days, or for a total six days in any month.
 - F. Where the employee engages in corruption or misappropriation of public funds, or accepts bribes or commissions.
 - G. Where the employee runs another business outside the Company that affects the Company’s interests and creates business conflicts in a serious way.
 - H. Where the employee refuses to follow reasonable instructions and neglects their duties, resulting in damage to the Company; this must be specific and serious.
 - I. Where the employee slanders the Company, instigates an illegal slowdown or illegal strikes, with specific evidence.
 - J. Where the employee forges the signature of their supervisor or abuses their supervisor’s stamp.
 - K. Where the employee threatens the supervisor or destroys or alters a company file.
 - L. Where the employee steals or gambles anywhere within the premises of the Company that affects the order of work; with specific evidence after investigation.
 - M. Where the employee violates a national statute and thus affects the performance of a labor contract, or breaches the labor contract in a serious way.
 - N. Where the employee brings banned items such as guns, ammunition, or knives into the workplace without good reason.

4. Protecting and using company assets properly

Our employees are responsible for protecting the Company's assets and ensuring that they can be legally and effectively used. If they wish to use the services, equipment, facilities, items, or other resources of the Company for other than business, they must obtain permission beforehand. The use and management of our assets are controlled through a clear system.

5. Responsibility for confidentiality

We attach great importance to protecting confidentiality and intellectual property rights. Our employees are required to sign an "Employment/Confidentiality Agreement" and "Confidentiality Rules" at the time of joining the Company. Their content covers the confidentiality obligations of the Company, the ownership of intellectual property rights during employment and after resignation, and other related regulations. Secrets regarding business or technology must not be disclosed; one must not read documents, letters, emails, design drawings, etc. that are not related to one's job.

6. Gender equality and the prevention of sexual harassment

In accordance with the law, we have included norms on gender equality in the Company's "Work Rules" and have formulated the "Regulation on the Reporting and Punishment of Sexual Harassment in the Workplace" and "Regulations on Prevention, Reporting and Investigation of Sexual Harassment", which provide detailed behavioral standards and reporting channels and processes for employees to follow.

IV. Environmental protection expenditure

(I) During last year and this year to date, the total amount of losses (including compensation paid) and penalties. We also disclose future countermeasures (including improvement measures) and potential expenditures (including estimated amounts for potential losses, penalties, and compensations paid for future countermeasures; if difficult to estimate, describe the matters that are difficult to estimate): None.

(II) Greenhouse gas emissions and reductions

For information on Apacer's greenhouse gas emissions and reductions, please refer to pages 55–56.

(III) Energy conservation and carbon emission reduction awards

As we support green energy and environmental protection, Apacer Technology is always focused on strengthening energy efficiency within the Company and reducing unnecessary energy consumption. We also stimulate our employees to reduce energy use, carbon emissions, and greenhouse gas emissions. In 2014, Apacer was awarded the Energy Conservation and Carbon Reduction Action Mark by the Environmental Protection Agency. In 2015, we participated in the "Clean Energy Conservation and Carbon Reduction Production Plan" of the New Taipei City Government. Our new technologies, techniques, and resources help control the use of energy and resources, raise energy efficiency and improve our competitiveness on our path toward greater corporate sustainability. In recognition of Apacer's efforts and achievements in energy conservation and carbon reduction, the New Taipei City

Government presented us with a Certificate of Appreciation during the announcement of the outcomes of the 2015 Clean Energy Conservation and Carbon Reduction Production Coaching Program. In addition, the Company was selected as one of Business Weekly's Top 100 Companies, and completed the carbon footprint calculation for the products of customers under the cooperation with the customers for more than one year in 2024.

(IV) Green product management

The company has successfully obtained and fully implemented various environmental management and occupational health and safety management systems, demonstrating our commitment to ensuring that our operations comply with global environmental and social responsibility standards. We have currently obtained the following certifications and passed third-party or customer verifications:

- Environmental Management System: ISO 14001:2015
- Occupational Health and Safety Management System: ISO 45001:2018
- Hazardous Substance Process Management System: IECQ QC 080000 Hazardous Substance Process Management (HSPM)
- Greenhouse Gas Inventory: ISO 14064-1:2018
- Conflict Minerals Management: Compliant with DRC Conflict-Free standards to ensure that the sourced metals do not originate from conflict-affected and high-risk areas.

The implementation of the above systems not only reflects our environmental commitment but also enhances operational efficiency and business sustainability. Through the HSPM system, we have established a comprehensive hazardous substance management mechanism and ensure that our suppliers actively comply with our policies, fulfilling requirements of regulations such as RoHS, REACH, WEEE, PFOA, PFOS, POPs, TSCA, HF, China RoHS, Taiwan RoHS, and greenhouse gas standards.

The company has fully adopted a lead-free manufacturing process, exemplified by our Fully Lead-Free DDR5 SODIMM industrial-grade memory. This product uses high-quality original ICs and exceeds the current EU RoHS environmental requirements, achieving a complete lead-free process without relying on the RoHS 7(c)-I lead exemption. Our DDR5 SODIMM memory products are designed for high stability and reliability in industrial control applications, equipped with an On-die ECC error correction mechanism that significantly enhances DRAM IC Reliability, Availability, and Serviceability (RAS), providing outstanding system stability and dependability.

In addition, this memory module features advanced power management capabilities. By integrating a Power Management IC (PMIC), it efficiently controls system power loads, improving signal integrity and system compatibility. Operating at a low voltage of only 1.1V, it significantly reduces system power consumption and heat generation, making it especially suitable for industrial control systems with strict low-power and thermal requirements.

(V) Industrial waste

To effectively clean out waste and protect the environment from waste pollution, we consider reduction of the waste generated as essential. We also properly sort and recycle wastes and send them to external agencies for disposal. Ordinary and hazardous industrial wastes are sent externally to qualified cleaning and disposal agencies to be disposed of. If required, on-site audits will be conducted by the responsible departments to ensure the appropriateness and legality of wastes and fulfill our corporate responsibility for waste management. For the waste production in the last two years, please refer to page 47.

(IV) Water consumption

We set great store by energy conservation and environmental protection. We have integrated such concepts with our daily operations to lessen environmental impact and, at the same time, make our employees behave in an eco-friendly way. Domestic water constitutes most of our water consumption. To prevent the waste of water resources, the faucets of our washbasins on all floors have been mounted with water-saving devices to reduce the use of domestic water. We have also put up posters promoting water saving, and designated personnel responsible for inspecting the water equipment; any failure discovered will be timely fixed to save water and avoid waste. For the water consumption in the last two years, please refer to page 47.

V. Cyber security management

(I) Cyber security policy

The Company released an information security policy applicable to the employees and suppliers of the Company in 2019 to protect the information assets by ensuring their confidentiality, availability and integrity and to boost the confidence of customers in the Company's information security. The information security team formed in accordance with the policy performs the PDCA (plan-do-check-act) cycle for information security on a yearly basis. It plans information security risk evaluations, applies controls, examines their effectiveness, and makes continuous improvements to implement relevant information security and control measures in order to ensure the achievement of reliability objectives for information systems, thereby streamlining our information security continuously.

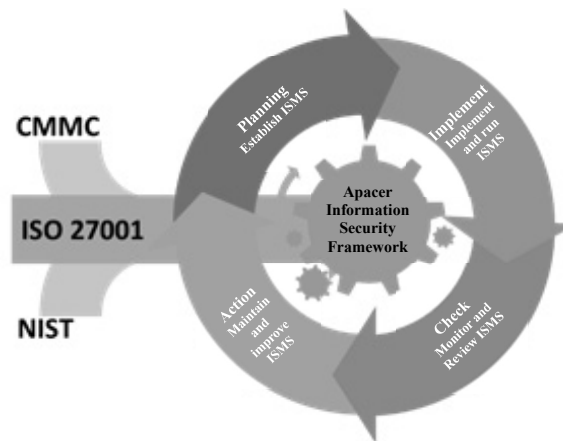
(II) Cyber security management structure

In response to internal and external threats as well as the requirements of stakeholders, the cybersecurity framework (NIST SP800-171) of the National Institute of Standards and Technology (NIST) and the Cybersecurity Maturity Model Certification (CMMC) requirements are introduced as control criteria to develop the information security management structure and relevant control requirements. We prioritize the control requirements and focus our attention on the implementation of control measures against high-risk threats.

1. Management model: Information security management system (ISMS)

The formed information security team integrates NIST SP800-171 and CMMC in the framework of the existing information security management system (ISMS) (see the figure below). It identifies risk attributes through risk evaluation

every year to perform risk management and control the risks, so as to establish control regulations and carry out technical control measures. The maintenance and independent audit and review are performed in accordance with the developed regulations, and continuous improvements are made through the PDCA cycle. The information unit will continue executing vulnerability assessment for hosts, servers or network equipment used for audit management to check if there is any vulnerability or risk. We make plans, take actions, conduct audits, and proceed in compliance with the operations of the ISMS and improve our defense capabilities to avoid risks generated due to out-of-date defense technologies and to build a comprehensive information security system.

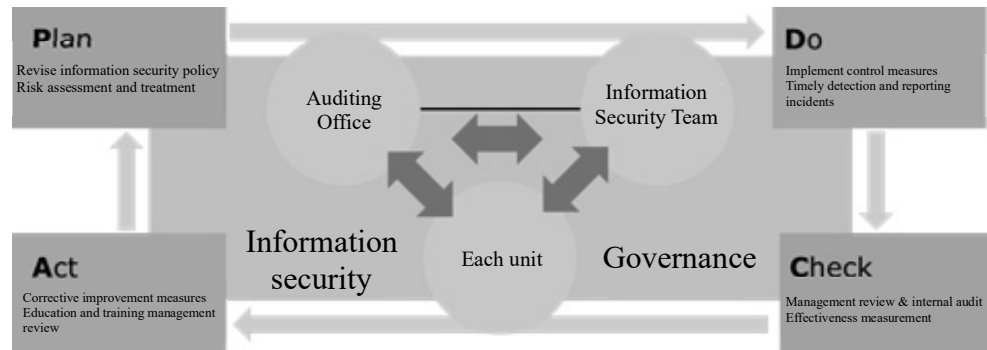


2. Operation of the information security organization and relevant control operations

We carry out information security control measures for our information assets, which are categorized into the following: information security management system, information security management for employees, asset classification management, system development and maintenance, system safety management, communication network management, access safety control, vulnerability detection and management, incident response management, and business continuity management. New categories are added in response to new risks and information security framework requirements. The measures under these categories performed based on the iterative PDCA cycle include:

- (1) Planning phase: Classification of information assets, risk evaluation, risk handling plans
- (2) Doing phase: Defense-in-depth strategies including physical security implementation, system/device security implementation, account and permission management, information security monitoring and maintenance
- (3) Checking phase: Internal audit, asset sampling and review, evaluation of the effectiveness of technological defense
- (4) Improvement phase: Corrections and improvements, management and review meetings
- (5) Information security awareness: Announcements, new employee orientation for information security

The information security team reviews the information security policy every year and increases the information security awareness of employees on a continuous basis as information technology evolves. New employee orientation for information security is provided to train the employees for information security and make them aware of its importance. This will help the employees gain a correct understanding and knowledge, thereby facilitating the protection of information security.



(III) Specific management policies and investment in cyber security management

To respond to ISO27001 and CMMC, control measures are planned upon the integration, adjustment and optimization of relevant frameworks. Risk attributes are evaluated comprehensively in accordance with information security control requirements covering multiple aspects. After risk evaluation, resources are invested to execute the control measures. In addition to the continuous promotion of information security measures, we carry on the implementation of defense in depth for information security. Through the integration of existing maintenance procedures and the ongoing systematic monitoring of information security, the confidentiality, integrity and availability of the Company's important assets can be ensured.

1. Outcomes of information security promotion

- (1) Information security certification: Obtained ISO 27001 information security management system certificate.
- (2) Policy: 6 ISMS documents were developed and amended and then released.
- (3) Training and announcement: four information security-related announcements were made. All new employees underwent information security training.
- (4) Internal audit: The Company passed information security-related audits and no significant deficiencies were found. There were also no serious information security incidents leading to the violation of the information security policy, leakage of customer information, or penalties.
- (5) Latest reporting date: Reporting of the implementation to the Board of Directors on December 19, 2024.

2. Types of controls

- (1) Communication network safety: Improving wireless network authentication and encryption safety.
- (2) System development and maintenance: Strengthening website and

application protection as well as threat blocking.

- (3) Vulnerability detection and management: Performing annual vulnerability assessment for high-risk hosts, planning for endpoint detection and response (EDR) protection and threat analysis.
- (4) Disposal guidelines and communication network safety: Revising and amending the regulations governing the control and management of the ISMS continuously.

3. Specific management policies

Type	Description	Relevant measures
Permission management	Personnel account setting Personnel permission control	Personnel account management and review
Access control	Internal and external system access Data transmission control Control of physical equipment	Personnel access control and management, data leakage management, personnel remote access restriction, external storage device control, physical equipment access control, network access control
External threat	Antivirus and anti-hacking measures, network isolation	Regular virus and malware scanning, network firewalls, network isolation zones, external service risk scanning
Business continuity	Monitoring of the use of systems and networks Measures for business interruption recovery	Alerts for abnormal system operations, regular backup of data, off-site storage of tapes, remote server backup, periodical disaster recovery drills

- (IV) List the losses, possible impacts and countermeasures caused by major information security incidents in the most recent year and up to the publication date of the annual report. The reasons should be stated in cases where the losses cannot be reasonably estimated: None. The Company continues to follow the information security management policy and take comprehensive protection measures, including information security monitoring, vulnerability management, contingency mechanisms, and employee information security awareness training, to ensure the security of the information systems and data and reduce potential risks.

VI. Labor-management relations

- (I) Below is a list of our company's employee welfare measures and education, training, retirement systems, with descriptions of their implementation status within as well as agreements between management and labor and the status of employees' rights and interests:

1. Staff welfare measures, education, training and implementation

(1) Employee welfare measures

In 2017, Apacer integrated all the existing welfare measures, conducted

a comprehensive assessment based on three main aspects – work, family, and health – and promoted new welfare measures. The “A+ EAPs Employee Assistance Program” was accordingly introduced and won the 2018 Work–Life Balance Award from the Ministry of Labor, the 2022 HR ASIA Best Companies to Work for in Asia, the 2023 Happy Enterprise Award from 1111 Job Bank, the 2024 CommonWealth Talent Sustainability Award, and the 2024 Friendly Migrant Worker Company Award from the Labor Affairs Department, New Taipei City Government.

A. A⁺ work

a. Flexible working hours

To provide care for the employees’ families, we have a system of flexible working hours that allows employees not in production lines to freely adjust their working hours based on the conditions of their families.

b. Daily meals

For the employees’ eating needs, we offer a meal allowance and have contracted quality vendors to provide nutritious, healthy and diverse meals. In addition, to give employees more choices for their diets, employees eating designated meals are entitled to a 50% subsidy for daily meals.

c. Weekly massage

To relieve employees’ stress, we have contracted physically-handicapped, professional masseurs or masseuses to provide massage service twice a week.

B. A⁺ family

a. Lactation rooms

For the needs of breastfeeding mothers, we have built lovely and comfortable lactation rooms that won the Award for Excellent Breastfeeding and Nursing Rooms from the Department of Health, Taipei City Government.

b. Maternity allowance

To encourage employees to have children, any employee who has worked at Apacer for at least one year and has given birth to a child at Apacer is entitled to a maternity allowance of NT\$36,000 for each child.

C. A⁺ health

a. Annual health examination

To strictly look after the health of employees, we provide an annual health examination to our employees for free. We have built a medical room with professional nurses to follow up on employees who have abnormal health conditions. We also arrange for such employees to visit in-plant doctors who will provide health consultation services.

b. Fitness area

To help employees cultivate a good habit of doing exercise from time to time, we have established fitness areas of spinning bikes and aerobic exercises for clubs and employees.

D. Workplace of sports

To help employees cultivate the good habit of doing exercise in the long term, we have created a “Let’s Exercise” group and held sports competition events to encourage the active participation of our employees. The Company has acquired the Exercise Enterprise Certificate from the Sports Administration, Ministry of Education, for consecutive years.

E. Large-scale events

To provide more activities for our employees to relieve their stress, in addition to the events organized by the Employee Welfare Committee for Dragon Boat Festival, Mid-Autumn Festival and company trips, spring parties and Family Day events have also been held.

F. Group insurance

To provide more complete guarantees for our employees in addition to the statutory labor insurance and health insurance for employees, we have taken out group insurance for our employees and their families, including injury insurance, hospital treatment insurance, and cancer health insurance.

(2) Employee education system

In addition to the training courses, we also offer diversified learning management to stimulate peer learning and knowledge sharing. This includes the following items:

- A. Our Intranet offers dedicated areas for articles, good books, and experience sharing.
- B. An incentive system for promoting reading clubs and other learning activities.
- C. Our library provides a variety of books and magazines for employees to read.

(3) Employee training

In order to achieve our vision of “Becoming the Leading Information Service Integrator for Digital Storage” we work to enhance our employees’ and the Company’s core culture values of “Act on What We Say, Persist in Upgrade Results, Develop Together with Partners.” Our education and training develop core competences in our staff to enhance their competitiveness in the workplace. These courses consist of the following four types:

- A. Core courses: These courses on our corporate culture and corporate strategy cultivate our advantages as a leading organization and our abilities to maintain core technology.
- B. Management courses: These develop management capabilities needed by

managers at all levels.

C. Specialist courses: These cultivate the specialized skills necessary for our staff to perform their jobs.

D. General courses: These cultivate common knowledge among our employees such as new staff induction training, labor safety training, responsible business alliance training, etc.

2. Retirement system

For the stability of our employees' life in retirement, and in order to improve their working morale during employment, we have established the "Regulations Governing Employment, Separation and Retirement" and provided a preferential retirement system in accordance with law. Pursuant to the Labor Standards Act, we have established the "Workers' Pension Reserve Fund Supervision and Management Committee", and we have allocated pension reserve funds in accordance with the "Regulations for the Allocation and Management of the Workers' Retirement Reserve Funds" and actuarial reports. The funds are saved in a designated account at the Central Trust of China to protect the rights and interests of employees. Starting from July 2005, in response to the government's new pension system, 6% of the income of the employees who have chosen the new pension system will be transferred to their personal pension accounts as required by law.

The following early retirement requirements are applicable to the Company in accordance with the Labor Standards Act and as approved by the Ministry of Labor:

(1) Voluntary retirement (including early retirement)

Any employee to whom any of the following circumstances applies may apply for voluntary retirement:

- A. The employee has worked at the Company for at least 15 years, and is aged 55 or older.
- B. The employee has worked at the Company for at least 25 years.
- C. The employee has worked at the Company for at least 10 years, and is aged 60 or older.
- D. If the number of years of service of the employee plus his/her age is over 65, he/she may apply for early preferential retirement, subject to approval by the CEO.

(2) Mandatory retirement

The Company may not force any employee to retire unless any of the following circumstances applies to the employee:

- A. The employee is aged 65 or older.
- B. The employee is physically or mentally disabled to the extent of being unable to work.

The mandatory retirement for employees who reach 65 years of age may be postponed by negotiation between the employer and the employee. If any employee performs any work of a special nature that is dangerous

or requires heavy physical labor, the business unit may, in accordance with Article 54, paragraph 2 of the Labor Standards Act, apply on his/her behalf to the central competent authority for adjustment of the age under subparagraph 1 of the preceding paragraph. The adjusted age may not be below 55.

(3) Standards for pension payment

- A. With regard to any employee to whom the old pension system under the Labor Standards Act applies, or any employee who has chosen the new pension system under the Labor Pension Act and retained his/her seniority under the old system, the Company will make pension payment to the employee in accordance with the following standards:
 - a. Two bases will be given for each year of service of the employee. Where the number of years of service is over 15, one base will be given for each year. The total number of bases may not exceed 45. Any period less than six months will be counted as six months, and any period of or more than six months will be counted as one year.
 - b. If any employee has become insane or physically disabled as a result of performing his/her duties, he/she will receive an additional 20% payment of pension under the preceding paragraph. The pension base means the average monthly wage at the time of approval for retirement.
- B. For any employee to whom the new pension system under the Labor Pension Act applies, the Company has allocated 6% of his/her wage on a monthly basis to his/her personal pension account.

(4) Pension payment

Pension payable by the Company to any employee under the old system will be paid within 30 days from the date of retirement of the employee. Pension under the new system will be paid in accordance with the requirements of the Bureau of Labor Insurance.

3. Agreements between labor and management

By emphasizing the harmony of labor and capital and paying attention to the welfare of employees, the labor-capital relations of the Company are good. There were no labor disputes in 2024.

4. Employee rights

We invest in labor relations from a perspective of co-existence and co-prosperity. Therefore, we set much store with employees' opinions. Employees may communicate through formal and informal channels at any time to give feedback on issues in their lives and at work. Two-way communication enables the Company and its employees to understand and support each other, build consensus, and create success.

(1) Management-labor conferences:

We regularly hold management labor conferences, where representatives from the employer and employees participate in two-way

communication on our company's systems and employees' issues regarding company rules, the work environment, and safety and health. This negotiation model helps both parties to strengthen mutual trust and provides valuable input to the management.

(2) Employee Welfare Committee:

The Employee Welfare Committee consists of members selected from among employees who are passionate about public welfare and are good communicators. Therefore, the committee's meetings offer management and labor insights into welfare measures of the Company.

(II) Protection measures for the working environment and employees' personal safety

1. Specific measures for safety and health management

A. Periodic review of the safety and health management system

The periodic review mechanisms of ISO 14001 ensure that all work processes are in line with international requirements.

B. Evaluating risks and countermeasures

We periodically review each unit for unacceptable risks and non-compliance with regulations, after which we formulate safety and health management plans and risk control measures, and submit these outcomes results to the Safety and Health Committee for review.

C. Training on safety and health

We implement a self-management plan for safety and health as well as a safety and health education and training plan to reduce to only one occupational accident every year.

D. Evaluation of the work environment

According to the "Implementation Rules for the Measurement of Labor Environments", the committee must regularly have their company's operating environment assessed by a qualified operating environment evaluation agency to determine whether the measurement result meet the statutory requirements. Any anomaly in the measurement results must be improved to ensure employee health.

E. Health care and management

In accordance with the "Labor Health Protection Rules", health inspections for general operations and for hazardous operations are carried out separately. The inspection items include chest X-ray, blood pressure, electrocardiogram, urine, blood, and biochemistry serum assays. Special inspections are conducted for special hazards at work such as free radiation, organic solvents, and the like, and implementations are carried out at different levels. With regard to hypertension, hyperlipidemia, abnormal blood glucose, abnormal body mass, and other metabolic syndromes. Our resident nurses use the "Personnel Risk Assessment Table" to assist people to mind their health status and to grow healthy living habits. In addition, external experts are regularly invited to share new and correct health knowledge through seminars to promote preventive care among employees.

We have a “Workplace Health Promotion Program” to create a relaxed and healthy workplace culture so that employees can build and enjoy a work environment that is happy for the body and mind. It not only reduces leave taken, staff turnover, and medical expenses, but also can bring down the incidence and cost of physical and mental health issues caused by injury and chronic diseases - a win-win result.

2. Implement operational safety control

- A. In line with the requirements of safety and health regulations and the outcomes of our safety and health risk assessments, we have strict operations control and work permits for operations such as work at elevated height, with open fire, free radiation equipment, etc., and staff must follow these.
- B. All machinery and equipment are legally qualified through regular inspections. Operators have professional licenses and regularly follow on-the-job training.
- C. All incidents (with or without injury and including false alarms) are reported and given follow-up to eliminate potential hazards. In addition, equipment with moving parts, potentially dangerous process points, and protective devices are physically inspected and improvement plans formulated and implemented, to prevent injury.
- D. Roaming inspectors in the plant compound inspect activities and environments along their routes, and also assist with support or rescue in the event of traffic accidents, emergencies, or major drills.
- E. To ensure that operators are not exposed to radiation hazards, periodic inspections of equipment are carried out. Also staff are required to wear anti-radiation gear and participate in radiation work health inspections. Based on the readings of radiation meters and medical check-ups. Radiation doses and employees’ health conditions are monitored to prevent equipment anomalies causing radiation damage to our staff.

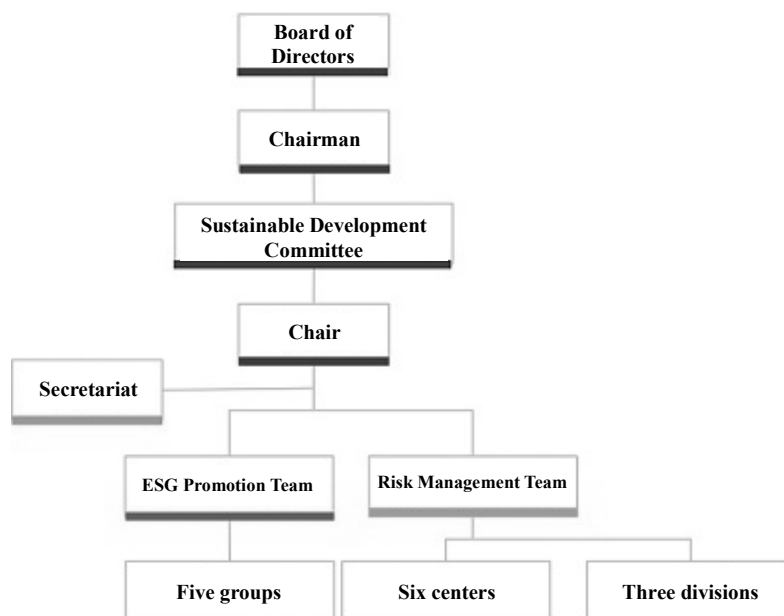
(III) List the total amount of losses due to labor disputes last year and this year to date. Also disclose estimated amounts and countermeasures for current and potential future events (if difficult to estimate, describe the matters that are difficult to estimate): The Company has harmonious labor relationships and has not suffered any losses due to labor disputes. Such losses are not expected to occur in the future.

VII. Important contracts

Nature of contract	Parties	Contract date	Main content	Restrictive clauses
Insurance contract	Union Insurance Co., Ltd.	06/30/2024~06/30/2025	Commercial fire insurance	None
Insurance contract	South China Insurance Co., Ltd.	01/01/2025~12/31/2025	Cargo insurance	None
Insurance contract	Hotai Insurance Co., Ltd.	01/01/2025~12/31/2025	Product liability insurance and public accident liability insurance	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	01/01/2025~01/01/2026	Directors and Managers Liability Insurance	None

Five. Review and Analysis of the Financial Status and Financial Performance and Risks

Risk management organization structure and functions:



- Board of Directors: Serving as the highest decision-making unit for corporate risk management, the Company's Board of Directors is responsible for approving risk management policies and relevant bylaws, overseeing the implementation of all risk management systems, and ensuring the effective operation of the management mechanism.
- Sustainable Development Committee: Subordinate to the Chairman, the Company's Sustainable Development Committee is the management unit for the implementation of risk management policies. It is responsible for the following actions for promoting corporate risk management:
 1. Development of risk management policies and relevant bylaws
 2. Implementation of the risk management policies approved by the Board of Directors
 3. Review of the issues related to corporate risk control
 4. Supervision of the overall implementation and coordination
 5. Analysis, prevention and monitoring of the overall risks, or control of the material risks
 6. Reporting to the Board of Directors (at least once a year)
- Risk Management Team: Subordinate to the Sustainable Development Committee and composed of the contact persons of different centers and directly subordinate divisions of the Company, it is responsible for carrying out the risk management actions, including the fundamental risk identification in all company operational dimensions, proposals of improvement/response strategies and control plans, and implementation of routine risk management.

I. Financial status

Unit: NT\$ thousand

Item \ Year	2023	2024	Difference	
			Amount	%
Current assets	4,994,176	4,819,603	(174,573)	(3.50)
Long-term investments	36,522	38,807	2,285	6.26
Real estate, plant and equipment	915,689	904,937	(10,752)	(1.17)
Right-of-use assets	41,516	40,719	(797)	(1.92)
Intangible assets	225,324	205,134	(20,190)	(8.96)
Other assets	158,285	203,225	44,940	28.39
Total assets	6,371,512	6,212,425	(159,087)	(2.50)
Current liabilities	1,819,180	1,506,166	(313,014)	(17.21)
Non-current liabilities	90,261	81,605	(8,656)	(9.59)
Total liabilities	1,909,441	1,587,771	(321,670)	(16.85)
Share capital	1,226,882	1,287,292	60,410	4.92
Capital reserve	925,825	1,155,419	229,594	24.80
Retained earnings	2,245,138	2,122,299	(122,839)	(5.47)
Other equities	(89,484)	(57,043)	32,441	(36.25)
Treasury shares	-	-	-	-
Equity attributed to stockholders of the company	4,308,361	4,507,967	199,606	4.63
Non-controlling interests	153,710	116,687	(37,023)	(24.09)
Total equity	4,462,071	4,624,654	162,583	3.64
Changes of more than 20%, or more than NT\$10 million are described below:				
1. Increase in “other assets”: Mainly due to the increase in Refundable deposit.				
2. Increase in “capital reserve”: Mainly due to the issuance of new shares through private placement to introduce Advantech as the investor.				
3. Increase in “other equities”: Mainly due to the recognition of gains from conversion differences in the financial statements of overseas business entities.				
4. Decrease in “non-controlling interests”: Mainly due to the decrease in net income in 2024 and increase in cash dividends.				

II. Financial performance

(I) Analysis of financial performance over the past two years

Unit: NT\$ thousand

Item \ Year	2023	2024	Difference	
			Amount	%
Operating revenue	7,631,446	7,837,159	205,713	2.70
Gross operating profit	1,778,642	1,301,205	(477,437)	(26.84)
Operating income	710,534	306,911	(403,623)	(56.81)
Non-operating income and expenses	37,855	42,101	4,246	11.22
Net profit before tax	748,389	349,012	(399,377)	(53.36)
Net profit for the current period	604,712	291,950	(312,762)	(51.72)
Other comprehensive income for the period (net income after taxes)	(5,505)	36,143	41,648	756.55
Total consolidated income for the current period	599,207	328,093	(271,114)	(45.25)
Changes of more than 20%, or more than NT\$10 million are described below:				
1. Decrease in “gross operating profit,” “operating income,” “net profit before tax,” “net profit for the current period,” and “total comprehensive income for the period”: Mainly due to the change in the product sales portfolio, resulting in a decrease in profit.				
2. Increase in “other comprehensive income for the period”: This was mainly due to the recognition of gains from conversion differences in the financial statements of foreign operations and the remeasurement of defined benefit plans.				

(II) The main factors influencing the expected sales volume in the coming year and the main factors for our company's expected continued growth or decline of our sales volume:

We will develop key applications and customers through customized products and value-added technologies. We will actively increase the number of European and American consumer channels for high-end storage products while optimizing the marketing benefits of the Group by enhancing our social media exposure and implementing comprehensive marketing data management. Through the triple strategy of products, business and marketing, the Company expects to achieve the sales target in 2025.

III. Cash flow

(I) Analysis of changes in cash flow over the past two years (consolidated):

Unit: NT\$ thousand

Item \ Year	2023	2024	Difference	
			Amount	%
Operating activity	381,842	(154,849)	(536,691)	(140.55)
Investment activity	(228,771)	98,364	327,135	(143.00)
Financing activity	(507,342)	39,461	546,803	(107.78)
Changes of more than 20%, or more than NT\$10 million are described below:				
1. The decrease in net cash inflow from operating activities was mainly due to the decrease in the procurement scale as a result of adjustments to inventory levels.				
2. The increase in net cash inflow from investing activities was mainly due to decrease in time deposit positions of more than three months.				
3. The increase in net cash outflow from financing activity is due to capital increase in cash and an increase in short-term borrowings in 2024.				

(II) Improvement plan for lack of liquidity: None.

(III) Cash flow analysis for the coming year:

Unit: NT\$ thousand

Cash balance at beginning of period	Annual net cash flow from operating activities	Annual cash inflow	Cash surplus (deficiency) amount	Remedy for cash shortage	
				Investment plan	Financial plan
1,072,751	288,992	(436,493)	925,250	-	-

IV. Impacts on financial operations from major capital expenditures in the coming year:
None.

V. The reinvestment policy of the past year, reasons for profits or losses, the improvement plan and investment plan for the coming year:

(I) The reinvestment policy of the past year: Our company's reinvestment policy mainly aimed to increase revenue and profit.

(II) Reasons for the major losses on the reinvestments: Our subsidiaries have already demonstrated their profitability, but due to rapid changes in the market and fierce competition, the current business growth rate of these reinvestments has slowed down. In the future, we will exert tighter control on certain processes to ensure higher profits.

(III) Investment plan for the coming year: The Company upholds the “Access the best” brand spirit and continues to promote one of the four major operational thrusts – the formation of alliances with strategic partners – to provide Apacer with more diverse operational perspectives and competitiveness, thereby becoming a growth driver for the Group’s operations. In the future, we will keep on looking for suitable strategic partners to create ecosystems based on the strategy of forming alliances and extend the benefits of partnership in the industrial value chain.

VI. Risk matters requiring analysis and evaluation

(I) The effects of changes in interest rates and exchange rates and inflation on the profit and loss of the Company as well as future countermeasures

1. Changes in interest rates

Our company's liquidity is sufficient, and short-term bank borrowings are used for operational turnover. Interest rate fluctuations have a limited impact on our company. Short-term investments are mainly in time deposits, which are combined with funds or bonds to increase revenue.

If the annual interest rate on bank borrowings increases or decreases by 1%, ceteris paribus, the Company’s consolidated income before tax of 2024 would decrease or increase by NT\$3,109 thousand.

2. Changes in exchange rates

The foreign exchange positions of our company are mainly in US dollars. Exchange rate risks stem from commercial transactions and recognized assets and liabilities. We will maintain our consistent and stable strategy and actively avoid foreign exchange risks to avoid exchange rate risk.

Unit: NT\$ thousand; %

Item	Year	2024
Consolidated net operating income (A)		7,837,159
Consolidated net operating profit (B)		306,911
Consolidated net gains (losses) from foreign exchange (C)		2,594
(C)/(A)		0.03%
(C)/(B)		0.85%

3. Inflation

The operating status of our company last year and this year to the date has not been significantly affected by inflation.

(II) Policies on high-risk, high-leverage investments, capital lending, third-party or endorsed guarantees, and derivative commodity transactions, and the main reasons for profits or losses from these and future response measures

1. Our company engagement in high-risk, high-leverage investments: None.
2. Loans of funds, endorsements and guarantees: Our company has not lent out, endorsed, or guaranteed any third-party funding.
3. Derivative financial commodity transactions: Our transactions in derivative products are mainly hedging transactions, which are handled in accordance with the provisions regarding trading procedures for derivative financial products in the “Criteria for Handling Acquisition and Disposal of Assets”.

(III) Future R&D projects and expected R&D expenses

1. Our research and development plan for 2025 includes the following:

(1) Technology for high speed transmission

We will continue to invest in the development of industrial SSDs for PCIe Gen4 high-speed transmission interfaces. PCIe Gen4 is still the mainstream standard transmission interface for industrial applications. We will continue the development of diverse industrial storage applications and technologies for PCIe interfaces. In addition, more PCIe Gen5-related studies will be conducted for consumer SSD transmission interfaces, supporting the new generation of high-speed flash memory. Furthermore, additional R&D resources will be invested in the development of SSD hardware, software, and firmware architecture technology. We expect to invest NT\$60,000 thousand in R&D for this area in 2025.

(2) Flash memory products for industrial applications

Focusing on the design and application technology of related solid state disk storage products, we research and develop embedded SATA, PCIe and USB interface products and related value-added application software, firmware and hardware, as well as industrial storage modules. SSDs have become the mainstream storage product in industrial and consumer applications, which ensures high reliability of data transmission and provide value-added applications. We will continue to develop SSD core technologies and innovative products geared to customer and market needs in different fields. We expect to invest NT\$40,000 thousand in R&D for this area in 2025.

(3) Random dynamic memory storage devices

In response to the era of big data analysis and the server storage market, the demand for high-speed data access will increase. As the system is further developed, the new generation of DDR5 has been officially introduced. We will invest resources in the research, testing, and development of DDR5 random dynamic memory devices with new specifications. We expect to invest NT\$35,000 thousand in R&D for this area in 2025.

(4) Industrial optical inspection and intelligent IoT architecture technology

In response to the development of the Industry 4.0 era and the Internet of Things, as well as the increase of industrial optical inspection requirements and applications and the demand for automation, we will continue to develop automated optical inspection devices to solve problems in industrial inspection applications. We will also invest resources in the R&D of inspection and IoT platform technologies to provide an automated platform system structure with well-integrated technologies and extensive industrial IoT applications. We expect to invest NT\$25,000 thousand in R&D for this area in 2025.

2. Estimated investments in R&D

Our R&D expenses in 2024 were NT\$180,702 thousand. We expect to invest NT\$160,679 thousand in research and development in 2025. Competition in the market for consumer and embedded storage, as well as innovative application products, is fierce. To keep our products competitive and stay ahead in the industry, we have become a manufacturer that continuously launches innovative products. The R&D expenditure accounts for a certain proportion of total revenue and is an important expense of the Company.

Looking to the future, in addition to developing memory and core SSD technologies and products for the consumer and industrial control markets, Apacer will focus on the development of industrial optical testing equipment and smart IoT products. The Company will actively deploy related core technology development talent and increase R&D personnel, including engineers for the development of core software and hardware, mechanism design, and electromechanical integration, to improve the design capabilities and technical services of electromechanical equipment. In response to green design requirements, the Company will invest in the research and development of electronic paper applications and initiate market application research and product design in new domains.

3. The main factors affecting the success of R&D in the future

- (1) Mastery of high-speed transmission core technologies and R&D of storage applications and algorithms.
- (2) R&D personnel experienced in software, hardware, system and system architecture.
- (3) Electromechanical integration capabilities for software, firmware, hardware, mechanisms, and systems.
- (4) Capabilities in storage product testing and verification as well as system technical support.

(IV) Changes in important policies and laws in Taiwan and abroad impacting our finances, and measures taken in response

Our company has not been affected by changes in important policies and laws in Taiwan or abroad last year that have affected our finances or business. Our main sales markets are in Asia, Europe, and the Americas. The European region consists mostly of developed countries, whose laws and major policies are more stable than other regions, while the Americas are dominated by the United States, which in the short term should have no military or political risks. Therefore we do not expect that our company will be adversely impacted by changes in important policies and laws in Taiwan or abroad in the future.

- (V) Impacts from changes in technology (including cyber security risks) and the industry, and response measures

Our company closely follows changes and developments in technologies in our industry. Thus over the past year there was no significant impact on our company's finances or business arising from changes in technology or the industry.

According to the annual inventory of information security incidents and risk evaluation results, there was no serious information security incidents in the most recent FY. However, in response to increasing external information security threats, the Company will continue to perform risk inventories for internal information assets with reference to serious information security incidents that occurred in Taiwan or abroad and develop risk handling plans to make continuous improvements.

- (VI) Impacts from changes in corporate or corporate crisis management, and measures taken in response

For many years our company has taken great care of maintaining a good corporate image and complying with statutory requirements. In the event of any situation that may affect our corporate image or legal compliance, a task force will be set up to formulate response measures. To date, there have been no incidents that could affect the corporate image.

- (VII) Expected benefits and potential risks from a merger or acquisition: None.

- (VIII) Expected benefits and potential risks from expanding our plant:

Our company has completed the integration of the management of our factory in Tucheng and the headquarters of our company. We have established company milestones and objectives for our company's sustainable business. As of the printing date of this annual report, our company has no plans to expand the factory.

- (IX) Risks associated with any consolidation of purchasing or sales operations, and response measures:

Purchasing: We not only constantly collaborate with the existing business partners but also keep looking for and assess other prospective partners in an active manner, in order to reduce the risk of concentration. Also, alternative supply plans are in place for the material excesses and shortages in the market. Meanwhile, we make regular supplier evaluations more carefully to ensure stable supply quality and mitigate the impact of material excesses and shortages.

Sales: So far, the Company has been engaged in good cooperation with all customers. In addition to the existing stable customer sources, we also continue to develop new customer sources with our strengths, ensuring a steady and long-term operational growth while achieving the objective of risk distribution.

- (X) Impacts and risks from large transfers of shares held by the Company's directors, supervisors, or large shareholders holding more than 10% of the shares, and response measures:

All the transfers of shares held by the Company's insiders have been reported as per the regulations of the competent authority. Meanwhile, there were no large transfers of shares.

- (XI) Impacts and risks from changes our company's operating rights, and response measures: None.

- (XII) Litigation and non-litigious events

1. Outcomes of major litigious, non-litigious, or administrative disputes last year or this year to date that have been determined or are still proceeding and that may have serious impact on shareholder income or share prices: None.
2. Outcomes of major litigious, non-litigious, or administrative disputes last year or this year to date involving our company's directors, supervisors, and large shareholders holding more than 10% of shares, that have been resolved or are still proceeding and that may have serious impact on shareholder income or share prices: None.

- (XIII) Other major risks and response measures: None.

VII. Other important matters:

None.

Six. Special Items

I. Information on affiliated companies

- (I) Consolidated business report of affiliated companies: Please refer to the MOPS>Single Company>Electronic Document Download >Three Forms for Affiliated Enterprises. (https://mopsov.twse.com.tw/mops/web/t57sb01_q10).
- (II) Consolidated financial statements of the affiliated enterprises: N/A.
- (III) Affiliates report: N/A.

II. Private placement of securities in the most recent year and up to the publication date of the annual report:

Item	Private placement of securities in 2024 Issuance date (share distribution date): April 16, 2024 Number of shares: 6,041,000 shares				
Type of securities privately placed	Common stock				
Date of adoption and amount approved by the shareholders' meeting	On May 29, 2023, the issuance of common shares for cash capital increase by way of private placement was approved at the shareholders' meeting, with the number of shares no more than 10,000,000. The process was carried out at 1-2 times within a year upon the date of the resolution of the shareholders' meeting.				
The basis for determination of the price and its reasonableness	<p>February 23, 2024 was set as the pricing date of the private placement this time (1st time). According to the resolution of the shareholders' meeting on May 29, 2023, the reference price for the private placement is calculated based on 80% of the higher one of the following two base prices:</p> <p>(A) The simple arithmetical average closing price of the ordinary shares for either the 1, 3 or 5 trading days prior to the pricing date, after deducting the value of bonus shares issued as stock dividends and cash dividends, and adding back the value of the shares canceled in connection with capital reduction, was NT\$60.50, NT\$59.77 and NT\$59.60, respectively, and the simple arithmetical average closing price of the ordinary shares on the trading day right before the selection, after deducting the value of bonus shares issued as stock dividends and cash dividends, and adding back the value of the shares canceled in connection with capital reduction, was NT\$59.77.</p> <p>(B) The simple arithmetic mean of the closing price of the ordinary shares for the 30 business days prior to the pricing date was NT\$57.64, after deducting the ex-rights and ex-dividend of the free allotment of shares and adding back anti-exclusion and capital reduction.</p> <p>The higher one of the two base prices above or NT\$59.77 was selected as the reference price. After detailed consideration, the actual subscription price of this private placement was determined to be NT\$48.00 per share or 80.31% of the reference price.</p>				
The method for selection of specific persons	Subject to Article 43- 6 of the Securities and Exchange Act				
Reasons for the necessity of the private placement	In view of the capital market conditions, cost of issuance, timeliness and feasibility of financing by way of private placement, and the restriction that the shares for private placement shall not be transferred freely within three years, a closer long-term partnership with the strategic partners is more likely to be ensured and facilitated accordingly. Therefore, instead of using a public offering, it is planned to use a private placement method to increase cash capital and issue new shares this time.				
Full payment date	March 1, 2024				
Information on placees	Private placement target	Qualification	Subscription quantity (NT\$)	Relationship with the Company	Involvement in the Company's operations
	Advantech Corporate Investment Ltd.	Article 43-6, Paragraph 1, Subparagraph 2 of the Securities and	289,968,000	None	None

		Exchange Act			
Actual subscription (or conversion) price	NT\$48 per share				
Discrepancy between the actual subscription (or conversion) price and the reference price	The subscription price of this private placement was NT\$48 per share or 80.31% of the reference price (NT\$59.77), which was not less than the minimum percentage resolved at the shareholders' meeting.				
The effect of the private placement on the shareholders' equity	The Securities and Exchange Act has a restriction of three years on transfers of privately placed securities, and relevant regulations regarding the qualifications for places. Hence, the shareholders' equity is protected at a certain level. Moreover, the Company's working capital can be replenished while the long-term partnership between the Company and the strategic investment partners can be ensured, which is favorable for the stable and permanent development of the Company and thus beneficial to the shareholders' equity.				
Use of the funds raised in the private placement and implementation progress of the plan	All the funds have been utilized for the working capital of the Company.				
Realization of private placement benefits	Replenishing the working capital of the Company to improve the competitiveness in the niche market of industrial control.				

III. Other necessary additional statements:

None.

IV. Matters that have a significant impact on shareholders' income or securities prices as set forth in Article 36, paragraph 3, subparagraph 2 of the Securities and Exchange Act during last year and this year to date:

None.

Apacer Technology Inc.



Chairman: Austin Chen



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